

Forgetting the Past: The Key to Predicting the Future

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Abstract

Historically, the prediction of and preparation for future events use a perspective which is rooted in the past. Organizations make plans for the future by (re)assessing what has already taken place. Benchmarking is a good example. An organization analyzes the practices of one or more high performing companies, often times within their own industry, then adopts those historically based processes when preparing for the future. The implied assumption is that the future will be only some variation of the past. This paper argues for a changed paradigm for prediction. New approaches to predict and prepare for the future are discussed.

Keywords: future, prediction, paradigm

Introduction

Visionary. Free thinker. Strategist. These are all references to that someone who is able to come up with ideas and directions which others fail to see. Obviously, the ability to foresee the next trend, innovation, or change on the horizon is a prize every organization seeks. Are these people somehow unique in their ability to do so? If not, how can an organization encourage if not train employees who can truly *think outside the box*. It is a conundrum that faces every organization today, especially given the every-increasing of technological and environmental change to which companies must “change or die.” The question of what allows some to see into the future and others to simply reinvent the past is one that is being examined from many different perspectives. Recently, Dvorak and Badal (2007) reported in the *Wall Street Journal* on the research of Pierre Balthazard. Using sophisticated brain mapping techniques, Balthazard has found that the areas of the brain used by individuals who are thinking about the future are different from those areas of the brain being used by those who are contemplating current, perhaps more mundane, thoughts. Those who are thinking about the future show increased use of the parts of the brain that deal with visual processing and procedural memory. Those thinking about the future also show an increase in overall brain activity.

If this research proves to be correct, it would imply that almost all individuals carry the capacity to predict the future. However, while there may come a day when large numbers of organizational participants will be using the appropriate areas of their brains to create a foundation of innovative strategic planning, the fact remains that today’s organizations need more employees to construct new approaches for the development of tomorrow’s strategies. So why is it that we don’t see large numbers of employees contemplating the future, formulating strategic plans, and/or thinking outside the box? This paper summarizes empirical research along with descriptions of common organizational and societal practices which document and explore how individual decision-makers predict the future. Physiological processes, the impact of the decision-makers emotional state and personality, the role of memory and active recall in predictions, a reliance on atypical past events, and common organizational practices in making predictions are examined. It is hoped that once we gain a better understanding of the processes involved in predicting the future suggestions can be made as to how to improve our predictive decisions and how to train or encourage innovative and creative decision-making within the organization. In doing so the goal is to move beyond predictions which are simply reinventions of the past.

The Societal and Organizational Socialization of Predictions

Reinvention of the past as a means to predict the future has much to do with the way organizations, as well as our society, train their managers and employees to make such decisions. Drilled into virtually every human in at least the United States, especially during their early years, are several pieces of what is referred to as ‘common wisdom.’

While these proverbs and maxims cover issues ranging from money (e.g., a penny saved is a penny earned) to personal preference (beauty is in the eye of the beholder) to the receipt of gifts (don't look a gift horse in the mouth), many of these reinforce the usefulness of incorporating the past into the projection of the future. "History repeats itself." "Don't make the same mistake twice." "I know of no way to judge the future but by the past." "Learn from your mistakes." The clear implication is that the most appropriate preparations for addressing future issues and problems are the lessons learned from past experiences. Further, this emphasis on the past has become the foundation upon which parents raise their children and organizations develop management decision-making practices. An organizational example of this is *benchmarking*. The process of benchmarking, has become widespread and virtually mandated within all industry sectors, both private and public. When benchmarking, an organization compares its practices with those of other (high performing) organizations. The idea behind benchmarking is to identify the "best" practices utilized by particularly successful organizations and then integrate them into your operation (Goetsch & Davis, 2006). Through benchmarking Organization A makes plans to confront the future by using those practices and processes which have previously been successful in Organization B.

One of the primary flaws of the logic behind benchmarking is the assumption that the environments, both internal and external, for the target organization and the model organization are similar, and that they will not be dramatically different in the future from what they have been in the past. For example, Harley-Davidson compared its manufacturing processes with Honda, when Harley-Davidson was attempting to improve quality to the point where it could survive. It used what it learned from Honda to turn the company around (Gross, 1997). At that time, at least, the external environments in this country for both Honda and Harley-Davidson were essentially the same. Thus, in that case the benchmarking with Honda paid off for Harley-Davidson, at least for a while. But did benchmarking show Harley-Davidson how to innovate and compete successfully for the long-term as a leader in its industry? The labor strife and financial turmoil that Harley has experienced during the last several years suggests otherwise. Nevertheless, it is the success stories of organizations such as Harley-Davidson which have promoted techniques like benchmarking to move an organization forward into the future.

And what happens when the future doesn't look like the past? Or when the internal and external environments in the target organizations are quite different from those of the model organization? Research conducted by Brah, Ong and Rao (2000), using both manufacturing and service sector industries, identifies that a major reason why benchmarking fails, when it does fail, is because the differences in organizational environments are not addressed. Given these circumstances we must ask whether relying on the past to predict future success be prudent, or even successful. So, how can organizations look into the future while at the same time escaping from the past so as to define a heretofore unseen situation? Clearly the process of prediction is a complex one, but not an impossible one.

Predicting the Future

The prediction of future events has both fascinated and transfixed mankind for thousands of years. While men have had an obvious interest in the nature of that which has been predicted, accuracy in prediction has usually been the ultimate goal, and the process of prediction itself oftentimes has produced elaborate rituals and processes. Thus, prediction has been prized in and of itself. In recent times organizations of all kinds have spent countless hours and significant resources in an attempt, many times in vain, to get an accurate picture of some future event. Periodically, sophisticated statistical models using large databases of past events are utilized in making these predictions. Whether it is predicting the next move of the stock market, or identifying a future industry leader, the predictive successes of statistical models have become well known. Rarely, however, do we carefully examine the decision processes which are used to predict the future. We rely upon these few but well publicized success stories to reinforce and continue their use, despite the fact that the predictions may not really be all that accurate. Consider, for example, the prediction of inflation. While economists are frequently given credit for the accuracy of the forecasts of their statistical models, recent research by Thomas and Grant (2008) demonstrated that those forecasts were no better, over a 12 year period of time, than those constructed by actual consumers in both the United States and in Australia.

Factors Which Affect Predictions

Research has identified a range of variables which may affect not only the way predictions are made, but their ultimate accuracy. These include:

- § Time reference. People seem to be less confident about predicting late events (i.e., those which occur farther into the future) than events which have occurred early on (i.e., those which will occur in the near future) (Vreugdenhil & Koele, 1988).

As the memory fades details are forgotten or seem of less importance. With recent events more details are remembered, therefore considered in decisions. With this increased detail, however, decisions take on a greater complexity and more potential complications and concerns are identified.

- § Cultural differences. European American and Japanese ancestry decision-makers may be more positive about making predictions of future events than those with other cultural backgrounds (Chang, Asakawa & Sanna, 2001). Beekun, et al (2010) not only found cultural differences with regard to decisions about intentions to behave ethically, but also found gender differences with respect to that same issue.
- § Time spent in aggregating past and current data. Newman (1996) identified that the range of consistency in decision making about the future was inversely related to the amount of time spent integrating information about the past and present. That is, the more time that was spent on acquiring information about the past and present, the less consistent the predictions of the future. Newman's work may indicate that time and effort may play a role, albeit not always a positive one, in predictive accuracy.
- § Brain physiology. Actual brain function may play a role in predictions. Different brain functions may be involved depending upon whether a person is consciously re-experiencing past events as opposed to pre-experiencing possible future events (Addis, Wong & Schacter, 2007). Thus, predictions may be varied depending upon the differences in certain physiological brain structures among the decision makers.

While some of these factors may be under the control of the person engaged in the prediction, some, such as brain physiology, are clearly not, and therefore the utility of incorporating those latter factors into a practical framework of prediction may be limited. Instead, when trying to discern an optimal prediction paradigm it may also be beneficial to examine only the controllable cognitive processes involved.

The Cognitive Processes Involved in Prediction

Several factors may play a role in determining the nature and effectiveness of the cognitive processes involved in making predictions. Considering these kinds of factors may lead to a greater understanding of how actual predictions are made.

- § The goal in prediction. Some authors, such as Malle and Tate (2006), indicate that there are two goals inherent in any predictive process. These are explaining the past and predicting the future. Malle and Tate (2006) found, however, that both explanations and predictions are generally undetermined by the actual data. For example, in explanations we generally know the outcome, but not the starting conditions. In predictions, on the other hand, the starting conditions are known, but not the outcomes. Even the motivation behind the predictions may be varied. In an explanation of an event, for example, the motivation is to find meaning, in many cases to settle some degree of social (i.e., organizational) tension. For predictions, however, the motivation is to spur hope, perhaps so as to coordinate social (i.e., organizational) forces to find a solution. Malle and Tate (2006) raise an interesting paradox. If there are two or more goals when making predictions, which may at times be incompatible, how do we know which of these is/are the primary goal(s) so as to maximize the accuracy of our predictions? And which is it that is more useful to us, a thorough explanation of a past event or an accurate prediction of an unknown future?
- § Predictions based on memory. According to Cole (1993) our conception of the future comes from the nature of our memories. How we describe the past sets the parameters within which we believe the future must exist. In other words, our view of the future is generally set within the paradigm(s) or context(s) of the past.
- § Emotions influence predictions. The emotional state of the person or persons making the predictions may directly impact the outcome. Zelenski and Larsen (2002) found that personality traits which are more affected by the emotion of the moment, such as extraversion and neuroticism (i.e., emotional stability), may bias our judgment of the future. The bias occurs because we tend to favor making decisions, predictions, which are congruent with our current emotions. Those who are more extraverted or less emotionally stable (i.e., neurotic) may be more subject to this bias. In other words, our prediction of the future may be influenced by the degree to which a past event is considered very emotional to us. For example, the negative emotions surrounding the events of 9/11 will produce congruent negative predictions of the future especially for those who are more extraverted or neurotic.
- § Moods influence forgetting. The mood the decision maker displays may affect their ability to recall information. Bauml and Kuhbandner (2007) found that repeated recall of an event seems to increase the probability that we will forget the information that we DID NOT recall. This seems to occur except when negative moods prevail. In other words, if we're in a negative mood, we are equally likely to remember a past event whether we have frequently recalled it or not.

§ Over-reliance upon atypical events. In some ways similar to the findings of Zelinski and Larsen (2002), Morewedge, Gilbert, and Wilson (2005) noted that atypical instances of an event seem to influence our prediction of the future more heavily than other more mundane occurrences. For example, post 9/11 commercial airline passenger miles decreased by 18% (Sivak and Flannagan, 2003). In response to this event, car transportation miles increased significantly. Clearly the choice of transportation mode was influenced by the atypical event (i.e., 9/11). And, just as clearly, people chose to use a mode of transportation which was inherently more dangerous. Ultimately more people were killed through this choice of transportation than the 9/11 casualties (Gigerenzer, 2004). In other words, there is an impact bias which is based upon the emotions associated with an atypical event. Apparently we have a tendency to overestimate the potential impact of future events because their prediction has been based on highly available, but under-represented memories of the past. Morewedge et al. (2005) found that when people were asked to recall an instance of an event they tended to make extreme forecasts about the future if an atypical instance was the basis for the prediction.

Implications for Making Predictions

Using the research summarized above, several lessons emerge regarding how we might improve our predictive processes, and they address the decision-makers themselves as well as the context within which the prediction will be made. Those who are charged with predicting the future should note:

1. Recent events preceding the prediction may be overemphasized. It is important that if the past is to play a role in the prediction a large database of events, occurrences, findings, etc., should be used.
2. The societal and perhaps even the organizational culture has an impact on the type of predictions that are made. That is, different cultures may differentially value how much the past needs to be honored and emphasized in predicting the future.
3. Organizations should limit the time they dwell upon and gather information about the past. The more time spent examining past events, the less accurate the predictions of the future may be.
4. Individual decision-makers will differ in the way and ability to make predictions. Neurological, personality, and emotional state differences will have an impact on predictions.
5. Organizations should clarify the goal(s) of the prediction. Predictions should not be made simply for the sake of predicting. Is the prediction being made so as to explain or account for a past event (e.g., declining product quality) or is it being made in an attempt to anticipate the next new trend or innovation of the future? Decision-makers must be aware of the possible zeal to use changes to address failures of the past as a substitute for real predictions of the future. Benchmarking, therefore, may in reality be a quasi-prediction of the future. That is, if we change to meet the current practices of the model organizations in our industry we are prepared to meet the future. This assumption is NOT a real prediction of the future, merely a recasting of the organization to meet past realities.
6. Decision-makers should be aware that what they are able to remember more clearly will have a greater impact on their predictions.
7. Ruminating on certain past events in the organization may lead to the forgetting of other events, some of which may be just as important in making accurate predictions of the future.
8. Atypical events (i.e., rare occurrences) may carry greater weight in shaping predictions as opposed to more frequent well-accepted events.

Improving Our Prediction Strategies

One can easily begin a consideration of improvement techniques by examining perhaps the most common prediction arena for organizations: strategic planning. Based on frequent reports in popular magazines, newspapers, and academic journals it would seem as if companies are spending more and more time studying and digesting external factors (i.e., those outside of their industry, geographic region, etc.) when making predictions. Indeed, while it would seem that all this careful study would make the decision makers in those companies more comfortable in predicting farther out into the future, that is strategic planning, this does not seem to be the case. Yet, in spite of the discomfort regarding the ability of strategic planning to accurately guide an organization into the future (Fairholm, 2009), it is being incorporated in more and more organizational systems and processes. Take organizational change interventions. Jacobs, Johnson, and McKeown (1999) demonstrated how so-called real time strategic change is becoming the basis for organizational change planning. As they have reported, participants in the change process develop a vision of the “preferred future” which, supposedly, brings together the best parts of the past with the present. Thus, the preferred future becomes the organization’s strategic plan. There are several important inconsistencies in formulating a change strategy for the future based on this technique. For example, how can knowledge of the past and present be construed as the complete definition of the future?

Is identification of the “preferred future” an accurate prediction simply because a group of individuals created a collective agreement as to the past and present state of the organization? As stated at the beginning of this paper, there has historically been an over reliance upon the use of existent data and a blatant assumption that the trends of the past will be replicated in the future (Sniezaek, 1980). Even with knowledge of past events and a careful analysis of the current state of things we do not correctly and consistently predict the future. As Harwell Thrasher (Thrasher, 2007) states, “People always try to use their experience even if it doesn’t apply to the current situation.” Why is this and how can we improve on prediction accuracy?

Understanding Our Paradigm of Prediction.

Many management practices and processes take a short term focus on prediction and, therefore, change, as change is the primary motivation for making predictions about the future. Prediction is all about change, that is, trying to determine the actions an organization must take so as to be successful in the future. The primary mistake made by those charged with predicting the future and thus developing the organization change programming lies in the *paradigm of prediction and change*.

What is a paradigm? According to Barker (1993) a paradigm is a set of rules and regulations (written or unwritten) that does two things:

1. establishes the edges or boundaries of a territory and
2. tells us how to act within these boundaries to achieve some measure of success.

For many, the prediction of the future is simply an application of past and current paradigms. Thus, if a particular paradigm is not present in either the past or current data it will not be seen nor developed by those endeavoring to make the prediction. Consider, again, benchmarking. The process of benchmarking is based on several key assumptions:

- The practices which have made the best organizations in our industry, business sector, etc., so successful will continue to do so, not only for these organizations, but for ours;
- Our organization can adopt these processes and practices;
- The future of our organization, industry, business sector, etc., will be a variation of the past.

As history has demonstrated, these assumptions are regularly false. Whatever it was or is that made or makes an organization successful is contingent upon a myriad of variables – the people, the structure, the marketplace, the environment, etc. In other words, their success is based on their use of a specific paradigm, a complex set of rules and regulations which have governed a large range of managerial and employee behavior. So the paradigm is visible to those within and outside of the organization. It can, therefore, be tweaked, adapted, massaged, etc. so as to become workable in “our” organization.

But will this paradigm take us into the future and ensure our success? No. What does not fit with the benchmarked past and present paradigm is invisible to us (Barker, 1993). Consider the following example. Let’s say that I am working with a large police agency to design a performance appraisal system. Top management indicates that they want to benchmark whatever system is to be developed against the best ones used in other law enforcement agencies. At first pass this seems like a plausible, even admirable goal. Take the features from the best systems that are available which already fit both the public sector and police agency paradigms and use them as a guide for developing a performance appraisal process. After all, wouldn’t this strategy yield the best of the best ideas? But, what if we know that within the public sector and police agencies in general, performance appraisal systems have many times been seen to be lacking in certain important areas, such as failing to incorporate performance areas which are proven to be job-related, or failing to train supervisors in how to reliably observe and interpret employee performance? In this case then, we are benchmarking against mediocrity. Our best practices are not as good as those that exist elsewhere, albeit outside of the existent public sector police agency paradigms. So how do we see outside the paradigms of the past and current? How can we avoid reinventing the past and considering it the future? It may be that accuracy in prediction comes not from a careful analysis of the past and present state, but lies within the range of information, perspectives, opinions, etc., used in the development of the predictions themselves. Here are three new perspectives and tools which will enable an organization to address the future because they build a foundation of information, expertise, and experience which goes well beyond any existent paradigm identifiable within the past or status quo.

The Industrial Sabbatical. The term sabbatical has become synonymous with providing time away from one’s usual duties, such as a professor who would move away from teaching and administrative work for the purposes of gaining new knowledge so as to stay current in a particular discipline. Normally the sabbatical is used to update the recipient through a prearranged set of activities which revolve around the collection of data, data which are associated with the faculty member’s area of expertise and discipline. But what if the sabbatical were used to provide an opportunity for development, experiences, study, etc. in areas and disciplines completely unrelated to the individual’s so-called expertise?

Sabbaticals are no longer the domain of academe. “Once the privilege of tenured professors, the sabbatical is branching out from the cosseted world of academia into the mainstream.” (Paul, 2002). Chura (2006), as reported in the *New York Times*, identifies that sabbaticals are becoming more and more common across a large range of industries. In 2005, the Society for Human Resource Management reported that about 23% of businesses in the U.S. offered paid or unpaid sabbaticals. The SHRM report focused on the use of sabbaticals as a means of keeping management and employee talent. While the purpose may be retention, the reports provided by organizations that use the technique goes well beyond the human resources purpose. Those returning from a sabbatical report a renewed sense of purpose within the organization and the ability to apply a much wider range of ideas and experiences than those narrowly defined within their organization and industry.

White (2001) reflects this view when he describes the situation at Lexis, a London-based public relations consultancy. Its managing director, Hugh Bitley, indicates “A sabbatical allows people to rediscover themselves – to bring back the originality and sparkle present at the start of a career which can be dulled without the chance to take an extended time-out. We’ve found them excellent for not only retaining and attracting high-quality people, but in re-firing creativity. We ensure there is opportunity for returning staff to put new ideas into practice, which is essential if individuals and employers are to derive maximum and mutual benefit from sabbaticals.” Therefore, sabbaticals are not simply time off and away from work. They are a tool to expose managers and employees to a wider range of paradigms, well beyond those in place within their current organization and industry.

The application of the academic sabbatical to industry holds some merit. The industrial sabbatical would require the recipient to gather firsthand information and experience in organizations as different as possible from their home institution. In other words, an industrial sabbatical entails the placement of the recipient in one or a series of organizations, none of which are competitors to their home organization, and are as different as possible in a variety of ways. The recipient would spend a specific period of time shadowing managers, completing training, performing systematic observations, and the like in a series of organizations which may be a complete contrast to their home institution. If the recipient resides in a manufacturing corporation, they should spend time in a company that is service based. If a for-profit corporation is home, then the recipient should complete a rotation in a not-for-profit setting. And so forth.

Being unconstrained by a history of looking at issues and problems via a prescribed perspective, that individual may very well generate completely new solutions to those problems. As a simple example, there is the now famous story of Almon Strowger, the 19th century undertaker turned telephone inventor. Strowger began losing business to a competitor when that competitor’s wife, the head operator of the local telephone company, began using the new telephone system to divert all inquiries regarding undertakers to her husband. Strowger turned his attention to the (human) switching system which was then employed. After teaching himself something about switching low voltage currents, he designed, using electromagnets and hat pins, an automatic switching device which revolutionized telephone service (Strowger, 2006).

The industrial sabbatical recipient would be charged with experiencing and subsequently describing the widest range of operational paradigms possible. Little attention should be paid to the relevance of a sabbatical placement or rotation. The assumption should be every setting or organizational context is relevant in some way, perhaps in a way that cannot be seen at present. In a sense, the industrial sabbatical recipient becomes an outsider to their home organization. Yet, even though they may be labeled an outsider, that is, someone who now sees things differently, because of their internal savvy they can interpret and adapt their newly acquired knowledge as only an insider can. Perhaps industrial sabbatical networks could be established within certain geographic regions so as to lessen travel times and relocation issues. Reciprocity would be the norm with those organizations within the network agreeing to host a number of sabbatical recipients each year for a specified period of time. Agreements would be designed so as to allow recipients to gain a full understanding of the structures, processes, and procedures of the placement organization, yet not reveal any proprietary information. A common template of reporting could be constructed so as to require the sabbatical recipient to have their planned sabbatical end report reviewed by the host organization before they present it to their home institution. It may be that their report and the observations of an outsider may prove to offer innovative insights to the host organizations as well.

The Sojourner Sabbatical. This is a variation on the industrial sabbatical. Just as a traveler takes a sojourn to chart unknown territories, the recipient of the sojourner sabbatical would be required to take a leave from the organization that would involve virtually nothing associated with their normal profession, work responsibilities, industry, etc.

For example, the recipient might propose an extended series of travels, volunteer or community service work, or immersion in a hobby. The purpose of the sojourner sabbatical would be to ensure that the recipient would bring back to the organization a set of paradigms which are as different and far flung as possible. Think about an accumulated group of past sojourner sabbatical recipients. Consider the increased range of perspectives they could bring to any organization issue. Is this not what real diversity is supposed to be about?

Cross-Sectional Think Tanks. Building upon the industrial sabbatical and a possible network of participating organizations, a collective group representative of the participating organizations could be identified. The cross-sectional group would include employees from all levels of each participating organization. As strange as it may sound, random selection could be used to identify participants. One day each quarter throughout the year could be set aside for these individuals to gather and work through an agenda which focuses on a particular organizational or societal issue. Facilitators could be used to create manageable groups which would work independently to formulate ideas and then present to the group as a whole (a common technique used in strategic plan development). All members of the cross-sectional think tank network would receive a report of the group's work each quarter. Reporting in the *Wall Street Journal*, Cross, Hargadon, Parise, and Thomas (2007) address the innovative potential of communication across organizational boundaries. They address the myth that most innovation comes from an individual or a small group of sequestered team members. In reality most innovations are created through networks of people working in concert, people who cross organizational boundaries such as departments, divisions, levels within the hierarchy, etc.

There are existing programs that are similar to what it is being proposed. For example, the Center for Advanced Engineering Fibers and Films (CAEFF) already has programs which are similar to both the industrial sabbatical and the cross-sectional think tanks. Their industrial sabbaticals and sabbatical interchanges utilize partnerships with participating members and partners from academe to achieve objectives similar to those stated above (CAEFF, 2006). While these exchanges are somewhat more limited than what has already been proposed, they nonetheless embody the same basic principles. The open source industry has also utilized the think tank concept, recently hosting its sixth think tank. Its goal was to bring together experts from important sectors of that industry to brainstorm about important issues and problems facing the development of commercial open source (Olliance Group, 2011). Again, while this think tank is somewhat more limited relative to what we are proposing, it does possess a similar goal.

As a third example, the Competency & Credentialing Institute recently held its second think tank. These think tanks both brought together a variety of healthcare professionals who addressed a multitude of issues related to quality and safety in patient care (CCI Think Tank, 2007).

Finally, the Center for Cultural Innovation, in California, has started Project Innovation. This modified think tank brings together artists, funders, community practitioners, etc., to network and knowledge share with the goal of promoting both art, and artists. While the examples vary dramatically, one thing is clear. Creating a large base of employee knowledge and experience which goes well beyond the organization and industry will provide the context for increased innovation and creativity, and the greater the variety of the individuals and industries, the better.

Conclusions

There will obviously be problems associated with the adoption of the concepts we have outlined. First, these are clearly “non-traditional” programs, and as such will likely generate more than a small amount of resistance, especially from “traditional” managers. In addition to the skepticism automatically generated when something new is offered, and the discomfort associated with the disruption of (accepted) routines, there are individual differences associated with the generation of resistance to change (Oreg, 2003), as well as contextual ones (e.g., Oreg & Sverdlik, 2011). The bottom line here is that one should not expect that the initiatives proposed will generate widespread initial enthusiasm, and the task of “selling” these initiatives will be a difficult one.

Second, the programs we've outlined would not be inexpensive, and the economy is not currently operating at peak effectiveness (although it is operating very efficiently). On the other hand, what we are proposing are investments for the future, and many organizations, especially those in the Standard & Poor's 500 Index, do have the resources to fund them. Just one year ago the Bureau of Economic Analysis estimated that U.S. corporations, because of a reluctance to spend during uncertain economic times, had accumulated \$1.6 trillion in cash reserves (abcNews, 2010). So even if businesses don't want to invest in “brick and mortar” because of a continuing concern about marketplace stability, these programs would still be investments in the future, and investments which may be seen as more palatable simply because of the nature of their maintenance costs.

Finally, there is, of course, no guarantee regarding the potential success of what we have proposed. We have argued for a set of new creative processes, and, as others have pointed out (e.g., Mainemelis, 2010), creative processes are inherently uncertain. Organizations would be asked to invest not in a product or service which may or may not appeal to potential consumers, but instead into processes which may not even be directly related to the current work environment. However, allowing employees to gain so-called “unrelated” experience will do much, we believe, to avoid the reinvention of the past while at the same time creating the potential of new paradigms for predicting the future.

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