Value Wave | White Paper

A Model for Innovation

Innovation is critical to organizational success. As business and funding environments become less forgiving, there are increased stresses on organizations to anticipate and adapt to changes. At a time when most organizations are feeling compelled to be innovative, many find that they are not all that proficient as innovators. The resultant scramble to identify successful organizations that could serve as templates for enhancing innovation has—for several reasons—not been very successful. Only a few good examples exist: 3M and Hewlett Packard in the private sector and the Denver Children's Museum in the public sector. Careful study of these examples led, at best, to a set of precepts that were not copied readily. The cultural heritage of both 3M and Hewlett Packard as research-based organizations was identified as the key reason why people found it possible to dabble, to create, and finally to innovate. Because of their quick-fix mentality, many leaders of Western organizations wanted quicker, easier answers.

The entrepreneurial success of the Denver Children's Museum might have served as an innovative beacon for those in not-for-profit and public sectors. However, the culture at Denver Children's was so different from that of other nonprofit organizations that even when the entrepreneurial Denverites packaged and sold their techniques for others to use, few could imitate them successfully.

Factors Working Against Innovation

The reason why so many companies and organizations are very poor at innovation is because of the magnifying impact of a dual problem. The first layer of this problem lies at the individual level. Very few adults show up at their workplaces intrinsically creative. Probably the most universal accomplishment of formal education, public and private, has been the squelching of creativity. We educate in a highly convergent manner, in which right answers are graded, and grades define success and failure. Truth is defined in the back of the teacher's edition of the textbook. The people who do survive the year-in, year-out onslaught of "right answers" and still retain their creativity tend to do so because of a fairly significant degree of deviance. They might have been class clowns or loners whom no one bothered to understand. Seldom were they appreciated by the teachers who had read the "right answers" in their teacher's editions.

People who are creative often are unable to convert their ideas to useful organizational innovation. To understand why this is true, one can look at the difference between creativity and innovation. Creativity is the ability to generate ideas—to see options when faced with a challenge. Innovation is the practical adaptation of an idea and results in some change in behavior, process, or function. In most organizations, there are many more ideas than innovations. If one examines organizational innovation at the individual level, it becomes clear that those who are creative often do not know how to make their ideas result in organizational changes.

A major reason is that creative employees often have a heritage of being organizationally deviant or are naive regarding the way in which the organization functions. Not only do they not find joy in tinkering with ways to make the organization better; they often do not believe that it can happen. Their creativity has little positive impact, because many of them sit outside the mainstream of organizational life lobbing howitzer-like rounds of ideas at the fortress of the decision makers. In some cases, they even seem to collude in making sure that their ideas are improperly aimed—for fear that the organization might respond and prove them wrong.

Another major reason why employees fail to be innovative is that the organization does not support the process. As any medium or large group tries to organize itself, it creates limiting structures, reward systems, appraisal systems, and lines of authority. The result is a clear message that adherence to structure is strongly desired. Innovation often is seen as a challenge to all the effort that has been put into organizing. The less secure a given manager is, the less comfortable he or she will be with suggestions for change. Whenever middle managers are feeling insecure, it is a particularly treacherous time in which to suggest organizational interventions.

A New Model for Innovation

The model for innovation proposed by Nolan and Nolan (1988) graphically represents an approach to enhancing innovation (see figure on next page). The model stresses skill development in the generation of creative ideas and organizational innovation in an environment of organizational support. It addresses both convergent and divergent types of opportunities for change. Although the model is linear, it can serve as a template to better understand an existing process of innovation.

Acknowledging the Desire/Need to Innovate

The first step in the process is the point at which it becomes clear that there is a need to innovate. This might be the result of an organizational mandate, such as that which might result from a strategic-planning process. It may come from an individual or from a small group within the organization. The signal of the need to innovate may be very obvious, coming from significant threats or opportunities outside the organization. Or the felt need to innovate may be much more subtle—a vague feeling that things could be done in a better way. Any of these starting points can become the beginning of a powerful process of innovation.

Whether the process proceeds from this awareness level depends on many variables. Sustained commitment is a critical variable, and another one is whether the individual or organization will sustain its desire to innovate—or if the process will die. More often than not, the process does not continue; inertia keeps both individuals and organizations proceeding as they have been. All too often they "get over" the belief that change is necessary. Another key variable is the overall climate for innovation, that is, whether the organization nurtures innovative efforts and whether champions are available to carry forward the ideas and programs.

In organizationally mandated change efforts, a critical step is to establish a group to carry the process forward. Which people are asked to serve on the group, how clear their mandate is, and the level of organizational support help to determine both the initial commitment to the process and the ultimate outcome of the effort.

Protecting the Process of Innovation from Environmental Stress

This aspect of the model addresses the need to give the creative aspects of the process room to flourish. An effort at innovation will perish if it is thrust prematurely into an unforgiving organizational environment before it is fully developed. Highly successful innovations maintain this status of protection from organizational reality in one of two ways:

1. Invisibility either by design or by accident. This includes the informal "skunkworks," made popular by Peters and Waterman, in which innovative efforts are fostered by individual tinkerers and champions working outside the system to develop new ways of doing things, new products, and new services. This also is true in mainstream efforts in which no one is tracking the process closely: anonymity enables people to be exempt from the organizational stresses that can kill the not-yet-fully developed idea.

2. Protection, by someone in power, from organizational stresses. The Fiero automobile project at General Motors is an example of such a case. Intervention by key, upper-middle managers is credited with keeping this project (which was outside the normal GM structure) alive at least three times during its vulnerable stages.

Clarifying the Opportunity to Innovate

Once the decision to innovate has been made, it is necessary to understand the problem to be solved or the opportunity to be pursued. If the need to innovate stems from a recurring manufacturing problem, it may be helpful to define the problem. If it stems from the desire to innovate, it may be helpful to identify the market need that the organization is seeking to satisfy.

Care must be taken here. In a process that flourishes when those involved are creative, it is easy to begin the process in a way that will overwhelm the people, engender pessimism, and depress creativity. The organization must press for enough clarity to proceed with mutual understanding and enthusiasm but not overanalyze the problem or opportunity. There will be sufficient time for that in later stages of the model.

Generating Ideas

When opportunities need to be opened up, the idea-generation phase is critical. If it is done well, a broad menu of options will be created. Various research on idea generation indicates several important facts:

- The more ideas generated, the higher their overall quality.
- The best ideas tend to be found in the second half of all ideas generated.
- People working individually tend to generate more diverse ideas than do people working as a group.

The drive is to maximize the number and quality of ideas being generated. This is done by the traditional—but often poorly practiced—tenets of brainstorming (that is, accepting all ideas, pushing for quantity, and suspending judgment). It also is enhanced by the use of more specialized and sometimes more structured approaches.

It is most productive when a mixture of group and individual efforts is employed. A problem in brainstorming groups is that judgment almost never is really suspended. “Far-out” ideas may never be expressed. Groups tend to develop patterns in their idea generation. Groups also restrict people’s ability to get their ideas out. Logistically, a ten-person group with an hour to spend allows each person only six minutes of time in which to express ideas—if time were distributed evenly.

Operating individually, each person has the full sixty minutes available. Mixing group and individual time greatly increases the number of ideas, the quality of ideas made available, the diversity of those ideas, and the satisfaction of those involved in the generation of ideas.

Selecting the Ideas Most Likely to Succeed

If the idea-generation process is done well, the employees will be faced with the task of selecting from hundreds of ideas those that will best serve their purpose. It is not unusual for a group of eight or ten people to generate five hundred ideas in a period of two to three hours.

At this point, it becomes necessary to determine which ideas are most likely to succeed. This is best done as a multiphase process. The first phase is a raw sort. Each person is asked to pick the top six-to-ten ideas of all those arrayed. This will result in convergence on thirty to fifty of the ideas from the much broader list.

The second phase of selection is to develop criteria for judging the quality of ideas. This includes defining (a) who will have to approve an idea and (b) what factors will be important (for example, implementation and training costs). In this phase, a grid frequently is designed for displaying the best ideas (on the horizontal axis) and the selection criteria (on the vertical axis). The ideas then can be rated easily against each of the criteria. The group discussion that this grid will generate will be most enlightening. If an individual is working through this process alone, this step can be helpful, because it not only aids in selecting the ideas that are most likely to succeed, but it also helps to define the marketplace or the organizational environment.

Firming Up the Idea or Vision

Many processes of innovation fail at this point. The individual or group has selected its best idea and is ready to turn it over to the organization for implementation. Often, the prospective innovators expect others to be excited by the idea, seize on it, and carry it forward enthusiastically. They believe that the idea will sell itself. This almost never happens.

The idea, however powerful, is more likely to be greeted by yawns and glazed stares. It needs to be nurtured, strengthened, and sold. It is an idea not psychologically owned by anyone other than the people who generated it. It is not understood, and often there are many other “good ideas” floating around. Human and organizational momentum are likely to keep things headed in their current directions. The mere introduction of a new idea is unlikely to overcome this inertia.

To nurture the idea, it is helpful to take it out for carefully controlled test walks, that is, talking about it with people (but not decision makers) who were not involved in the generation of the idea. What may appear clear and obvious to the person who invested so much time in the process may not be easily transmitted. Learning as much as possible about the idea in order to defend it and taking the time to help others to understand the idea will pay off. So will piloting the idea quietly in a corner.

Performing a Gap Analysis

It still is not time to introduce the idea until what might be called the third phase of idea selection, a gap analysis, has been completed. This is an effort to analyze the current status of the area of concern and compare it with where the new idea would take it. Such a comparison will help to determine the size of the gap between the current and proposed states.

Up to this point, a good deal of effort has been made to protect the creative process from the organizational environment. Although creativity flourishes in such a protected state, innovation—real organizational or marketplace change—cannot occur in isolation.
A full understanding of the gaps involved in turning the creative idea into an innovation may result in several alternatives:

- The idea may be accepted.
- The idea may be rejected because the gap is too large. Another idea that seems more likely to succeed may be selected.
- An entirely new creative process may be initiated to explore how to close the gap in nontraditional ways.
- It may become clear that more work must be done on the environment prior to the introduction of any idea.

At this stage, it may be helpful to involve others who are particularly effective in managing organizational and marketplace issues. What is most helpful is a champion—someone with a hurdler mentality—to guide the idea forward with zeal.

Preparing the Environment to Foster Innovation

In the model for innovation, the second large area surrounding the process illustrates the critical role that the environment plays in the success or failure of innovative efforts. Even when the innovative idea is ready to be introduced, like a child being brought into the world, it needs proper care in the form of support and a problem-solving mentality.

For a child to develop fully, it must take risks. In order to become independent adults, children require parents to commit resources, to provide challenges, and to experience stress. In order to succeed at innovation, one must risk challenges to the status quo, significant stress to the parent organization, and even failure.
In the model for innovation, action plans and contingency plans must be developed, and the action plan must be implemented.

Developing Action and Contingency Plans

Once the gap analysis has been completed and an idea selected, an explicit action plan is needed. The process of innovation too frequently falters because of inadequate implementation, which is tied to a lack of action planning. A set of contingency plans also may be needed in case key variables fail to occur exactly as anticipated.

The action plan should be specific. It may involve pilot tests, staged presentations, or whatever is necessary to ensure that the creative idea will become an organizational or marketplace innovation.

Key people who must support the innovation should be integrated into the process at this stage, and the plan probably will need to be readjusted to accommodate their input. A strong champion will not allow the idea to be swallowed up by organizational realities but will push for priority treatment, fruitful compromise, and alternative solutions.

Implementing the Action Plan

It is important that the action plan be implemented with drive and creativity. Although creativity is necessary during the idea-generation stage, it also is required throughout the process. Many more forces will stop or slow a potential innovation than will advance it. The champion—or champions—will be called on regularly to use their creativity in order to continue to move forward.

Drive is important, but timing is crucial in most innovative efforts. Most organizations tend to slow the process of innovation; unfortunately, they often end up with an innovative product or service that is too late to benefit the organization.

Building an organization that fosters innovation is a major effort. It involves decisions about allocation of resources, commitments to the selection and development of human resources, strategic planning, and strategic management. It requires not simply proper management but also high-quality leadership. Nolan and Nolan found no solid examples of innovative organizations that are devoid of strong leadership—leadership that creates expectations that call for innovation and support.