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Our March Conference dealt with achieving radical innovation. It was our most successful ever, with nearly 100 attending and giving high marks to the speakers. For those who couldn't make it, and for those who did, this Newsletter features contributions from the keynote speaker and other Alliance researchers working in this important area.

Larry Gastwirt
Director

A Prescription for Innovation

Jack McGourty and Lemuel A. Tarshis

How do leading firms continuously innovate? Surely, there is some secret to their success as leading edge corporations year after year continue to generate revenues from new products and innovative processes while competitors languish, downsize and reengineer just to stay in business. Analysts and pundits alike stand in awe of companies such as Corning, Xerox, 3M, Intel, GE, Motorola and dozens of other corporations and divisions that seem to have an inbred culture of innovation.

While it is clear that innovative companies must have monetary fuel to instigate and sustain a steady stream of new products, it's equally apparent that money isn't enough to do the job. Other companies that have devoted similarly high percentages of revenue to R&D have not fared nearly as well as these "best-of-breed" innovating corporations.

Unquestionably, there are other factors in the "innovation equation" that must be present to fill the company pipeline with patents and new ideas, and give birth to the next generation of products.

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A Prescription for Innovation (continued from page 1.)

What is this unidentified corporate component? It is a focused, sustained and systems-driven effort to construct a work environment that breeds innovation among employees. This conclusion is based upon a series of studies begun in 1991 by the Stevens Alliance aimed at demystifying corporate innovation.

Having been personally associated with several winning product developments, we wondered what really differentiated those that were successful from those that were not. At the time that we embarked on our initial research, it was difficult to believe that there were any rules that were operative in achieving innovation; it was easier to be pessimistic about finding common factors to distinguish high innovators from less successful ones. However, when we focused our attention on discrete behavioral aspects of organizations, we were astounded at the similarities that exist between the "best-of-breeds". Innovation is not, as the common belief would expound, happenstance and resident only in individuals. Innovation is directly related to organizations and the systematic approaches that management takes to affect a well-defined set of behaviors within their companies.

In almost seven years of intense research, including several hundred interviews, questionnaires and a doctoral dissertation, we have discovered four distinct behavioral patterns common to all leaders in innovation: Inquisitive, Advocative, Collaborative and Goal-Directed behaviors. We have strong qualitative and quantitative evidence for this discovery, including two large studies cutting across several industries. The importance of these behavioral patterns to sustained innovation are well recognized by innovators. For this reason, there is a deliberate effort on the part of highly innovative firms to foster these behaviors through a systems-driven application of specific organizational practices.

These practices can be captured under the following categories: Strategic Drivers, Employee Selection and Development, Rewards and Recognition, Support Systems for Innovation, and Multi-functional Structures. We found a clear difference between high and low innovators when we measured these behavioral patterns and the related organizational practices required to create and maintain an innovative work environment.

The Model for Innovation

As extraordinary as it sounds, a business outcome as complex (and critical) as innovation can be planned, built in and prescribed. We found that best-of-breed innovators have long recognized this, and have carefully crafted their corporate policies and programs to stimulate the right employee behavior and culture to further innovation. Furthermore, these innovators realize that culture change can be accomplished in a specified systems-driven manner to achieve an increase in innovative productivity.

The application of this Alliance research has gotten to the point that, with the aid of an Innovation Audit, we can go into an organization and identify gaps in the behavioral patterns and organizational practices and use these gaps to define actions and changes to corporate policies, procedures, and systems to deliberately increase innovation.

For purposes of guiding such an innovation improvement program, we crafted a Model of Innovation - iconically depicted below - to prescribe and demonstrate the integrated dynamics of innovation. As illustrated below, our Innovation Model depicts the major factors associated with innovation as Culture, History, Behaviors, Strategy, and Organizational Practices. Culture - the set of normative behaviors found amongst employees - is depicted in this Model encompassing the relevant behaviors. It is the culture that, we profess, drives innovation and that environment is defined by the stable and ordinary behaviors of the individuals in the organization.

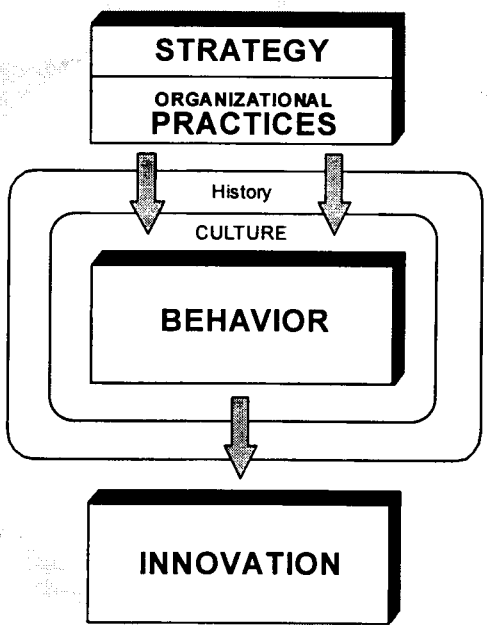
Also as indicated in the illustration of the Innovation Model, we found that history clearly impacts on the culture of highly innovative companies. The views and beliefs of founders and the stories of successful innovations - and how they were handled in the organization - have a profound effect on what future employees think and how they behave. In using the Model, we have come to realize that, although nothing can be done to alter history, management must recognize what the history is and either use it, if it is innovation-supportive, or otherwise deal with it.

To achieve/sustain the desired culture (behaviors), management must implement and support specific practices - depicted in the Model with prerequisite arrows to culture. Appropriate practices encourage the proper behaviors, inappropriate ones detract from the desired results.

In context, the behavioral patterns and organizational practices must be seen as a system rather than as isolated factors. Our studies clearly show that management practices directly influence employee behavior, and the combination of these practices and behaviors directly lead to sustained rates of innovation. Furthermore, all the individual factors are interconnected and inseparable. Drop or weaken one and a company endangers its current rate of innovation.

A Prescription for Innovation (continued)

It is best to view innovation as a systems-driven process within an organization. Innovation itself can be regarded as a resultant product -- the output of specific behavioral patterns and the organizational practices that support and encourage those behaviors. (Indicated by the outside circular arrows in the "Innovation Model" graphic) Even then, innovative behaviors and their corresponding corporate practices do not exist in isolation. Each of these factors work together - influencing one another directly and indirectly - to produce the desired end result. Even slight changes in one component can interact with other parts of the system, effecting the final outcome.



Innovation Model

As a relatively simple example of innovation as a system, take what we heard from the Ford Motor Company relating to its slogan "Where Quality is Job One." Back in the early 1980's, Ford researchers were looking for innovative ways to reduce fuel consumption by reducing weight and friction among engine components. After years of work on a replacement valve train made of titanium, the project fell apart because of conflict in a culture literally obsessed with quality. Purchasing refused to buy from a small "unproven" vendor, despite the fact that the supplier was capable of meeting Ford's specifications for the new product. In this case, Ford's attempt at innovation was wrecked by its concomitant drive for quality.

That is not to say quality and innovation are mutually exclusive. To the contrary, many of the cutting-edge corporations we studied were winners or finalists in Deming and Baldridge quality competitions. The Ford scenario does demonstrate, however, the need to look at practices and behavior as a system. In this case there were some conflicting cultural elements that blocked a well-researched and clearly innovative way to meet the requirements for reduced fuel consumption. The overriding concern for quality at any cost simply overwhelmed a perfectly capable vendor who could have met all of Ford's specifications An innovative solution, while technically a success, remains unused to this day. The innovation seems to have had no advocacy within Ford to push its acceptance.

Therefore, it is important to be equally concerned with each element of the system, constantly questioning and investigating potential interactions within the organizational system.

As our Model depicts, innovation begins with a clear, aggressive corporate strategy, one that is well conceived and communicates a real commitment for organizational change and growth through innovation. In this age of strategic planning, leading-edge corporations decidedly want to determine their future in the marketplace, not just let the future happen and take their place in the shakeout. They can create their own futures proactively rather than merely react to market forces of unpredictable length and depth. That's how truly innovative companies ride through perturbations in the marketplace, continuing to apply new ideas regardless of (or in spite of) market conditions or competition.

While the importance of strategy is well recognized by managers and academics alike, we consistently find that employees do not know what the strategy of their firm is, or worst, jokingly define it as "strategy du jour". Furthermore. our research shows that employees of highly innovative firms clearly perceive that innovation is a key strategic driver and not just another management fad. Unfortunately, even in our relatively small database of 50+ organizations, there are more organizations than not in which employees believe that innovation is not regarded as a fundamental driver of growth.

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A Prescription for Innovation (continued)

To succeed at innovation off, of course, corporate strategy must translate into organizational practices that encourage innovative behavior. For example, certain strategic drivers will indicate to employees clearly whether a company is committed to innovation itself or not. Employee development programs (or lack of them) will show the company's level of dedication to the growth of their innovators. Reward and recognition systems are sure indicators of the extent to which a company appreciates innovative behavior among its employees. Multi-functional structures, such as empowered cross-functional teams, show a company's commitment to new ways of doing things. Finally, formal support systems to seek and accommodate new ideas from within and outside the organization obviously promotes innovative behavior. These are the organizational practice areas we found in truly innovative corporations.

Continuing this systems view, we found that highly innovative organizations were applying the aforementioned practices to sustain a defined culture that nurtured innovation. Culture, as we formulate it, can be characterized by a distinct set of normative behaviors that, taken together, describe the environment that all employees experience over a long period of time. The specific behavioral patterns we entitle: inquisitive, advocative, collaborative and goal-directed.

The innovative organization fosters inquisitiveness among employees. These researchers and technicians, engineers and scientists, continually expand their knowledge by searching for new technologies, new applications to benefit the business. In a sense, they become scouts of the learning organization, eagerly searching for fresh ideas and new challenges, always pushing the envelope for more creative solutions. This inquisitiveness permeates throughout the organization, manifesting itself in all kinds of tasks. Employees, in an almost obsessive manner, inquire into any situation in order to squeeze out any learning that may be derived from the circumstances at hand. Highly innovative organizations encourage this behavior of inquisitiveness among employees in several interrelated ways.

Innovative organizations instill a sense of "advocacy" to support idea generation and exploitation. When employees begin to champion new ideas, innovation happens. In such a culture, there are no "bad" or "crazy" ideas -- only unworkable ones that have been tried and failed at a specific time period. Thus, lessons learned and shared experiences that emanate out of the company's history are relevant. Such a culture also implies that reasonable risks are accepted and failure is tolerated. In contrast, when advocates are squelched and discouraged by management practices, or simply ignored, the steam is taken out of innovation.

Intensive collaboration among employees, both inside and outside of the firm, is indicative of perhaps the most widespread innovative behavior we encountered in the course of doing our research. In a collaborative culture, employees are routinely involved in a network of relationships, working informally with colleagues irrespective of position, rank or function. In turn, these collaborators partner with customers, suppliers and outside researchers in their quest for innovation. Highly innovative organizations create and sustain a corporate culture where collaboration is nurtured by management practices.

Goal-directed behavior is highly prized in the highly innovative organization. Here, innovation is not done for innovation's sake, but rather for the organization's overall business objectives. Although there may exist some pure science advocates, they are rarely found in successful centers of innovation. Scientists as well as engineers and technicians need to understand how innovation fits in the organization's strategic plan. In turn, management is called upon to categorize innovative efforts in terms of importance and area, such as new products, line extensions, process improvements and the like.

Application of the Model

We have identified five steps that will, in a structured and measured way, guide an innovation improvement program in any organization. Rather than the silver bullet theory, the Model serves as a framework for a systems approach to change the culture in a prescribed manner, with the result being higher rates of innovation.

Definition. The first step is to clearly define what your organization means by innovation. We know that this sounds trivial but it probably is one of the most important steps. The word innovation is used so frequently, and so broadly, that employees do not know what you really mean. It is not uncommon for us to uncover a real disconnect among the various levels of employees across an organization.

Recognition. Organizations must recognize, and appreciate, that achieving an innovative environment, and thereby innovative output, requires a systems approach.

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A Prescription for Innovation (continued)

Single "component" changes probably will not work because in a system all the elements need to work together to achieve the desired results. The goal is behavioral (cultural) change; the Innovation Model predicts that innovation (your definition) will result if the environment is "right". Managers, in particular, need to recognize and understand what the desired behaviors are so that they can recognize them and be able to observe change.

Benchmark. The third step is to survey the organization as to the extent to which the innovative behaviors and enabling organizational practices exist. Based on our Innovation Model, we have developed and validated a comprehensive audit that allows organizations to compare themselves both internally as well as with world class innovating organizations.

Determine Gaps. The Audit data are compared to best-of-breed organizations for both the behavioral dimensions and the management practices. This provides the organization with baseline information on key drivers of innovation. It permits comparison with companies known to be "world class" innovators and, where available, allows comparison within a relevant industry.

Action/Monitor. Management should implement the changes, suggested by the gaps relative to the best-of-breed, and observe behavioral change. As mentioned above, the management team needs to know what to look for and often times the result is not what is expected (after all, our Model is explicit in stating that altering behavior for desired output must be dealt with as a system). Behavior, in turn, depends on the practices - plural - and these (components) must work to complement one another to achieve the desired result. This is a true system - a change in any one component may not yield the desired result.

Summary

Thus, we found, to our surprise and delight, a prescription for innovation. Contrary to what a lot of creative management people may think, innovation can be a planned, a deliberate process, embedded in a system of corporate policies and employee programs that stimulate, nurture and reward innovative behaviors.

By appropriately cataloging the various policies of an organization, we have been able to detect a finite and specific set of behavioral patterns (inquisitive, collaborative, advocative, and goal directed) and organizational practice areas (strategy, rewards, recognition, selection, training/development, support systems, multi-functional teaming) that separate the high from the low innovators.

The top innovators we studied are not cookie-cutter corporations. While each organization manifested the four behavioral patterns and instituted procedures and systems fitting within each of the practice areas identified, the exact configuration of practice to behavior relationships differ. For example, while all of the most innovative organizations had specific reward systems in place to encourage innovation-related behaviors, the specifics of the program varied among the various organizations. We believe that for any organization to foster an innovative culture, they must implement several organizational practices from each of the identified areas. The exact configuration will be shaped by several factors including the organization's own history and unique culture.

As the "Innovation Model" suggests, the process of innovation is dynamic, not static or linear, in a cutting edge corporation. While innovative behavior is clearly at the center of the process, innovation is not an end in itself. Instead, innovation itself informs strategy. A best-of-breed company will shape and reshape its strategy around core competencies and best practices, both of which are depicted in the kinds of innovation the company accomplishes.

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