How to Keep Your Company on the Cutting Edge

INNOVATION
BY DESIGN

THE SUMMARY IN BRIEF

Innovation is the fuel that feeds organizational growth and drives future successes. It enables businesses to sustain their viability, even as competition arises from new geographic areas and heretofore unknown markets. While many equate innovation with a creative drive found in the best and brightest employees, true innovation is much more than that — it is an organization-wide commitment to openness and communication. It requires a culture that values original thought and that supports new and valuable ideas with principles, policies and appropriate infrastructure, across the entire company.

In Innovation by Design, Gerard Gaynor provides sound, practical advice and real-world examples (culled from 45 years of experience) to help you determine whether your organization is doing what it takes to develop innovation as a core competency.

What You’ll Learn In This Summary

✓ The types and elements of innovation. Are the innovations you are considering incremental, new-to-market, or breakthrough? What are the things you need to know about each to make sure your resources are put to the best use?

✓ The process of innovation. Although there is no set process for innovation, there are a number of elements that must be in place in order for an organization to innovate.

✓ How to create an innovation-sustaining culture. As organizations consider developing cultures that foster innovation, they must focus on three major areas: people, management and attitude.

✓ The building blocks of innovation-friendly infrastructure. Innovation will die without a solid infrastructure to sustain it. The infrastructure includes the organization’s vision, purpose and strategy as well as essential partnerships.

✓ How to avoid the Virtual Innovation Prevention Department. Zero in on the people and things (rejection of innovation, an anti-maverick attitude, etc.) that often get in the way of being innovative, and navigate your efforts around or past them.
Innovation Explained

Innovation depends largely on four elements: resources, infrastructure, culture and process. Each of these elements interacts with others to form an effective and efficient means for pursuing innovation. In addition, we notice that innovation does not take place by some well-defined linear process; rather, it lies on a continuum of events that begins with a raw idea, which is developed into a concept, which then yields some type of invention that is, finally, implemented and commercialized.

Myths of Innovation

There are several myths about innovation that must be addressed and debunked:

- **Individuals drive innovation.** In fact, innovation is a team sport, requiring multiple participants with a variety of backgrounds and capabilities.
- **Innovation begins with brainstorming.** Actually, innovation begins with an understanding of your customer and your market.
- **Innovation requires creative people.** Innovation requires effective problem solvers, rather than creative people. These people have the initiative and motivation required to find, address and remedy any problems associated with introducing an innovation.
- **An innovative process will give the results you need.** The innovation process is only one tool for successful innovation. Infrastructure is key, and one must have the buy-in of management to support it. Organizational culture is also important — it’s difficult to innovate in a culture that closes the door to new ideas.

Where Innovation Comes From

Innovation can occur from the bottom-up or be sponsored from the top-down; each approach has its own specific exigencies and approaches.

Top-down innovation (TDI) has the advantage that the people in power set the pace — they set the targets and objectives, construct teams containing the best and brightest people available, and provide funding and other resources. Indeed, the only limits of top-down innovation are the people resources; funding and direction are not usually a problem.

Types of Innovation

**Incremental:** The modification, refinement, simplification, consolidation and enhancement of existing products, processes, services and production and distribution activities. An example of incremental innovation is Sony’s Walkman — not the original, but all models that followed and were built on a common platform.

**New-to-the-market:** Innovations that deliver new products, processes, services and systems, and that usually

- Involve a major organizational effort.
- Continue for long time periods.
- Require multidisciplinary output.
- Involve major marketing decisions.
- Involve leading-edge technologies.
- Have high impact on results.

**Breakthrough:** Innovations that result in something new — something that has never been achieved before. The results of a breakthrough innovation are so different, they cannot be compared to any existing practices or perceptions.

In 1982, Canon began reconceptualizing the plain-paper copier business and investigated the opportunities for lightweight compact copiers. Management knew the new copier would not come into being by minor

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The Innovation Process

There are no road maps or algorithms to define just how ideas are born and how they mature into innovation. At the same time, there is no mystery about what is required to become an innovative organization.

Experience tells us the following:

- Innovations do not proceed through a series of orderly, well-defined stages.
- The many variables in the innovation process prevent predicting outcomes.

- Although the desired outcome can be specified, the route to achieving the outcome often involves changing direction frequently, even to the point of scrapping approaches and starting over.
- The process consists of an idea that comes from some recognized need that is developed into a concept, followed by invention, and then taken through development, production and diffusion and adoption by end users.

Process plays an important role in any achievement, and, although there is not any one specific process for innovation, the following things must be considered:

**Type of innovation.** The application of the innovation process varies, depending on the kind of innovation one is seeking to implement — an incremental innovation to an existing product line will require different steps than, for instance, a new-to-market or breakthrough innovation.

**Importance of the innovation.** Management must perceive an innovation has added to the bottom line, even though the measure of that value may be qualitative or indirect.

**Timing.** Timing of any innovation requires consideration of the amount of change the innovation creates. If the innovation comes too early, the market might not be ready to accept it; if it comes too late, you give your competitors an opportunity to gain greater market share.

**Sources of innovation.** In theory, all members of an organization are sources of innovation, but the process differs if it begins from the top down, as opposed to the bottom up. For example, potential problems with finding resources for an innovation tend to dissipate if management is driving an activity, rather than employees.

**The innovation moment.** No one knows why ideas become apparent at a specific moment in time, or how they’re transformed into innovations.

**Organizational infrastructure.** A company’s organizational structure (its purpose, objectives, strategies and so forth) must support innovation, in order for innovation to sustain performance.

**Organizational resources.** These resources include more than people and money; they include intellectual property, access to information, capability, time, customers, suppliers and other key facets. Having these resources is only part of a successful innovation strategy; you must also know the full breadth of their capabilities under varying circumstances.

**The number of unknowns.** Too often, the effort to resolve unknowns in product innovation is put on a “to-do-later” list. Take the time to address and resolve these issues, and to position your organization to address additional unknowns in the future.
Innovation Process Design

Different sources of information may trigger an idea, but articulating the idea is not a group effort; ideas build on ideas until, eventually, some person articulates them. The systems approach to the innovation process makes this assumption and involves four stages: idea-concept-invention (ICI), pre-project, project, project-product launch.

Idea-Concept-Invention (ICI)

The ICI stage involves a kind of controlled chaos, as those involved try to keep multiple thoughts in balance at one time, making the right decisions. This stage ends when an idea has been translated into a well-defined concept and proof of concept has been established — not just for the technologies involved, but also for the market and the system. The ICI stage is dedicated to activities that define the concept (and the technologies required to pull off the concept); knockouts (anything that might cause a “no-go” decision at some time in the future); market opportunities, customer base and needs; strategic fit; resources, infrastructure and confidence level; and deliverables.

Pre-project

The pre-project work effort focuses on a number of things, including assigning the people resources from the required disciplines, and developing a business-focused project team from those resources; finalizing the definitive concept and modularizing the project to address the needed competencies and available skills; performing design work and building and testing a prototype; and investigating the possible proprietary position related to copyrights, patents or trademarks.

While there is no single measure of success in such an endeavor, some criteria must be established before major investments are approved. These criteria may include: degree of profitability; payback period; market share (foreign and domestic); relative sales and profits for similar products; opportunities for entering new markets; and basis for future technology advancement.

Project

The project stage brings together all the necessary disciplines and molds them into a project team. Up to this point, the innovator has been the star, but the project team now takes over, providing the additional expertise and manpower (as well as project management skills to bring the project to specifications on time, at cost) required to turn the concept into reality.

Project-Product Launch

Product launch is driven by the industry involved and by the product, and is also affected by whether the effort was directed to an incremental, new-to-market, or breakthrough innovation. The expected result from the ICI, pre-project and project stages is a product, process, service, or introduction of a new administrative benefit. At the very least, the launch of this end product involves the following:

- Getting the product to the customer on specification, on time and at the agreed cost.
- Providing customer service.
- Managing customer returns.
- Working with the customer to optimize product performance.

Developing a Culture that Fosters Innovation

A company’s culture is, ultimately, about its people — how they perform their work and how they interact. As organizations consider developing cultures that foster innovation, they must keep in mind that there is no single issue that will make innovation happen. An organization that makes a decision to improve its level of innovation or become innovative needs to focus on three major areas, all of equal importance: people, management and attitude.

People

No one will contest that people are the organization’s most important asset, but those words must be turned into actions that demonstrate the full meaning of the sentence.

The first step in managing the people issues related to innovation is to identify the critical mass of talent.

Project success comes from having the right mix of people with the required competencies, whether those individuals come from inside or outside the organization.

The next step is to build trust. There is little doubt that trust is essential in any dealings between individuals and organizations; lack of trust breeds cynicism, a symptom much more contagious than trust.

Finally, you must insist on accountability. Innovation depends on accountability from all participants for their contribution to the final effort. Failure is part of the innovation process, and innovators must accept responsibility for those failures.

Management

Management practices determine culture; building culture starts at the top. The following actions need to be revisited and acted upon when trying to develop a culture that fosters innovation:

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Defining purposes, objectives and strategies. What may be clear and concise at the executive level needs to be translated into meaningful terms as it flows down the organization.

Seeking breakthrough opportunities. Organizations must direct attention to breakthrough improvements and/or opportunities in performance. Breakthrough products provide significant growth opportunities; breakthrough processes can destroy competitors.

Making timely decisions. Managers who delay decisions create levels of frustration that decrease motivation.

Anticipating future events. IBM didn’t anticipate the PC; U.S. automobile and electronic companies did not anticipate Japan’s competitive emergence in the 1980s. Professional people in all disciplines cannot disregard the importance of future needs and directions.

Attitude

The attitude with which we approach any activity makes a significant difference in the outcome. Unconcerned, dispassionate or perfunctory performance of duty results in an inability to develop successful innovations.

One of the essential attitudes for developing a culture that fosters innovation is the desire to foster creativity. Creativity involves more than instituting a company-wide suggestion program and hoping some great revelation will come out of that box. Creativity requires action.

You also need to motivate through example. Not all people are self-motivated when it comes to work. Motivation through action begins at the top of the organization and at least the first levels of management. Managers must recognize that motivation depends on them.

Organizational Resources Required for Innovation Success

There is a wide-ranging spectrum of resources that are critical to innovation. These resources include people, intellectual property, time, customer input and finance.

People

People are the most important resource or asset an organization can have; at the same time, they are among the most difficult to manage, due to the potential for wide-ranging diversity in attitudes, work habits, personal and professional philosophies and a host of other areas. Managing people resources often generates into a numbers game, often unwittingly acceded to by upper management. Too many times, problems are addressed simply by adding staff, a bad circumstance that compounds itself once the problem is solved and the layoffs begin.

Intellectual Property

While organizations develop intellectual property in every facet of their operations, very little of the experience and knowledge is documented in any useful manner. Knowledge gained through daily work must be viewed as an organizational asset — one that must be actively protected and disseminated throughout the organization.

Time

One of the major issues innovators face is time-to-decision — most organizations are guided by a timetable, and innovators are not necessarily sensitive to the policies and procedures generally required in most organizations. Time is indeed money, as the saying goes. One study showed that a product six months late to market misses out on one-third of the potential profit over the lifetime of the product. Time is an important issue.
Organizational Resources Required For Innovation Success
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**Input from Customers**

Customers can provide valuable input, particularly for improving products and processes that already exist. They can be a valuable resource when the organization knows the customer, knows their needs and understands how they use a product or service.

**Finance**

There comes a time in which a financial investment will be required; innovators need to recognize the limitations of an organization’s financial resources. The ability to finance an innovation in the pre-project, project and project/product launch stages needs to be assessed in relation to the organization’s ability to provide financial resources. These resources are required to bring aboard new people with required competencies, new technologies and new information resources.

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**Dimensions of Organizational Infrastructure**

Resources provide the raw material, but organizational infrastructure provides the catalyst that allows innovation to occur. When innovators become passionate about pursuing a particular activity, some minimum level of infrastructure support is absolutely essential to move them forward; if the infrastructure cannot accommodate the innovation process, innovation will not take place.

The issues surrounding organizational infrastructure include the following:

**Purpose.** Organizational purpose must be described within the context of the business. Statements of purpose must go beyond the simple (though essential) statements of meeting shareholder and customer expectations; they must communicate the company’s reason for being so clearly as to motivate employees to go the extra mile to fulfill that purpose.

**Organizational vision.** Not too long ago, every organization was visioning in some manner, but visions without actions and without resources to accomplish them build expectations that are not realized. An organization’s vision statement must include more than being the greatest this or that. Organizations must first define what they want to be, then use the vision statement to communicate that message.

**Strategic planning or strategy.** Very little strategic planning evolves into strategy. Much of strategic planning is based on seven questionable assumptions:

- Assumes steady-state conditions for the economy, technology and markets.
- Disregards the dynamic issues that affect strategy.
- Operates on a 12-month cycle.
- Deals with data rather than knowledge.
- Ignores leading-edge technologies.
- Focuses on incremental improvements.
- Uses planners who are not implementors.

Any one of these assumptions diminishes the value of the effort to create an organizational strategy; we live in a dynamic world, and an organization’s strategies must address that world in real, concrete ways, and challenge that strategy, as new information is uncovered.

**Uncertainties and risks.** There is a difference between uncertainties and risk. Uncertainties include the entire list of the unknown and unpredictable issues and events at the time decisions are made. The level of those uncertainties determines the risk, and that risk must be evaluated in relation to the organization’s capability to accept the risk.

**Essential partnerships.** Organizations do not exist without the support from many other entities — customers, suppliers, regulatory bodies, citizens and others. Good relations with external sources are based on mutual interest; each entity affects the organization’s performance and in turn is affected by the organization.

**Leadership.** Leadership must exist at all levels of an organization — individual, functional, sub-business unit and organizational — in order for innovation to stand a chance. Leaders must focus on vision, strategy and management in order to play a leadership role in today’s global economy; strategies cannot be developed without some defined vision.

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**Key Innovation Skills**

Leadership, communication and project management skills give innovators a head start in gaining acceptance of their ideas. People who can be pathfinders and look...
to the future, communicate that vision and manage their projects from a strategic perspective reduce the obstacles in gaining support from management and their colleagues and peers. Let’s take a look at some details about each essential skill.

Leadership

There are two types of leadership that the innovator provides — leadership in innovation and leadership in the business of the firm. Leadership in innovation does not require being a multidisciplinary specialist; it does, however, require a knowledge base and the skills and competencies to promote innovation — independent thinking, maturity, diplomacy and the ability to accept criticism, among others. Innovators also have the opportunity to provide business leadership; successful innovators have the ability to take an idea and conceptualize it in a variety of ways, until it makes sense. This talent can be used to search out opportunities disregarded by the rank and file.

Leadership has little to do with one’s position; it takes many forms, although there are certain common attributes that apply to all leaders in innovation, for example:

✓ Leaders accept responsibility and accountability. The rose must be pinned on someone.

✓ Leaders make the complex simple. The essence of a situation is what needs to be communicated.

✓ Leaders challenge the so-called experts. Experts have their place, but also their agendas; they may be experts of the past and not focused on the future.

✓ Leaders understand the devil is in the details. It’s too late to become proactive when an emergency arises; that emergency might have been avoided if someone had been proactive.

✓ Leaders obsolete the present before its time.

Communication

Norm Augustine, retired Lockheed Martin CEO, once reminded engineers, “In my career, I’ve seen engineers do a beautiful piece of work, and then make it sound like garbage when they write it up.” While this statement was directed to engineers in relation to written reports, it applies across the board to all professions and to all segments of the population.

If an idea cannot be communicated, it is of little value; someone somehow must be able to clearly articulate not just the idea, but also its importance to the organization. Indeed, the ability to communicate effectively in many different formats cannot be overemphasized. There are five basic types of communication to master: — oral, written, graphic, listening and reading.

Timely obsolescence of products, processes and activities prevents future crises.

✓ Leaders promise a positive attitude. Look for solutions, not scapegoats.

The Innovative Leadership Of Robert Lutz

Robert Lutz, former chairman and president of Chrysler Corporation, once stated, “Chrysler’s return to prosperity was engineering driven.” He could have also said that the company’s return to prosperity was innovation driven.

Lutz reorganized Chrysler’s engineering department to operate as task-oriented platform teams, in which all engineering disciplines are integrated to work on a vehicle. In a typical balkanized automobile environment, the brake department works on brakes for all vehicles, the lock department works on locks, and so forth, in a highly sequential fashion. If several projects come through at once, each may hit a manpower limit in each department. In Lutz’s view, such an environment creates a too-comfortable comfort zone because workers could spend their whole career in one department.

The development of product platforms like Chrysler’s engineering department directly improves the financial returns from manufacturing, and also reduces significant costs associated with product distribution and related administrative activities.

Chrysler’s engineering effort took leadership to drastically alter traditional and embedded work methods of doing engineering, meet the highest standards of innovation and counter the opposition. Chrysler’s rebirth was a display of innovation leadership by innovators.
Key Innovation Skills  
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Project Management

A good project management strategy focuses on both effectiveness (making the right choices) and efficiency (executing the many activities involved in the project). Strategic project management involves four distinct elements of project strategy:

The first is **product definition/competitive advantage.** Identify objectives, the competitive advantage and value added, the product vision and type, cost effectiveness and functional requirements, among other data.

The second element of project strategy is **business perspective.** Determine the expectations of the project when completed — what is to be achieved in the marketplace?

The third element is **project scope and definition.** Establish the work that is to be accomplished as well as what will not be included — the boundaries between which the project will be run.

The fourth and final element of project strategy is **strategic focus.** Establish guidelines on position, policy, behavior and processes, to assist in the achievement of competitive advantage.

For more on communication and project strategy, go to:  
http://my.summary.com

Roadblocks to Innovation

Somewhere in every organizational setting, there exists a virtual innovation prevention department, a group that might include key executives and management, colleagues and peers, even some innovators themselves (sometimes, innovators can be their own worst enemies). The department also houses all the practices that prevent innovation, including undermined or vague strategies, conflicting priorities, lack of trust, inadequate communication and other organizational deficiencies.

There are, however, more subtle innovation killers in this virtual department.

The Fear of New Thinking. Innovators will often face managers who are not open-minded about new thinking. In the situation, the innovator must not respond negatively, or give up in the face of resistance. They must ask why management is responding in such a manner, both to understand the root causes of the resistance, and also to keep their own innovative fires burning. Even in the best of innovative organizations, not every idea, regardless of its profit or market potential, will be funded.

No Tolerance for Mavericks. Any list of constructive mavericks would include people who made a difference, people who had the vision and the passion to pursue an idea and bring it to fruition, who questioned traditional wisdom and asked difficult questions. It’s much easier to go with the crowd than to stand up and suggest new ways of solving problems. Are mavericks difficult to manage? Yes, but the organization’s future depends on them.

Focusing on Next Quarter’s Results — Only. The next-quarter mentality is understandable (people need to be paid on time), but it can become a problem if management obsesses about it and allows it to trump all other decisions. Innovation requires long-term thinking; focusing solely on short-term results can bring about an environment that is poisonous to innovation, as Hewlett-Packard learned (see box below).

Innovations That Don’t Sell. Innovators must sell their innovations to the higher powers in organizations, convincing others to buy into new ideas and strategies. When projects aren’t approved, it is often because the innovators have tried to sell managers something they don’t want to buy. You must determine what motivates decision makers, perhaps even making return visits and new presentations, to fine-tune your proposal and win approval.

Organizational Politics. Organizational politics can be either productive or destructive. Innovators can either make use of all possible networks within the organization, connecting with the players that can win approval for a project, or they can fall victim to damaging internal rivalries and power plays.

For information on assessing organization limitations, go to:  
http://my.summary.com

HP’s Short Sight, Big Problems

Organizations obviously must be sensitive to Wall Street, but need not be dominated by it. Often the problem arises from comments made by an organization’s CEO regarding future growth.

In July 1999, Carly Fiorina arrived as new CEO of Hewlett-Packard with overly ambitious expectations and projected double-digit growth that did not materialize: The company had turned from an agile and innovative organization to a slow-moving bureaucracy that could not justify such predictions. Perhaps Fiorina’s eagerness to succeed kept her from realizing the magnitude of the problems that would have to be resolved to generate that kind of revenue growth. Her reorganization and restructuring of HP compounded those problems, creating frustration and confusion where efficiency and effectiveness were needed.

Perhaps HP needed a few constructive mavericks to tell the CEO about the real problems.