Management

Improving the way organizations run through participative planning and management.
Creating a Sustainable Competitive Edge

Dr. George Land, CEO, Leadership 2000, Phoenix, Arizona

Many researchers agree that we are entering a period of discontinuous change that will transform our organizations and personal lives radically. This rapid, complex change is not predictable based on past experience, nor is it rational.

This is the first in a series of articles written to help managers understand how to manage products and organizations along the s-curve. Dr. George Land is a noted author, scientist, and consultant who developed the Transformation Theory, a universal process of change and growth, in 1973. In this article, Dr. Land stresses the importance of learning, creativity, innovation, and vision in managing the organization through discontinuous change. When managers understand the nature of discontinuous change and the implications of the s-curve, they can take full advantage of new opportunities—Editor.

Our company, Leadership 2000, has learned a tremendous amount about the process of growth and innovation over the last three decades. In particular, I have found two phenomena that are of importance to managers: (1) that there is a basic pattern to change, and (2) that this pattern of change and growth is found throughout all of nature. We've tried to dig down to the fundamental dynamics that drive change to understand the “whys” of growth and of innovation. Once managers understand these dynamics, then they can selectively find the “hows” that will work best for their organization.

The s-curve

Growth is plotted on the familiar s-curve. What I discovered in my research on change was that cells, organisms, people, and organizations all progress through the same distinctive phases of the curve as they grow. Real life, of course, is not a smooth curve; it consists of many ups and downs smoothed over a mean (Figure 1 on the following page). The breakthrough in the research on natural change was that the three phases of growth within the smoothed curve have very different rules and characteristics. There are two major phase changes, or breakpoints, where the behavior of the system must radically shift for it to succeed.

Phase one: creating a pattern

Every system that we have investigated begins in a state of chaos, phase one of the growth cycle. Imagine a little cell in a growth medium or a typical entrepreneur: each one attempts to find the pieces of a pattern that will help it connect to the larger environment. I've learned never to try to predict the behavior of an entrepreneur. They stumble around, trying almost anything—it is literally chaos. Chaos...
Phase one: creating a pattern, continued

Theory has helped to explain this environment and show managers how to work within it. If the system is in a nutritious environment and if it finds enough pieces of a pattern, it eventually reaches the first breakpoint—a very crucial one because this is a zero-sum game in the beginning. (In business terms, you are not netting a lot, you may only be breaking even, but you are learning a great deal.)

Phase two: growth through limitations

When the organization moves to phase two, it starts to eliminate those behaviors that are not productive. It concentrates on the pattern, or formula, that works. It creates mechanisms that limit the system to do only those things that work. This is a very important period of growth through limitations. The system stays within that basic pattern, while allowing continuous incremental growth.

When a group moves from one economic system to another, they carve out a niche around a pattern that works. Organizations use policies, procedures, rules, and standards, all of which we hate to some degree, but are absolutely essential to growth in the second phase. One of the primary functions of management in a second phase system is to ensure the subjugation of the creative impulses of employees, to focus that energy on incrementally improving the pattern or formula. Then the organization can achieve an exponential level of growth that is necessary to successfully exploit all of the environment’s opportunities.

The second phase follows predictable trends; growth is stable and there are simple relationships. Organizational life is controllable, conventional, and comfortable until growth reaches the second breakpoint.

Phase three: radical change

At the second breakpoint, a new problem will arise for the organization. If the system is really successful and saturates its environment, it will have attracted competitors, and the niche becomes very crowded. In business terms, the market is “commodified.” We think of it as a law of nature that “nothing fails like success.”

For the organization to succeed, a shift to the third phase is essential. The
Phase three: radical change, continued

It's important to learn fast in phase three, or you can fail

system or organization must start to de-structure and admit things that were not part of the earlier system. This third phase is characterized by the organization behaving in weird ways. For example, in biology, there is the law of the excluded middle. It says that when the organism enters this period, which has to do with hybridization, the organism has to let go of some of the things that were successful in the past. There is also the law of the regressive lead, which states that some of the things that the organization was sure it would never do, that stand out on the edges, start to be expressed. In genetics, we found that some strands of DNA have buffers on them that keep them from being expressed. The process of hybridization starts to de-buffer and activate strands that were not expressed before. In businesses, product-based companies start to integrate services, and service organizations offer products.

Rationalize product lines in the third phase

Businesses can learn some important lessons from biology, such as rationalization, trimming the part of the system that is not paying off. We've done work for a large British manufacturer that had over 2,000 products. We helped them develop some criteria (degree of value-added, integration with other offerings, margins, manufacturing fit, distribution fit, and some twenty others) to decide what sense it made for them to continue these offerings, enabling them to reduce their product offering by 85%. The aim is to trim the dead wood and develop new offerings that have much higher rates of customer value and return. Unfortunately, Wall Street doesn't yet understand that it can be very worthwhile for companies in this phase to reduce total sales in order to increase customer value-added and profit margins. The result is that rationalizing product lines is something that management doesn't do often enough; they go for top-line growth for its own sake.

Learning

In the third phase, the organization must learn from mistakes, and learn quickly, so that the organization doesn't just fail and pull out of a project, but finds out what really happened. The aim is to investigate, learn, and introduce high value-added changes. This process ought to be continuous—not something done once in a while. Like an anthropologist studying other cultures, I need to understand how my clients' organizations are being managed in this phase. I have finally narrowed my questions down to one: “What do you do when someone makes a mistake?” It is incredible the degree to which organizations will try to hide their mistakes under the rug. One client said that they have so much under the rug that they could hardly stand on it. The challenge of managing in the third phase is to allow people to try new things, and learn from them. If you try new things in a changing environment, the probability that you will make mistakes is 100%. One of the fundamental principles of innovation is learning how to make mistakes; the information gleaned from experiments that do not work will often tell you more than the ones that do.

This does not mean that anything goes. Learning mistakes, mistakes that have value for what they teach, have three criteria. (1) Learning mistakes are made in
It's important to learn fast..., continued

Reinvention and improvement must occur in different domains

The “back to basics” bump

alignment with the organization’s strategies. (2) The person(s) who made the mistake must really investigate it. (3) The information must be shared with the organization. If those three conditions are not met, then it is not a mistake—it is a failure. Most organizations do not have or allocate the resources necessary to investigate, never mind share what they learned from their mistakes.

To help organizations reinvent themselves to continue their growth, we ask managers, “What was something that you said you would never do as an organization?” That one thing is likely to be key to your future success. For example, selling outside of normal distribution channels is still holding back many companies today. If the organization is healthy, then it will continually innovate and ultimately recreate itself and move into the next growth curve. It will discover a new pattern to express itself in a much wider domain than before.

Reinventing

Today, managers find themselves in a business environment where they have to get serious about better managing the area “underneath the curve,” (New Phase 1 in Figure 1). In organizations and in nature, the activities represented by the upper and the lower curve happen simultaneously, but in distinct domains. Reinvention does not come from within the main system. The parts of the system, the cells or individuals that are under the curve, out of contact with the pressures of the main system are the ones that will reinvent the organization.

Some organizations try to continuously innovate (the top line) and reinvent (the line under the curve) at the same time and with the same people. It does not work! This is a significant error because as that curve heads downward, the system undergoes tremendous stress. We have concluded that innovation should not be assigned to departments like the sales force or R&D, or even the combination of the two. Innovation should be activated throughout the organization. Reinventing the organization, on the other hand, is best started completely outside the system mainstream by committed entrepreneurs. Some people call it “intrapreneuring.” It is creating a whole new pattern, not just modifying the old. Their charge should be, “Figure out how to put our organization out of business. For if we don’t do it, someone else will.”

This transition can be very painful for many people and their organizations if they do not understand the dynamics of change and are not prepared. Learning how to manage the dynamics is essential. Some organizations have the risk-taking capacity to carry themselves through such a period. Many do not.

Unfortunately there are some maladaptive responses to the problems that occur in the second breakpoint—the declining market share, internal competition, endless product extensions, and increased costs. Managers decide that the organization needs to “stick to its knitting”—continuing to do what it knows how to do best and tighten up. While it is nice for the investors in the short-term, and that short-term
The “back to basics” bump, continued

may be five or six years, there are serious drawbacks to these approaches. The organization becomes more internally focused and it rigidifies and ossifies; it becomes more reactionary and less creative. Figure 2 illustrates this “back to basics” bump, which leads to a more rapid decline.

Figure 2. The “Back to Basics” Bump

Reduction of cognitive dissonance

The reason for this all-too-common response is an unconscious one. Once the human mind learns something, people create an internal mechanism that filters out information that does not agree with what they believe. Psychologists call this mechanism the reduction of cognitive dissonance. People are besieged by so many stimuli every day that the mind has developed this filtering mechanism to sort what is useful from what is not, what fits the patterns of our beliefs from what doesn’t. We’ve done an enormous amount of experimentation with this, and have found that when people are presented even with a large amount of data that supports another world view, they just won’t remember it. This is a very insidious process and it happens to every one of us.

“I’ll see it when I believe it.”

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Removing information filters

There are some things you can do to remove those information filters. Open yourself up to new experiences. Stop at a magazine rack and buy two or three magazines that you are absolutely sure you have no interest in—a biker’s magazine or Cosmopolitan. Use your non-dominant hand continuously for one day. Go to a movie that you are sure you will hate. Experiment with a different hobby. Try to move past the barrier that says, “I have no interest in this because it doesn’t fit who I am.” It is fun to do and, moreover, very important. We all want some sense of self-worth. For most managers this comes from what we know. This source of self-worth is disrupted when our organization moves through the second breakpoint. In the third phase, the culture that values learning and imagination will succeed, not one
Rewarding chaos

Chaos, as we understand it in natural systems, is a process in which the system explores its environment and experiments to find the pieces of a pattern that will allow it to create order and match its internal organizations to the external world. It is the process of discovery. It is experiential and very powerful. This phenomenon suggests that in the business world, organizations need to pay the “intrapreneurs” to go off and get confused. And if they are not getting confused, they are not doing their job. They need to get away from the patterns of the past. They have to be able to say, “Whatever business we have been in is wonderful and important, but how we are doing it is absolutely wrong. We don’t know how we should be doing it, but it is going to be very different from what we are doing now. And we are going to figure out how we should do it.”

The reward system for creating chaos is very different from that which is attached to an orderly result. Most organizations have not learned this. Bell Labs did it for years; they separated those people, let them play, and did not expect an immediate return on their investment. Yet when I look at the P/E (or what would be a P/E if they had any earnings) of many IPOs and other small companies today, there seems to be great acceptance of this risk and the long-term payback. The new economy is not a stock market fad. Big companies are often caught up in “short-termism.” Old companies need to learn how to tell the story of the future and not leave it to outsiders.

natural leadership

Businesses can learn from natural, self-organizing systems. Nature uses a model called autopoiesis in which the system is organized and run by outcomes, rather than past events. Autopoiesis is a navigation model (know where you are, where you are going, and make course corrections as conditions change). The self-organizing company knows the absolute truth about what is happening now, it knows its vision and values, and the people in it can learn and act creatively along the way. Self-organizing systems leave the past behind and plan everything from the future back. BB&T, a small community bank that has grown from several hundred million to over forty billion in assets, is a good case in point. It is a company that has committed to leading every day in every job from their future vision and continually learning and adjusting creatively to change.

Discontinuities

Niles Eldredge and Stephen Jay Gould of Harvard University coined the term punctuated equilibrium to describe the phenomenon of discontinuous change as it occurs in the natural world. Changes gradually accumulate in the system until there is a cataclysmic transformation of the whole system. By its nature, discontinuous change can yield extraordinary increases in productivity. For example, human beings
Discontinuities, continued

have experimented with corn for roughly 12,000 years to boost its yield. In 1933 corn was hybridized in Iowa, and the yield increased from 25 bushels to 150 bushels an acre. Today the yield is often over 450 bushels per acre. This is innovation in action!

I did some work once for a big insurance company whose margins over the years had been very small. We told them they could probably have a 95% margin on some of their new services and products. They thought we were insane, and we had a bit of difficulty retaining them as clients. Then they hired a new president (from outside the industry) who saw the potential and who hired new people who also saw the potential. They now have some products with 97% profit margins. Another good example was Arpanet, the precursor to the Internet, which was an Advanced Research Projects collaboration between several universities and the Department of Defense. At the time, most of the people involved had a total failure of the imagination as to its possibilities.

Value-price true innovation

Most organizations set the bar far too low for their return on investment in innovation. A real innovation incorporates something dramatically different. And that something different adds enormous value to your product, service, or customer. Then you are able to value-price the new offering and enjoy high profit margins. Most organizations know a lot about cost pricing, but very little about value pricing. A profound understanding of your customer, your customer’s customer, and their costs and suppliers is needed so that you can calculate what your product or service is worth to them. Managers need to know what their customer’s economic model is for their products and services. Otherwise you are in danger of giving your investment away, and putting yourself out of business. The return on investment for a discontinuous change should be at least ten times that of a normal change, and twenty to forty times is not unthinkable.

Real needs- real business

Organizations need to know how to develop this deep understanding of their customer. A consumer product company that we work with used to have a success rate of one out of sixty. Now it is one out of one. They achieved this success rate by not doing anything until they were absolutely sure there was a real need. They now spend as much on qualitative customer research as they used to spend on technical research. Then once they are sure they have identified a real need, they began to work closely with the customers to understand how the customer responds to a new product. Then they tweaked and improved the product continually during the introduction process until the customers were totally satisfied.

Customers must understand their own needs

We have discovered that to develop a profound understanding of the customer’s need, the customer has to be put into a situation where they can experience a deep understanding of their own needs. A number of our client organizations
Customers must understand their own needs, continued

are providing imagination and creativity training for their customers to help them surface both their current needs and wants and those that are emerging. This makes customers an active part of the development team. This technique opens up possibilities for whole new markets.

When we began our research in creativity back in the '50s, we found that non-creativity is a learned behavior. The challenge for managers in the first and third phases of growth is to help their people express the creativity that is inside them, rather than telling them what to do.

Creating a future

To create a future for their organizations, managers must:

- Create a shared and compelling vision of an ideal (best possible) future, connect people in every job with that vision, and make day-to-day decisions based on the future, not the past.
- Share real-time information broadly about where the organization is and how it is doing. Make learning from mistakes a cause.
- Ensure that all people have creative and collaboration skills, the opportunity to contribute, and are aptly rewarded for their participation and their successes.

Author information

Dr. George Land is an author, speaker, consultant, and general systems scientist with a broad and varied background in communications, business, education, and government. He is also the CEO of Leadership 2000 (l2000.com), which has an international roster of clients in the public and private sector. His learnings have formed the core of leadership and innovation training for tens of thousands of managers worldwide, including companies such as AT&T, 3M, IBM, and DuPont. He is the author of Grow or Die: The Unifying Principle of Transformation, Random House, 1973. His most recent book is Breakpoint and Beyond: Mastering the Future Today, Leadership Press, 1998, which he coauthored with Beth Jarman.

Editorial assistance for this article was provided by Carolyn Field.
The Process of Progress

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In this second in a series of articles on the s-curve, Dr. Barbara Lawton and Dr. Sally Goerner discuss the predictable changes that all organizations experience as they progress through the stages of growth. Each stage holds different challenges for organizations and civilizations, prompting profound cultural and strategic changes. The authors show managers how to navigate the s-curve successfully by varying their behavior and management approach—Editor.

The level of quality is set in the boardroom

Dr. Barbara Lawton—My graduate degrees are in statistics, and I started my career as a statistician in manufacturing design at Rockwell International and the Department of Energy. I learned early on that the quality of what we created had little to do with what we statisticians and engineers were capable of producing, and everything to do with what management understood about quality. W. Edwards Deming was right: the level of quality is set in the boardroom.

I sought Deming out and then had the privilege of working with him as his last student. During that time I learned a great deal about management, quality, and processes. In 1989 I began working at Albany International, a supplier to the paper industry with 36 manufacturing plants around the world. My focus, as the Corporate Director of Quality, was on improving the performance of the company, and our ability to meet and exceed customers' expectations.

As I worked on improving manufacturing processes, I realized that our customers' greatest dissatisfaction was not with our products, but rather with how our sales force interacted with them. A fundamental shift was occurring in the paper industry at this time. Many of the paper mills were located in the southeastern U.S. and had an "old boy" culture. The sales force relied upon strong personal relationships built and maintained through hunting trips and company-paid entertainment to keep their customers happy. But by the early '90s, our customers' needs had changed. They faced increasing pressure to continually and substantially improve productivity and profitability. They no longer had time for entertainment-based relationships. They needed and demanded consultative relationships with our sales representatives.

Albany International faced a tremendous need for improvement that had little to do with process management. Each one of our three core product lines was made by a different division, and each division had its own sales people. This was fine in the old model, where more sales people calling meant more entertainment. Now mill
managers wanted one point of contact with our company, and advice on how to use our different products synergistically to maximize their production. The solution to this challenge was not a simple change in the selling process; it required a rethinking and redesign of divisional structure. The company divisions competed against each other, and this attitude permeated the sales forces. Solving the problem ultimately depended upon resolving power, authority, and culture issues at the division level.

Process management is only one piece of what is needed for continual performance improvement. My educational background includes work in ecology and the sciences, and it was there that I found the models that helped me understand the larger pattern through which organizations advance. These models cannot predict what path your organization must take to improve, but they do show that there is a pattern to the process—what I call the process of progress. I believe it’s extremely important for managers in particular to understand the underlying pattern, because behaviors and approaches that are useful at one point in the process are detrimental in another. In the remainder of this article, I’ll share with you the patterns and discuss their relevance to the task of continuous improvement.

Dr. Barbara Lawton, Dr. Sally Goerner—Let’s look at the history of human progress as an example of this process as it occurs in human society (Figure 1). Our species has existed for roughly 300,000 years. The plot in Figure 1 shows sporadic progression (for example, birth rates, population size, and longevity) over this time frame, with smooth periods of growth followed by points of discontinuity that create a pattern of linked s-curves. This s-curve pattern is ubiquitous throughout nature and is recognized by economists, scientists, and marketers alike as a fundamental building block in their domain.

In the first s-curve in Figure 1, the earliest tribes slowly improved their standard of living by learning how to create better spears, taking on different roles in

![Figure 1. History of Human Progress](image-url)
The s-curves of human progress, continued

Even with continuous learning and improvement, each mode of living has its limits relative to the size of the population and quality of life it can sustain. As the human population grows, the spoils of the hunt must be shared among more and more people, putting pressure on the system and its leaders to produce more.

“Topping out” occurs when the return on efforts decreases and the population continues to increase. This results in tremendous tension and often societal rifts as different subgroups struggle to maintain their share in a time of diminishing returns. The usual human response, however, is to work harder doing what we already know how to do. In this case, it may be to teach children to hunt at an earlier age, put them through more rigorous training, or create “production” quotas for adults. At best the result is meager incremental growth. Continuation on this same path eventually leads to decline. This is the basic cycle faced by every great civilization and organization.

Breakthroughs create new modes of life

Continued progress is founded on a breakthrough concept brought to fruition. About 10,000 years ago, our mode of life shifted from hunting and gathering to one based on agriculture. While the idea of growing food had probably been around for hundreds, perhaps thousands of years, it was in this period of our history that an entire, end-to-end system of planting, nurturing, harvesting, and storing food had evolved to the point where it could become the foundation for human life. Just as with the hunter-gatherer tribes, what followed were times of tremendous bounty and growth, as the new patterns were established, implemented, and spread to substantially increase productivity. The rules for success, as they understood them, were once again woven into the very fabric of these societies—how they defined roles and responsibilities, governed themselves, taught their children, and worshipped their gods (for example, fertility gods and mother earth).

Examples of discontinuities

This pattern of formation, growth, and topping-out continues to repeat itself. Agriculture eventually reached its limits and was replaced by the Industrial Age. While this transition occurred over decades, the discontinuity was brought into sharp relief by the American Civil War, where the South fought to preserve their agricultural way of life (slavery was just one part of this larger equation) against the industrialized North. Today we’re in the midst of the transition from the Industrial Age to the Information Age. And while there are no great battles, there are skirmishes everywhere as the economic foundation and our way of life shifts from blue-collar, industrial work to white-collar, information-based work.
The challenge of accelerating s-curves

There are other important features in this larger pattern of linked s-curves. The s-curves are increasingly shorter in duration and larger in effect. The Agricultural Age began 10,000 years ago, the industrial revolution began 250 years ago, the Information Age began in the 1960s, and already the seeds of what will likely be the next wave (genetics) are underway. The s-curves are occurring closer together, have increasing impact, and are accelerating the rate of change.

The challenge that accelerating s-curves present to us is significant. Gone are the long periods of relative calm between s-curves. Today each of us is likely to live through several discontinuities between s-curves. As we've already seen, it is the nature of a discontinuity, the point at which you break from one s-curve to another, to create a massive upheaval in the existing structure (family, organization, society) at tremendous human cost. There is, however, hope. Within this process of progress, there are patterns that are lawful and inevitable. Understanding these patterns can inform the choices we make, reduce the stress of managing, and increase our chances of a less costly and more successful transition.

The process of progress is a universal process. The driving force behind the development of a self-organizing system (for example, the economy, an organization, societies) is a massive energy differential that creates pressure for energy to flow. We'll look at a simple, physical example—boiling water—before bringing this concept into the more complicated realm of human beings (Figure 2). A pot of water

![Figure 2. Flow Structures Reduce Energy Differentials](image-url)

- **Flame under pot of water adds energy.**
- **Energy drives water molecules faster and faster, until...**
- **Flow structure develops (rolling boil) for dissipating energy and then reaches its limits.**
- **The flow structure changes again, increasing flow rate and intricacy.**
Flow structures develop to equalize energy differentials, continued

with a flame underneath will illustrate the formation and role of a flow structure. Before the flame is lit, the water molecules move within the pot in a random fashion, their speed correlated with the temperature of the water (faster with greater temperature). When the flame is applied, the energy concentration beneath the pot builds, creating pressure for energy to flow. In response, the water molecules move faster and faster in their random fashion to dissipate the flame’s energy. If you were to plot the rate of heat transfer within the pot of water, it would appear as an s-curve.

Topping out occurs when the random movement of water molecules cannot move energy through any faster. As the pressure for energy to flow continues to build, undissipated, the system becomes unstable, and the conditions for breakthrough are created. The pressure eventually leads to the formation of a flow structure—a pattern of interaction—that allows energy to flow faster, relieving the pressure caused by the energy disequilibrium.

In our pot of water, the breakthrough occurs when groups of molecules rise to the surface, their heat is released, and the now cooler molecules sink to the bottom, where they are once again heated. This circular motion (a rolling boil) is a much more effective and efficient flow structure than is the random motion of molecules. The upward movement of water molecules creates friction, which actually increases the momentum of the flow. Continuing to plot the flow of energy on a graph, we would see another s-curve shape. The top is dictated by the maximum speed at which the rolling boil (flow structure) can dissipate energy from the source. A horse in motion is another familiar example of successive flow structures. A horse can only walk so fast. To go faster, it has to break into a trot, and to go faster yet, it must begin to gallop. The pattern of each successive flow structure is more complex (or intricate) than the previous pattern, and the flow of energy increases with increasing intricacy. In essence, there is an increase in productivity at each stage.

The energy driving our organizations is human desire

Human desire is a form of potential energy that drives the formation of flow structures such as organizations and businesses. Recall our earlier examples in human history. The hunter-gatherer society is a pattern of interaction (methods, processes, roles, rules, religion) that allows human desire to flow or be fulfilled. Each successive stage in Figure 1 is more intricate and productive, allowing more energy to flow and increasing the pressure to flow due to increasing population size.

New flow structures incorporate old structures

Flow structures are universal and have a fractal quality, meaning that their pattern repeats in various scales. A snowflake, for example, has a fractal structure; every crystal within the snowflake has the same shape as the larger snowflake. Within the human realm, organizations (church, business, government, or schools) are flow structures, and so is human behavior. For example, at some point a child learns to say “please” to get something he or she wants. The new behavior is used over and over again, until such time that “please” no longer gets the desired result. Then the child learns a little more complicated strategy, such as negotiating.

New flow structure builds upon the foundations of the old, and new develop-
New flow structures incorporate old structures, continued

As long as there are energy disequilibriums, there will be continuous waves of change. This means that our concept of an ideal or final state is nothing more than wishful thinking. With each wave, some of the old structures will be completely replaced, some will remain but no longer dominate, and those that do remain will be significantly different because of the backward integration of new inventions. Today the worldwide web is revolutionizing business. Eventually, e-commerce will be incorporated into every aspect of our organizations; it will be how we do business.

Flow structures cease when they become disconnected

Flow structures cease to exist when they no longer serve the energy flow needs of the larger system in which they are embedded. When the energy source beneath the pot of water is exhausted or the pot is removed from the flame, the rolling boil ceases. This is perhaps the single most important lesson of flow structures: they (for example, businesses, governments, organizations, schools) arise and exist in service to the larger environment. When they become disconnected from their purpose, or the desire they serve changes, they will eventually cease to exist. American business learned this lesson the hard way in the ‘70s and ‘80s as they faced competition from Japan.

The implication for business is clear—ongoing adaptation, and at an ever increasing rate, or cease to exist.

Phases of the s-curve

There are three distinct phases in each s-curve, namely the formation, acceleration, and limitation phases, that correspond to the life cycle of flow structures (e.g., organizations). It is important to understand the dynamics of each phase because managerial roles and actions that are effective in one phase are often counterproductive in other phases. Within these phases, there are also two recognized organizational fragility zones—areas in which the growth or continued growth of the organization is at risk (Figure 3 on the next page). The first corresponds to the formation
The formation phase

The formation of a new organization occurs only under specific conditions. Most importantly, there must be an unmet human need that the new flow structure will serve. In economic terms, there must be a market for the offering. This could be the demand for a different type of education system for children, for a new type of government, or for a simple product such as the VCR. For the moment, we will ignore the difficulties created by existing flow structures (these will be addressed in the second fragility zone) and will instead just focus on the process of formation and growth.

The primary condition for formation in the physical world is pressure for energy to flow faster than its current rate. In the boiling water example, many molecules of heated water are racing to the top to release their heat to the surface. The rolling boil forms when the molecules that are rising, then sinking, coalesce into a coherent pattern of interaction. The new pattern accelerates the rate of energy dissipation from the flame beneath and then builds its own momentum. A similar phenomenon occurs numerous times each day when someone (we call them entrepreneurs, either internal or external to the organization) recognizes an unmet need and enlists others in creating a coherent pattern of interaction that taps into the energy pool that need represents.

An end-to-end process is needed for survival

The majority of entrepreneurs, however, never create a sustainable business. They must not only recognize a need, but create an end-to-end creation and delivery system (flow structure) that successfully fulfills the identified need. Consider the telephone. It was a long way and many years between the time Alexander Bell first passed his voice over a wire and the time telephones became commercially available. Phones, wiring, switching, and a subscription-based service had to be created. So
flow structure formation is a continuous process of trial and error. As new solutions arise, so do new obstacles. What new organizations value is the ability to create, by whatever means possible, the pieces needed to create an end-to-end flow structure. The goal of this early period is truly survival. The culture is one of quickly searching out and creating solutions, by whatever means possible, and then finding out quickly which solutions did not work. And while there are generally strong leaders with a driving vision, the atmosphere is very egalitarian, creative, and collaborative.

Once phone service was available, it took several years more for it to go from a novelty item to a real communication tool. Imagine trying to sell phone service in the early days. The only reason to have a phone is if those people you want to talk with have one, too. So there is a critical mass issue, where enough people have to have an item before it builds momentum through positive feedback.

Acceleration commences when critical mass is attained and an infrastructure to support growth is developed. Once this phase is initiated, there is a circular, positive feedback-based relationship between the effectiveness of the organization, the growth of the marketplace (the energy pool to tap into), and the growth of the business. The business or industry builds capacity and consistency through infrastructure—processes, systems, organization—to fulfill demand. Economies of scale, efficiencies, and refinement decrease costs, increase availability, and improve service, expanding the number of people who desire and can afford service. The business grows and feeds this cycle by continually refining and improving its infrastructure and through geographical replication of the flow structure.

It is during this time that the skills of the professional manager, bureaucracy, and process management become highly valued, and the culture of the company shifts from “create on the fly” to a focus on repeatability and efficiency. The company must begin to pay attention to how it operates, establishing processes and assuring that they are followed. This is a tough transition for the successful entrepreneur and entrepreneurial company.

My own company, TIS Worldwide, is transitioning out of this first fragility zone and into the acceleration phase. The company has grown at a rate greater than 50% per year for the last five years. It is now too large to operate in the loose, organic ways of its past. In the last year, management has devoted a significant amount of their time and energy into transitioning into a regionally-based organization (replication) and to developing the internal processes needed to ensure quality and consistency throughout. Its continued growth will depend upon how well it can consistently meet the increasing expectations of its customer base.

The limitation phase begins when the opportunities for growth diminish because the organization no longer serves the energy needs of the larger environment. Remember the American auto industry in the late ‘70s and the ‘80s. American desire, shaped by high-quality, fuel-efficient Japanese cars, was no longer served by...
The limitation phase, continued

American car companies. The public school system has been in crisis for decades — spending more money than ever and yet failing to meet demand. In both cases, the energy pools were actually growing, but the existing system no longer served them. Revenues typically level off or even decrease, profit margins evaporate, and everyone scurries to protect their share of the existing pie.

What happens in the limitation phase is essentially sclerosis or “stuckness.” Unfortunately, the very same flow structures that increase productivity and enable growth in the early and middle phases of an s-curve, later inhibit the change and adaptation needed at the top of an s-curve. Unions are one example of this phenomenon; a remnant of the industrial age, today they tend to restrict choices in what workers can do in an organization.

Human flow structures are very resistant to change for a number of reasons. First, those who are in power and would lose that power typically resist the change the most (recall the American Civil War, or more recently, the opening of trade barriers). Second, the nature of the change often threatens the existing economic base of those in power. Saturn is a good example. Saturn was GM’s biggest attempt to break out of their stuckness. In fact, it was very successful on its own, but did not ultimately transform the parent company. GM decreed that they could not grow into the mid-size market because it would jeopardize their other car lines—the economic foundation of the entire company. My mental image of an organization stuck in the limitation phase is that of a great dinosaur stuck in a tar pit. Figure 4 shows the aims, dynamics, and the transitions organizations must make to move from one s-curve to the next.

Figure 4. S-Curve Synopsis

<table>
<thead>
<tr>
<th>Aim</th>
<th>Dynamics</th>
<th>Transition</th>
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</thead>
<tbody>
<tr>
<td>Formation</td>
<td>Survival</td>
<td>Environment focus</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Diversify &amp; fail fast</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Specialize &amp; integrate</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Committed collaboration</td>
</tr>
<tr>
<td>Acceleration</td>
<td>Growth</td>
<td>Build infrastructure, bureaucracy</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Increase capacity</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Competition to serve</td>
</tr>
<tr>
<td>Limitation</td>
<td>Continuance</td>
<td>Decreasing growth rate</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Internal focus</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Insularity &amp; entitlement</td>
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<tr>
<td></td>
<td></td>
<td>Dominator hierarchy</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Infrastructure problems</td>
</tr>
<tr>
<td></td>
<td>Break constraints</td>
<td>Relink to environment</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Niche specialists</td>
</tr>
</tbody>
</table>

Organizations, like civilizations, have three alternatives in the limitation phase: (1) Slow death through famine, either real or in the form of falling revenues and profits; (2) War—again, either real or in the form of trade wars; or (3) Creation through specialization and integration. The first alternative is the usual result of
working harder doing what we already know. The second alternative is unacceptable. The third is achieved through breakthrough, when the organization or civilization either reinvents itself or rapidly adapts and integrates the inventions of others. Either way, the organization must break through its existing constraints and reconnect (physically, emotionally, and financially) with the energy pool it wants to serve. This will inevitably require those within the organization, from top to bottom, to let go of some roles, practices, and perks that are most dearly held. In short, moving from one curve to the next requires a collective willingness to let go of entitlements and the sources of power and prestige, and to create or reinvent anew with a sense of committed collaboration.

The key to personal and organizational success in a rapidly changing environment is the ability to recognize and tap into energy in the environment, and to recognize and work with the dynamic balance that underlies the process of progress. Organizations move from exploring and creating to systematizing, from loose to tight, and then back again.

The progress of information technology is a familiar example of this dynamic balance between opposites: centralization and decentralization, efficiency and effectiveness. In the late ‘70s and early ‘80s, most organizations had centralized computing. There was a single, large mainframe that was shared by all users. With the advent of the personal computer (PC), computing became much more flexible, personal, and very decentralized. Some connectivity and local centralization was created through area networks, but there was still considerable isolation among the various systems. Computing is once again centralizing through the creation of centralized server farms and shared central storage. This creates tremendous efficiency in the maintenance of servers, storage utilization, and system back-up. The development of portals and Intranets is the latest layer of connective tissue, enabling data and applications anywhere within the organization to be accessed from anywhere else. Each swing of the pendulum builds upon the foundations of the old, creates a new level of intricacy and interdependence, and increases local adaptability and total performance (serving the needs of the energy pool).

There is today a general recognition of the importance of balance, which is usually expressed by the catchphrase “and.” Be global and local, effective and efficient, long-term and short-term. The message says to me, “be all things to all people.” I find it both encouraging and useful to know that this is only part of the story. The dynamic nature of the process of progress says that while this is true, we don’t have to be all things at the same time. A useful metaphor is how people stand in balance, with your weight equally distributed between both feet. While it’s true that you’re in balance, you’re also not making any progress. Dynamic progress is akin to the process of walking, which requires a back-and-forth movement of your weight from one foot to the other. Dynamic balance implies there is a time and
The process of progress requires a place for different strengths and approaches, and that progress requires a coordinated movement among them.

**Leadership challenge**

The management challenge associated with the increasing frequency of s-curves is significant. It is a story of managing coordinated movement and of personal give-and-take. For instance, I have yet to meet an individual who can effectively lead large organizations through the discontinuity period and through the systemization period. Effective management requires recognition of the time for change and the readiness to give up many of the artifacts that create personal advantage.

**Enabling progress**

Progress occurs when we enhance energy flow in our larger environment. Internally, it is grounded in specialization followed by integration in the context of collaboration. I believe that ongoing success therefore requires us, individually and collectively, to:

- Continually seek and serve the needs of the larger environment.
- Recognize what is needed for progress—where are we in the pattern of the s-curve?
- Personally develop dynamic partnerships, where at some points we may be called to lead and at others to follow.
- Create collaborative and equitable environments that develop and nurture such personal partnerships.

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Editorial assistance for this article was provided by Carolyn Field.
Scenario Planning: Springboard for Strategic Innovation

Author
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Editor’s note
As change in the business environment accelerates, scenario planning has become an invaluable tool to help organizations address the dynamic uncertainties of the future. The third article of our series on managing the s-curve shows how scenario planning can be used by organizations as a way to target their strategic innovation efforts. Author Garrett Brauer has successfully coached many planning teams at Eastman Kodak Company, helping them to systematically visualize possible futures, and to move forward with confidence—Editor.

Scenario planning can be used to help generate new and innovative strategic initiatives, but is not, strictly speaking, the actual process for innovation. Most structured innovation processes, such as brainstorming, require as their starting point a question, stimulus, or target. Scenario planning is a process that will generate a very rich set of stimuli for follow-on innovation processes to use.

Scenario planning is a process that generates plausible sets of stories about environmental elements in the future strategic horizon that are critical to the success of the business. These elements satisfy three important characteristics: (1) they are strategically very important, (2) the elements are largely beyond the business’ ability to influence or control, and (3) the elements are frequently not predictable in present time. This article describes a successful scenario planning technique often used at Kodak.

When to use scenario planning
Scenario planning is useful at several points in the product life cycle represented by the familiar “s-curve” of unit sales over the product’s lifetime (Figure 1 on the next page). Scenario planning is a necessity when the end of the linear growth of the product’s sales is in sight. This is sometimes called the “burning platform” stage, the point when you must move quickly to a new paradigm or perish. Probably the best time to use scenario planning to generate insight into future strategic possibilities is when the product is in the middle of its linear growth success. In this phase the organization has both the wisdom and insight born of experience—and the resources to use that wisdom to develop options for future competitive advantage that are outside of the current paradigm. Unfortunately when you are embedded in the linear part of growth curve, it is very difficult to know how just close to the end you are. Therefore, scenario planning should be done all along the way so that when
you hit the middle of the curve, even if you don’t know it, you’ll explore the future as a matter of course.

Different scenario planning methods

There is much literature describing successful but often quite different ways to do scenario planning. People have argued in favor of one method over the other, but I believe that different planning situations call for very different approaches. Therefore, I cannot unconditionally recommend one method over another. The scope of the planning process, the degree of inherent uncertainty, the knowledge of the planning team, and the time and money available for the effort are all important factors that help select the method of choice. It is beyond the scope of this paper to explore methods of choice based on circumstances. However, I do want to present a particular method that has been very effective under a set of circumstances common in our experience at Kodak.

Scenario planning at Kodak

The circumstances we find at Kodak are:

1. The business scope is modest (contained within a business unit or product unit),
2. The strategic time horizon is relatively short (5 years or less),
3. The elapsed time to complete the analysis is short (days or just a few weeks at most),
4. The time available among the planning team to work on this activity is small (4–20 hours at most),
5. The planning team itself is sufficiently knowledgeable of the total current and future business environment to be able to construct useful and credible scenarios. We don’t need outside expert consultants to help, saving both time and money.

Streamlined scenario planning

Under these conditions, we have developed a streamlined scenario planning process that is completed in little elapsed time (one or two weeks), with minimal
Streamlined scenario planning, continued

personal investment of the planning team’s time (usually less than 12 hours per person) and no costs for external expertise. There certainly are obvious limitations to this kind of modest scenario planning effort. Too often the alternative is not a more in-depth effort but no effort at all. Figure 2 lists the seven steps of the streamlined scenario planning process that we use.

Figure 2. Steps in the Scenario Process

1. Define the scope of the planning.
2. Identify and define the major “predetermineds” and “uncertainties.”
3. Develop the different plausible outcomes for each uncertainty.
4. Build the scenario table.
5. Develop a most likely or “base case” scenario.
6. Develop several other plausible scenarios.
7. Use the scenarios as stimuli for strategic dialogue.

Setting the scope

Defining the scope of the planning situation requires just a few minutes of team time, but is a critical step. The time frame is always an essential dimension of scope. In our experience this can be as short as two or three years in a rapidly moving business situation such as microelectronics, or it can be as long as 10 years in very slow moving businesses with large capital expenditures. Typically we use a five-year time frame. The geographical dimension of scope also needs to be decided. For example, we ask, “Is the scope worldwide, U.S. only, or developed countries only?” The product categories and target market also have to be specified. Often there are other dimensions of the scope that will have to be defined that are specific to each scenario planning situation.

Identifying the “predetermineds” and “uncertainties”

We next identify and define the scenario elements that are strategically critical but beyond control of the business. These elements fall into two categories: the “predetermineds” and the “uncertainties.” Predetermineds are the predictable elements of the future. If you are 80% sure that you know how the element will play out, designate it predetermined. Because they are predictable, the set of predetermineds appear in every scenario.

If the team’s confidence in the outcome of an element is less than 80%, we consider the element an uncertainty. To develop the set of the most critical few uncertainties, I will often ask each team member to write down the one question about the future they most want to have answered now to help them construct the very best strategy. The questions that emerge from this ploy usually frame the most critical uncertainties to the business. In framing uncertainties, it is important to consider whether the uncertainty is truly unpredictable (like the weather), or whether it is uncertain because the team simply doesn’t know much about it, i.e., is
Identifying the “predetermined” and “uncertainties,” continued

ignorant in this matter. If the uncertainty is due to ignorance, we ask whether it is worthwhile to invest the time and money necessary to turn it from an uncertainty to a predetermined. What results from this activity is a list of strategically important predetermined and uncertainties. Significant effort is taken to keep both lists short (20 items or less) and of the highest strategic priority.

Developing plausible uncertainty outcomes

We next develop plausible outcomes for each uncertainty, one uncertainty at a time. Any outcome must pass the test of being strategically useful. To test this, I ask the planning team, “If this outcome were to happen, what would you do differently?” If the answer is “I really don’t know,” I would strike the outcome off the list of consideration as being “interesting but irrelevant.” Outcomes also need to be mutually exclusive and should cover the range of what could plausibly happen. For practical reasons, there should be no more than five outcomes that cover the plausible range.

Building the scenario table

Predetermined, uncertainties, and their associated outcomes are organized in what we call a scenario table. We usually use an Excel™ workbook to be a repository for the scenario content. Each worksheet, or tab, in the workbook represents a major area of scenario inquiry, so there are separate worksheets for technology, competition, customers, etc. Figure 3 on the following page shows one worksheet from a non-Kodak hypothetical example I developed just to illustrate the concept of a scenario table. I make no claim for the quality of the content; it was just done for fun and illustration. This particular scenario exercise concerns some of the factors I consider relevant to performance of the U.S. stock market in the year 2002. Notice that predetermined are placed at the top of each worksheet, and each uncertainty is framed as a question at the head of each column. Outcomes for each uncertainty are below their defining question. Framed outcomes, in the U.S. stock market example, are what I considered the most likely at the time I created the scenario.

The “base case” scenario

At Kodak we do choose to build a most likely or “base case” scenario fully recognizing the strengths and drawbacks discussed in the literature about singling out any one scenario as most likely. Once a scenario is identified as the most likely, there is a concern that people will fixate on that one, and exclude other plausible scenarios from consideration. We do take steps to avoid that fixation by generating other scenarios, and also by exploring the implications of all the non-base case outcomes. But we do find that the base case is very useful as the “official” set of assumptions for required business case valuation.

To create the base case scenario we simply ask the team to vote on the most likely outcome for each scenario. Often there is general agreement as to which outcome is the most likely. The base case scenario is comprised of all the predetermined plus the set of most likely outcomes. We do examine the coherency of the set of most likely outcomes to make sure that the scenario is logically consistent.
Creating other scenarios

As you might expect, the base case scenario is often an incremental extension of the current situation. This isn't usually the result of an anchoring bias; there is a good reason the base case is, and should be, incremental. Most often the business is in the linear phase of growth where the dynamics are in fact incremental. To stretch thinking beyond the base case scenario, we routinely create several other plausible scenarios that are not incremental extensions of the current situation. It is easy to look at the landscape of predetermined s and uncertainties represented in the scenario table and brainstorm, as a team, other high-level scenario themes that are plausible but quite different in character and impact from the base case. From a set of themes, we would select the few most strategically interesting. For each of the selected new scenario themes, we would select the outcomes from the table that are most aligned and consistent with the new theme. The new scenario is comprised of the selected outcomes plus the same predetermined s that were in the base case.

Using the scenarios as a stimuli for strategic innovation

Recall that the scenarios are stimuli for strategic innovation, not the process of
innovation itself. This is a critical distinction. Many challenging and provocative questions can be wrapped around each scenario as will be shown below. The answers to each of these questions can be followed up with a variety of simple to exotic creativity techniques including, on the simple side, brainstorming. Also recognize that there are really only two fundamentally different avenues for innovation: you can either change your strategy or you change the future. We will look at the provocative questions for each of these two stratagems.

Here are some useful questions to test your current strategy against any of the scenarios:

- How does your current strategy play against the base case scenario and any of the other scenarios?
- Where are problems encountered?
- Where are there unrealized opportunities?
- How can you modify your strategy, without changing its fundamental strengths and character, to better survive the specific challenges from these scenarios?

Also consider:

- What would be the ideal strategy to have for each and every scenario, including the base case?
- How could you change the current strategy to reflect this ideal? Should the current strategy be abandoned altogether in favor of an ideal?

Recall that scenarios are constructed in the frame of mind that the scenario elements cannot be manipulated or controlled by your business. This is not always strictly true. With considerable creativity and resources, some degree of change to your advantage can often be effected. It is always worth the time to consider how the future can be manipulated in your favor. Here are some of the ways to use the scenarios to creatively explore how the future can be improved:

Choose a particular uncertainty in the scenario table, and then decide as a group what is the most favorable outcome. Then explore what can be done to increase the probability that the most favorable outcome will occur. Specific creativity techniques, not discussed here, can be employed to generate powerful new ideas to change the future.

Also ask what new outcome, not currently in the scenario table, could be to your advantage if it occurred. Use creativity techniques to explore how you might make this new outcome happen.

Another approach is to decide which of the several scenarios is ideal. Then explore if there is anything that can be done to increase the likelihood of that scenario occurring.

Sometimes it is not necessary to actually change the future, just your sensitivity
Changing the future, continued

to it. Suppose you are in a situation where you have critical concern about the supply of a raw material. You might consider long-term contracts, futures options, backward integration, or strategic inventory as a way to control, in a sense, how the future comes out. If your organization is worried about competitors, you may think about alliances, acquisitions, partnerships, or aggressive intellectual property strategies. If you are concerned about regulation, you may choose to participate on standards teams or lobby for regulation in your favor. Changing the future is not easy, but is well worth pondering the possibility. Often you can make significant shifts in your favor that at first seemed very difficult to do. I also find that, by just thinking about how the future can be changed, planning teams generate many new ideas that have great creativity and utility.

Summary

Scenario planning, however it is done, should be a part of every planning effort. Too often it is not. As shown by our experience at Kodak, the effort to do scenario planning need not be lengthy or difficult in order to generate very useful dialogue about strategically important elements beyond the control of the business. The output of scenario planning, however it is done, can then be used as a very rich set of stimuli for any of a variety of creativity techniques that seek to create genuine innovation in strategic thinking.

Author information

Garrett Brauer graduated with masters degrees in both biology and statistics from the University of Wisconsin in 1974. He joined Kodak in 1975 and worked as a statistical analyst for 10 years before he began practicing Decision and Risk Analysis and Scenario Planning in the company. He has successfully used scenario planning for many years to confront the dynamic of uncontrollability and uncertainty in strategic planning. Today he helps planning units throughout Kodak develop and evaluate strategies.

Editorial assistance was provided by Carolyn Field.
Fostering Creativity and Innovation as a Process:  
How to Implement Ideas that Produce Profitable Solutions

Gerald Haman, Founding Partner, SolutionPeople, Inc., The THINKubator, Chicago, Illinois

Creativity is the process of developing new or interesting ideas, and innovation is implementing those creative ideas into valuable or profitable solutions. Innovation finds the value in creativity, so innovation is really how organizations can profit from their ideas.

Organizations have many reasons to focus on creativity and innovation, including growth, profit, quality, empowerment, diversity, and knowledge management (see Figure 1). The business world has placed a lot of emphasis on innovation because if companies do not innovate and grow, they will suffer or perish. Research by several major consulting firms shows that companies that emphasize creativity and innovation are much better at delivering high shareholder value than other, less innovative firms.

There is also a personal need to be more innovative and creative. People who tap into their own creativity and innovation feel more empowered and experience greater personal growth.

Figure 1. Why Organizations Focus on Creativity and Innovation

| • Growth                      | • Competition                   |
| • New Products and Services   | • Technology                    |
| • Profits                     | • Information Systems           |
| • Quality                     | • Knowledge Management          |
| • Change Management           | • Intellectual Capital          |
| • Reengineering               | • Empowerment                   |
| • Downsizing                  | • Diversity                     |
| • Productivity                | • Government Regulations        |
| • Globalization               |                                 |

The four types of innovation

In his book Innovate or Evaporate, James Higgins defined four types of innovation¹ (Figure 2 on the following page). (1) Product innovation, which receives most
The four types of innovation, continued

of an organization’s focus, is the development of new products. (2) Process innovation finds new ways of doing things, including new manufacturing processes. (3) Management innovation results in new or different ways of managing people. And lastly, (4) marketing innovation develops new ways to market, sell, or promote products and services. Opportunities in the world of innovation exist in applying learning and knowledge to all four of these areas.

Figure 2. Four Types of Innovation

The evolution to innovation: a new hierarchy of needs

Figure 3 illustrates the evolution of business training and human resource initiatives over the past few decades. Initially, the focus for improving business operations was on technical skills: total quality, statistical process control, and cost reduction. This was followed by communication skills training — team building, leadership, and diversity. During the 1990s, experts like Peter Senge advocated the importance of having a learning organization, and people sought help...
for knowledge management, to manage all of the knowledge learned from communication and technical training.

We have now evolved to focusing on creativity and innovation, with innovation as the main emphasis. In the year 2000, 52% of all companies with more than 100 employees will offer their people creativity and innovation training. What does that mean? As a whole, the world wants to become more creative and innovative, in part because organizations have found that creativity and innovation are learnable and trainable skills that produce bottom-line results.

Research shows that executives recognize the need for innovation. Statistics also reveal that very few people feel that their companies are superior at it. So how do you become better at innovation? By applying the “six ingredients” that foster creativity and innovation (Figure 4). These ingredients fall into categories that you have heard before — teamwork, leadership, processes, technology, environment, and tools — and each has underlying guidance and value to help you become more innovative.

The most effective teams consist of diverse thinkers that represent the brain’s four quadrants and have people who serve the roles of investigators, creators, evaluators, and activators. Author Ned Herrmann’s extensive long-term research on thinking and creativity went past traditional “left brain/right brain” concepts and detailed the necessity for whole brain thinking. Innovative solutions occur most efficiently by carefully constructing dream teams of diverse thinkers that represent all four quadrants and form a “whole-brain” organization.

“Dream teams” can create an impact in a short amount of time. For example, we facilitated a dream team with 80 top technology people from Procter & Gamble
CASE STUDY  Fostering Creativity and Innovation as a Process

The six ingredients: teamwork, continued

and in a half a day, they generated 10,000 ideas, of which over 3000 were actionable, implementable, valuable ideas. Kellogg convened a dream team of 25 employees to create new cereal marketing ideas. The team generated 1800 ideas in a few days. TAP Pharmaceutical brought together a group of doctors, nurses, and medical practitioners for a creative meeting. They accomplished more breakthrough thinking in one one-day meeting than they had in five of their previous meetings, because of the combination of team members assembled.

The six ingredients: leadership

The Swedish Employment Council found that 67% of innovation was determined by organization leadership. I’ve talked with a variety of leaders about the value of creativity and innovation and they all concur that leaders must think creatively and foster innovation. Most organizational leaders who are viewed as positive role models continuously work on fostering creativity and innovation.

The six ingredients: processes

What is the value of understanding your brain’s thought process? If you can understand your brain’s manufacturing process for creativity and innovation, you can break it down to understand the weak steps and improve the process.

Innovative thinking usually involves following some type of process. I’ve identified over 100 different models of thought processes that relate to creativity and innovation. The Three R’s model involves the three steps of recording, recalling, and recreating ideas. I encourage people to take notes everyday, to be better at recording ideas so they can be better at recalling them and then be better at recreating new ones.

Use the Diamond Solution Process to get results

Our Diamond Solution Process is a proven innovative problem-solving process that guides thinkers through the four steps that yield innovation: (1) investigate needs, (2) create ideas, (3) evaluate solutions, and (4) activate plans. Using the Diamond Solution Process can generate high return on ideas (ROI). For example, the Diamond Solution Process helped Helene Curtis generate $63 million worth of cost reduction ideas, of which 55% have been implemented. Valvoline Oil used the process to develop almost 2,000 new product ideas that will yield several hundred million dollars.

Invest more time and maximize the mind curves

A study by the American Productivity and Quality Center found the main block to creative thinking is a lack of time. Most people do not give teams enough time to get to breakthrough ideas. Innovation requires sufficient time investment. In ideation sessions, we have found that the more time allotted, the higher the volume, the wider the variety, and the greater the value of ideas generated.
The Mind Curve model represents the idea generation flow for a typical one-day brainstorming session (Figure 5). Ideas flow through two major loops or curves during the day. A study of those curves found that old ideas occurred in the first curve, while new solutions were primarily generated in the second curve, with breakthroughs most often occurring near the end of the session. So how can brainstormers produce more breakthrough ideas? They should allow more time to move further along the mind curves. Plan a two- or three-day session, instead of a half-day session, and give teams the time to use more tools and techniques.

The six ingredients:

- **technology**
  
  One way to accelerate the mind curve and foster innovation is to use technology to generate ideas. There are several idea-generating software programs that I would recommend. One is called IdeaFisher, which consists of a database of over 700,000 ideas and thousands of questions to generate a high volume of ideas. Another program is based on the Synectics product development process called ThoughtPath™, which helps you work through some Synectics techniques. Other programs such as MindManager™ and Inspiration® are useful for organizing and mind-mapping ideas.

  If you really want to leverage technology, understand not only software and hardware but also how human brains interact with technology to be more creative and innovative. Have people use their e-mail system as “idea mail.” Train people to look at every e-mail as a communication of (or request for) valuable ideas. Also help people to drain their brains to get ideas out of their heads and onto paper or into a database to be easily retrieved.

The six ingredients:

- **environment**
  
  The environment is different from the other six ingredients. All of the other ingredients focus on what goes on inside of people's heads, while this ingredient focuses on what goes on outside of people's heads. It is an underdeveloped opportunity for most organizations. People need to get out of a box to think out of the box. They need to design spaces that are comfortable, thought-provoking, fun, and filled with tools that stimulate the imagination.
Avoid cubicle creativity

Too many people suffer from “cubicle creativity,” where the size of their ideas is directly proportional to the space in which they have to think. The more space people feel they have, the bigger their ideas. People, even if they are in cubicles, need to use their imagination to enhance those cubicles to overcome cubicle creativity. Rules and regulations regarding what can be placed on cubicle walls can limit creativity.

Northwestern University research shows that the brain cells of mice put in a dull, box-like environment will shrink and die, while cell growth occurs in the brains of mice in enriched, multisensory environments. The lesson is that if you want to be creative, work in environments that let your imagination soar.

Understand the three places of environment

Workspaces should offer unlimited food for thought. When you walk into a workspace, it should stimulate thinking. Work environments should focus on the three P’s, or places of innovative environments: (1) personal places, which include people’s cubicles and individual offices; (2) public places, which relate to the open public and reception areas; and (3) partnership places, which refer to the group meeting, board, and conference rooms.

Opportunities exist to create better partnership areas. Too many people are bored in boardrooms. Some companies are converting boardrooms and traditional libraries into creativity and innovation centers to stimulate employee thinking. The space need not be opulent or luxurious, just filled with the right resources to foster creativity and innovation, and to give people a multisensory, enriching experience.

The six ingredients: tools

Abraham Maslow said that when the only tool you have is a hammer, every problem begins to resemble a nail. Too many people rely on traditional brainstorming with flipcharts and need a bigger toolbox of techniques. There are a variety of new tools for generating ideas and fostering innovation. The KnowBrainer® is a unique hand-held fan-deck of cards that uses keywords, questions, and symbols to guide thinkers through the Diamond Solution Process. A technique called the Thinkathon® uses a special worksheet to allow teams to quietly generate hundreds of ideas in minutes. The “Elements of Design & Beauty,” a deck of 64 cards with photos and phrases, is another great tool to stimulate revolutionary ideas.

Putting the six ingredients into action

Most organizations do not need more traditional brainstorming sessions. Ideation is not the problem. Developing actionable illuminations is really the challenge for most groups.

We created a concentrated two- to three-day team experience that has been effective because it applies all six of the innovation fostering ingredients. It uses a facilitation team of two to four people that includes a lead facilitator, assistant facilitators, an experience manager, and a “technographer.” The experience manager concentrates on the music, sound, lights, and aroma to ensure that the participants are inspired by all five of their senses. The technographer uses computers to capture all of the ideas and put them into databases that the team can access later. We bring...
Putting the six ingredients into action, continued

in outside illuminators to augment teams and provide new perspectives with “fresh eyes.” We follow the four steps of the Diamond Solution Process and we use a variety of different tools. If the client cannot come to our environment, we create a thought-provoking space on-site for them. Technology such as the IdeaFisher and tools like the KnowBrainer® are used to focus teams on the process.

By using the six ingredients in this experience, clients have indicated they have reduced their planning or meeting time by 25%–60% compared to traditional meetings. Most important, they feel positive because they have used their whole brain and gained innovative results.

References


Author information

Gerald Haman founded SolutionPeople (formerly Creative Solutions) in 1988 to help organizations to be more creative and innovative. He is an author, inventor, software designer, and developer of creativity centers and innovation tools. He was formerly with Procter & Gamble and Arthur Andersen. SolutionPeople reports that they have used the information in this article to help customers generate ideas that have yielded a return on ideas of over $1 billion during the past 10 years. Gerald received his master’s degree in Communications and Training from the University of Minnesota, and has been a University Instructor at Northwestern, DePaul, and Loyola Universities.

Editorial assistance for this article was provided by Daniel Picard.
Four More Companies Show the Way to Performance Excellence

Four organizations—STMicroelectronics, Inc.–Region Americas (Carrollton, TX; manufacturing); BI (Minneapolis, MN; service); The Ritz-Carlton Hotel Company, L.L.C. (Atlanta, GA; service); and Sunny Fresh Foods (Monticello, MN; small business/manufacturing)—were honored this year for their achievements in performance excellence, as recipients of the 1999 Malcolm Baldrige National Quality Award.

Speaking at the awards ceremony, President Clinton said: “The Malcolm Baldrige National Quality Award plays a major role in revitalizing our nation’s economy, competitiveness, and quality of life. Through their tireless quest for excellence, the 1999 Baldrige Award recipients are models for any organization that wants to improve performance and competitiveness.”

The President also commented on this year’s expansion of the program into health care and education: “Although no Baldrige Award recipients were named in the new education and health care categories, I am delighted that our nation’s schools and health care organizations are now full partners in the Baldrige National Quality Program. I am proud of the 25 education and health care organizations that participated in this first year’s process, and I have no doubt that in the years to come this program will play a key role in revitalizing our education and health care system.”

Commerce Secretary William Daley noted how different the four winners are: “While they are very different organizations, each with their own blueprint for excellence, all four have in common a focus on the future and a passion for performance improvement. They are role models for excellence in the 21st century.”

About the 1999 Baldrige Award Recipients
STMicroelectronics, Inc.–Region Americas

STMicroelectronics designs, develops, manufactures, and markets semiconductor integrated circuits for consumer electronics and automotive, medical, telecommunications, and computer applications in the United States and around the world. It has more than 3,000 employees located in 37 sites around the United States and Canada, including its headquarters in Texas; manufacturing facilities in Carrollton, Texas; Phoenix, Arizona; and Rancho Bernardo, California; a design and prototype facility in Montgomeryville, Pennsylvania; and other design and sales offices in San Jose, California; Lexington, Massachusetts; Schaumburg, Illinois; and Livonia, Michigan. STMicroelectronics, Inc. Region Americas is a business entity of STMicroelectronics N.V. based in St. Germain, France. Contact: J.P. Rossomme, manager, public affairs and communications, 602-485-2262; email: Jean-Pierre.Rossomme@st.com

BI

BI helps its customers achieve their business goals by enhancing the performance of people—generally a customer’s distributors, employees, or consumers. BI designs and
delivers performance improvement programs integrating communications, training, measurement, and rewards. Products and services include design and implementation of training, helping customers with organizational change and strategic planning, customer-loyalty programs, and sales incentive programs. BI employs more than 1,400 “associates.” Most are located at its headquarters in Minneapolis, Minn.; others are at facilities in Eden Valley, Minn.; Sioux Falls, S.D.; and in 21 sales offices around the country. Contact: Betsy Schneider, director, marketing services; (612) 844-4655; email: schnede@biperf.com

The Ritz-Carlton Hotel Company, L.L.C.

The Ritz-Carlton Hotel Company manages 36 luxury hotels worldwide. Based in Atlanta, Georgia, Ritz-Carlton has approximately 17,000 employees. In 1998, Ritz-Carlton had sales of more than $1 billion. The Ritz-Carlton is the only service company to receive a Baldrige Award twice; it won its first award in 1992. The company is a wholly owned subsidiary of Marriott International, Inc. Contact: Stephanie Platt, corporate director of communications; (404) 237-5500; email: Stephanie.Platt@ritzcarlton.com

Sunny Fresh Foods

Sunny Fresh Foods is the first food manufacturer to receive the Baldrige Award. Sunny Fresh Foods manufactures processed egg products, including pasteurized refrigerated and frozen egg products, fat-free egg products, peeled hard-cooked eggs, and pre-cooked egg products such as omelets, french toast, and frozen scrambled and diced eggs. With headquarters in Monticello, Minn., Sunny Fresh Foods has about 380 employees located in Minnesota; Panora, Iowa; and Lake Odessa, Mich. The company, which markets to food service customers, is a wholly owned subsidiary of Cargill, Inc. Contact: Laura Huston, manager, business process improvement; (612) 742-2918; email: Laura_Huston@cargill.com

About the Baldrige Award Program

Baldrige Award applicants undergo a rigorous examination process that takes almost six months and reviews achievements and improvements in every aspect of the organization’s business, including strategic planning, human resources, customer satisfaction, and performance and business results. Applications are reviewed by an independent board of examiners primarily from the private sector. Each applicant receives a “feedback report” citing strengths and opportunities for improvement.

Named after a former Secretary of Commerce, the Malcolm Baldrige National Quality Award was established by Congress in 1987 to enhance the competitiveness of U.S. businesses by promoting quality awareness, recognizing the quality and performance achievements of U.S. organizations, and publicizing successful performance strategies. In 1999, new categories for education and health care were established. The award is not given for specific products or services. Since 1988, 37 organizations have received a Baldrige Award.

The program is managed by the National Institute of Standards and Technology, an agency of the Department of Commerce’s Technology Administration, in conjunction with the private sector.
The Defense Contract Management Agency: Teaming to Achieve Process Excellence

Author


Introduction

The Defense Contract Management Agency (DCMA) is the principal organization for contract management for the Department of Defense. As Director of DCMA, I sit in a unique position between the supplier base and the military services. Our organization has facilitated systematic teaming to achieve continuous improvement to the acquisition process. The use of management teams to achieve process excellence is a key element of our success.

The Department of Defense is big business

The DCMA is in the business of observing the acquisition of products for the Department of Defense, which is why we are very interested in process excellence and process improvement. We are a big enterprise with people in 900 different locations around the country and around the world. We oversee 26,000 different suppliers on approximately 360,000 contracts with a current business backlog of about $100 billion. We have 50 different flying operations and accept about 1,000 aircraft a year. The Department of Defense is, in fact, big business.

Why the DCMA was created

Historically, contract management and contract administration were done independently by the Army, the Navy, and the Air Force, each in individual buying activities. Each would keep an eye on quality, delivery, the authorization of payments, and all of the things involved as part of contract management.

In the late 1980s, the Defense Management Initiative combined these contract management activities into a single organization. The Defense Contract Management Command (DCMC) was formed to oversee the on-time delivery of products as products of quality. People from the Army, Navy, Air Force, and the separate defense contract administration regions were combined into a single organization. On March 27, 2000, we changed our name and the DCMC became the Defense Contract Management Agency.

Establishing the foundation for the DCMA

As we entered this new phase of contract management, we needed to identify the nature of the challenge and identify our customers. Our customers are the members of the Army, Navy, and Air Force who receive products from the defense industry. Because these customers had a great concern over how we would proceed, we established a mission, vision, and goals (see Figure 1 on the next page) for our
Establishing the foundation for the DCMA, continued

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<th>Figure 1. DCMA Mission, Vision, and Goals</th>
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<tr>
<td><strong>OUR MISSION</strong></td>
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<td>To provide customer-focused contract management services, throughout the acquisition life cycle, around the clock, around the world</td>
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<tr>
<td><strong>OUR VISION</strong></td>
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<td>DCMA people, teaming to provide world-class contract management services</td>
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<td><strong>OUR GOALS</strong></td>
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<tr>
<td>• Deliver great customer service</td>
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<td>• Lead the way to efficient and effective business processes</td>
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<td>• Enable DCMA people to excel</td>
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organization as a basic foundation. This foundation has provided the direction of the DCMA for the last 10 years.

**Our mission**

Our mission is to provide customer-focused contract management services throughout the acquisition cycle around the clock and around the world. The first part of our mission, “to provide customer-focused contract management services,” is not just delivering services, but recognizing that it is the customer we are serving. We needed to assure the Army, Navy, and Air Force that we were committed to their priorities, and that we didn’t have an internal, vested interest in satisfying the Defense Logistics Agency (DLA) just because, as a command, we happened to be located within the DLA. We view the DLA as one of our customers, but not an exclusive customer and not a customer at the expense of the other military services.

We said “throughout the acquisition life cycle” because we had to be committed to the entire, end-to-end acquisition process to achieve success. And we included “around the clock and around the world” to say that wherever or whenever we are needed, we will be there within 24 hours to take care of our customers’ needs.

**Our vision**

Our vision of DCMA people, teaming to provide world-class contract management services is based on people because people and their knowledge, capabilities, and commitment are the foundation for whatever we are going to be able to achieve. We focused on teaming to emphasize that we will work not only with our key customers – the Army, Navy, and Air Force – but also with the defense agencies and other partner agencies to make sure that we deliver those services.

**Our goals**

We determined that there are really only three goals that organizations require: one to deal with customers, one to deal with process, and one to deal with people. Our first goal is to deliver great customer service because that is the outcome that we want to achieve. But we do that by way of our second goal, process; therefore, it is
not only efficient in terms of cost or cost per unit output, but it is also effective in terms of customer outcome. Because the foundation is built on people, we have to provide the tools, techniques, training, and work environment to attain our third goal, enabling the people in the DCMA to excel both personally and professionally.

Service sets

Government in general is really a service-based organization. As such, at DCMA, we developed service sets (Figure 2) to describe what we do. The purpose of identifying the service set was to determine the core set of what we do and identify the critical processes, whether it’s the right item in terms of quality, the right time in terms of on-time delivery, or the right price in terms of getting value for money in how we perform. The underlying management framework for achieving process excellence while these services are delivered is called the Integrated Management System Framework.

The Integrated Management System Framework (Figure 3 on the next page) is built on a process that begins with the One Book. (The One Book can be accessed at http://www.dcmc.hq.dla.mil.) Because the Army, Navy, Air Force, and defense agencies all have different views and different ways of doing business, we very consciously called our policy book the One Book to say that we are not going to maintain separate, legacy ways of doing business. Rather, we are going to integrate to have one command policy and one consistent set of processes for all to follow.

A performance labor accounting system (PLAS) enables us to record costs by processes and by program. Tracking costs in this manner allows us to do activity-based management because if you don’t have an insight of where you are spending your time and efforts, then you are not in a position to evaluate and achieve process excellence. Without the right data, it becomes impossible to reasonably measure processes and to
make improvements. Achieving this balance of designing a cost accumulation system to be able to make process improvements is extremely important.

We account by contract, by sub-customers, and by broader customers. In the broadest context, we have a Board of Directors formed by the senior acquisition executives of the Army, the Navy, and the Air Force. Twice a year, we brief the Board of Directors as a means to be held accountable for what we do everyday. Even though we are not the ones who issue the contract and define the requirements, we are in a position to facilitate and identify better ways of doing business.

The tools and techniques identified in The Memory Jogger™ pocket guides are fundamental to process improvement. We have delivered a copy of The Team Memory Jogger™ to every person in the DCMA and we use them extensively as keys to improving processes.¹

As we've progressed on a journey toward process excellence, I would emphasize a couple of keys that we have seen to process improvement. The first is process mapping. You need to map the process to have a good understanding of the linkage between the elements that are necessary to achieve process excellence.

Second, you have to work very hard to identify the outcome metrics (as opposed to output metrics) that are in the context of what the customer wants the process to achieve. We identified an outcome metric for each service set and then

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¹ Journal of Innovative Management
wrote objectives linked to the outcome metrics for the level of performance that we
wanted to achieve. Sometimes, identifying the outcome metrics can be very difficult
in our business because we are not the direct owner of many of the processes. But to
be successful, we have to understand the end-to-end processes and all of the linkages,
no matter how far removed.

Lastly, good, sound root cause analysis is important because it identifies the
metrics drivers and how to go about making process improvements.

Teaming, in particular, is a very important key for us due to the diversity of
customers and the linkage of processes. But measuring the process must include all
links in the process. For many years, the logistics community operated on Logistics
Response Time (LRT; Figure 4), which measures the time the supply depot receives a
requisition until they ship the item. But the LRT measures only part of the supply chain
and a lot of the process was being left off – How long did it take the contractor to
operate? Were there any backorders? What happened once the item was shipped? Did it
get installed so that the machinery was operational again? The real measure to ensure
customer satisfaction should be Customer Wait Time (CWT), which measures the
entire process, from the time a soldier orders a part until the part is received.

How can we measure to ensure consistent customer satisfaction? The traditional
measure has been the average LRT. But that measurement easily leads to the mental-
ity that if I focus on 15% of the items, I can satisfy 80% of the needs, and therefore,
my average looks good. However, the smaller orders that may be the most critical
may not be satisfied because they don’t affect the overall average. The solution is to
measure by variance-based statistical process control, a measurement of the process
Time Definite Delivery, continued

that would say 95% of the time, I can deliver within a specified number of days. The industry counterpart to much of this is called “Just in Time.” But I guarantee you that when you talk to soldiers and tell them that you’re going to get them the fuel, the food, and the ammunition they need “just in time,” they get very nervous. So the term was changed from “Just in Time” to “Time Definite Delivery,” but it still is a 95% guarantee of reliable delivery in a specified number of days.

Mission Capable Rate

For us, the outcome metric is the Readiness Metric or Mission Capable Rate (Figure 5). We can trace this metric as an end-to-end process. The Fleet Mission Capable Rate is tracked by the Army Chief of Staff. If a product is not mission capable (NMC), it could be one of two things; it’s either not mission capable because of supply or because of maintenance. In turn, the Army has a Material Command that manages NMC and worries about supply, LRT, and backorders. The Defense Logistics Agency provides some of these parts, and as a different process, they work the “critical few” backorders and issue the contracts that the DCMA administers. The DCMA is at the base of the pyramid, and out in the plant, focusing on ensuring deliveries.

Teaming to influence the end metric

Although we are not writing the contracts or deciding if the items are ordered at the right time, we need to deal with how we, at our level, can link through a Logistics Agency supply center, a Material Command, and an Army process to a soldier in the field, at the top of the pyramid. Because we are at the far end of the process and don’t have direct ownership, the only way to succeed in this environment is to team with all of the customers, to influence the end metric, the Mission Capable Rate.
Teaming overcomes multiple handoffs

Understanding the end-to-end process and linkages allows us to start the incremental process of: (1) getting customers to write more informed contracts in a more timely way to eliminate backorders, (2) getting industry to shorten order delivery time to eliminate critical backorders, and (3) getting timely notice of the requirements, needs, and failure rates from the customer so supply centers understand failure rates and order the right items. This incremental process would be a lot easier in one integrated company, but it is much more difficult in our process because there are so many handoffs. Teaming helps to overcome this difficulty.

Process-Oriented Contract Administration

Looking at our quality journey over time, we found that by teaming with contractors, we’ve made improvements to product delivery processes and product quality processes as a result of Process-Oriented Contract Administration (PROCAS). PROCAS is a philosophy and set of tools that is bridged between our customers and our contractors as services are delivered. PROCAS uses a formal, continuous improvement methodology to determine how healthy processes are, to identify key processes, and to improve by focusing on those key processes. Since PROCAS began in 1993, we’ve identified over $1 billion in both cost savings and cost avoidances to achieve process-improved results.

Improving on-time delivery

Improving on-time delivery is the ugly part of this story because today, our on-time delivery rate is only about 66% for the hundreds of thousands of parts out there. While we are making some incremental improvement, progress is slow. We can break down the numbers for on-time delivery by office, company, or geographic location. With good data, we can analyze by supplier, by ordering activity, or by the failure rate, to try to do a much better job of not only improving the performance of contractors that are not living up to their contracts but also of getting our Army, Navy, and Air Force customers to do a much better job of ordering. Correcting problems like these are part of the challenge of achieving process excellence.

Management councils

To improve processes, we have to bring all of the stakeholders together—the contractor building the parts, the customers ordering the parts, DCMA as we oversee quality and payment, and the auditors who look at business processes. We formed these various stakeholders into teams called management councils, at many different locations. With these councils, we can determine how to communicate effectively to achieve process improvements and to benefit our customers.

Management councils at many levels

Management councils operate at many different levels (Figure 6 on the next page). For instance, at Lockheed Martin there is a corporate group, but there are also some 85 different Lockheed Martin business sectors that operate in an independent line. While there may be good ideas at the level of the individual sites, those ideas need to be facilitated across the corporation to achieve a much broader leverage.

We have therefore instituted corporate-level councils in Lockheed Martin (as
well as in Raytheon, Boeing, and Northrop Grumman) to team throughout the
process. We have created an early contract administration where, before the con-
tracts are ever issued, we look at how to team up-front to get a better insight into
parts, provisions, and suppliers, to do a better job of contracting. We put customer
liaisons at the major buying activities, not only to make sure that our customers
understand the services that we deliver but also to understand the particular priori-
ties of our customers to serve them better. We have program integrators at our
offices that pull together all of the functions to operate in multifunctional teams,
rather than in separate contracting, quality, engineering, and finance functions. And
we group into common metrics to talk to our Army, Navy, and Air Force counter-
parts. We ask them what the most important metrics are from their perspective, to
measure those metrics consistently and identify them as either critical or core
processes that need to be improved to achieve customer results.

Over the past 10 years, employment in the aerospace industry has decreased
dramatically because of reductions in the defense budget and defense industry.
There has been a remarkable consolidation. As part of the consolidation and
reduction of the defense industry, we realized we had to eliminate military unique
specifications, and that we needed to embrace commercial methodologies and
commercial technique. The question was how to go about migrating from military
to commercial specifications.

DCMA was put into the lead to facilitate this migration. We identified the
core processes by forming management councils and by asking what needed to
change. Those changes were initiated at the contractor's site, but they cut across
many key processes. As part of this Single Process Initiative, 219 facilities or
business sectors have converted from the old military specifications to ISO 9000
standards because a large number of facilities agreed that they didn't need to
perform the military unique way. The conversion to the commercial specifications
Embracing commercial methodologies, continued

has provided savings and cost avoidances across a broad number of processes, and these process changes better serve our end customers.

Accepting ISO 9000 standards

In general, ISO 9000 standards have been well accepted. We try to maintain a level of insight into how well industry is following what they've proposed in their ISO 9000 procedures so that we know in fact were going to receive quality products. But the overall migration to commercial or industry base is absolutely the right thing to do and has very wide acceptance.

Knowledge management

One final component beyond teaming and process would be knowledge management. Knowledge management as a technique is rapidly expanding. It's really about leadership responsibility, the responsibility of everyone who wants to achieve process improvement. It's the responsibility of driving the tools, the techniques, and the process reengineering down to the bottom level of the organization so people can do their jobs better. Too often, people make policy pronouncements of what they would like to achieve without providing the tools, knowledge, and techniques that people need to succeed. Knowledge management is a particularly good approach for people to follow as they try to make steady and continuous process improvement.

Teaming to put the customer first

In conclusion, our process is to say the customer must be first. The customer can take many forms, but we need to make sure that each customer has what they need to succeed in caring for our national defense. We can best serve our customers through process excellence. There has to be a process focus; identify those critical processes, collect the data and the insight, and then in a systematic way look at that information to achieve outcome results. And particularly in our case, because of the broad range of customers and because of the length of the end-to-end process, we have to make sure that we really understand the right outcome results. It is only through outcome results and through teaming with all of the people in the process that we will succeed.

Cited publications


Author information

Major General Timothy Malishenko is the Director of the Defense Contract Management Agency and its 13,000 employees. He entered the Air Force in 1969 as a distinguished graduate of Ohio State University’s Reserve Officer Training Corps Program. He has attended the Armed Forces Staff College in Norfolk, Virginia, and the National War College, and has served as the Deputy Assistant Secretary of the Air Force (Contracting). In addition to his bachelor’s degree in business administration from Ohio State University, he has earned a master’s degree in business administration from Michigan State University and a master’s degree in systems management from the University of Southern California.

Editorial assistance for this article was provided by Chuck Putney and Daniel Picard.
Process Design And Management: The Path to Organizational Transformation

Sr. Mary Jean Ryan, FSM, President and CEO, SSM Health Care, St. Louis, Missouri

SSM Health Care was one of the first health care organizations in the United States to implement continuous quality improvement system-wide in 1990. The system owns, operates, and manages 20 acute care hospitals in four states—Missouri, Illinois, Wisconsin, and Oklahoma, and three nursing homes. SSMHC has nearly 5,000 affiliated physicians and 20,000 employees. SSMHC also owns an interest in two managed care organizations, Premier Insurance Agency in Wisconsin, and Community Care in Oklahoma.

In 1999 SSM Health Care received the Missouri Quality Award. We were also the first, and only, health care organization in the country to merit a site visit from the Baldrige National Quality program. If you've ever gone through a quality award application effort, you know that it is a humbling process. First, you must analyze and carefully document your own strengths and shortcomings with regard to quality. Second, and even more challenging, you must welcome outsiders inside, so that they can suggest all of the places where your organization could make improvements.

Any organization that is willing to put itself through the painstaking work of self evaluation and then allow others to scrutinize its facilities, must be committed to quality improvement. When SSM Health Care began the quality journey 10 years ago, we really had very little idea of the extent of the commitment we were taking on. At our annual leadership conference, in May of 1990, we proudly and publicly announced that we were launching a continuous quality improvement (CQI) effort. But, during those hectic early months of implementation, some of us on the system's team of senior executives privately began wondering if instead of having committed ourselves to CQI, we should have just had ourselves committed!

Over time, though, we have embraced the never-ending task of our quality improvement effort and I want to share three things with you. First, I will reflect briefly on the importance of continuous improvement for organizations committed to building quality cultures. Then, I want to look at some lessons that SSM Health Care has learned about process design, process improvement, and process management in the past decade. And finally, I will offer some thoughts about why I believe process improvement leads to the transformation of an organization.

When an organization takes up the challenge of shifting its entire culture to one of continuous quality improvement, it enters very unfamiliar territory. For example, within SSM Health Care, in our pre-CQI days, many of us, on both the
In the beginning, there was some culture shock, continued

clinical and management sides, thought that we did things quite well. When we moved into the new arena of quality improvement, however, we began to wonder if we actually did anything nearly as well as we could. We discovered that when we were subjectively judging our performance, we always gave ourselves high marks for our accomplishments. And we always had very good reasons why we didn’t make progress in other areas. We also were in the habit of using health care industry standards as a way to compare ourselves to other facilities. And—no surprise—the comparisons were almost always favorable to us! In the new arena, we began to doubt if anyone in health care was thoroughly competent. And, we questioned whether our industry standards measured much of anything that was relevant.

Undertaking a quality initiative can be unsettling, at first. It is unsettling to go from the comfortable assurance that we are doing a good job, to a world in which no matter how good we get, the possibility of being better is always pressing upon us. Eventually, the organization comes to see that there is no final change we can make. And, there is no ultimate result we can achieve that will have our organization’s quest for quality be completely realized. Neither prestigious new buildings, nor an array of high tech equipment, nor a prosperous net income can be a satisfactory substitute for continuous improvement in our products and services. It is like the song “Toyland,” from The Nutcracker Suite. “Once you cross its borders (into continuous quality), you may never return again.” Organizations such as yours and mine begin to discover new rewards and satisfactions in the continuous pursuit of quality, rather than in the comfort of keeping things on an even keel.

I doubt if there is any company or institution that would say it isn’t interested in improving quality. But continuous improvement doesn’t happen just by talking about it. To integrate quality throughout an organization, we have to build an environment that encourages dynamism and change, not complacency and inertia. To instill the quality commitment in everyone, we have to recognize and reward those who are willing to try out new ideas—not those who are wed to the past. And to actually cause a cultural transformation, we must focus on the design, redesign, and management of our processes, not on our bottom-line results.

Clearly, this is not to say that a company doesn’t need to have successful financial results to stay in business. But the organizations that have strong results over time don’t accomplish that by watching the bottom line. Rather, their results flow from the quality of the goods and services offered. And quality flows from the processes that are used.

When an organization’s focus is on improving a process—any process—it means that our eye has to be on the customer of that process. And, keeping our eye on our customers is what a quality culture is all about. Look inside any company where process design and improvement is a fundamental value. You can be sure that service and respect for clients and customers is also a value. And, when clients and
When SSM Health Care rolled out our CQI implementation, we were emphatic that we were not undertaking this effort merely to improve our financial statement. From our research, we of course knew that the idea of quality improvement had gained strength first in Japan, and then back in the U.S., because it reduced waste and therefore reduced costs and increased profitability. And, believe me, we had absolutely nothing against achieving those benefits. We were committed to achieving them in fact.

It had been startling to learn that 40% of U.S. health care costs, across the board, were attributable to waste. We said our system would no longer tolerate anything close to that level of wasted resources. All of the system’s senior executives, commonly called the system management team, were confident that implementing CQI, with its emphasis on process design and problem solving, would result in the quality culture we wanted, as well as reduce waste and cost. But we wanted to make sure that everyone in our system fully understood this major effort for what it was—a commitment to quality, and not simply a cost-cutting project to improve the bottom line.

To avoid it being seen as a reduction program, we deliberately did not project any cost savings. Nor did we instill urgency, at first, about accomplishing our improvement projects within any set timeframe. We said that it might take five or more years to see real results. And, we made it clear we were not engaging in a pilot project or experiment.

If we had it to do over, I think we would have encouraged a greater sense of urgency in our projects to accomplish more in the early stages of CQI. We later learned, when we conducted a Breakthrough Series of improvement projects, that a lot of major problems can be solved within six months—and produce significant savings.

There was much that we learned also from visits and conversations with some other CQI organizations around the country. But even as we adapted and adopted various ideas, the one thing we did not adopt was the concern for the return on investment. Rather, the system management team was united in our stand that our efforts would focus on building a quality culture, whose number one principle is that patients and other customers are our first priority.

I want to dwell a little on how that principle fits into processes, their design, improvement, and management. In our human condition, you know that the tendency is always to blame a person or a group of people whenever a mistake is made or something doesn’t work the way we think it should. But it is probably only about 15% of the time that breakdowns can be blamed on people. The other 85% stems from faulty processes or non-existent processes.

Benchmarking helped and we retained our principles

Customers are well served and respected, you can be sure that the company has something more at stake than simply a concern for the bottom line.

Connecting process work with customer focus, and not a cost reduction to improve the bottom line continued
Mostly, people don’t see processes. We see tasks. One after another, the tasks line up like a disconnected series of things we do at work. If we are the one doing the tasks, we may set them out in a particular order to cross off our list. But at the end of the workday, we often wind up with a list of uncoordinated items that were either completed or carried over to the next day.

If we are on the receiving end of someone else’s tasks, we may be left feeling fragmented. We call to check on a credit card bill, and the first person we talk with can’t give us an answer to our question. We are put on hold for a few moments and another person comes on the line and asks how they can help. We ask our question all over again, and are told that the person who resolves those issues is in another office. They calmly and politely give us the number to call. Yet we are left feeling frustrated and even angry with the two people we’ve talked with. We are almost certainly going to be tempted to blame those two customer services representatives. Yet, it isn’t the people who are to blame for the problem; it is the process, or more likely, the lack of one.

As a worker without a process, we may come to the end of our day’s tasks lacking a sense of purpose or accomplishment. As a customer, we come to the end of a transaction, feeling irritated and asking the question, “Is anybody here paying attention?” A while ago I was at a department store in St. Louis. It was about 9:30 P.M., and I heard one salesclerk telling another one that her lunch break was scheduled for 9:45 P.M. The employee was complaining about having to go to lunch so soon after coming to work. The other employee agreed with her that it was stupid. As a customer overhearing their conversation, I quickly formed my own opinion about a store management that would be sending people to lunch at 9:45 in the morning! In very short order, the lack of a workable process left three people with negative opinions about how that store was run—all because of an unworkable or non-existent process. If you look at your own experience, you will recognize that it is an organization’s processes that affect both how customers and employees think about it—whether positively or negatively.

Recently I saw a letter of complaint in the St. Louis Post-Dispatch from someone who had had a bad experience with a bill from a local hospital (not one of SSM’s). The hospital has a national reputation for its medical treatment and has a number of top physicians on its staff. The letter writer blamed an “incompetent” billing clerk for the mistakes in her bill. I thought it was interesting that the customer was so sure that “incompetence” was the cause of the problem. That is usually where human beings tend to put the blame. Yet, from my experience with CQI, I bet the culprit was not a person, but a missing process! The clerk was left to appear inept in a situation over which he or she had no control. This was one of those “moments of truth” where the customer meets the company. And, as often happens, a person was blamed instead of a failure of process. The more complex and far reaching our businesses become, and the more sophisticated our products and services are, the more chances there will be for failures in those moments.
There is perhaps nothing more complicated than the functions of a hospital that is open 24 hours a day, seven days a week. The endless loop of overlapping procedures, reporting structures, and lines of accountability within various departments make it seem impossible to design processes that work for our patients and other customers. And that was actually one of our concerns when we first considered the feasibility of bringing CQI into our system. But, it quickly became clear to us that there is no feasible alternative to process design and improvement for an organization committed to serving its customers. The company that tries to save itself the work that goes into process improvement is not saving anything. It is like the TV advertisement where the auto mechanic tells his customer, “You can pay me now, or you can pay me later.” If an organization is not willing to invest the time, money, and effort to create an infrastructure for process design and improvement, it will pay over and over again—in wasted time, material, energy, and customer dissatisfaction.

Even before our system management team knew that process design and improvement was missing from our facilities, we knew there was something missing. In May of 1989, SSM Health Care was faring well in the health care industry. As I mentioned earlier, when we compared our facilities to others in our markets, we looked pretty good. Yet among our system management team there was a bit of discouragement and discontent. Throughout the system, there seemed to be too much satisfaction with the status quo. If something was working fairly well, our facilities, as a whole, tended to use ratings and rankings as indicators that we were doing as well as anyone else and better than most. Another source of discontent was that we didn’t think we had the structures in place to make the best use of people’s talents. And, while we had a strong mission and set of values, we had no way to operationalize those values throughout the system. When we implemented CQI, we gained the structure to help us integrate those values into everything we did. And, clearly, the process-focused character of CQI plays a big part in that.

Even in a complex hospital setting, process design and improvement is both possible and necessary

Getting started in process design

The way the Baldrige National Quality Program describes a process is “linked activities with the purpose of producing a product or service for a customer within or outside of the organization.” The very first lesson in designing or redesigning processes is learning to work with the people who represent the various activities that must be linked together; that is, the owners of the process.

Having operated for years in the management tradition of command and control, working on teams was not our forte. As you may know, in command and control structures, managers are trained from their earliest days to see themselves as the keepers of the knowledge. To be a good manager, of course, you would have to act like you knew everything about everything! When we honestly looked at the multitude of people and things we were accountable for, we saw there was no way we could know everything. In fact, it was a wonder that we accomplished anything when we pretended to know everything.
Lone Rangers and Mighty Mouses

Within the upper management of the system, we soon discovered that we divided into two groups: those Lone Rangers, who try to do everything solo. And the Mighty Mouses, imitating the cartoon figure that could fly in anytime to save the day. We quickly found out that process design is a team effort. To really work, every member has to know they have something to contribute and that they will be heard. If the team isn't representative, the process will be missing something.

This was illustrated dramatically by system management's first team effort when we began implementing CQI. Our project was deliberately a small one. We wanted to improve the cycle time for routing the mail among system management in the corporate office. In our work, we painstakingly designed a flowchart of what we thought the existing process was like. We posted the chart for all to see and asked for input. We received more than a dozen comments correcting aspects of our chart. The comments came from members of our support staff—none of whom had been included on our team!

Looking again at existing processes

A second important aspect in process design is being willing to keep looking at the existing process, and asking, “Why is this step here, and why is that step there?” When we do this, we ultimately get to the root cause of the breakdown in the process. But it takes patience. In a culture in which people think they already know how something works, it is harder to look at something simply and objectively. When we do get to the root cause, nine times out of ten we don't find an uncaring employee; we see a non-existent or poorly designed process.

Addressing the willingness to change

In process design, it is usually clear that the original process, or what was passing itself off as a process, is so flawed that all there is to do is to start from scratch. In that case, the team would look at what it is that happens—what or who must get from point A to point B—and say, “Under the ideal circumstances, what would the design of this process be?”

In the hospital setting, one of the things we saw is that getting health care professionals to create a standard process for something is about as natural as herding cats. Well-trained professionals, who are confident of their skill and proud of their abilities, simply do a job. They are not looking for a manual. One surgeon might come in and ask the surgical nurse to set up the instrument tray for an appendectomy in a specific way. He is sure that his is the most effective way to have the tray set up. Another surgeon will ask for a completely different set up and so on.

What motivates physicians and nurses to improve processes is evidence that there are wide variations in outcomes based upon the processes used. When that evidence is collected and presented, a team has its case for process design or redesign. Often you don't even need evidence to make the case for a process redesign. Many people can see that the process is flawed.

How many times as a customer yourself, have you complained to the person serving you that something just doesn't work? And how many times have you heard the employee say, “Well, that’s just the way we are told to do it.” Or, “You’ll have to
An example

In an organization that has an infrastructure to support the work of process design and improvement, people are empowered. They feel like they have a stake in how things operate, and they have a say in serving the customer well. We had a situation with one of our hospitals and nursing homes that were located fairly close to each other. Typically, when an elderly patient had recovered sufficiently to leave the hospital, they would go to the nursing home. But whenever a doctor happened to discharge a patient on a Friday morning, the patient would arrive at the nursing home when the weekend schedule was in effect. If the doctor did not write the orders for the patient, or could not be reached by phone, the patient would be left without a physical therapy plan of care or medication until Monday. Patients would sometimes be left waiting until Tuesday before they could have their first physical therapy session, and thereby miss out on one or two days of therapy.

Two teams, one from each facility, got together to create an improved process. The plan gives each discharged patient a standard set of orders that accompany him or her to the nursing home. Now, when a patient comes to the nursing home, no matter what day of the week, he or she has a complete set of orders for pain medications, any other medications, and a physical therapy schedule, so they can begin their therapy at the earliest possible time. This was simply a matter of designing a discharge planning process from the point of view of our customer, not from the point of view of the care providers. The design team first saw that real people had to be transported from point A to point B. They asked the question, “In an ideal world, what would be the best process for moving him or her to that point?”

Another example

In a similar occurrence, one of our hospitals has altered the entire process of its care for the dying by imagining themselves in the place of the patient and the patient's family. Previously, the hospital personnel had simply set out to ensure that the dying patient was well cared for while in the hospital. But when a team of caregivers looked from the perspective of the patient and the patient’s family, they saw that many things have to be provided when someone is dying, and not all of them are within the hospital. The team created a process that includes several other sectors of the community—churches, home health agencies, funeral homes, grief support groups, and so on. Sometimes process design rightly expands beyond the service or product you offer. Companies might legitimately take the view that they can only be responsible for their product or service. But I don't believe an organization that is seeking to transform its culture with process design and management can put limits on itself.
**Collaborative agreements to serve customers better**

Notice all of the collaborative arrangements that are springing up among hotels, airlines, car rental agencies, credit card companies, and membership organizations like AAA and AARP. Integrating the services and products of several providers is an example of process design that comes from standing in the shoes of the customer, rather than stopping at the boundaries of the corporation.

**Eliminate hassles**

Philip Crosby, one of the leaders of the quality movement in this country, has equated quality with “hassle elimination.” Just ask your customers or clients for their opinion of your product or service and you will understand how quality and freedom from hassles can seem synonymous. Customers tend to be delighted when processes are simple, convenient, logical, and hassle-free. And, they tend to be frustrated, angry, irritated, and impatient when they are not.

**Example**

One of our facilities discovered that its phone answering process was an annoyance for callers. In tracking the calls to the switchboard, it was found that 100 people a week who were put on hold, eventually got tired of waiting and hung up. The solution was not to increase the number of people answering the phone, but to change the way the phone system was programmed. The new system provided callers with more information and allowed them to leave a phone number for a call back. In six months, the number of hang-ups was reduced to 10 per week. Designing a process that respects and serves the customers of that process—whether they are patients, clients, or employees—requires paying attention to the customers’ interests.

**Your culture is a process, too**

Creating a culture of continuous improvement means that process improvement teams eventually will form on their own when employees know that is expected and encouraged. A quality culture calls all of its employees and managers to be acute observers of what happens and how things work in their areas. This requires employee education, involvement, and development. The people who do the job are the ones who have the best vantage point on how it can be improved. But they have to be trained in how to go about improving something in a way that makes a difference.

Our CQI classes provide valuable learning on how to get to the root cause of variations, how to measure variations, and how to determine if something is a common cause variation or a special cause variation. This knowledge means the difference between employees who can implement strong improvements or those who just tinker with processes.
The value of measurement

In all of the work done on process design and management, measurement becomes a critical factor. For those who aren’t statistically oriented, measuring the process may at first be simply a pain in the neck. Yet, without measurement, supervisors and managers are left to the same opinions, suspicions, hunches, and assumptions that have traditionally driven our management decisions. The subjectivity of decision making without measurement often turns a decision into guesswork.

One of the five CQI principles we adopted when we began implementation was termed “decision making by objective data.” I’m sure that in your industry and in your particular company, you have long had certain measures that you keep your eye on. You have to have objective data that you follow perhaps over many years, to track trends in quarterly sales, or to notice the seasonal availability and price of materials or ingredients. In health care, we have long used such measures as occupancy rates, lengths of stay, and the ratio of Medicare/Medicaid patients to privately insured patients and charity cases. If you managed anything in a hospital, you knew the numbers to keep your eye on. Regardless of the industry, there are always the standard measures that give you a view of reality. But when it comes to quality, the traditional measures don’t tell us much. Our length-of-stay numbers gave us an insight into expected occupancy, or income projections, but they do not tell us anything at all about customer satisfaction. They do not give us access to ways to improve a process. If patient satisfaction is affected by the length of the wait times in the emergency department, then we had better find a way to measure how long people were waiting.

There are many federal, state, and local bodies that regulate hospitals. Their interest is in compliance with policies and regulations, not customer satisfaction. The measurement of processes gives us a window into the customer’s experience, which, when it comes to quality, has to be at least as important as compliance.

In his book The Fifth Discipline, Peter Senge wrote about the difficulty of managing quality in a service business due to the intangibility of service activities. He said there is a strong tendency to manage service businesses by focusing on what is most tangible—numbers of customers served, costs of providing the service, and revenues generated. “But,” Senge points out, “focusing on what’s easily measured leads to ‘looking good without being good,’ to having measurable performance indicators that are acceptable, yet not providing quality service.”

How can we know what aspects of a process are wasteful and inefficient if we are not measuring anything? How can we tell what our customers’ experience of our service is, if we don’t have mechanisms for gathering and analyzing their opinions? Whether it is phone rings, trips to the laboratory, lab specimen handoffs, or the number of minutes it takes to clean and prepare an operating room, measuring things gives people data to make decisions. For example, if a quality team reduced the turnaround time in an operating room from seven to three minutes and all of a sudden, that number started rising again, the team would have to go back and look at the steps in the process. The team would collect data to see what was really going on.
In a previous life, when I was an operating room supervisor, I always knew that surgeries started late because anesthesia didn't get there on time. But the fact is, that was only my guess; I never collected any data. It may have been true, but I really didn't know. If we don't know the facts about a process, then our attempts to impact it for the better are going to be only guesses. Yes, sometimes we may get lucky and guess correctly, but more often than not, we will not.

One of the things we saw early in our implementation of CQI is that human beings' natural cynicism and lack of trust can stop the development of a quality culture. The system management team and I discovered early that we could not put a series of demands on people's time and attention and then just watch to see what happened. We had to be in there learning and teaching ourselves. We had to be on teams. We had to go through the process of getting to root causes in the functions of our corporate office. We had to learn how to measure and to use the tools of process analysis. People in your organization have to see that you are walking the talk.

The leaders of quality organizations also have to be up to managing the entire quality improvement effort over the long term. Process design/redesign and improvement do not succeed without consistent management. Nothing stays in existence by itself. The tendency, in fact, is for everything to go out of existence.

One of our system's greatest compliments came from Dr. Donald Berwick, the nationally recognized health care quality expert. He acknowledged our “constancy of purpose,” in continuing to manage CQI in our system over a long period of time, through thick and thin, even when it gets tough. As you know, “constancy of purpose,” is W. Edwards Deming’s first principle of quality. With the perspective of time, those of us at SSM Health Care can see now why that principle is so important. Without management’s commitment to keeping the quality effort in motion, it will surely stop.

Sometimes we see habitual patterns or behaviors going on for long periods of time. But if you observe your organization, I think you will see that the best behaviors quickly lose their edge if managers stop paying attention. People may keep doing the same things for a while, but whatever it was that lit people up would disappear without management, without motivation, without acknowledgement.

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Process management, continued

executives let down the attention they pay to those processes, you will see the employees letting down as well. The word—implicitly or explicitly—gets around that those ways of doing things are not quite as important as they once were. Then you wind up with a process that is not being managed, or we could say, a process that is not being maintained. Until it starts to become second nature to improve processes, it will require managers continuously generating the environment in which improvements can be initiated. Otherwise the people closest to the work and those in supervisory positions, will tend to say they don’t have time to get into it.

Inconsistent management of process improvement can also be a problem. If employees in a company or institution sense that processes are important to some managers and not to others, this sets up confusion, uncertainty, and frustration. Do I or don’t I follow this process? Is it important or not? People get mixed signals about their jobs and what is important. It leads to cynicism. Quality service and customer care and respect may be perceived only as window dressing that is spruced up when some kind of quality inspection is going on. This does not support a transformed culture—it is more like business as usual.

Encouraging and requesting that employees design and improve processes also requires openness with the company’s or institution’s business. We found executives at some of our facilities were reluctant to divulge certain information that teams needed to analyze processes. There is a risk in trusting people with key information. Employees, who come to know processes intimately, can be tempted to use the access to money or data in a fraudulent way. We’ve had that occur recently in our system. A finance officer in one of our smaller corporations devised a way to embezzle over a million dollars over a period of several months before anyone noticed.

The three people who had direct responsibility for that area came to my office, embarrassed and devastated. They offered to resign. I didn’t accept their resignations. Instead, I asked them to use that experience to determine where the process broke down. I asked what happened in the process and how could it be improved so that this activity couldn’t happen again. Sometimes, the amount of money involved might be a temptation to give up on the process. This was a significant amount of money. But what we had to do was find the breakdown and improve the process. What they found was that there was in fact a process in place, but it wasn’t being followed.

The importance of trust

In a quality culture, the other temptation is to identify where people have authority and say, “I’m taking that away.” But, if we are truly a quality improvement culture, committed to process improvement, we cannot afford to stop trusting people. We cannot afford to withhold necessary information. We have to design processes to keep temptation out of people’s way. And then make sure we follow the processes. Process management also means that processes are subject to periodic review—to see if they are really working as intended, even if the variation is in control.
Achieving organizational transformation

In my sharing with you today, I have told you some of the things we have learned about building a quality culture through process design, improvement, and management. But there is one last and most important thing about this topic of processes. There is something truly powerful that happens in an organization and among employees when they are at work on process improvement. 

Looking for ways to improve the way we do things for our customers and clients alters the vantage point from which we see. And by altering our perspective, we transform what we have been dealing with—even if we have been dealing with it for years.

Give the power to improve processes to your managers and employees and watch what happens. Instead of an automatic, unthinking approach to a routine, people start paying attention to what they are doing. They start standing in the place of the customer and discovering how the process or lack of process is being experienced over there, rather than simply performing a task. The human spirit comes alive in people who know they have the capacity and the authority to make a difference in their work.

The job of the organization is to take the spirit that abides in every one of the people who work with us and make that a part of the organization's own transformation. In SSM Health Care, we say that the spirit of people that arises when they are engaged in improving the processes of their work is one of the essential components of our institution's transformation. It seems an amazing phenomenon—but it's nevertheless true. The act of designing, redesigning, and continuously improving processes, alters the spirit of the people who authentically engage in that work. And, the transformation of the whole organization comes about as more and more people who work there feel free to express that spirit.

When I speak of this spirit, I am not speaking of it as a religious concept. The spirit is what is at the core of your being. It is what makes you the person you are; it is that ineffable quality that is present when people are at their best. We see it throughout SSM Health Care, in people of all cultural, ethnic, and
Achieving organizational transformation, continued

social backgrounds. And you see it, too, in your organizations. We see it in the hospital cafeteria worker who stands behind the steam table throughout her shift and has a friendly smile for each person who goes through the line.

We see it in the housekeeping supervisor who goes out of his way to personally greet every person on his crew and expresses concern about how each one is doing. We see it in the surgeon who, after 12 straight hours in the operating room, decides to make one more stop on the surgical floor to see how a patient is feeling. We see it in the social worker that remembers a special need of a patient about to be discharged and makes an extra phone call to accommodate that need. The spirit of a company emerges from the spirit of the people who work there. The individuals fuel the organization with their spirit and they in turn find a place to express their desire to serve and contribute and make a difference with others.

Very early in our work on quality, I received a letter from a security guard who worked on the pay parking lot at one of our hospitals. She told me that she had recently allowed one of the visitors to the hospital to leave the parking lot without paying. The visitor had gone to the hospital to see her husband and did not realize until she got to the exit gate that she had left her purse at home. The security guard waved her through the gate and wished her a good day.

In her letter to me, the employee said that the day before she had heard me give a talk about putting the customer first, and she decided that this was an opportunity to do so. Her spirit, her desire to be generous was now freed, rather than constrained, by her work.

An unhappy employee will not deliver the compassionate care we say they will deliver. Employees need to experience the same level of compassion from us that we are expecting them to pass on to others. Employee satisfaction is the gateway to customer satisfaction. You cannot have people thoughtfully and sometimes painstakingly creating processes from the vantage point of the customer, and not see their own joy in their work come alive. You cannot have people thinking from the customer’s perspective to create processes, and not have their sense of compassion expanded. You cannot have people looking at how to make a process better, and not have employees start expressing their creativity.

Employee satisfaction is the gateway to customer satisfaction. You cannot have people thoughtfully and sometimes painstakingly creating processes from the vantage point of the customer, and not see their own joy in their work come alive. You cannot have people thinking from the customer’s perspective to create processes, and not have their sense of compassion expanded. You cannot have people looking at how to make a process better, and not have employees start expressing their creativity.
Conclusion: the energy of people becomes infused with the mission

When the people of an organization have the opportunity to really be alive, vital, and creative in their work, that life and energy is infused into the organization. We say that the opportunity to design and improve every process throughout an institution is how people get to bring that life to their work. The organization’s mission starts being fulfilled, not on a static piece of paper, but in the actions and words of its people. The mission, the very purpose of the organization, is fulfilled through people. And people begin to have more fulfillment in their lives because their work is truly about serving people. Believe me when I say, if your organization and mine are designing processes that honor and respect our customers’ needs and wants, then we are not designing processes that will merely improve our bottom line, or even only improve our products. We are designing processes that literally transform our organizations and the people in them. When that happens, we do not have to be concerned about how to make our organization successful. When that happens, our organization is successful. It is fulfilling its mission and it therefore cannot help but flourish in every sense of the word.

Sr. Mary Jean Ryan is president and CEO of SSM Health Care, headquartered in St. Louis, Missouri. It is one of the largest catholic health systems in the United States. She has been a member of the Franciscan Sisters of Mary for more than 35 years, and was appointed the first president of the restructured SSM Health Care System in July of 1986.

Sr. Mary Jean has emphasized three key themes during her 11-year leadership: commitment to Continuous Quality Improvement, preservation of the earth’s resources, and enhancing ethnic and gender diversity.

She has a bachelor’s degree in nursing from St. Louis University, and a Master’s in Hospital & Health Administration from Xavier University.

Sr. Mary Jean has received a number of awards over the years, including The Brotherhood/Sisterhood Award from the National Conference of Christians and Jews in 1990, The Missouri Governor’s Quality Leadership Award in 1997, and The Distinguished Health Care Ministry Award from Archbishop John May in 1998.

In 1999, SSM Health Care received the Missouri Quality Award, and it was the only health care system in the nation to score high enough to receive a Baldrige site visit.

Editorial support for this article was provided by Laurence Smith.
Book Review

by Larry Smith

Hidden Value

How Great Companies Achieve Extraordinary Results with Ordinary People

Charles A. O'Reilly III and Jeffrey Pfeffer

© Harvard Business School Press
September 2000
$27.50 hardcover, 304 pages.

When Harvard Business School Press sent me a copy of O'Reilly and Pfeffer's forthcoming book, I was eager to read it. Jeffrey Pfeffer was a gracious and enlightening keynote speaker at GOAL/QPC's annual conference last year, and we subsequently published two articles by him in the Journal of Innovative Management: “Challenging the Conventional Wisdom of How to Manage People” (Summer 1999), and “Bridging the Knowing-Doing Gap” (Fall 1999). I was also intrigued by the book title. It reminded me of a statement by Ko Nishimura, CEO of Solectron, who said: “Ordinary people can do extraordinary things in the right environment.” (Journal of Innovative Management, Winter 1998-99). Solectron, you may recall, won the prestigious Malcolm Baldrige National Quality Award—twice!

The authors, distinguished professors and researchers at Stanford University, emphasize that management in successful companies consistently and methodically do two things well, and they do them simultaneously: (1) They understand and treat people well. (2) They understand and manage the business operations well. And they do it as a living process, an evolution, a continuous journey through time. There is no final destination and there is also no standing still. It includes trial and error, ups and downs, and course changes. But most of all, to the contrary of most conventional wisdom about what makes organizations successful, it is a journey that rises or falls on the attitudes and behaviors (not just the words) of people toward other people, from top to bottom and side to side.

The beginning chapter, “The ‘Right’ People or the ‘Right’ Organization?” asks two questions: (1) Why are some companies able to succeed, often over long periods of time, in highly competitive industries, without having any of the usual sources of sustainable competitive advantage, such as barriers to entry or sources of market power? (2) Why do the competitors of these remarkable companies seem unable to copy what they did? (This second question seems especially interesting, considering the popularity of benchmarking over the past two decades.)

In the first chapter we're reminded of some current conventional wisdom: that the most important factor for success in today's knowledge-based economy is attracting and retaining great people. That may sound good, but only part of the solution, not the whole. What happens when those great people you've attracted and recruited show up for work? The authors tell us that companies:

“...need something else that is even more important and often more difficult to obtain: cultures and systems in which these great people can actually use their talents, and even better, management practices that produce extraordinary results from almost everybody. The unfortunate mathematical fact is that only 10 percent of the people are going to be in the top 10 percent. So companies have a choice. They can all chase the same supposed talent. Or they can do something even more useful and much more difficult to copy—build an organization that helps make it possible for regular folks to perform as if they were in the top 10 percent.” (Page 2.)

Now if you think that isn't possible you'll want to read the next eight chapters, which are a presentation of the company examples O'Reilly and Pfeffer have selected to demonstrate their thesis: Southwest Airlines, Cisco Systems, Men's Wearhouse, SAS Institute, PSS World Medical, AES, NUMI, and Cypress Semiconductor. The examples illustrate their primary thesis: the companies succeeded, “not by winning the war for talent but by fully using the talent and unlocking the motivation of the people they already have in the organization.” (Page 231.)

The final chapter, “Unlocking the Hidden Value in All of Your People,” wraps it all up. They are clear in saying that they are not offering a silver bullet. There is no such thing. Nor do they claim to have found the only correct answer. They are merely trying to show that “to the extent that any organization can truly unleash the hidden value in its people, it will increase its chance of success.” (Page 232.)

The authors document three common themes found in the successful organizations cited: (1) They have a well-articulated set of values that are widely shared. The values become the foundation for the management practices that build the core capabilities that in turn provide a basis for the company's competitive success. (2) Each organization has a remarkable degree of alignment and consistency in the people-centered practices that express its core values. (3) Senior managers, not just top management, are leaders whose primary role is to ensure that the values are maintained and constantly made real to all of the people who work in the organization. (Page 232.)

If you're someone who wants to open a rarely used portal and see what lies outside the box of conventional wisdom, you will undoubtedly find hidden value in spending time with this book.
Understanding the Process-Centered Organization

Introduction

A process is nothing more than a collection of tasks that link together to create an outcome of value for the customer. That's a very simple definition, but when organizations start organizing and aligning work, management, measurement, compensation, and responsibility around processes, very significant turmoil tends to result, because processes represent a very different way of looking at the world than the way most organizations are structured today.

When organizations take their processes seriously, a battle of the axes tends to erupt. Most organizations are traditionally configured around time-tested axes, such as geography (the eastern or western regions), business units, or functions. They are normally in a stable configuration of power.

Power typically flows around people, money, and/or management responsibility. When an organization starts adding process to the list of parameters by which they take things seriously, tension occurs, because in most organizations, power is a zero-sum game. If processes are becoming more serious and process jobs are becoming more significant, power flows out from other areas, and that creates an enormous amount of internal transition.

We have a lot of history managing functions, business units, and geography; we don't have a lot of history managing the organization through a process lens. For organizations to succeed at processes, it requires a context change. This is a change in how the organization is aligned and managed, which includes the high-level processes.

One thing that I won't say is that this transition is easy. In fact, it's often among the most wrenching revolutions I've seen large organizations take, moving from a traditionally vertical management approach to a horizontal approach, a more integrated, inclusive approach.

One way to better understand the idea of process would be to explore the ordering system in a large manufacturing company. From the time that an order is received to the time it is filled, it may flow through 25–30 different departments. Because most people inside the organization are focused on their own part of the system, most organizations do not manage this system as a seamless flow. Instead, they behave like medieval fiefdoms, with different departments at war with each other (see Figure 1 on the next page). The walls of the castles are very high, and we tend to know very well what’s inside our own castle, but not see what’s going on in the other castles. When the work inside our castle is completed, it is often launched by catapult to another castle, with little regard for how or where it will land.
Organizational fragmentation is the enemy of high performance, continued

Measures, compensation schemes, and management systems reinforce winning at this local “castle level,” but sub-optimize at a business unit or enterprise level. Conflicts occur when someone in the organization is forced to sub-optimize the whole to win at one of the parts.

Figure 1. The Fiefdoms in a Fragmented Organization

<table>
<thead>
<tr>
<th>Sales</th>
<th>Finance</th>
<th>Engineering</th>
</tr>
</thead>
<tbody>
<tr>
<td>Service</td>
<td>Distribution</td>
<td>Production</td>
</tr>
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</table>

Sub-optimizing to win at the local level can be very detrimental to the company as a whole. For example, a new customer said to a consumer product company, “If you can fill a test order fast, right, cheap, and easy, we have a lot of business we’d like to do with you.” The company started to expedite the order through the 25–30 parts of the order fulfillment process. But when the order landed on the desk of the transportation manager, he said, “It’s a small order; it’s less than a truckload.” Because the transportation manager’s behavior was measured and evaluated by full truckloads, he decided not to expedite the order. As a consequence, the customer was unhappy and the organization never received the rest of the business.

Fragmentation results in lost business

In a fragmented organization, nobody is thinking about how all the pieces of work come together. But the customer wants the parts of the organization to fit together seamlessly in one integrated, smooth, harmonious flow. What’s been causing performance issues (costs, delays, handoffs, incompatible measures, inattention to actual performance) in our organizations is that we’ve been living in a fragmented world with no clear overarching integration. We’re dealing with fragmentation, which is why process is the answer.

Process is the answer to fragmentation

We need process results, not just processes

A process is a set of tasks that link together to create an outcome of value. The most important word in thinking about process is result. We don’t need processes. We need process results. We need customers to get what they want when they want it. Processes provide organizations (that are taking them seriously) with an unrelenting focus on outcomes. Process really stands for “results that matter to customers.”
The customer comes first; shareholder happiness follows

Imbedded in the process perspective is the belief that customers come first. An organization has three constituencies that need significant attention: shareholders who provide capital, employees, and customers. While most organizations are concerned with shareholder value, those organizations that focus on processes say that customers come first. Focusing their organization on making customers happy creates, as an outcome, shareholder happiness. Shareholder happiness is an outcome, not an objective.

Process-oriented teams are good for business

Every organization has processes, and processes almost always require multiple disciplines working together. For instance, people from multiple constituencies participate in an order fulfillment process. But many companies have optimized performance to enhance processes and eliminate non-value-added activities (Figure 2). For example, Owens Corning Fiberglass has combined parts of their organization to create an order fulfillment process. The primary work of the order fulfillment process is done by an order fulfillment team with members who used to work in separate departments. Now they work together to serve the needs of the customer, so that when a customer calls with a question about billing, availability, usage, transportation, or delivery, they have one team to call, the order fulfillment team. The team is making it easy for customers to do business with Owens Corning.

The perfect order

The outcomes of a process need to be defined in terms of customers. For example, Owens Corning has one key measure, a perfect order, to define the performance of the order fulfillment process. A perfect order is the right product to the right customer at the right time, complete, with an accurate invoice. The team bears the entire weight of the entire measurement, because that's what their customer cares about, the perfect order. Consequently, the target outcome of the order fulfillment process is a perfect order.

IBM manages by process and business units

When I talk about process, I'm not talking about individual people; I'm talking about bringing multiple skills together to reach a few important outcomes. In the way that I'm using process, organizations typically don't have many processes. IBM, for instance, has seven global processes that define the key work that's done in every one of their business units. They have one set of processes, because they're very

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Figure 2. Recognizing the Enemy

Non-Value-Added Activities:
- Inspections
- Status reports
- Reviews
- Controls
- Audits
- Checking
- Rechecking
- Meetings
- More meetings
- Management
IBM manages by process and business units, continued

Customer focus is the first theme of a process organization

serious about presenting one face to the customer. They have one order fulfillment process worldwide. They're not defining the work by the people, or the origination of the work. They're defining it by the results.

Looking at the world through process eyes forces an intense focus on the results that cause us to do the work in the first place. Let me give you, as an example, the process of repairing home telephones at an unnamed telephone company. In the past, when you called this local phone company to say that your telephone was broken, the phone repair process was extremely frustrating. It involved multiple phone calls and a lot of waiting around for the phone company to respond. Today, when customers call, they are connected to a customer care advocate in an expedited way. The customer care advocate listens to the complaint, immediately runs a diagnostic test while the customer waits on the phone, and, if necessary, schedules a service technician to fix the problem. The phone call ends with either a fixed phone or a guaranteed visit at a time convenient for the customer.

What made the difference? At this company, they did a significant amount of reengineering, starting with the question, “what will make our customers happy?” They didn't think about the work until they defined the outcome. Once they realized that they needed to think about the results before they thought about the work, the solution was clear. The customer always benefits when we simplify the work and bring skills together, either through cross-training as we see here, or in integrated teams as we saw at Owens Corning.

The essence of a process is linking work together to create outcomes of value for customers. The themes that run across every one of the companies increasingly taking their processes quite sincerely are very few (see Figure 3). The number-one theme is a customer focus. In every industry, competition has gotten tougher. The

<table>
<thead>
<tr>
<th>Figure 3. Understanding Processes</th>
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<tbody>
<tr>
<td>The key themes of managing work as a process</td>
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<tr>
<td>• A focus on outcomes: holistic integration of multiple parts of a business through common goals and mutual awareness</td>
</tr>
<tr>
<td>• Discipline: structured design ensures work is done in a deliberate and replicable fashion</td>
</tr>
</tbody>
</table>

Process thinking focuses on:  
• the ends, not the parts  
• the ends, not the means  
• the customer, not the manager  
• the design, not improvisation

A process:  
• has a customer orientation  
• has precise end-to-end design  
• shows clear responsibility  
• has explicit performance metrics  
• exhibits a commitment to improvement
Customer focus is the first theme of a process organization, continued

beneficiaries of that competition are the customers, who can increasingly demand better products, better prices, and better service. The reason that Owens Corning has a perfect order as their measure is because, when their orders are on time and complete, their customers don't have to keep extra inventory or pay clerks to correct invoices, which lowers the customer's cost of doing business with Owens Corning Fiberglass. The intensity of competition is forcing organizations to find better ways to operate, which means focusing truly on customers and defining internal success by external success.

Process organizations also focus on the design of the work

The second theme of a process organization is discipline (see Figure 3), which means thinking hard about the design of the work, not just executing the work. In most organizations, the work is not well-designed or architecturally clear. Most work processes are messes, collections of system-, personality-, historical-, and organizational-inflicted changes. The focus of a process organization is not just on outcome, but it's thinking about a disciplined, well-thought-out way of getting work done consistently well across multiple locations and often across multiple business units.

Process organizations align behavior and process

A process turns a handoff into a flow, so process thinking is really thinking about the whole system, not just the parts (see Figure 3). Process organizations focus on the ends (the customer) rather than the means. They try to make their customers happy, not their bosses. And they're thinking about design rather than improvisation. The organizations that are successful at processes are those whose measurements, systems, and internal cultural behavior focus on customers, design, and aligning management responsibility to those processes.

Texas Instruments' analysis of their order fulfillment process

To ensure an outcome focus, organizations must move from the world of improving the work to thinking about how to manage it differently. For example, eight years ago, Texas Instruments was the least profitable computer chip-making firm in the industry, so they did an analysis to discover why. They found that there were 28 handoffs in their order fulfillment process from the time they received an order from their customer to the time that they were ready to make the chip. Of all the work in the front-end of the process, only 11% focused on the customer; the other 89% was non-value-added.

Texas Instruments reengineers the process

They decided to reengineer the process to improve cycle time. They realized that these 28 handoffs were not 28 individual parts, but they were one thing, an order fulfillment process. They changed the language of the organization and focused on defining success by measuring cycle time. Personal and organizational success was defined by speed. They compressed the entire front-end of the process into work for a caseworker, similar to the customer care advocate at the telephone company. The back-end of the process was changed to treat all of the manufacturing fabrication locations and warehouses as one entity with a virtual inventory, shipping and making parts wherever was best systemically rather than having locations.
Texas Instruments reengineers the process, continued

Sustaining high performance requires a change in management approach

Texas Instruments reengineers the process, competing with each other. Within two years, order fulfillment at Texas Instruments went from worst in the industry to best. The first year’s savings were over $130 million. Today, they’re over $1 billion in raw, bottom-line savings.

A process organization is an organization in which all processes are capable of sustained high performance. The key word here is sustained. It’s easy to improve performance once. The key is to find a way to allow processes to sustain high performance, to continually raise the bar, and to continually improve how the processes work. After reengineering, Texas Instruments realized that they couldn’t overlay high-performance processes on a functional organization. They had significantly improved the operational performances for order fulfillment, but they were worried about sustaining these high levels in the future. If they reverted back to their traditional management style, with broken up responsibilities and multiple measures, maintaining the improved performance would not be possible. They couldn’t operate better in the future unless they also changed how they were managed. They needed to become a process organization, not because they were attracted to organizational change, but as a way to continue operational improvement.

Process organizations think of work as a process

Process organizations are organizations in which work is thought of as a process. People are thinking about the process, which means they’re thinking about what work gets done before them and after them, and what happens to their work when it reaches the customer. When you visit a process organization, people are thinking laterally and horizontally instead of looking up and down. They understand the entire flow of work in front of them and they’re working in an organization where the work is well known.

American Standard reengineers to view work as a process

The order fulfillment process in a business unit of American Standard used to work with a lot of handoffs in an enormously complex set of flows. American Standard reengineered the process to include cross-functional teams working together. They now have an order management team to get all the information together, a materials process team to get the right part to the right place, and an actual production team.

When they started looking at work as a process, they decreased their order time from 30 or 40 days to 10, and their production cycle time to less than three days. This is a good business that is getting results because they’re looking at work as a process.

Reengineering around market and process

Like Texas Instruments, American Standard realized that they couldn’t sustain their improvements in a traditional way, so they re-organized (see Figure 4 on the following page). This unit of American Standard is a billion-dollar organization with no organizational charts or functions. It simply has four organizational layers: a business owner, process owners, sub-process owners, and process performers. The company is organized around markets and processes, with each order fulfillment process serving a different market. Their focus is on order fulfillment processes for these markets so that each market gets precisely the right product with the right
The stars of American Standard are the process performers

One of the things that accompanied the transition at American Standard was the belief that management is non-value-added. They had a lot of people watching other people do work, rather than actually doing work themselves. The ratio of frontline supervisors to frontline workers was about one to six. After reorganization, the typical ratio between the sub-process owners and the process performers is about one to fifty. The stars of this organization are not the managers; they’re the process performers who actually bend, design, position, and ship the product. This organiza-
The stars are the process performers, continued

Focusing on outcomes

American Standard has removed all of their handoffs, and their measurements are clear. Any one of their process performers in their manufacturing plants will be able to tell you who the biggest competitors are on the product line that they're working on and what the big trends are in the heating and cooling industry. Every work cell on the shop floor has a picture of the entire order fulfillment flow, highlighting where that particular cell is in the flow. They understand precisely every stop that the product has been to before it gets to them, and every stop that it makes on the way to the customer. Every process performer has seen what their product looks like in use by their customers. As a consequence, they're thinking about process all the time. It is brutally clear what's important in this organization. It's an organization that is very simply organized around process, and they're focused on creating an outcome.

Customer satisfaction is the aim of a process organization

In a process organization, everybody knows the organization's processes. Everybody knows where they fit in and what the customers want. Everybody's measured on processes, and everybody knows who the real enemy is, namely the competitor. Rather than looking up the organization ladder, everybody's head is turned out to making customers happy. Customer satisfaction is an organizational measure that connects the processes together.

One final example of a process organization

A final example of how a process organization can work involves Duke Energy, a large, successful utility company in the Carolinas. Until about four years ago, Duke Energy was organized into 14 regions. Each of those regions was led by a vice president. They had 14 vice presidents, 14 ways of scheduling business for customers, 14 ways of purchasing equipment, and 14 ways of evaluating people.

Duke reorganized to become a process organization (see Figure 5 on the next page). They have a process for developing market strategies, and processes in the field for getting new customers, making sure their networks of electrical power lines stay active, and delivering products and services. All of the employees in Duke are managed by four regional vice presidents. Process owners do not manage people, but rather spend their time thinking about how to improve the work in their process. For example, the process owner for Reliability and Integrity (preventative maintenance) is concerned with tree trimming as one of his sub-processes so that tree limbs don't take electrical lines down in a storm. Because he's not spending his time doing performance evaluations, hiring, or firing, he now has a lot of time to think about the very best way to get tree trimming done. The regional vice president listens to the process owner's process design because the process owner is budgeted for the process. If the vice presidents want to do tree trimming, they'll follow the process owner's design and get funded.
One final example of a process organization, continued

Duke Energy manages by process and geography

Duke Energy is a process organization where the process owners don't manage the people; they manage the design. Instead of coaches or Centers of Excellence, Duke has regions where the people are managed. It is an organization organized around both processes and geography.

High-performing processes

In reality, we don't want a process organization; we want high-performing processes. We need to focus unrelentingly on improving the way that we work, not on creating new organizational charts. We want to improve how we work, to think about how to make our customers happy by working better together. We want to take the cost, quality defects, time delays, and inefficiencies out of our system, but organizations are increasingly finding that they can't do that and leave the organization intact. To sustain process improvements, we are inevitably pulled to changing how we're operating and to creating management alignment around processes to improve how we work and to consistently get the results we're looking for. The path to improving the way we work lies not just in process improvement techniques, but in changing how we work, whether we're managing by processes and market as American Standard does, processes and geography as Duke does, or processes and business units as IBM does. There are a lot of ways to look at processes, but unless we change the way we manage as well as the way we improve, we won't get the kinds of results we're looking for.

Author information

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