

Creating a Sustainable Competitive Edge

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Editor's note

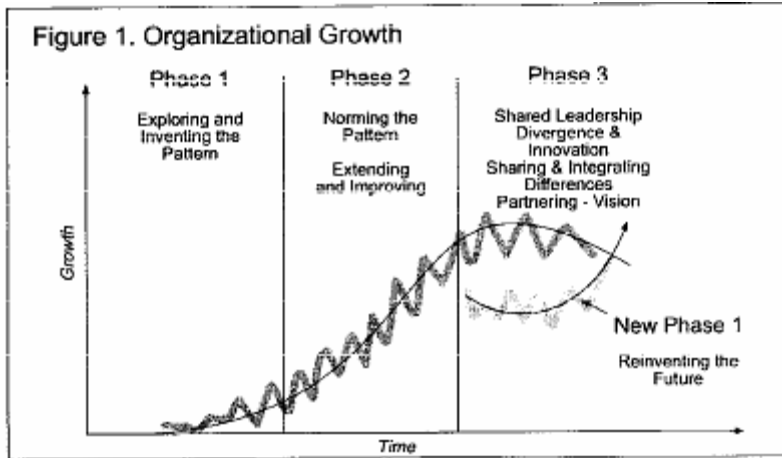
Many researchers agree that we are entering a period of discontinuous change that will transform our organizations and personal lives radically. This rapid, complex change is not predictable based on past experience, nor is it rational. This is the first in a series of articles written to help managers 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 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.

The pattern of change

Our company 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.

Characteristics of the s-curve

Growth is often plotted as the familiar s-curve. What I discover in my research on change was that cells, organisms, people, 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. 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 the pattern

Every system that we have investigated begins in a state of chaos, phase 1 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 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 2, 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 powers, 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 that point, a new problem will arise for the organization. If the system is really successful and saturates its environment, it will attract 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.

In the third phase the system or organization starts 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 which 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 such as, degree of value-added, integration with other offerings, margins, manufacturing fit, distribution fit and some others to decide what sense it made for them to continue to offer, 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 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: It’s important to learn fast in phase three, or you can fail

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 the 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 things, and learn from them. If you try new things in a changing environment the probability that you will make mistakes are 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 can they teach, have three criteria. (1) Learning mistakes are made in alignment with the organization's strategy. (2) The person who made the mistake must really investigate it. (3) The information must be shared with the organization. If those three conditions are not met, than 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 the one thing 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, like IBM moving from mainframes to PC. 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.

Reinvention and improvement must occur in different domains

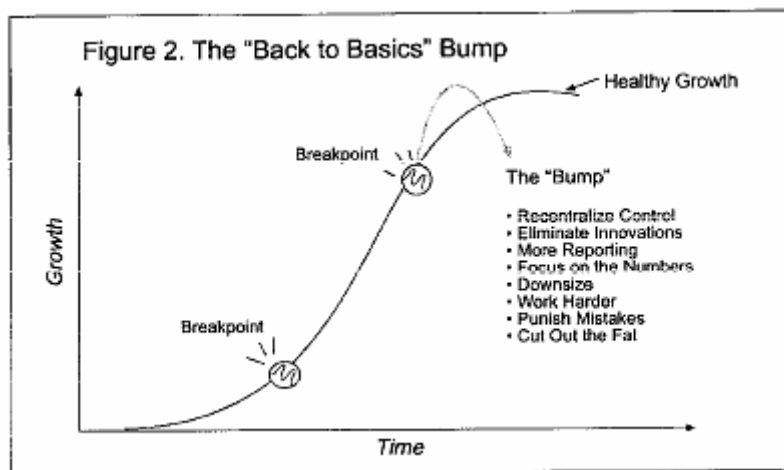
Today, managers find themselves in a business environment where they have to get serious about better managing this area "underneath the curve," (New Phase 1). In organizations and in nature, the activities represented by the upper and the lower curve happen simultaneously, but in distinct domains. Reinvention 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 downwards, 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 is best started 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 and resources to carry themselves through such a period. Many do not.

The “back to basics” bump

Unfortunately there are some maladaptive responses to the problems that occur in the second breakpoint—the declining market share, product extensions, and increased costs. One is 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 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. This “back to basics” bump, which leads to a more rapid decline.



Reduction of cognitive dissonance-“I’ll see it when I believe it”

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 the mechanism at work 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 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.

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 that values what we already know. Cultivate your curiosity about the world; it will help you move beyond this sense of loss.

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 people 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 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.

Managing a system by outcomes-Natural Leadership

Businesses can learn from other natural, self-organizing systems. Nature uses a model called *autopoiesis* in which the system is organized and run by outcomes, rather than the past events. Autopoiesis is a navigation mode (know where you are, where you are going, and make 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, rather from the past forward. BB&T, a small community bank that has grown from several hundred million to over forty billions 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 have experimented with corn to boost 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 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 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, 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.

Understand customer needs to value-price: 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 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 during the introduction process until the customers were totally satisfied.

Customers must understand their own needs

We have discovered that in order to develop a profound understanding of the customer's need, the customer has to be put into a situation where they can experience a profound understanding of their own needs. A number of organizations are providing imagination and creativity training for their customers to help them surface their needs and wants. This makes customers an active part of the development team. This technique can open up possibilities for whole new markets.

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

To create a future for their organizations, managers must:

- Create a shared and compelling vision of an ideal future.
- Make day-to-day-decisions based on that vision, not the past.
- Assure that all people have the opportunity to contribute to the vision.

Dr. George Land is an author, speaker, consultant, and general systems scientist with a broad and varied background in communications, business, education, and government. His learnings have formed the core of management 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 Universal Principle of Transformation, Random House 1973. His most recent book is Breakpoint and Beyond: Mastering the Future Today, which he coauthored with Beth Jarman.