Organizational Diagnosis

and

Change Leadership

A Short, Practical Guide

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Contents

Introduction: The Challenge of Complex Adaptive Systems

The average expected life of a newly launched company is well under ten years. In fact, only one third of companies survive to that age. As Bain's Chris Zook and James Allen note in their new book, <u>Repeatability</u>, "the extinction of once great innovators is less often caused by technological or market evolution, and more often by self-inflicted wounds and slow cycles of decision and adaptation." Yet a recent survey by Deloitte found that "60 percent of CFOs feared their strategies may not adapt well to changing business conditions" (*CFO Signals*, 3Q2011, U.S. CFO Program, Deloitte LLP). In the medium term, the most important enterprise risk management issue that companies face is their ability to adapt to changes in their competitive environment. In my experience, a superior ability to adapt is based four different factors:

- The ability to accurately diagnose and resolve problems that inhibit organizational performance;
- An understanding of the drivers of individual behavior, and how they can be changed;
- The ability to design and execute complicated organizational change programs;
- And conscious attention to the organizational design factors that naturally give rise to adaptation over time.

This short and hopefully very practical guide has a simple goal: to enable leaders to quickly strengthen their skills in each of these critical areas. It is based on the lessons I have learned over the thirty years I have spent as a management consultant and corporate executive.

Whether or not we do it consciously, our problem solving process usually proceeds through up to seven stages:

1. We allocate and direct our scarce attention, and observe a problem – i.e., an actual or potential situation wherein results would fall short of our goals.

2. We explain why the problem exists, by recalling or constructing a causal model of the situation.

3. On the basis of our explanation, we generate options/plans for improving the situation

4. We use our causal model to predict the likely impact of each option, or combination thereof.

5. We decide which option or options to initially pursue.

6. We implement our plan.

7. We observe the results, compare them to our expectations, and, if necessary, adapt our causal model and/or our plan.

Perhaps the most challenging step in this process is the second one – causal reasoning. I believe that an important source of this difficulty lies in the way we usually learn about this critical process. For most of us, this happens in the context of our earliest science classes, and later on, our exposure to the scientific method. In both, we learn about causation in the context of fixed, deterministic systems, which are usually characterized by relatively simple cause and effect relationships and hypotheses that are tested using experiments that are both carefully controlled and easily repeated.

Unfortunately, social systems, like organizations, industries, markets, societies, economies, and governments aren't deterministic. Rather, they are complex systems, in which effects have multiple interacting causes, which are often characterized by time delays and non-linearity. Moreover, they are also adaptive systems, populated by actors that modify their behavior over time in light of the effects it produces. One signature characteristic of complex adaptive systems (CAS) is that their effects are impossible to predict to anything close to the same degree of accuracy that is possible in deterministic systems (just to clarify, some

physical systems like weather are complex, but not adaptive; even with the best models and most powerful computers now in use, the accuracy of weather forecasts currently degrades sharply after seven days). Another is that many of the results they produce tend to follow an exponential (i.e., power law) rather than Gaussian (i.e., normal or bell curve) distribution.

Unfortunately, traditional (frequentist) statistical methods are often of little help in explaining the behavior of complex adaptive systems. In essence, these methods assess the probability of observing a certain pattern of data given a hypothesis about the true workings of an unchanging system that generates that data. Moreover, the frequentist approach to hypothesis testing often assumes that the results of the null hypothesis are random and normally distributed. Frequentist statistical approaches work very well in the case of physical systems whose operations do not change, and where the repetition of experiments can be used to test hypotheses. Unfortunately, the distinguishing aspect of complex adaptive systems is that their underlying data generating process is constantly changing. For this reason, and despite the invention of very advanced methodologies, the use of frequentist statistics for causal reasoning about complex adaptive systems remains very problematic, as can be seen in any review of organizational research that is based on this approach. In my experience, this methodological issue is one cause of the large gap that exists between academic researchers and practitioners in fields that are dominated by complex adaptive systems.

On the other hand, Bayesian statistical methods can be quite useful for analyzing causality in complex adaptive systems. Where frequentist statistics infer the probability of observing data assuming that a hypothesis is true, Bayesian statistics infers the probability that a hypothesis is true, given a decision maker's prior belief in the truth of the hypothesis (which can be based on experience, intuition, and/or previous analysis results) and the impact of newly observed data. Put differently, the frequentist approach focuses on the properties of a sequence of data, while the Bayesian approach focuses on the properties of a decision

maker's beliefs. While these may seem like somewhat arcane distinctions, they represent very different philosophies of causal reasoning.

As a practical matter, for people who have to make decisions about how to act in a complex adaptive system (i.e., a constantly evolving data generating process), the Bayesian approach (whether employed explicitly or intuitively) provides a much more useful guide that traditional frequentist statistics, not the least because it takes into account prior experience, intuition and analysis, as well as the results of the latest experiment. For the Bayesian decision maker, the critical question is "what is the probability I would observe this new piece of evidence if my hypothesis is true, compared to the probability I would observe it if the hypothesis is false?" The greater this "likelihood ratio", the greater the increase in the decision maker's prior probability/belief that the hypothesis is true. This Bayesian approach also helps a decision maker avoid information overload, buy focusing his or her information search on those pieces of evidence with the highest likelihood ratios. Put differently, if you are trying to fix the position of a moving target, you are more likely to succeed if you combine and update multiple sightings, rather than relying on just one. For this reason, the Bayesian approach is much more appealing to real world leaders who constantly have to make decisions in the face of considerable uncertainty and fast changing conditions.

In addition to Bayesian statistics, in my experience the study of history and literature can also help one to better understand and explain the behavior of complex adaptive systems. While history never repeats itself exactly, common patterns tend to reoccur, as do certain plotlines throughout the history of literature. Researchers have also found that the use of property designed simulations (i.e., that contain adaptive agents, and causal relationships that are time delayed and non-linear) can also help decision makers to develop a better "coarse grained understanding" of, and intuition about, the behavior of complex adaptive systems, and how their actions are likely to influence the results they produce. That said, and regardless of the methodology used, causal reasoning

about complex adaptive systems will always require a combination of intuition and analysis, and will remain a non-trivial challenge for decision makers.

Given this context, it is important to begin with a realistic set of expectations when we talk about diagnosing the root causes of organizational behavior, and leading the process of organizational change. Because we are dealing with a complex adaptive system, there will always be an irreducible amount of uncertainty associated with our explanations and predictions, even at relatively simple levels of analysis like a work team (the amount of uncertainty increases exponentially with the size of the system under consideration). Put differently, our causal models will always be incomplete, and our predictions imprecise. All our plans will require adaptation if they are to achieve their goals. Most people know this intuitively from experience. It is only recently that science has developed a matching analytical explanation.

Because of their complex, adaptive nature, I have found it very useful to use some simple checklists as a guide to initial hypothesis generation about the root causes of a given organizational problem. Checklists force you to think about a range of interacting causal factors, and ensure that you don't fixate on just one or two. So with that in mind, I'll move on to the first main topic of this guide.

Diagnosing the Organizational Root Causes of Performance Problems

Policies and plans are devised and implemented by organizations to achieve their goals. But what does that actually mean in practice? What organizational factors drive implementation? Broadly speaking, there are five of them: processes, systems, structure, people, and leadership. Let's look at each of these in more depth.

Process Design

A process is a deliberate sequence of tasks and decisions, which are intended to repeatedly produce a consistent, measurable result. Processes can be specified at different levels of aggregation. An example of a very high level of aggregation would be a company's value chain (e.g., production, marketing and sales, distribution, finance, information and communication technology, people, etc.). An example of a low level of aggregation would be the process for producing and distributing a store's monthly customer email newsletter. To achieve its goals over time, an organization typically has to design and consistently execute multiple interrelated processes.

Processes differ from projects. While the latter also consists of a sequence of tasks and decisions, projects are undertaken to produce a unique, one time result.

When confronted with results that fall short of a goal, the first question I ask is "can we describe the underlying process or processes that are involved?" People who have not been through a lot of performance improvement projects are usually surprised by the number of times that a team cannot affirmatively answer this question, or when it produces a range of conflicting answers.

While the focus of this briefing is organizational diagnosis, rather than design (or prescription, if we are in problem solving mode), let me digress just a bit to discuss a critical process design issue. In my experience, two questions are critical for every step in a process – and the answers tend to evolve over time.

The first question is whether a given step in a process should be performed by labor or capital. You can think of the latter in two ways. In some cases, it is quite a traditional question – for example, should a machine part be formed from metal by a skilled craftsman with a lathe and a file, or should it be done by a computer

controlled machine tool?   In today's world, however, "capital" needs to be interpreted more broadly, to include software. For example, lending decisions used to be made by human beings known as "loan officers" on the basis of (sometimes fallible) human judgment. Today a substantial portion of lending decisions are made by (sometimes fallible) algorithms. Or consider how much the process of checking in for an airline flight has changed over the past thirty years. In fact, as the Santa Fe Institute's Brian Arthur has noted, the parallel digital economy has been growing much faster than the physical economy with which we are far more familiar.

The second question is whether a process step that should be performed by labor should be performed internally or outsourced. In the education sector, we see this issue combined with the labor versus capital issue in the growth of online courses taught by world famous professors.

In my experience, there is no "right" or "wrong" answer to the labor/capital and insource/outsource questions. Rather, all leaders need to make decisions in a rapidly changing environment, where there are only two things they can count on: (a) in order to realize the full benefits of a technology, organization factors must also change, and (b) due to the speed of technological change, the right answer today may be suboptimal tomorrow. In short, we are living in the world of Alice in Wonderland's Red Queen, where "it takes all the running you can do to keep in the same place. If you want to get somewhere else, you must run at least twice as fast as that!"

Systems Design

I use "systems" as shorthand for what and how information is collected by an organization, how it is transformed, and when, how and to whom it the results are communicated.   The linkage to processes should be clear. The collection, transformation and communication of information often result from the execution

of processes, while at the same time information and analysis are critical inputs into many individual process tasks and decisions, as well as for integrating and coordinating execution across multiple processes.

When diagnosing the root causes of performance problems, it is usually helpful to ask, for each process task and decision, what information inputs are used, what analysis is performed, what information outputs are produced, and to whom they are communicated. While this can be time consuming, it transforms emotionally charged assertions, like "our problems are caused by poor communication" into specific issues that can then be discussed and resolved.

Organizational Structure

Broadly speaking, the structural root causes of performance problems typically fall into two interrelated categories. The first is job or position design. Conceptually, a "job" can be defined as a set of tasks that an individual must perform, and decisions they must make, over a given period of time (typically, a calendar year). In order to successfully do this, the job designer (on some basis) assumes that an individual must possess certain knowledge and skills, and sometimes values and personality traits. Evidence that a candidate possesses these qualifications is obtained through various means, including testing, evaluation of previous experience, recommendations, etc., and then often confirmed again during an initial post-hire "probationary" period. However, as we discussed above, processes themselves tend to evolve, in response to changing organizational goals, changing technology, and changing outsourcing possibilities. In turn, this usually triggers changes in the de facto task and decision requirements of many jobs, but not their official descriptions. This can generate high levels of stress for people holding these jobs (if there is a growing mismatch between their skills and the evolving requirements), which can manifest itself in poor process execution and/or higher levels of interpersonal conflict.

The second structural issue I have frequently encountered is problems related to the allocation of decision authority within an organization, and/or how that authority is defined. I have often found it very insightful to ask a group to write down a list of the decisions that must be made in their organization, as well as when and by whom. To make things even more interesting, I then ask who needs to be consulted by the decision maker before he or she makes each decision, and who must be informed after the decision is made. Almost without fail, this diagnostic activity finds a high level of confusion about how decisions are made in an organization, the required time frames in which they need to be made, and/or a very high level of perceived decision centralization, which typically comes as a great surprise to the person at the top of the relevant organization chart.

I trace the roots of this problem to the invention of email, and particularly the ability to easily "cc" and "bcc" large numbers of people. These magic letters have made it infinitely easier for those so inclined to evade accountability in the name of consensus, and anonymously stab colleagues in the back. In sum, organizational structural issues related to job design and decision authority are frequently very important contributors to performance problems.

People Issues

I long ago lost count of the number of times I've heard a senior manager tell me that the main cause of their performance problems are "people issues." Most often this is not the case, and the real root causes lie elsewhere. In my experience, most of the people you find in any organization have a similar set of goals, including being part of a talented team achieving success in the pursuit of a worthwhile purpose, achieving a sense of mastery in their work, performing it with a degree of autonomy, and being fairly evaluated and rewarded for their efforts and results. When there are problems in other areas – like process and

systems design, organizational structure, and leadership – they typically have a negative effect on the achievement of these goals, with the resulting frustration manifesting itself in a number of ways. For this reason, my first instinct is to treat "people problems" (e.g., problematic attitudes and behaviors) as symptoms rather than primary causes of performance problems.

For example, existing processes may be recruiting people to the organization with knowledge and skills that are inadequate given current job designs and technologies being used. Alternatively, existing processes may be recruiting people who are overqualified, given current job designs. Or existing processes may be providing ineffective training and development, and promoting people upwards into jobs they cannot perform to the standard required. Or current performance evaluation processes and incentive structures may be misaligned with the process and job designs. All of these are not uncommon problems that usually trigger "people issues."

That said, there are (thankfully rare) situations I've seen where a root cause of a performance problem is a true "people issue", involving factors such as changes in personality or mental health, or the development of stressors outside of work that adversely affect performance.   In these cases, well-established human resources processes can usually be used to confirm a preliminary diagnosis, and to provide an effective organizational solution.

Leadership Quality

Since humans first banded together on the east African plain eons ago, evolutionary selection has primarily operated on groups, not individuals. Teams win and lose. Companies succeed and fail. And nations and empires rise and fall. For this reason, effective group leadership is critical, and its absence is always a root cause of organizational performance problems.

To survive and thrive, every organization must competently execute four processes. Three of them are relatively easy to describe.

- Strategy is about sensemaking and design. The former seeks to identify the key elements in the situation facing an organization, how they are related, and how they are likely to evolve in the future. The result is assumptions that form the basis for the design process – determining how to achieve desired goals with available means.

- Execution implements this strategic design, by developing objectives, metrics, plans, budgets, processes, systems, organization and mechanisms to provide feedback and drive adaptation.

- Finally, risk management ensures survival by identifying and assessing risks and uncertainties, providing warning of adverse changes, mitigating and transferring loss exposures, and strengthening organizational resilience and adaptive capabilities.

However, excellent strategy, execution, and risk management alone won't deliver survival and success. They need leadership to integrate and animate them. But just what is leadership about?

At the most basic level, we need to distinguish between dominance and leadership. In some groups, a dominant individual will seize power and assert control. This is the world of animal herds, of palace intrigue, authoritarian dictatorships, and mafia families. However, while these situations all make for great television, dominance isn't leadership. Rather, over the years I've become more focused on the nature of leadership as a relationship – an honor that is bestowed upon a person by followers who are willing to place their trust in them.

The key question thus becomes what are the qualities in a person that cause others to trust him or her with the leadership of their group? Framed this way, the question becomes timeless, and as applicable to hunter-gather groups on the east African savannah eons ago, as it is to military, government, nonprofit, or corporate groups today. Based on my studies and experience over the years, I have concluded that a simple model captures the three key traits people require in order to bestow the mantle of leadership on someone.

- First, people look for integrity – confidence that a person will do the right thing, with the best interest of the group in mind, even when that may not be in the leader's own self-interest. As a practical matter, this integrity is embodied in the leader's behavior. For example, leaders with integrity a comfortable adding people more talented than themselves to a team. And when things go wrong, they take responsibility, rather than throwing subordinates under the proverbial bus, or blaming failure on unforeseeable events. Make no mistake: leadership is an honor that often requires sacrifice.

- Second, people look for competence – a leader must have the skill to assess a situation and either directly take, or indirectly organize, the sequence decisions and actions required to ensure the group's survival and the achievement its larger goals. A leader also needs to be able to perform under pressure, to be resilient when adversely surprised, and to have the grit and persistence to overcome obstacles. Finally, a leader has to strike an appropriate balance between the optimism needed to inspire their team, and the hubris and overconfidence that lead to failure.

- And third, a leader must have empathy for the people who have entrusted him or her with the leadership of their group. Leaders authentically care about their people. You can't fake this; evolution has endowed people with a very strong ability to tell the difference between leaders who are

authentic, and leaders who are putting on an act. For example, leaders with empathy don't hesitate to liberally share credit for their team's success. And while they praise in public, they only criticize in private, and only do so when they can provide constructive coaching and advice.

So far, so good. But I'm sure that some of you are thinking that there is still something missing from this description of leadership. I agree. There is one last element, and it is critical.

My father used to say that there are only three things a person leaves behind when they die: their children, their creations, and the impact of their actions. And when you are on your deathbed, looking back on your life, actions that serve no higher purpose than maximizing your own wealth and pleasure will look painfully small and insignificant. Most people know this, and either explicitly or intuitively want to be part of a collective purpose that is larger than their own pleasure, that gives meaning to their lives and the passage of time. This is the last aspect of leadership: the ability to define a noble purpose for a group, and to give meaning to every individual's effort.

Off all the words I've read about leadership, perhaps the most insightful were written by U.S. Army General Walter Ulmer:

"What is the essence of a 'good climate' that promotes esprit and gives birth to 'high performing units'? It is probably easier to feel or sense than to describe. It doesn't take long for most experienced people to take its measure. There is a pervasive sense of mission. There is a common agreement on what are the top priorities. There are clear standards. Competence is prized and appreciated. There is a willingness to share information. There is a sense of fair play. There is joy in teamwork. There are quick and convenient ways to attack nonsense and fix aberrations in the system. There is a sure sense of rationality and trust. The key to this climate is leadership in general, and senior leadership in particular."

While General Ulmer wrote these words in 1986, they are no less applicable today, when organizations need effective leaders more than ever.

Summary of Organization Diagnostics

Organizations are complex adaptive systems, which means that performance problems are almost guaranteed to have multiple root causes, some of which are time delayed and non-linear. At best, we can hope to identify many of these causal factors, even if we cannot fully understand the relationships between them, and how they give rise to the performance we observe. As human beings, we tend to be overconfident in our causal reasoning, and to fixate on a too limited set of root causes to explain an outcome. For this reason, checklists are often very useful means of forcing us to broaden our thinking, and identify a range of possible root causes for underperformance. In my experience, the organizational causes of performance problems fall into five categories. Process and system design, as well as organizational structure issues are all usually involved, and often related to deeper leadership problems. More often than not, alleged "people problems" are symptoms of these other issues, rather than true root causes.

Successful Change Leadership

In natural systems, successful adaptation is necessary for survival and success. Yet it also appears to be exceptionally difficult. Most evolutionary selection takes place <u>across</u> individuals and organizations, rather than within them, because successful adaptation <u>within</u> them is so difficult, particularly as they grow older, and especially when past behavior has brought significant success. For example, consider the distribution of the number of years new companies survive as independent entities, until they close, fail, merge, or are acquired. As is

typical for outcomes produced by a complex adaptive system, this distribution is exponential (i.e., geometric or power law) rather than Gaussian (i.e., normal or bell curve). Most new companies quickly disappear, and only thirty three percent survive for ten years or more. The key point is this: any discussion of change leadership has to begin with a realistic understanding of the challenge involved.

I will approach this issue on three levels: change at the individual level, intentional change at the organizational level, and design factors that promote adaptive organizations, with better odds of long-term survival.

Individual Behavior Drivers

The starting point for successful change leadership is understanding that in acting to achieve a goal, human beings proceed through many iterations of what the military calls the "OODA" loop, which stands for observe, orient, decide and act.

When observing a situation, human beings absorb sensory information on two levels. Direction of our conscious attention – one of our scarcest resources – is guided by our underlying mental model of the situation we confront. Depending on the sophistication of the user and/or familiarity with the situation (or with analogous situations), a mental model may contain up to three elements: At the lowest level, the key elements in the situation that must receive attention; at the next level, an understanding of how these elements are related to each other; and at the highest level, an estimate of how the situation is likely to evolve in response to different actions. At the unconscious level, we are also taking in information about the situation; however, this system is much more elemental, and is focused on aspects of the situation that represent threats to our survival, such as loss, uncertainty, isolation, or overt danger.

Similarly, when we orient on (i.e., make sense of) a situation, complex systems are at work. At the cognitive level, we use the same mental model that guides the allocation of our attention to give meaning to the sensory inputs we receive. At the emotional level, we experience fast reactions (often at the physiological, but not conscious level) to perceived threats, and somewhat slower reactions to the results of our cognitive processing. Research has shown that "emotional reactivity" differs across people, and is rooted in both personality and neurophysiology (e.g., the size of the amgydala region of the brain). Similarly, cognitive frames differ across people and are influenced by a range of factors, including intelligence, brain physiology, and our accumulated knowledge and experience. Finally, both frames are influenced by our current physiological state (e.g., physical exhaustion, and so-called "decision fatigue" which can result from making a large number of high stakes decision over a short time in the face of uncertainty, time pressure and information overload).

When it comes to making a decision about how to respond to a situation, in most cases human beings do not engage in a textbook process of multi-attribute decision making (i.e., generating options, deciding upon evaluation criteria and weights, and evaluating options). Rather, they first search their memory for an action that has produced acceptable results in the past in similar or analogous situations, then mentally simulate how it would turn out in the current situation. A key aspect of this simulation is the set of normative and institutional incentives and constraints under which the decisionmaker operates. If the result of mentally simulating a possible action is acceptable, the decision is made to take that action; if not, another action is recalled from memory (note that for frequently encountered situations – like those encountered while driving – this conscious simulation is often skipped, and the decision made automatically). This process of "naturalistic" or "recognition primed" decision making has evolved in humans over time, and has the critical advantage of conserving scarce cognitive resources. Most of the time, it produces acceptable result. Where it fails is when an inappropriate analogy is used, or when a situation is novel, and a course of

action must be developed more deliberately, assuming there is enough time to do so.

Finally, once an action is taken, randomness (i.e., luck) and the actions of other agents combine with our intentional behavior to produce a result, which is then observed and compared to the original goal, starting the iterative OODA process over again.

This very brief summary of the complex factors that give rise to the purposeful human behavior we observe around us highlights the points at which we can intervene to change it.

Intervention Points for Individual Change

First, we need to provide a motivation to change the behavior in question. To accomplish this, we can either call attention to the failure of current behavior to achieve an important goal, or, alternatively, we change an individual or team's goals to ones that current behavior cannot be expected to achieve.

Second, we can try to change an individual's mental model – the cognitive frame that determines the allocation of conscious attention and the meaning we derive from sensory inputs. In the case of small changes, this may be easy (assuming the individual respects the person proposing the change). However, when the proposed changes are larger most people will resist them, out of an innate desire to preserve the coherence of their current mental model. This is why so-called "paradigm shifts" take so long, even when, with hindsight, the evidence in their favor seemed to be so strong.

Third, we can try to change an individual's emotional frame. This is usually much more difficult. Personality tends to resist change, therapy takes a long time, and drugs have unpredictable effects. That said, some approaches, such as

biofeedback, mindfulness, and self-awareness training, sometimes seem to be effective.

Fourth, we can try to change an individual's normative frame. For example, different training approaches (e.g., simulation, wargaming, and case method teaching) have been shown to be effective at accelerating the development of an expanded range of action options a decision maker can recall from memory. Changing incentives and/or authority in a decision process can also produce a change in the normative frame. However, it is much more difficult to change responses to situations that have become automatic, whether at the individual or organizational level. This is one reason why expert advice often fails in novel situations, and why "cultural factors" (i.e., unquestioned behavioral norms) so often cause companies to fail.

In sum, human behavior emerges from a complex mix of factors that are often related in non-linear ways. The majority of these factors are extremely difficult to change. There are few leverage points for changing individual behavior are few, and even fewer still that have a reasonable chance of producing rapid results. On balance, at the individual level (and also at the organization level), behavioral patterns, once established and ingrained, tend to be highly resistant to change, which results in most of evolution's variation/selection/retention process taking place between individuals and organizations rather than within them.

Intentional Organizational Change Programs

These insights about the process of behavior change at the individual level underlie the framework I have used over the years to manage change programs in organizations. I have learned through experience that successful change is a complex phenomenon, which results from working hard to continuously ensure the alignment in an organization of four or five factors:

1. People must perceive a strong need for change. Before change can occur, people need to intellectually understand and emotionally fear the consequences of not changing the status quo.

2. However, fear can be paralyzing instead of empowering if there is no shared vision of where to go next -- an end-state that is emotionally desired. If need is about "change from", this is about "change to."

3. Critically, people need to rationally understand what must be changed in order to move from the current situation to the desired future state – i.e., the detailed sequence of actions that must be taken to get from here to there. I would also add that there is a particular subtlety here that is often the difference between changes that are sustained and those that are not. Simply introducing more consultants into an organization can temporarily cause behavior and results to change. However, sustainable change – improved results that continue after the consultants leave -- requires changes to what I call an organization's "hardwiring" – i.e., the design of its business and people processes, metrics and goals; the nature of its information systems; and the allocation of its decision rights and design of its organizational structure.

4. People also must feel confident they can make the changes that are required – i.e., that they have the right training and tools, and that they won't suffer negative consequences if a change they make doesn't immediately produce the predicted results. Put differently, as Michael Fullan consistently emphasizes, capacity building is usually a critical contributor to successful change. Confidence is also enhanced by widely publicized early wins, and positive reinforcement from key stakeholders. Both of these reinforce individuals' belief that the desired end state can actually be achieved, which in turn builds further support for change while accelerating its pace.

5. The last, and most difficult element of successful change is that it sometimes requires the removal from the organization of people who are unalterably opposed to making the changes that are required to improve performance. I am a firm believer in giving everyone involved in difficult change the proverbial "three strikes." Sometimes, however, people choose to use them all up. Provided that the termination process used is widely perceived as transparent and fair, the departure of such people generally does not detract from a change process, but rather often accelerates it.

A final point about complex organizational change programs is that it is usually worth the additional cost to establish a separate team to manage it. In today's world, most line managers' time is devoted to the day-to-day tasks and processes that are critical to delivering this year's results. Asking them to take on the additional task of managing a complex change program invites conflict, frustration, and failure. In addition, most complex change programs involve initiatives that cross current organizational boundaries, as well as complex sequences of actions. Both of these often produce challenges that are hard for line managers to address, but far easier for a dedicated cross-functional change team to meet.

Designing Adaptive Organizations

Most people know that evolution is driven by three processes: variation (i.e., the generation of new ideas), selection (the evaluation of new ideas) and retention (the implementation of selected ideas). As previously noted, the fact that most selection occurs across organizations suggests that the evolutionary processes often operate ineffectively within them. Put differently, in their striving to improve effectiveness and efficiency, many organizations seem to inadvertently reduce their ability to successfully adapt to changes in their environment (e.g., new competitors, technologies, customer tastes, economic conditions, etc.). The challenge for leaders is to design organizations in which adaptive changes

steadily emerge, to avoid the need to undertake high risk, complex change programs under crisis conditions. In my experience, this requires leaders to focus their attention on five different issues.

The first is how current capabilities are applied and improved on a daily basis. For example, to what extent are individuals and teams encouraged to be "reflective practitioners" of their work? What is the balance between emphasizing compliance with standard procedure, and encouraging experimentation and learning? Are people trained in how to conduct these experiments, and differentiate between those that successfully improve performance and those that do not? How is this learning captured and transferred to other teams?

The second issue is how an organization decides upon, and pursues the development of new capabilities, which typically requires greater resource investment than simply modifying the ways in which current capabilities are used. How are ideas generated? How are they developed and refined? How are decisions made on which ideas to initially pursue (e.g., how are intuition and analysis balanced? How big a role does internal politics play?) How does the organization choose between different approaches to capability development (e.g., acquisition, internal development, alliances, etc.)? How is progress monitored, and how often is it reviewed? Under what conditions is the development of new capabilities terminated? How are promising pilots scaled up?

The third issue departs from traditional approaches, and directly focuses on improving the adaptive processes that underlie the first two issues. This has been called improving an organization's ability to "learn how to learn." In many organizations, addressing this issue is extremely difficult because of the political and power issues involved. In my experience, many organizations underperform and eventually fail because they cannot successfully improve their ability to learn, even as the pace of change in their external environment accelerates.

The fourth issue has two aspects: the extent which internal performance measures are aligned with external selection criteria (e.g., those used by customers, investors, employees and regulators), and relationship between their respective target levels. Misalignment of these metrics and/or targets is a recipe for organizational failure. Moreover, the challenge is made more difficult because external selection criteria and acceptable performance levels are constantly evolving.

The fifth issue focuses on the balance between the number of an organization's internal and external connections. For example, the invention of email has sharply increased the number of internal connections between members of many organizations, and often resulted in slower decision making and information overload. At the same time, technology has also increased the number of connections that most organizations have with a wide range of external parties. Research has shown that the balance between the degree of internal and external connectivity affects the adaptive environment within an organization. Broadly, a complex adaptive system like a company exists in one of three states: a chaotic state, an excessively stable state, and a state in the region between the two, where the system is maximally robust and adaptive. Obviously, threats to the organization's survival are higher in both the chaotic and excessively stable states, where the system is either over or under-reacting to changes in its external environment.

When an organization has a denser network of external connections than internal connections, it will tend toward the chaotic state; when the opposite is true, it will tend toward excessive stability. Only when internal and external connectivity are roughly in balance will the organization move towards optimal robustness and adaptability. This view gives rise to some very practical system level early warning indicators of organizational health. A high number of "fire drills" generally, and, more specifically, an increasing number of operational "near

misses" and errors of commission are indicators that an organization is approaching or in the chaotic state. In contrast, rising levels of strategic surprise and errors of omission are indicators associated with the excessively stable state.

A Final Word of Caution

Most people overconfidently believe that change is easy, whether at the individual or organizational level. Yet all around us, every day, and year in and year out, we see an abundance of evidence that contradicts this view. The reality is that change is very hard, whether one directly attempts it or seeks to create a highly adaptive organization that consistently generates, selects, and implements value increasing ideas.

While leadership optimism and confidence are critical inputs in successful change programs, leaders need to recognize that most people and organizations find change extraordinarily difficult.   That is why, for example, so many relationships run into problems, and why the average lifetime of companies is well under ten years. This is not to say that adaptation is impossible; however, it always requires a lot of hard work, and careful, conscious attention to the underlying organizational drivers if it is to succeed. Hopefully this brief overview will help you and your organization to meet that challenge, and successfully adapt to the continuing evolution of your competitive environment.

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