A model for improving business performance:
How to simplify the complexity

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Throughout prior articles, we have addressed the need to focus on our individual role in the change process (internal) as well as the need to understand the complexity of the world in which businesses are operating (external). In this article, we will introduce a model that brings these ideas together, enabling you to begin your journey of making improvements - not only in your leadership role - but in aligning the organization to solving the right problems, which is critical for survival. This model utilizes the concepts of changing habits (personal and organizational) and complexity theory (Cynefin framework) for making change that will be effective and sustainable. In this article we will address:

- How the natural order of the world is to increase complexity

- How our unquestioned assumptions make things more complex

- The importance of selecting areas of the business where stability can (should) be achieved in order to reduce complexity

- A description of a framework for making change that is grounded in complexity theory and will create stable and sustainable processes

The natural order of the world – increasing complexity

Take a moment to reflect about what the world was like decades ago vs. today. Nearly anywhere you look, you will recognize that the world you live in today is significantly more complex and is operating at a faster pace. In the Harvard Business Review article, "Managing Complexity to Drive Performance Improvement", Mark Gottfredson and Darrell Rigby
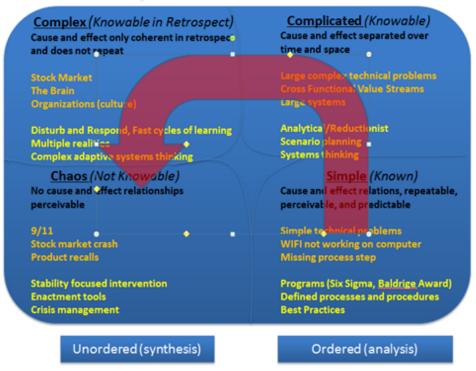
identify *Product (more products offered to customers)*, *Organization (adding/changing people and functions)*, and *Process (more process steps)*as three elements that are typical of increased complexity. We believe *Regulation (more controls)* is another element that adds to complexity.

Dr. W. Brian Arthur, an economics professor from Stanford, suggested in an article written for Scientific American that complexity emerges from the cycle of attempts we go through in order to make improvements. People naturally react to deficiencies in a current situation by adding work-arounds, which seem to fix the problem according to their limited viewpoint. Over time, with more fragmentation and work-arounds, the process becomes so complex that no one individual can understand the whole process. Special efforts will have to be made to reduce all the added complexity and simplify the process. But if this is done without clear understanding of how to design for simplicity, it often makes the situation worse, adding to the confusion. The cycle of adding work-arounds begins again. The reason for increased complexity is our desire for improvement and our inability to understand how to make these improvements without increasing complexity.

The Cynefin Framework revisited

The Cynefin Framework helps us to understand the natural process of increasing complexity. Processes in companies go through the cycles of adding steps and reducing/changing resources; over time moving from being simple and knowable to complex and unknowable. The red arrow below shows the natural evolution from simple to complex processes.

Cynefin Framework

Complex *(Knowable in Retrospect)*
Cause and effect only coherent in retrospect
and does not repeat

Stock Market
The Brain
Organizations (culture)

Disturb and Respond, Fast cycles of learning
Multiple realities
Complex adaptive systems thinking

Complicated *(Knowable)*
Cause and effect separated over
time and space

Large complex technical problems
Cross Functional Value Streams
Large systems

Analytical/Reductionist
Scenario planning
Systems thinking

Chaos *(Not Knowable)*
No cause and effect relationships
perceivable

9/11
Stock market crash
Product recalls

Stability focused intervention
Enactment tools
Crisis management

Simple *(Known)*
Cause and effect relations, repeatable,
perceivable, and predictable

Simple technical problems
WIFI not working on computer
Missing process step

Programs (Six Sigma, Baldrige Award)
Defined processes and procedures
Best Practices

Unordered (synthesis)   Ordered (analysis)

Early in the life of an organization, when it begins delivering products or services to customers, the elements are controllable because the company is still small. Under these conditions, the processes are stable and produce high quality deliveries. As the product demand grows, the response is to add people, departments, and more controls. The simple processes become more complex, moving through the complicated quadrant into the complex quadrant. Over time one will observe more errors, more cost, and longer response times because of the increased complexity that emerges from adding the layers of people, departments, paperwork requests, etc. within the company.

A case study of increasing complexity

We had an opportunity to work with a company in the financial industry several years ago. The company had grown significantly over the last 15 years, adding many resources and

increasing the number of functions in order to meet the demand of an increasing customer base. They added people and departments to manage the risk, which inadvertently increased the opportunity for errors in the database that holds the customers' accounts.

The specific area we addressed was in software development. At the time, there were nearly 2000 software development employees creating new features and functions for their customers. The process we examined was providing secure disc space for the programmers to write their programs. Over the period when the company growth was the greatest, the time required to provide secure disc space increased from about one week to 4 months. When we examined the process further, we found that the series of tasks expanded across 14 separate departments and required 21 documents to be filled out, with significant redundancy. All of this work resulted in a 4 month lead-time (from request to disk space available). This increase in complexity was caused by the business growth, quick blanket solutions of adding people and functions, and the concept of attempting to control each step of the process by adding levels of bureaucracy (like filling out 21 different documents). We engaged the operators in a Value Stream Project and within 60 days of the event, they were operating the same process with a 5 day lead-time, as compared to 4 months, and had redesigned the process to use a single document to flow through the appropriate functions, eliminating the rework and redundancy. Ultimately, the process quality improved significantly which minimized risk to the customer

Taking control in a complex adaptive world

Is it possible to regain control of processes that have moved into the complex quadrant? The answer is yes, but it takes some special care to overcome the natural cycle. We are not recommending a program approach like quality circles or Six Sigma. We are approaching the

change process with a new mindset of solving problems within the complex adaptive systems. Change needs to take place by;

- selecting a few critical processes

- engaging the people who are doing the work in that process by creating understanding of the overall complexity

- having the people re-design the process and

- having them experiment with changes that create stability and simplicity

Next, we will describe a model that will help you create the mindset and build organizational capability to simplify your complex processes.

Overview of a model for simplifying complex processes

The first aspect is to focus on a ***particular business problem*** that your company is facing that it needs to address in order to survive. It is very common to work on a problem that has no real significance to the outcome and survival of the business (i.e. reorganization of responsibilities, implementation of new technology, etc.). The key is to figure out what challenge the company is facing that is absolutely critical for survival. Learning to choose these problems effectively will help to improve problem solving thinking and keep you from overburdening your people with too much work.

The second aspect is to focus on ***engaging people*** (at all levels of the organization) to work on solving this problem. You cannot assume that people will just start working on the problem because it is important. You will need to make sure you have delegated the right problem to the right person at the right level in your organization. You will need to coach and mentor them, and ensure that they are practicing ***effective problem solving***.

Start small. Focus on one small group within the company and begin to develop their problem solving capabilities. Other departments will watch the changes in this group and slowly begin to learn from them. Do not try to change the whole company at once. Resist commanding your solution on the organization. Allow the people to become involved in the improvement process by involving them in the problem solving process. Your job, as a leader, is to guide the process and coach your people in effective problem solving.

In previous articles we discussed the power of habit and that the only way to eliminate old habits and replace them with new, more effective, habits is to consciously practice and run experiments. While you engage your people in carefully selected projects for improving business performance, you will need to practice developing new habits for yourself and your people. We have identified four areas of practice that we are calling the Four Arts.

The Four Arts (practice areas to grow the capability of simplifying complex processes)

While you maintain your focus on the business problem and the engagement of your people, you should be practicing the Four Arts. The first three are observations from behaviors of Toyota and the fourth emerged from the Cynefin framework.

1. Practice effective **problem solving**. Improve your ability to a) define a problem, b) break down the problem to identify the critical process areas, c) effectively apply countermeasures and test their effectiveness, and d) implement standards for continuous improvement. ***Break the habit of imposing quick solutions to problems that increase complexity***

2. Practice **designing value streams** that are focused on providing customer value. The value stream should FLOW from start to finish with no rework and no delays, making it efficient and effective. The value stream should expose problems immediately so that the

operators and support people can correct the problems in real time. The people who work in the value stream should be controlling the processes and making continuous improvements based on their in-process measurements. ***Break the habit of expecting results without a deep understanding of the value stream that is producing the results.***

3.   Practice creating a **different relationship** between you, the supervisor, and your employees. In order to fully engage people in taking personal responsibility for their part of the problem situation, you cannot take the position of knowing more than your employee. Learn how to ask questions that are open ended and intended to uncover the thinking of your employee. Learn how to grow their problem solving capability. ***Break the habit of thinking you know more about the problem situation than your people.***

4.   Practice **managing organic change**. You should begin to think differently about how to enact change in companies – not based on command and control mentality – but based on complexity theory and evolutionary processes. Select a small area to practice the problem solving, engaging employees, and value stream design. Recognize that you are learning a new way to address problems that are in the "Complexity" quadrant in the Cynefin diagram, and that you are learning new skills for moving the value stream to stability. ***Break the habit of imposing blanket solutions across your organization as if it is operating in the "Simple" quadrant.***

References

Manage Complexity to Drive Performance Improvement – Mark Gottfredson, Darell Rigby

Why do Things Become More Complex, May 1993, Scientific America Magazine – Brian Arthur