

MEMO TO THE CEO

Winning in Turbulence

The Power of Managing Complexity

BY

Mark Gottfredson and Darrell Rigby

PREVIEWS THE FORTHCOMING BOOK

Winning in Turbulence

BY

Darrell Rigby

Bain & Company, Inc.

PRE-ORDER THE BOOK ON [AMAZON](#)

JOIN THE CONVERSATION AT [HARVARDBUSINESS.ORG](#)

Harvard Business Press
Boston, Massachusetts

ISBN-13: 978-1-4221-4047-5
4048BC

The Power of Managing Complexity

DOWNTURNS REVEAL a company's weaknesses. An organization that seemed nimble and focused during a period of expansion may be sluggish and ineffectual when faced with declining demand. Its very survival may depend on determining which products are making money, what customers really value, and which organizational bottlenecks are getting in the way of effective action.

One major cause for this sluggishness, in our experience, is complexity—product complexity, organizational complexity, and process complexity. In good times, all three are likely to increase. The costs of complexity are usually hidden, so executives are often unaware of the magnitude of the problem. When the downturn hits, they may be unsure how to tackle it. They often fail to identify the short-term actions that can reduce costs and create flexibility so the company can adjust to the new market conditions. They may also neglect the longer-term steps necessary to balance complexity reduction with innovation as the company pulls out of the downturn and begins to grow again.

Managing complexity brings significant benefits in a relatively short time. One of the world's largest natural-resources companies, for example, began its corporate life with only a handful of operations in just a few countries. But as the company grew into a worldwide enterprise, its complexity grew even faster. Costs spiraled out of control, safety procedures were sometimes ignored, and the company's financial performance suffered. A diagnostic assessment revealed huge opportunities for improvement from complexity reduction. The company found that it had no fewer than 483 process improvement projects in the works—and that only 25 would deliver a significant impact. Acting on these and similar findings, the company was able to boost operating income by more than 20 percent.

The “Zero-Base” Approach to Complexity

The challenge with managing complexity, of course, is that some complexity is necessary and advantageous, even in a downturn. For example, country or regional business units are closer to the ground than headquarters is and are more likely to know what customers want. It takes a complex organization to provide enough local autonomy so products or services can be tailored to those customers while still taking advantage of global scale. But that kind of complexity can be vital to sustain sales through a recession. A similar challenge arises when companies struggle to balance complexity and innovation. Adding new products, services, features, and options creates complexity of all sorts. But companies become leaders by offering customers new choices, and in a downturn, innovation may be a company's salvation. (Consider where Apple would be today without iTunes and the iPhone.) The key is not to eliminate complexity but to balance its benefits with its costs.

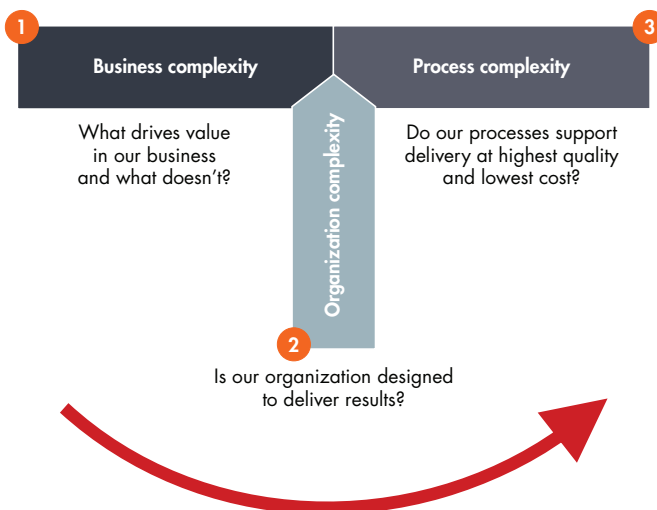
A useful way of analyzing the level of complexity in your company—and separating complexity that's beneficial from complexity that hurts the business—is to begin from a base of zero. Imagine, for example, that your company produced just one product or service with no options or varieties, sort of like Henry Ford's classic Model T. A manufacturer with only one product would still need a supply chain, a factory, a distribution network, and a sales-and-marketing function. But it could greatly simplify its IT systems, its distribution and sales efforts, and its forecasting. One plant manager with whom we discussed this exercise was bringing in fifteen planes full of parts almost every day just to be sure he could meet the next day's production schedule. In a Model T environment, he noted, “All those costs would disappear instantaneously.”

The point of the exercise, of course, isn't to go back to the days of the Model T—which, after all, succumbed to the greater variety offered by General Motors. The point is to determine your zero-complexity costs and then assess the costs of adding variety back in. In a tractor plant, for example, you wouldn't need a scheduling system for one or two models, but you probably would for four. Often the cost curve has just this kind of “knee”—a step change triggered by adding one more model or level of variety—and you can determine whether moving beyond the knee is worth the additional expense. You can also assess the benefits of innovation and determine the focal point where a given innovation overshoots what most customers want and are willing to pay for.

The key task—more essential than ever in a downturn—is to manage these balance points, keeping costs low while maintaining the level of variety and innovation that customers value. For example, you might decide to eliminate individual options and instead offer customers a small number of configurations that include the most popular features. Thus Honda's CRV comes in just 8 configurations and 13 interior/exterior color combinations, for a total of 104 possible build combinations, with no other options available. This is far fewer choices than most cars offer, yet the CRV is the hottest-selling vehicle in its class.

FIGURE 1

Managing complexity: A zero-based approach in the right sequence delivers sustainable results



Similar kinds of analyses can diagnose organizational and process complexity. We've found that companies get the best results by attacking product complexity first and organizational complexity next and only then focusing on process complexity. (See figure 1.) The reason is this: complex processes often reflect unnecessary product variety or poor organizational design. If you attempt to simplify a process without changing product or organizational complexity, you find even more complexity cropping up in some other process area. It's like trying to make a balloon smaller by squeezing one part of it—another part just gets bigger.

Let's take a closer look at each of the three areas of complexity.

Product Complexity

Unnecessary product complexity means offering products, services, or options that relatively few customers want. Most companies, of course, like to give their customers choices. But managers often overestimate buyers' wants and willingness to pay for all those choices. Sometimes, indeed, it's obvious that companies have carried innovation too far. In 2006, Nestlé introduced a wide array of new variations on its basic Kit Kat candy bar in the United Kingdom, including passion fruit and mango flavors. But the introduction of so many varieties had exactly the opposite effect from what the company hoped: customers were turned off, and sales dropped 18 percent in the course of the year.

A diagnosis of unnecessary product complexity often turns up room for rapid improvement. A major U.S. industrial company, for example, was in its own acute downturn a few years ago: competitive pressures had slashed its operating profits by more than half in less than six months. Analyzing its SKUs, the company found that 80 percent of SKUs contributed only 20 percent of revenues. Needing quick results, it took a three-pronged approach to reducing this complexity:

- *"Drain the swamp."* The company evaluated each SKU through three lenses—customers, operations, and products. Which were most important to major customer segments? Which fit best into the company's operations and product lists? When it dropped an SKU, the company armed its salesforce with alternative products to offer major customers as replacements. These actions enabled it to reduce SKUs by 20 percent immediately—and it ended up adding back only two out of the five hundred that it had eliminated.

- ***“Make the best of what’s left.”*** The company then actively attacked complexity in its remaining product portfolio. Within days, it established higher order minimums, longer lead times, and larger production runs. Another quick hit: outsourcing low-volume product families. Over time, the company reassessed other make-versus-buy decisions and established different service levels by customer and product group.
- ***“Fix the shop floor.”*** With a less complex product line, the company set about streamlining its operations. For example, it reduced the number of low-volume products running on high-volume equipment. It cut back on products with inherently high scrap rates or inherently short lead times and products that required specialty materials or processes. It also began altering design specifications so it could make more individual products on the same platform.

These complexity-reduction efforts boosted operating profits by about 2 percent of sales—and about 75 percent of that improvement was achieved in the first year. Even more important, they helped create a nimbler organization, one that could respond rapidly to changes in the marketplace.

Organizational Complexity

As a company expands its product variety or moves into new markets, managers are likely to add organizational complexity. For example, they may try both to maximize scale and to stay close to the customer. Pursuing both these objectives often leads to complex matrix structures, duplicated costs at different levels, and a lack of clear accountabilities. Each decision to add an organizational layer may make sense, but few companies in good times assess the overall impact of these decisions on organizational complexity.

In a downturn, however, the performance burden of an overly complex organization becomes a major disadvantage. We have found three specific areas that provide a quick payoff in terms of nimbleness and the ability to focus.

- ***Increase spans and remove layers.*** Unnecessary hierarchy contributes to a number of ills, including excessive head count, inflexibility, slower decisions, and a lack of accountability. “Delaying” can help address all these issues. Companies typically begin by determining the average span of control (the number of employees assigned to any one manager) and the number of layers between the CEO and front-line employees (or between the head of a function and the lowest-level person

in the group). They then compare those figures to the competition. A U.S. pharmaceutical company, for example, found that competitors, on average, had 4.2 individuals reporting to each manager in their research function and 6 layers overall between front-line employees and the CEO. Its own organization, by contrast, had only 2 research employees per supervisor and an average of 8 layers from top to bottom. Just getting its organizational structure in line with the competition allowed the company to save as much as \$500 million a year.

- *Eliminate decision complexity.* Decision paralysis is another pitfall of complex organizations. We'll address this point in greater detail in a subsequent chapter on strengthening the organization in a downturn. In brief, however, many companies suffer from unclear decision roles and processes. This is bad in any economic climate, but can be particularly damaging in a downturn. A tool we call RAPID—for recommend, agree, perform, input, and decide—can help cut through the mess. Take the case of U.K. department store John Lewis. Managers there realized that their product line was too complex—for example, they stocked nearly fifty SKUs of salt-and-pepper mills, while most competitors stocked around twenty. When they tried a new, leaner range of options, however, sales declined. The trouble was this: buyers had expected to maintain the same amount of shelf space and believed the final decision about space allocation rested with them. But merchandisers, who in practice made shelf space decisions on the floor, had reduced shelf space along with the number of SKUs. By clarifying decision roles between the two groups—in this case, that buyers “had the D” (decision authority) on shelf space but needed to seek input (I) from merchandisers—the store was able to maintain the original shelf space with the new range of products. Sales climbed well above original levels.
- *Establish accountability for orphaned costs.* In complex organizations, it may be unclear who is responsible for any given operation, and scrutiny may often be lax. This leads to “orphaned costs”: routine costs that are unaccounted for and unmanaged. The magnitude of these costs can be startling. At the natural-resources company we mentioned earlier, investigation determined that there was little or no accountability for approximately 40 percent of the company's overhead costs. Simplifying the organization helped the company attack this problem. For

instance, it eliminated redundant finance organizations' operations and clarified the responsibilities of those that remained, ensuring that accountabilities for every cost line were clear.

Each of these measures has its own payoff; together they help create an efficient organization that can move swiftly and focus on the most important activities rather than spinning its wheels.

Process Complexity

Companies that do attempt to manage complexity usually begin with processes, often through efforts such as "lean six sigma." Typically the emphasis is on how companies can execute all their current operations faster and with fewer resources. But that's the wrong place to start. The natural-resources company, remember, had 483 separate process-improvement projects in place. But the whole collection didn't add up to much, because the company had not yet attacked product and organizational complexity. Reducing process complexity should be a company's last step. Here's where to begin the final step:

- *Look for the process improvements that add the most value.* Some processes are obviously critical in any business. A retailer having trouble getting the right mix of products on its shelves, for example, needs to address merchandising right away. In a downturn, the decision about which processes to tackle should be governed in part by how long it will take to yield results. Fixing an inefficient product development process might take years, whereas fixing a poor inventory-management process might take only a few weeks. Companies can then focus on process improvements that promise the biggest returns. The natural-resources company found that 110 of its 483 process-improvement projects were redundant or unjustifiable. Among the remaining 373, it identified 90 that had significant merit. Management then evaluated each of those and narrowed the group down to the 25 initiatives that were likely to generate the most value. These are now closely tracked by a project management office.
- *Cut through the data clutter.* The natural-resources company also looked into the information and metrics it used to manage the business and discovered that people were drowning in data they weren't using.

By determining what kind of management information it truly needed to run its business, the company found it could reduce its volume of reports by 40 percent in one major business unit. That not only accelerated the decision-making process, it also liberated employees to focus on the activities that matter most to the business and saved \$10 million. In cutting through the clutter, you may discover both too much data and a lack of consistency from one data set to another. At a telecommunications company, key metrics like the number of fixed-line customers differed depending on the data source used. And each silo within the business used a different set of data, one that supported its own view of the world. The new CEO at this company had to find out which of the sources of data most closely reflected the truth and determine which methodologies should be used for calculating key performance indicators.

That, of course, is the ultimate reward of complexity management. Companies can focus only on the products that are most important to their customers, saving the costs of unwanted production and boosting the margins of the best sellers. By streamlining their organizations they make better, faster decisions, exert tighter control on costs, and can quickly reduce unnecessary head count. Managing process complexity helps companies see where they are overspending and allows them to track performance more effectively. All these complexity-management efforts help a company become lean and flexible enough to adjust to the changing market conditions in a downturn. It pays off again when the economy improves and a company has stripped out enough complexity to accelerate quickly out of the downturn.