THE TOOLS OF SYSTEMS THINKING

When you use systems thinking, you start to see the invisible forces acting upon your organization. Small signals become more important; symptoms become relegated to the background as you identify underlying causes. You see patterns of recurring behavior reinforced by either positive "learning loops" or negative "ignorance loops." You come to understand the importance of constantly challenging assumptions. And you appreciate that one can neither be too hasty nor too slow. Timing is everything.

Symptoms vs. Systems

When you encourage people to use systems thinking, you're asking them to explore and identify the underlying forces at work rather than focus on the superficial symptoms. The table below shows some examples of systems thinking "lenses" through which you can view your organization and its environment.

SYSTEMS THINKING LENSES

LENS	WHAT YOU SEE	
	"SYSTEMS" PERSPECTIVE	"SYMPTOMS" PERSPECTIVE
Customers	Shifts begin in specific segments	New, old, desirable, expendable
Competition	Shifts in market positioning and branding	Size, proximity, growth, threat, opportunity
Technology	Shifts in technology driving new business models	What's working, what's broken, what do we need
Operations	Performance measures that integrate and align (e.g., balanced scorecards)	Different processes, work units, people
Management	Leading through purpose, core values, vision	Managing by objective
Partners	Synergies (or non-synergies)	Desirable, expendable

Most people become accustomed to focusing their attention in just a few places—on the competition, for example, or on technology. When you use systems thinking, you take a more holistic view. Using a systems perspective you also discover there are fewer variables to juggle. As you step back and view things from a longer time scale, you find it easier to pick out the critical issues to deal with. The result is a more balanced perspective, clearer thinking, and stronger leadership.

Systems Thinking Examples

Systems thinking means having the ability to view things in different time scales simultaneously and thus resolving the paradoxes between them. For example, we were asked to facilitate the transformation of a blighted urban neighborhood. We invited a number of "experts" to offer their views to a panel of residents. A city planner looking at the neighborhood told them that crime could be reduced by building new housing units. A group of residents argued strenuously that the key to saving the neighborhood was reducing drug dealing in the park. A cop testified that reducing crime would require a year-long undercover surveillance effort.

When we introduced them to systems thinking, everyone agreed that the ability to transform the neighborhood depended on attracting new residents. They also agreed that the best way to do that was for the neighborhood to develop a deeper sense of its own identity and ownership. From these insights, a new neighborhood association was born, with 80 percent of residents taking part in regular meetings. A revitalized neighborhood watch group sprung up. Within a year, developers started constructing new housing units. Crime went down. People began returning to the neighborhood, buying properties. Neighbors celebrated their success with a huge street fair. The mayor hailed it as a model of downtown renewal. It made headlines in the daily newspaper.

These are the kinds of results that emerge from systems thinking.

When Darwin Smith first took over at Kimberly-Clark, he found a company thoroughly convinced that its future lay in the paper manufacturing business. Its culture framed its thinking in terms of production quotas and downtimes. He credits the tough conversations he had with his executive team, and the insights they reached together, for leading them to a different framing of their future – to exit the manufacturing business and excel in the products business. Kleenex and Huggies were the outcome of that vision.

HSBC Bank's global operations are guided by systems thinkers like Iain Stewart, who can integrate the immediate priority, such as resolving back office processing problems, with the long-term vision to become "the world's local bank." Says one of his senior managers, "Iain's blessed with a toughness and an ability to analyze problems that few leaders I've worked with possess. He doesn't stop at the first or second level of analysis. He pushes to the third level – where everything is integrated."
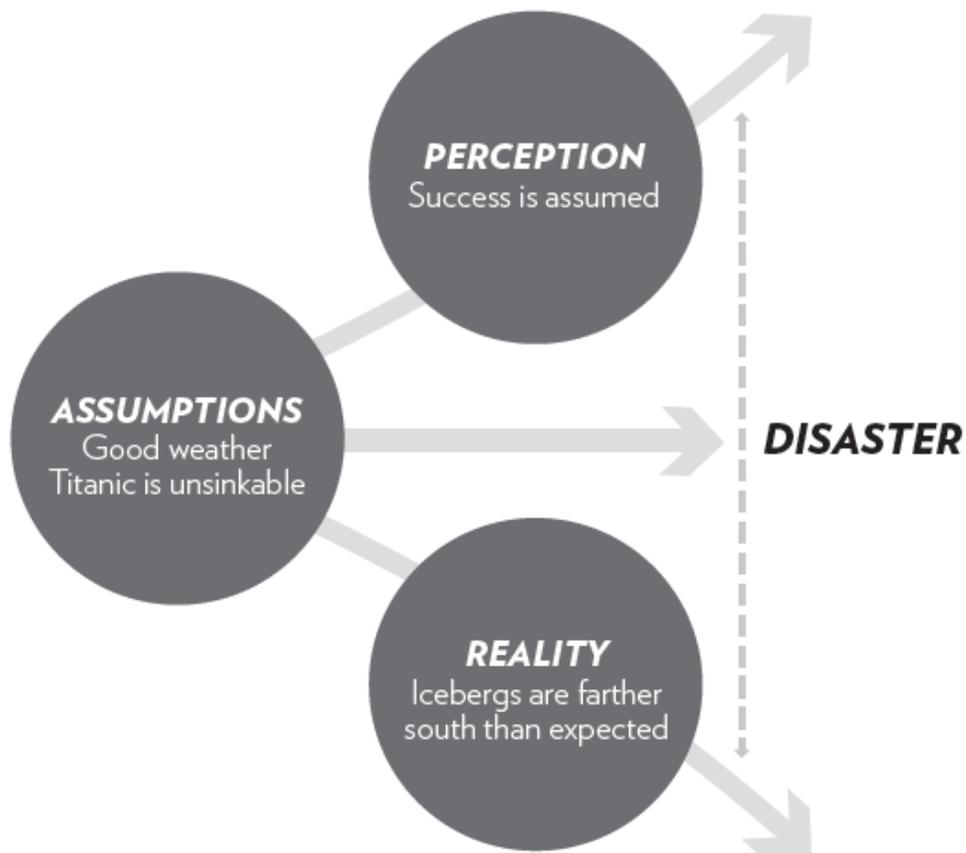
When Systems Thinking Frames Collide

Here are more examples that may help you see the benefits of systems thinking. When the *Titanic* set sail from England, the engineers who designed the watertight bulkheads assumed that the hull would never be breached across multiple compartments below the waterline. This led to the popular illusion that the *Titanic* was unsinkable. Thus, for its maiden voyage, the ship carried only enough lifeboats to handle a small emergency evacuation.

In addition, weather reports at the time indicated the weather was better to the north and that there was no danger from icebergs. So the captain sailed a more northerly course to avoid inclement weather to the south. The owners of the *Titanic* wanted the ship to make the crossing in record time, which motivated the captain to sail at high speed through what turned out to be an iceberg-riddled ocean.

The story of the *Titanic* illustrates two types of errors – both precipitated by "ignorance loops." The first is *feedback delays.* The weather reports upon which the captain relied were based on anecdotal evidence from a ship that had sailed three weeks earlier. The second is *assumptions of causality.* It was assumed that watertight doors caused the boat to be unsinkable. But in reality, the watertight doors couldn't handle certain scenarios – including the gash in the bow that caused water to invade several compartments simultaneously.

FEEDBACK DELAYS ON THE TITANIC

PERCEPTION
Success is assumed

ASSUMPTIONS
Good weather
Titanic is unsinkable

DISASTER

REALITY
Icebergs are farther
south than expected

Feedback delays are all too common. It would be absurd to drive a car down a street and respond to a red light fifteen minutes after it occurred. Yet companies rely on two-year-old market research to determine whether their products or services are well-positioned to meet consumer demands. When Disney made a huge investment in Go.com, it gambled that it would be able to make a significant dent on the emerging internet search market, then dominated by Yahoo. But as AOL-Time Warner had already discovered, the internet search business is a brutal marketplace – where content providers are penalized if they give preference to their own content. Disney's investment turned sour and it later sold go.com for a fraction of what it paid. Consumers simply weren't behaving the way disney assumed they would.

Assumptions of causality are also common. When videocassettes were introduced, it was assumed that the number of movie theaters would decline. Instead, home video viewing sparked an increase in overall demand for movies. There was a causal connection, but the underlying assumption was 180 degrees off.

The best way to cope with feedback delays and assumptions of causality is by encouraging people to challenge each other's assumptions – including top leadership's. At the CIA, a preliminary national intelligence estimate (nie) is put through the wringer of an all-day grilling in which senior officers do everything they can to poke holes in it. if the initial estimate survives, then it is forwarded to higher ups.

3 Challenges to Maintaining a Systems Perspective

Watching leaders and managers in action, I've observed that there are three major challenges to maintaining a systems perspective.

First, because we live in an era of accelerating change, it's easy to become distracted by the daily influx of events and issues – "to spend 24 hours a day fighting fires," as the vice president of a health care system told me. Almost by nature, people tend to focus on the things right in front of them: on the people who aren't performing, budgets that aren't met, or logistical issues that need attention. It's easy to become bogged down in the details and forget to use systems thinking to create leveraged solutions.

Second, people don't get training in systems thinking. Few companies offer it. Few human resource managers recognize its value. It simply isn't a priority. As a result, there is no forum, no conversation, for leaders and managers to engage in systems thinking together. Lacking a dialogue around systems thinking, it's easy to miss the opportunities and the benefits.

Third, aside from getting distracted by day-to-day details and the lack of training, it's human nature to avoid confronting deeply-rooted problems. "There are some issues I'd just as soon leave alone," one manager said. "We have to pick our battles."

That may be human nature. But a leader's attention has to be focused through a systems thinking lens. Failing to listen to data, to challenge assumptions, or to use systems thinking to address underlying issues ultimately imperils the organization. One need look no further than General Motors, Lehman Brothers, or Enron. In contrast, think about Porsche, which has single-mindedly focused on engineering high-quality cars for

five decades. Porsche has consistently been one of the most profitable automobile companies in the world. And, not surprisingly, managers at Porsche put a premium on core values, on disciplined performance, and on analyzing their customers and their competitors from a systems perspective. It's this kind of thinking that builds high performing organizations in a time of accelerating change.

Systems thinking helps people address hidden issues. When leaders use different frames to identify problems, when they understand traps like the assumption of causality, feedback delays, and the substitution fallacy, they can steer clear of problems and focus their attention where it can have the greatest impact.

Leaders who understand their own mental maps and the system of forces acting on their organization are better able to tackle problems at their core. By defining the underlying problem accurately, they minimize wasted effort, create leveraged solutions that result in continuous improvement, and build high-performing organizations.