

Problems with a Life of Their Own

One of the 8 problem types defined on www.problemsolving2.com, a website created by Jerry L. Talley.

These pages outline the essential nature of the problem and the best process for addressing it.

Definition	<p>Whenever we have a large number of actors, each pursuing their own notion of “success”, there is a potential for Problems with a Life of Their Own. Such complex adaptive systems typically show emergent behavior, which is neither predictable from the actions of individuals, nor is it necessarily the intent of the actors. (See notes below for more examples.)</p> <p>The “problem” and the “solution” are recursively linked; one cannot be defined or explored without impacting the other. There are perplexing circular causal chains, often with time lags that obscure the link between cause and effect. As a result, effects of change efforts are often unpredictable and out of proportion to the effort.</p> <p>Change efforts cannot be withdrawn. There is no experimentation; any changes alter the system in irreversible ways. There is often mysterious resistance to even obviously beneficial change. The “change agents” are <i>in</i> the system, not outside of it; their behavior (even their curiosity) is an event which changes the system.</p> <p>Problems of this sort most commonly result from the dissonance between the intentional, purposive systems of an organization vs. the emergent, organic systems that are outside our conscious intent or control.</p>
Examples	<ul style="list-style-type: none">● Oscillations in complex supply chains● Addressing a sour company culture● Any market phenomenon, such as attracting sufficient staff in a tight labor market● "Gaming the system" (California's energy providers?)● Quarter-end spikes in customer demand and, hence, in production workloads● Increasing size of sales force leads to reduced sales?!● Using the Federal tax code to influence investment, savings, and spending habits which spawns a new set of financial strategies which drive the need for more controls● The arms race
Challenges	<ul style="list-style-type: none">● Gathering useful information on disparate portions of the system (which is usually beyond the grasp of a single individual)● Working with an unknowable system● Cultivating an appreciation for the dynamics of an open, complex system: circular causality, symptoms far distant from causes, homeostasis● Keeping decision-makers from taking hasty or domineering action● Getting decision-makers to acknowledge their role as part of the problem (maybe even the cause)
Definition of Good Outcome	<p>The key players understand the independence and the complexity of the system. Their change efforts are temperate and partial, that is, they leave room for the system to act and react to any behavior before rushing ahead. They pursue an iterative cycle of discovery, design, and implementation that "nudges" the system rather than comprehensive attempts to control or drive it; solutions emerge out of the system rather than being imposed on it.</p> <p>Often there is “healthy behavior” somewhere in the system; it is easier to nurture existing positive behavior than it is to introduce new behaviors. The best outcome may be the one already existing, but dismissed as an “exception”.</p>

False Solutions	Assuming the problem is a person, a simple skill, or poor motivation. Corrective efforts have a negative, but delayed, impact on the desired outcome; as a result, problem solvers continue to do the very thing that maintains the problem (e.g., " <i>The beatings will continue until morale improves</i> ")
Typical Identification Errors	<ul style="list-style-type: none"> ● Some (seemingly) complex adaptive systems may be simple enough (once understood) that they can be treated as Puzzles instead. If the system is well bounded, causalities are simple and linear, and the elements are easily identified, it does not justify the extra conceptual overhead of considering it as a system. Manufacturing lines, for example, are often visible, simple systems that can be treated as a Puzzle. ● Some situations are so confusing or overwhelming that we just assume it must be a "system problem". Confusion in the mind of the observer does not constitute evidence that you are dealing with a complex system.
When to Exit	<ul style="list-style-type: none"> ● The system is so weakly connected or so vulnerable to outside turbulence that it is more likely to dissipate than evolve in a positive direction. ● The system is so densely connected that the slightest change produces chaotic reactions. ● The surrounding environment is changing more rapidly than the system can adapt. ● There is a strong likelihood of mass extinction.

Examples of Emergence:

The notion of emergence is central to Problems with a Life of Their Own – and it is not easily grasped. A marketplace is the emergent event stemming from individual buyers and sellers. Corporate culture is the emergent event stemming from thousands of individual interactions. Consciousness is the emergent event built on the interactions of billions of neurons. The flocking of birds is an emergent event. The stability of a hillside ecology is the emergent result of the daily lives of birds, squirrels, insects, plants, and the weather. In nature we see emergent events as "natural", but in human interaction we often attribute some causal agent that we assume is creating the order. In most cases, the order is without purpose or agency, despite its power and organization.

Emergence also implies that complex adaptive systems are organized on many levels. Within a company, we can explore the behavior of individuals, teams, departments, divisions, the whole company, its place among vendors and competitors as a segment of the economy, and even greater levels of organization. Each level is the emergent event built on the behavior of the previous level. For example, interdepartmental cooperation is a property at the departmental level; the secret to changing it may be one level down. That is, we may have more leverage on interdepartmental cooperation if we explore how individuals make choices which create the emergent event at the next higher level.

It is this "order for free" that makes this class of problem so difficult. There are natural mechanisms that generate unexpected and highly sophisticated patterns of behavior. The complex adaptive system creates the internal momentum and coherence that makes these patterns stable, even resistant to change.

The assumption of some causal agent often sends people looking for "who is accountable" or "who is in authority". In the case of complex adaptive systems, no one is in charge. There is no single person who can "flip a switch" and make things different. In all likelihood, their attempts to do so will only drive the system into some other, perhaps more caustic state.

Process for Problems with a Life of Their Own

Leader in the System	Individual Contributors in the System	Neutral Party Outside the System
	<p>Problems in this class have two classes of players: the principals currently “in” the system, and the change agents “on the fringe” of the system (but vulnerable to being pulled in).</p>	<p>Being “outside the system” is sometimes an illusion.</p>
<p>Exploring the Problem</p>	<p>The leader needs to be open to the fact that their attitudes and actions are part of the system, not separate from it. The leader is not “driving” the system, they are “in” the system. They do not “run” the system; they “ride” it.</p> <p>Clarifying a problem with a life of its own requires a new mindset. Defining a system (its elements, boundaries, and dominant dynamics) is extremely difficult from the inside. Principals have to be content with partial descriptions and open to continual revision and enhancement. When the problem is well defined, it will be recast as a symptom embedded in system dynamics. The probable causes may well be distant in time and space.</p> <p>Action oriented discovery:</p> <p>A key step in a successful solution is to identify the evolving entity. Is it individuals making minute-by-minute choices? Is it project teams allocating resources? Departments? Project Managers? Where is the person / group / relationship / interface that is shifting in response to the environment? That is the driver of the system.</p> <p>The appropriate style of exploration is action-oriented. In a complex adaptive system (CAS) the evolving entity is engaged in minute-to-minute action research, scanning their environment for clues, framing hypotheses for future action, and then learning from their environment’s reaction to new behaviors. A good discovery process mimics that process by asking about anticipated actions rather than simply exploring perceptions. Rather than asking “What’s frustrating in your work environment?” we ask “What have you thought of doing to improve your work environment? Why do you think that action would be beneficial? What assumptions are you making that lead to your proposal? What would be a first step we could try to test out your hypothesis?”</p> <p>A CAS system is never fully understood, but we can take modest actions and see how the system reacts. Action oriented discovery is aimed at identifying those first steps.</p>	<p>The greatest contribution of a neutral party is in their fluency in systems thinking. Someone who can keep the group humble in the face of the system can be a great help.</p>

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<p>Considering Options</p>	<p>With a systems mindset, the focus will shift to derailing key system dynamics or supporting system health rather than driving a total solution to the symptom.</p>	
	<p>Lean Design:</p> <p>Since a system can (and probably will) generate its own responses to solution attempts, a good strategy will look for small but provocative changes. Given the ability of systems to maintain a stable state (homeostasis), wholesale efforts or major programs are not high leverage strategies.</p>	<p>A facilitator can support this phase by tempering the push for total, immediate solutions and pulling for small, well targeted actions instead. The need is to provoke the system in a desirable direction rather than drive it the whole distance.</p> <p>The tempo of change is much slower, although more effective in the long run.</p>
	<p>While we are often tempted to do something dramatic, the most powerful changes may be the most subtle. A recent client was facing a significant hiring program that would leave 50% of the employees with less than 2 years tenure within a short time. Fearing for the dilution of their culture, they designed a massive new hire orientation program. As you might expect, it was highly unpopular with the managers who were desperate to get new employees on the job and productive. Our proposal was to simply give the new hires distinctive red colored badges. Tell people to be on the lookout for red badges. We made it "normal" to walk up to a red badge and introduce yourself. We asked managers to scan for red badges in meetings and make sure people were introduced. Does having a red badge solve the problem? Of course not. But giving people a red badge and highlighting them nudged the culture to adopt new behaviors.</p>	

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<p>The most dangerous actions from the leaders in a problem of this type is taking some abrupt, precipitous action. Out of frustration or a false sense of simplicity, leaders sometimes “take decisive action” and merely plunge the system into another round of reaction and recalibration.</p> <p>Implementing Solutions</p>	<p>Within a systems perspective, action planning is necessarily short-range. It is impossible to predict any medium- or long-term sequences when system dynamics may rewrite the script early on.</p> <p>Interactive Implementation:</p> <p>Monitoring progress means looking for emergent events and unintended consequences more than checking for “progress against plan”. It is actually more important to look for system responses to small efforts; they might provide a clue about where to support the healthy dynamics of the system.</p> <p>Putting any change into effect in a CAS will provoke the system to respond. Homeostasis is the capacity of systems to remain stable despite fluctuations. Many change efforts can be absorbed and neutralized within a CAS. So implementation has to anticipate a certain amount of systemic resistance. So we tell new hires that “Of course a red badge won’t magically take care of all your needs. We will want to know what else you need after a week, or a month, or a quarter. Then we can fill in the missing pieces for you.” In other words, resistance and even failure is labeled as ‘normal’ and ‘expected’. People in the midst of the change effort have more than a binary choice of “support the change” or “be cynical”. They are asked to engage in an ongoing conversation about the change effort and how to adjust it for more effectiveness.</p>	<p>This process recycles back onto itself. The subtleties surfaced during implementation lead to a new set of questions, which takes us back to action-oriented discovery. Like the CAS itself, the process of change is circular rather than linear.</p>