

## Systems Thinking & Problem Solving:

(Understanding Our Most Important Messes)

Values, Purpose, Vision to Behavior; Strategy: Look for the Loops

From Causal Loops to Action;

Characteristics of Collins' Catalytic Mechanisms

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## Values, Purpose, Vision through Organic Processes to Results

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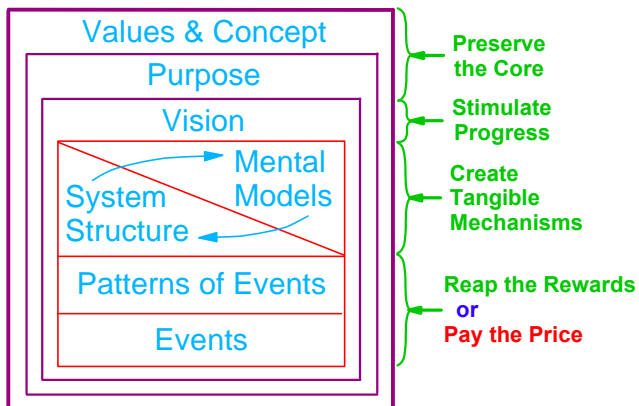
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## Levels of Perspective



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## What about Vision and Mission?

### Vision includes:

- Core Ideology
  - Core values
  - Core purpose (mission)
- Envisioned Future
  - A major 10-30 year goal, a hoped-for outcome (a BHAG for "Big, Hairy, Audacious Goal")
  - "vivid description" of the desired outcome and/or company to convey a picture charged with emotion
- Provides inspiration and guidance for alignment.

Collins & Porras, "Building Your Company's Vision," Harvard Business Rev., Sep/Oct 1996

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## Values, Purpose, Vision

- Values: What do we value?
- Concept: Who are we? If this is our value, how do we act? It informs our "winning strategy," our mental model of how we must act in pursuing safety & success.
- Purpose: Why do we exist?
- Vision: What do we want? The two Vision components:
  - Outcome: What outcome do we desire?
  - Vehicle: What will our organization look like?
- Structure/Mental Models: The structures (interdependencies and policies) and beliefs that support us in acting in a way consistent with our Values in pursuing our Purpose on the way to our Vision.

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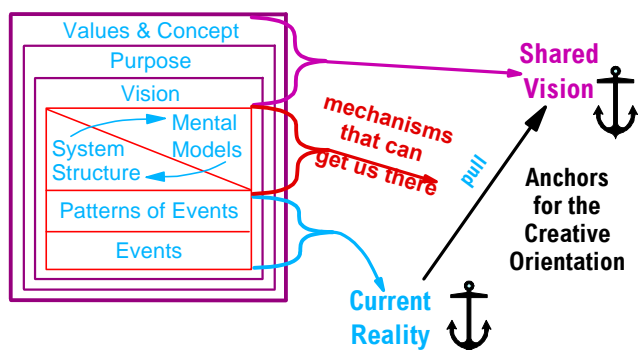
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## Creative Tension & The Hierarchy



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## Look for the Loops

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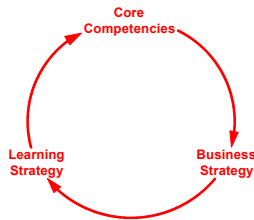
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## Mechanistic vs. Organic Learning Strategy

### Mechanistic Strategy



### Organic Strategy



"Charting a Corporate Learning Strategy,"  
Darling & Hennessy,  
1996 Systems Thinking in Action Conf.

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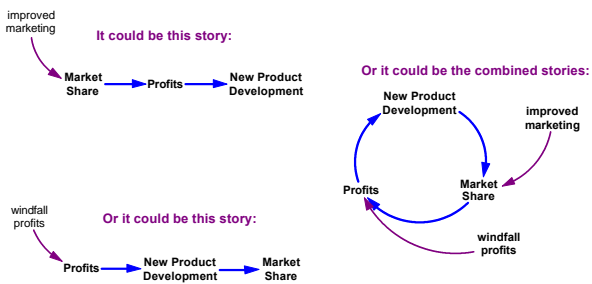
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## Strategic Stories ... linear to loops



Gordon Shaw, et al., "Strategic Stories: How 3M is Rewriting Business Planning," HBR, May-June 1998

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## Collins' essential characteristics of a catalytic mechanism

- **Characteristic 1. It produces desired results in unpredictable ways.**
- **The results appear unpredictable because our intuition in dynamically complex systems is poor, though our intuition can be improved with experience. The systems thinking and system dynamics literature is full of what have been described as counterintuitive behaviors in social systems.**

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## Collins' essential characteristics (continued)

- **Characteristic 2. It distributes power for the benefit of the overall system, often to the great discomfort of those who traditionally hold power in the system.**
- **In general this depends on the Values, Purpose, & Vision (VPV) that are being supported by the mechanism. Some VPVs might not lead to distributed power.**
- **Yet, perhaps this is specifically true for mechanisms which are effective in improving overall system performance because, while we are able to influence dynamically complex systems, we cannot control them. Centralized power just isn't as effective.**

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## Collins' essential characteristics (continued)

- **Characteristic 3. It has a sharp set of teeth.**
- **Effective mechanisms are those that provide long-term improvement, as opposed to short-term relief. These are painful because we observe "worse before better" behavior in systems undergoing transformations that benefit long-term performance.**
- **This is the root of the addiction problem; it requires discipline to endure the short-term pain in order to gain the long-term payoff. Or more generally, we require discipline and/or a "sharp set of teeth" to enforce discipline.**

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## Collins' essential characteristics (continued)

- **Characteristic 4. It attracts the right people and stimulates the ejection of viruses.**
- **Effective mechanisms make it particularly painful for those who do not believe in the VPV of an organization. They leave and others are attracted who do.**

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## Collins' essential characteristics (continued)

- **Characteristic 5. It produces an ongoing effect.**
- **The effect is ongoing because the power of reinforcing and balancing feedback mechanisms is their persistence over time ... they are not a one time occurrence.**
- **This is the "clock building" metaphor in Built to Last is so appropriate: the combinations of gears in a clock (the reinforcing and balancing feedback processes) keep turning to tell the time (produce the behavior we desire).**

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## Questions at the HBR web discussion on Collins' catalytic mechanisms.

- **Question: "If catalytic mechanisms are powerful and effective at helping us get beyond rhetoric and to stimulate significant and tangible progress (which the evidence suggests), then why are true catalytic mechanisms so rare? Why is it difficult for people and organizations to create and install them?"**
- **They are rare and difficult to create and install because the systems way of thinking, & the language necessary to support the thinking, are "unnatural;" as Nigel Nicholson observes, we did not evolve with the tendency. A good thing about humans, however, is that we can change what's natural; we can learn to be systems thinkers.**

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### Questions at the HBR web discussion (continued)

- Question: "Granted that 'nothing ventured nothing gained,' I am keen to know if in your catalogue of catalytic mechanisms there are examples of organizations having implemented catalytic mechanisms that pass every test of the criteria that catalytic mechanisms have to fulfill but yet failed to produce desired result or worse still backfired and bombed!"
- This is common when organizations don't stick with it to get through the initial "worse before better" behavior. People tend to see the immediate negative impact of effective mechanisms as an indication of policy failure and give up.
- This is why it's so important to understand the structure of the system and estimate the delays required for the positive benefits of the policy to appear.

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### Questions at the HBR web discussion (continued)

- Question: "It seems to me that the greatest thing for a leader would be to find some way to create one "meta" catalytic mechanism that leads others in the organization to come up with new mechanisms. Some sort of a "clock" for continuously stimulating the creation of new mechanisms. Do these exist? Is it feasible to create these?"
- This "meta" mechanism for creating stimulating the creation of new mechanisms is systems thinking. It helps organizations dialogue about and think through proposed ideas and design effective organic processes that achieve the desired system behaviors.

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### Questions at the HBR web discussion (continued)

- Question: "The article talks a lot about catalytic mechanisms and their relationship to BHAGs (Big Hairy, Audacious Goals). I would be interested in exploring more how catalytic mechanisms relate to an organization's core ideology, more specifically the values that an organization hold."
- Built to Last makes clear the value of Values and Purpose and the need for tangible mechanisms to support them.
- Systems thinking is the way to design those mechanisms, mechanisms that should reinforce the "How do we act?" "Concept" statements associated with each Value.

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## Questions at the HBR web discussion (continued)

- Collins' Notes: "The following has become clear since the publication of the article: there is an interesting relationship between information and knowledge and catalytic mechanisms.
- A good catalytic mechanism helps you make the shift from information to information \*that you cannot ignore\*. A customer survey system, for example, gives you knowledge and information about your customers, but short pay gives Granite Rock knowledge and information \*that it cannot ignore\*.
- The problem in most companies is not that they lack information or knowledge (there is little evidence that high performing companies have more information and knowledge than their mediocre industry comparisons); the problem is that they don't pay attention to the right information or act on what they know. Perhaps, then, there can be a useful link between "knowledge management" and catalytic mechanisms.

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## Questions at the HBR web discussion (continued) - Comment

- This point underscores
  - the need to understand the feedback loops and delays in the system; and
  - we need to have the right information, that is, measures that truly indicate the "real health of the system," as opposed to the "perceived health of the system."
- Without measures that gauge the behavior of the feedback loops in the system, we create "management misinformation systems."

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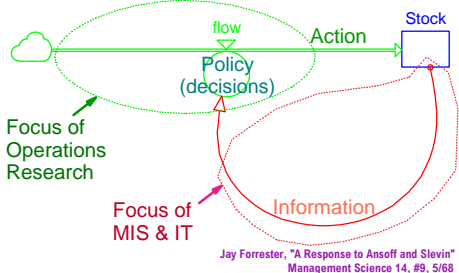
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## Questions at the HBR web discussion (continued)

- Operations research focuses on how to make the best individual decisions at the flow, whereas system dynamics deals with the whole loop including the time-varying decision stream (as opposed to individual decisions).



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