

Russell Ackoff

By Jane Gannon

Thanks to our good friend Lewis Orchard who sent us an article recently remembering the late Russell L. Ackoff, our continued interest in systems thinking received a big boost and new resource, of whom we were unaware.

Ackoff, who was schooled as an architect, spent most of his career teaching at Wharton School at the University of Pennsylvania. He also provided thought leadership to over 250 companies (most prominently Anheuser Bush) and 50 government agencies in the United States and abroad, especially in operations research, general systems theory and management.

Ackoff's down-to-earth, colloquial expressions make systems thinking much more accessible than most others make it. We just ordered his book, *Re-Creating the Corporation: A Design of Organizations for the 21st Century*, and recommend you give Ackoff a search and enjoy his thinking about systems thinking.

The following excerpts are drawn from a speech given by Ackoff at a Villanova University conference honoring his lifetime

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Systems Thinking

By Lanny Vincent

A couple of months ago, General Motors decided to end the joint venture with Toyota called New United Motor Manufacturing, Inc. (NUMMI) in Fremont, California. This was big news in the San Francisco Bay Area where I live. Recently the local public radio station was airing a program about the history of this very successful joint venture, which now will re-open as a Toyota and Tesla Motors joint venture production facility. The radio program included an interview with an executive from Toyota who was directly involved in the original joint venture with GM. He was asked why Toyota was apparently so willing to share so much with a direct competitor like GM, and to even consider such a joint venture to begin with.

The Toyota executive's answer was revealing. He said everyone was focused on the visible parts of the Toyota Production System—that is, what was happening on the factory floor. No one from GM thought to ask anything about the “invisible” support and management part of the system necessary to keep it all going. The questions (or lack of them) reassured leaders at Toyota that GM did not present much of a competitive threat because they seemed

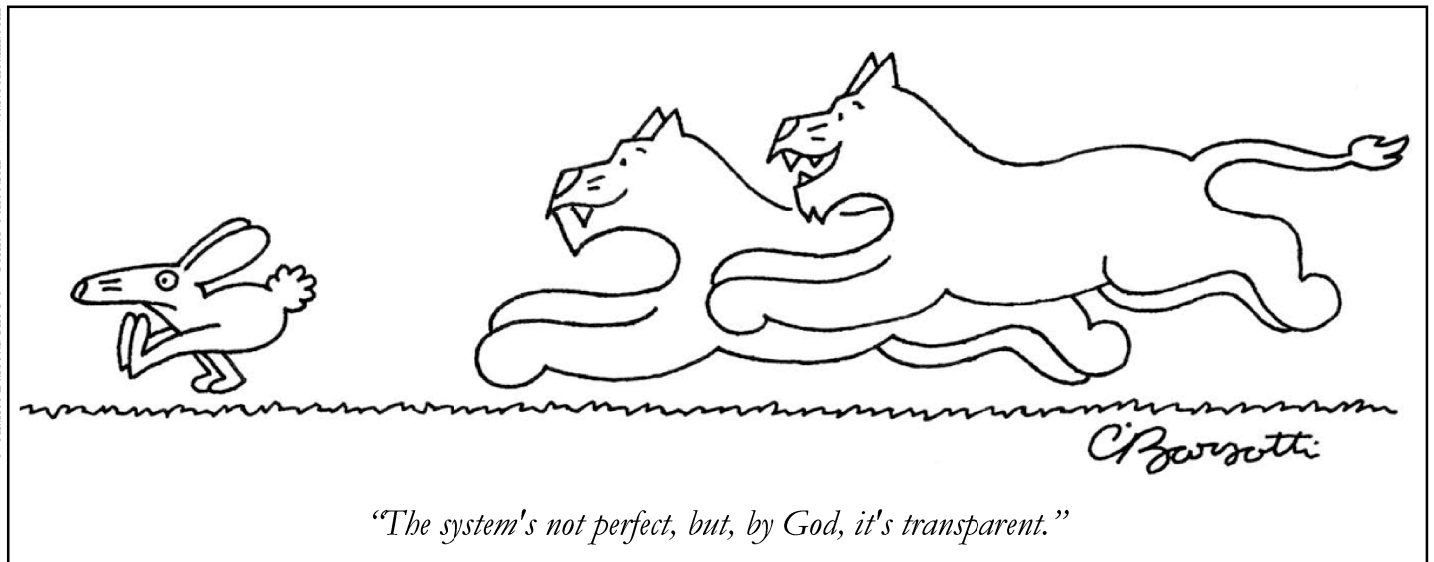
interested in only one part of the equation.

Many companies have a similar blind spot when it comes to managing innovation efforts. The more “visible” parts of the management system—like the stage-gate pipeline—are the center of everyone's attention, while the less visible parts of the total system are often ignored or underappreciated. When these less visible parts of the system are brought into focus and the interactions between the various parts of the system are made more explicit, however, places and ways to improve the system reveal themselves quite readily.

My first formal exposure to systems theory and thinking was in the context of family systems therapy. The training I received confirmed in experience what I learned in theory—the attempts of one family member to change will be short-lived as and when that individual returns to the same, unchanged family. System effects trump individual attempts to change. I also learned that for any intervention to be effective, some observation-based understanding of the system's “architecture” is necessary. Like a mobile hanging suspended from a beam overhead, touch one part of the

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of work in systems theory and practice—and celebrating his 80th birthday. In the address, Russell, who died earlier this year at the age of 90, reflects on what he enjoyed most about being a lifelong systems thinker.

- Systems thinking is holistic; it attempts to derive understanding of parts from the behavior and properties of wholes, rather than derive the behavior and properties of wholes from those of their parts. The whole can be understood only by viewing it from all the perspectives simultaneously.

- When we know how a system works, how its parts are connected, and how the parts interact to produce the behavior and properties of the whole, we can almost always find one or more points of view that lead to better solutions than those we would have arrived at from the point of view from which the problem was formulated. For example, we do not try to cure a headache by brain surgery, but by putting a pill in the stomach. We do this because we understand how the body, a biological system, works.

- The best thing that can be done to a problem is to dissolve it, to redesign the entity that has it or its environment so as to eliminate the problem. Such a design incorporates common sense and research, and increases our learning more than trial-and-error or scientific research alone can.

- When we do something right, we already know how to do it; the most we get out of it is confirmation of our rightness. Mistakes are of two types: commission (doing what should not have been done) and omission (not doing what should have been done). Errors of omission are generally much more serious than errors of commission, but errors of commission are the only ones picked up by most accounting systems. Since mistakes are a no-no in most corporations, and the only mistakes identified and measured are ones involving doing something that should not have been done, the best strategy for managers is to do as little as possible. No wonder managerial paralysis prevails in American organizations. □

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mobile and movement occurs in other parts that were not directly “touched.” Predicting what might happen is merely guessing without some basic understanding of the system’s structure.

My second formal exposure to systems thinking came several years later at Kimberly-Clark in the context of operations research, manufacturing and supply-chain architectures. Here I became exposed to the vocabulary of “system dynamicists” like Jay Forrester and his disciple, Peter Senge, at MIT, among others. Stocks, flows, causal feedback loops—both amplifying and correcting loops—and oscillating behavior, all became even more meaningful when combined with my exposure to systems thinking through family systems theory and practice.

A third foray with systems thinking is more recent. Several interesting client assignments got me thinking that:

- Serious students of innovation management generally recognize the “front end” as a “higher leverage” location for improvements;
- Toyota has widened its competitive lead in innovating by building and accessing knowledge “stocks” (to avoid re-learning); and
- Many who practice stage-gate disciplines quickly realize the need to practice complementary portfolio management as well.

Given these assumptions, might many of

us benefit from viewing our innovation management as one system? Recent assignments related to the “front end” or “Gate 0” issues allowed us to apply systems thinking. When we did almost instantly the dialogue was reinvigorated and we began to discover “levers” to pull that could have a disproportionately positive effect.

In hindsight I realize now that I shouldn’t have been surprised. This often happens when you take a systems point of view. The interconnectedness of the mobile’s individual parts reveal themselves, and with greater appreciation one can have a much greater effectiveness with an intervention thusly directed.

Despite the compulsion many managers may feel to “not just stand there, but do something,” it may be better to resist the temptation and not just do something, but stand there, and watch what the system reveals of itself. Albert Einstein is credited with defining insanity as “doing the same thing while expecting different results.” Yet, despite widespread agreement with Einstein’s definition, the definition only goes so far as to suggest that we need to think and act differently. How to think and act differently, Einstein seems to have left out. Systems thinking might fill it in.

So part of the solution to our present insanities—whether they be the Dilbertian absurdities of organizational life, the legacy of tired imaginations, the irony of over-committed schedules of knowledge workers with little time to learn—looking at what we are doing in the context of the system of which we are a part can only help. It may also point us to the lever we should pull or push next. □

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