

Systems Theory Applied to Organizations By John Corlett

Ask the typical public or private sector manager to draw a picture of his or her mental model of an organization, and more often than not what emerges is some version of the classic, pyramid-shaped organizational “wiring diagram.” In other words, many managers equate “organization” with “structure.” Here, structure can be defined as the way the work (or activity) is divided up and reporting relationships established. This tendency to identify the “formal” hierarchical structure is not surprising, given the bureaucratic mind set prevalent in many large organizations. Unfortunately, the reality of organization is far more complicated, and capably guiding organizations through change requires a much more sophisticated understanding of relationships.

The antidote to this “organization is structure” dead end is for the leader to develop a multi-dimensional picture of the organization. Organizational science offers help in the form of system theory applied to the organization, organizational sociology, and organizational modeling. By walking thoughtfully through these three arenas and relating the key ideas in each to real life experience, the managerial leader can mold an intellectual framework that grasps the complexities of organizational life and provides a practical mental guide for leading an organization through change.

System theory originated in the natural sciences in efforts to understand sets of objects, the relationships between those objects, and the relationship between sets of objects and their environments. The solar system and the human body are understood to be systems. System theory has been widely applied to the study of organizations. The major applications arguably cluster around four themes:

- System as it illuminates **productive processes**: the input-throughput-output mechanisms that result in products and services going out the door. If the typical managerial leader has any knowledge of system theory, this is often the piece he or she has. This is a key insight into the organization as system, but it is not a full picture of same.
- System as it illuminates **energizing processes**: the myriad ways in which the organization affects and is affected by its environment. The key points are two. (1) The organization’s boundary—the physical, social, psychological, and work/task dimensions that set it apart from its environment—must be semi-permeable, tight enough to focus the organization’s energy so that it can accomplish its mission, but loose enough so that there is a robust exchange of ideas and energy with its environment. This semi-permeable boundary is characteristic of healthy living systems and gives rise to the term “open system.” (2) The boundary’s quality of permeability makes it possible for the organizational system to get feedback from its environment and use it for purposes of developing greater adaptiveness.
- System as it illuminates **enabling processes**: the mechanisms that control and measure the relationships and interactions among the organization’s subsidiary parts--individuals, groups, departments, profit centers. The key points are two: (1) something that affects one part or level of the system affects all other parts and levels; (2) no single part of the organizational system can be allowed to sub-optimize, or over-achieve...each part must operate in concert with all other parts.
- System as it illuminates **developing processes**: the systems and programs that provide for the differentiation, i.e., growth and development, of the organization’s subsidiary parts-- individuals, groups, etc. The key point here is that differentiation must precede integration, that is to say, the individuals, teams, groups, etc. within organizations must themselves have the opportunity to operate as open systems before the whole organization can operate as an open system.

Organizational sociology brings a different, but equally powerful set of ideas to the table. Leading thinkers in this field suggest that there are four fundamentally different sets of basic assumptions about how organizations work...four equally valid lenses through which an organizational actor can view organizational life. Viewing organizations through the **rational** lens, a managerial leader will tend to pay primary attention to structure, efficiency, rules, roles, and hierarchies. Through this lens, change is viewed as unusual, and when it happens it is assumed to be orderly and incremental. Viewing organizations through the **human resource** lens, a managerial leader will tend to pay primary attention to taking care of people, developing people, and the fit between the people and the structure. As with the rational lens, change is viewed as unusual and when it happens it is assumed to be orderly and incremental. Viewing organizations through the **symbolic** lens, a managerial leader will tend to pay primary attention to the mutual growth and interaction of the learning individual and the learning organization, the meaning of the organizational experience, organizational culture, and the organization as an open system. Through this lens, change is viewed as normal and often transformational. Viewing organizations through the **political** lens, a managerial leader will tend to pay primary attention to power, conflict, negotiating over scarce resources, the messy marketplace of ideas, and the organization as a battlefield. As with the symbolic lens, change is viewed as normal, though often sudden, opportunistic, and unpredictable.

There is a hidden trap in this seemingly straightforward material, for the organizational sociologists suggest further that each of us tends—for reasons of constitution and experience—to prefer one or two of these lenses and to find the other two or three unhelpful at best and alien at worst. The reality, however, is that each lens provides a valid view of organizational dynamics. And if the managerial leader can bring only one or two of them to bear, she or he is in trouble. While the lens one prefers will illuminate some realities of organizational life, it will blind one to others. Successful managerial leaders must intellectually leverage themselves to a point of being able to see all four views of organizational life as valid and useful.

With a little system theory, a dash of organizational sociology, and a dollop of practical experience, the managerial leader is ready to put pen to paper and try again to draw a picture of her/his mental model of an organization. The picture that results should be very different from the “wiring diagram” mentioned above. It has the potential to become an important framework for managerial thinking and action. It can help clarify the inevitable muddiness of organization dynamics and change. It can serve as a prod for questions that can move the organization into the zone of high performance: what’s working, what’s not working, what needs to change, and what change can the organization support? It can provide a framework for gathering data to more fully understand what is going on. And it can help focus and plan organizational change by limiting analysis and action to a workable number of variables. Such a model ends up being a statement of the managerial leader’s “educated biases” about how things work, with an inevitable sub-text of how they ought to work.

Academics and consultants typically go through a similar process of walking through system theory, organizational sociology, and their own experience, often producing organizational effectiveness models that become the basis for their writing about and working with organizations. The Open System Diagnostic Model is representative of these models. The fulcrum of this model is the organization’s **work**-- what the organization does for a living and how it does it. The work is the central arena of organizational life, energized equally by the requirements of the customer and the capabilities of the organization, embedded in the people, the culture, and the strategic intent. The model argues that if one fully understands the organization’s work, most of what needs to be known about the organization will become apparent. The

direction (strategic intent), **culture** (shared values), and **behaviors** (how people act as they deal with each other and the work) are fundamental to how the work gets conceptualized and carried out. The **customer** is co-king, partnering with the organization to define and judge the work.

Structure and **systems** (the cross-cutting carriers of energy and information, e.g., MIS systems) are viewed as important but secondary elements of organizational life. The model is biased toward the rational, human resources, and symbolic lenses. Lacking a political reference, it probably would not be useful in helping to understand an organization where politics were the dominant currency of interaction.

By virtue of experience, the typical senior utility regulator, is well-positioned to manage the myriad operational challenges facing the agencies newly created to oversee or manage infrastructure reform. This same decision-maker may not, however, have the skills and insights required to ensure that the regulatory agencies themselves develop into high performance organizations. This paper will present three inter-related sets of ideas in a manner designed to alert the senior regulator to some key issues of internal organizational effectiveness facing regulatory institutions that are in the midst of change. The three sets of ideas are: (1) the organization understood as a complex system; (2) the three faces of organizational change; and (3) the -- for some -- uncomfortable reality of politics as an aspect of organizational change.

Context as Another Factor: Leadership under Changing Conditions

There is no simple recipe for effective regulation. In particular, the context in which regulatory decisions are made can change with new technologies that make segments of the market potentially competitive, with demand growth that reduces the importance of scale economies and facilitates entry, and with changing national priorities. We can think of the three circles in Figure 1 as now embedded in a larger sociopolitical context. When the context changes, regulators cannot remain rigidly attached to the past and avoid the “senility” phase of the regulatory cycle described above.

At one time or another, regulatory leaders grappling with external change must address internal adjustments—in terms of values, processes, and policies. Leaders confronting organizational change may be faced with three very different scenarios. In scenario one, a bureaucratically inclined organization with a long history needs to change but resists change. In scenario two, the organization experiences change as the only constant, change breeding change in a never-ending cycle. In scenario three, change is more a function of spontaneous, opportunistic action than a systematically thought out process. Each scenario requires regulators to use a different mental model and a different set of skills to help the organization. To be effective, leaders need to understand all three “faces” of organizational change and how best to operate when confronted by any of the three.

A rational viewpoint serves the leader very well under scenario one. When change is the exception, if it must be endured it can be more or less scientifically and programmatically managed. Here, once the organization has been motivated to change, the change leader serves as architect, engineer, and program manager of a planned change process. Social psychologist Kurt Lewin (1951) most succinctly articulated this rational view of change. He saw organizational change as an essentially linear process of unfreezing an existing organizational state, managing a transition, and re-freezing the organization in a new, more desirable state.

A whole industry of change consultants has grown up around this basic concept. Their approach can be summed up in the steps they recommend: assess the current state, conceptualize

a future state, plan how to get there, and implement the plan. Worth underscoring, perhaps, is the critical work of re-aligning the organization to make sure that the change sticks. Without the kind of mental model/framework discussed above, a change leader will be vulnerable to missing key aspects in the re-freezing part of the change work. He or she might, for example, miss the need to alter the organization's rewards system to support a change-dictated shift in employee behavior.

Linear and rational concepts and unfreezing/transition/re-freezing models lack effectiveness under scenario two. Here, change breeds change and more change. Faced with what one thinker has termed "permanent white water," managerial leaders often feel great uncertainty about what future state an organization could or should be working toward. And the prospect of bringing about an elaborately scripted and choreographed change process seems remote. The last thing the organization in such flux needs is to be "unfrozen." Another set of ideas for working with organizational change is clearly needed to complement the classical approaches.

Some writers and thinkers about organizational change have turned to the East for help. What they find is a worldview predicated on non-linear, "both/and" thinking. Applied to organizational change, this viewpoint can help the change leader re-frame his/her analysis of constant change. Rather than struggling to figure out where the permanent change is going, the leader comes to see change as a constant balancing and re-balancing process through which the organization strives to find both internal harmony and harmony with its environment.

Nearly constant change can have an irrational quality. Decision makers may feel out of control. Organizations probably must be led more than managed. The job of the leader in this scenario is not so much to manage as to serve in the leadership roles of steward and facilitator. The change leader must provide stability and grounding for the members of the organization in flux. Managerial leaders facing this kind of change discover that to figure out and plan for an outcome that keeps changing is less important than putting as many organizational resources as possible into making the organization as adaptive as possible.

Theorists and practitioners of organizational change have been slow to develop practical approaches to dealing with constant change. Some of the most promising work relates to Senge's concept of the "learning organization," one that is "continually expanding its capacity to create its future." For the learning organization, organizational life *is* change. Managerial leaders and organization members alike base every decision they make, every structure and system they create, on that premise. Another approach to "change overload" is a set of techniques loosely clustered under the rubric "whole organization change." These approaches attempt in one way or another to bring the whole organizational system together—all levels, all divisions, key external players—to solve organizational problems and position the organization to take advantage of emerging opportunities.

Scenario three offers yet another set of challenges. This is the arena of sudden acquisitions, overnight mergers, sudden sell-offs, pre-emptive downsizing, disaster, scandal, and strategic firing. Here, change has a "ready, aim, fire" quality as organizational leaders act swiftly in response to the exigencies of business. Change of this sort clearly has intentionality, but planning and managing, if present at all, take a backseat to the wielding of organizational power to re-shape the organization and its environment. Except for the initiator of the change, leaders working with this kind of change must have the attitudes and skills of relief workers. They must carry out triage: engineer the clearing away of rubble, shore up remaining structures, and begin planning for how to get things moving again.

However change is viewed and whatever the approach taken in carrying out the change, there is an often misunderstood, underlying psychological dimension of change to which the managerial leader must attend. Organizational change is disconcerting. It stirs in many of the people involved -- even people strongly committed to the organization--deep feelings of uneasiness and even fear. Entirely natural and normal, these feelings can manifest as denial of the need for change and resistance to the change. Yet many managerial leaders, schooled in objective analysis of and rational discourse about the organization, are reluctant to acknowledge and deal with this irrational, or perhaps arational, dimension of change.

It is imperative that they do so. Failure to do so risks dehumanizing the change process and driving the creative and adaptive energies of organization members underground. Dealing with this side of change can be as simple as making it safe for people to express their doubts and fears, listening to those doubts and fears for data that can help shape the change process, and providing clear and consistent information about why the change is necessary. In this kind of atmosphere, the vast majority of organization members will be able to sort through their anxieties and move through their fears and uncertainties to a place where they can enthusiastically embrace the change. Those facing change move from denial to resistance, to acknowledgement and finally engagement—addressing the issues and adapting to the new situation.

Should the utility regulator with an already full plate of concerns care about this “touchy-feely” aspect of organizational change? Warner Burke, one of the grandfathers of organizational consulting, did a study recently about what managers and executives know about change. Overall, the scores were acceptable, if not particularly impressive. Managers had two particularly weak spots: (1) their knowledge of individual responses to change efforts and (2) managing the people side of change. In short, many managers had difficulty in interpreting their employees’ reactions to change and in guiding people through the complex and often confusing process of change. The point is clear: leaders of regulatory agencies ignore the organizational implications of change at their peril.

The rational, scientific bias of many managerial leaders has yet another potential downside when change is in the air. The impulse to reduce organizational life to that which can be dispassionately structured, planned, and measured misses the fact that when change is afoot, there are almost always going to be disagreements about ends and means. In a word, there will be politics, the process by which power is exerted in the organization. And if we know anything about politics, we know that it is neither rational nor manageable. The change leader who either denies or gives short shrift to the politics of change will almost certainly doom the change effort to failure.

The simple fact is that, when the stakes are high, rational discourse and program management cannot carry the day. Good data and persuasive argumentation are necessary but not sufficient to make change happen. The change leader must also marshal political forces. This essential political work begins with identifying the forces in the organization—individuals, groups, and coalitions—that have a stake in the change. The next step involves determining which of these forces favor the change on the table and which are against it. Finally, the leader must identify a strategy for working with this array of forces in a way that facilitates the change. This can mean recruiting and fostering a group of change champions—opinion leaders who are willing to support the change publicly and often. It can mean getting out the organization’s version, “selling” the change to employees. And it can mean working to neutralize opponents of the change. At bottom, accepting the reality of organizational politics as part of the change equation is to accept that change is in part a contact sport, not just a cerebral exercise. While regulation can create a

positive-sum game, some stakeholders will be uncomfortable with the outcome, resulting in counterattacks through court appeals, legislative lobbying, and appeals in the press.

Bibliography

Berg, Sanford V., Ali Nawaz Memon and Rama Skelton. 2000. Designing an Independent Regulatory Commission. Public Utility Research Center Working Paper.

_____. 2000. Developments in Best-Practice Regulation: Principles, Processes, and Performance. *Electricity Journal*, forthcoming.

_____. 1995. The Customer Bill as an Index of Performance. *Electricity Journal*, January/February. Verify lack of volume #, page #s

Bernstein, Marver (?) H. 1955. *Regulating Business by Independent Commission*. Princeton, NJ: Princeton University Press.

Bolman, L. G., and Deal, T.E. 1984. *Modern Approaches to Understanding and Managing Organizations*. San Francisco: Jossey-Bass.

This next citation is a general problem. For starters, the web site listed states that the requested file does not exist on this server or is outdated. Et al. needs to be replaced by actual names.

Burke, W., et al., 1997, "What Do OD Practitioners Know About Managing Change?"
On the web at <http://www.mcb.co.uk/services/articles/documents/lodj/burke/htm>.

Corton, Maria Luisa. 2000. Performance Efficiency in Infrastructure: The Water Sector in Peru. Master's thesis, University of Florida Department of Economics, Gainesville.

Gunawardene, Palitha Silva, 2000 "Consumers" Role in Telecom Regulation: A Sri Lankan Perspective," *NRRJ Quarterly Bulletin*, 20, 4, 311-318.

Koch, Adrienne. 1961. *Power, Morals and the Founding Fathers*. Ithaca, NY: Cornell University Press.

Lewin, Kurt. 1951. *Field Theory in Social Science*. New York: Harper and Row.

Marshak, Robert. 199?. Lewin Meets Confucius: A Re-View of the OD Model of Change.

Journal of Applied Behavioral Science 29 (4): 393-415.

McCraw, T. K. 1984. *Prophets of Regulation: Charles Francis Adams, Louis D. Brandeis, James*

M. Landis, and Alfred E. Kahn. Cambridge, MA: Harvard University Press.

Samarajiva, Rohan. 2000(a). Establishing the Legitimacy of New Regulatory Agencies. *Telecommunications Policy* 24 (3): ---need page #s; April denotes issue.

_____. 2000(b). The Role of Competition in Institutional Reform of Telecommunications:

Lessons from Sri Lanka. *Telecommunications Policy* 24 (8/9): page #s.

Schein (1992?) check reference on p. 4 and fix citation.

Senge, Peter. 1990. *The Fifth Discipline*. New York: Doubleday.

Stern, Jon, and Stuart Holder. 1999. Regulatory Governance: Criteria for Assessing the Performance of Regulatory Systems—An Application to Infrastructure Industries in the

Developing Countries of Asia. *Utilities Policy* 8 (issue #) 33-50.

Vaill, Peter B. 1989. *Managing as a Performing Art*. San Francisco: Jossey-Bass.

Weber, M. 1978. *Economy and Society*. Edited by G. Roth and C. Wittich. Berkeley:

University of California Press. (NOTE: If this author is Max Weber, the full name might be useful in explaining why a single author has two editors. Perhaps they are translators. Also, some indication that the date given is not for the original publication may be useful.)