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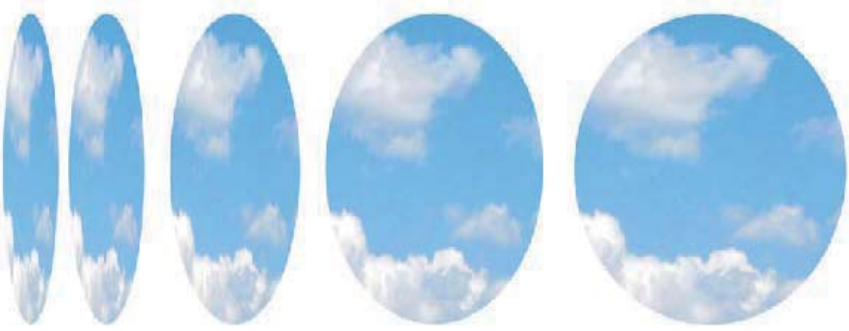

Readings in Global Organization Design
Case Studies

Structure Is Not Enough:
Systems Are the Drivers of Organizational Behavior and Culture

By Catherine G. Burke, Ian Macdonald, Karl Stewart

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Structure Is Not Enough: Systems Are the Drivers of Organizational Behavior and Culture

Catherine G. Burke, Ian Macdonald, Karl Stewart

WHAT'S IMPORTANT

Conzinc Rio Tinto of Australia (CRA), a 25,000-employee Australian mining and refining company, worked more than ten years to improve its competitiveness through the implementation of RO.

After early systems design failures due to poor setting of managerial accountabilities and authorities, the authors describe improving their principles and practices to design and implement a successful transformation of a CRA business unit, New Zealand Aluminium Smelter, with large improvements in productivity, profitability, and worker satisfaction.

A key principle is that the design of systems, including their foundational values, the values that employees perceive imbedded in them, and the design of system controls and audit, is a high-level task requiring a minimum of stratum IV capability.

To be a good leader you must understand your own mythologies and the mythologies of your workforce.

After writing *A General Theory of Bureaucracy*, Elliott Jaques worked with Sir Roderick Carnegie in a ten-year effort as Sir Roderick worked to improve managerial effectiveness, productivity, and business results at CRA, an Australian mining company with 25,000 employees. It was with CRA that Jaques worked with people from CRA to develop the details of his then more theoretical Stratified Systems Theory (SST) ideas. The outcome was published by Jaques in his book, *Requisite Organization*.[1]

Karl Stewart and Ian Macdonald played important roles in the transformation of CRA. Catherine Burke worked in a parallel project in the US, and all three worked together on the development of the theory based on their respective experiences. In their article, they describe their learning and insight over the length of the project. They recommend that designing roles at the right level and staffing them with the right people is only the first step of a complete implementation; of itself it is not sufficient. They evolved an approach that places the design of new systems at stratum IV or above, pays early attention to human values and organizational culture, and designs new systems to shape desired behaviors and culture.

CRA's 14-year experiment (1978-1992) in applying Elliott Jaques's theories of management is often cited as one of the key implementations of requisite organization. (See sidebar for a chronology of the work.) This article describes two situations—one at CRA's Hamersley Iron unit in 1985 and one at their NZAS unit in 1991—in which the authors participated and that illustrate how hard-learned early lessons led to great success later.

It was in these years that we learned something important: systems and mythologies are powerful tools for the CEO to change the organization's behavior and culture. The design of systems, controls, and audit, and the values the systems demonstrate, as understood by employees, is a high-level task requiring minimum stratum IV capability. Trying to implement a requisite organization without taking these into account will lead to failure, as we learned at CRA's Hamersley Iron business unit where we first met.

1 For a more detailed description of the CRA work by Sir Roderick Carnegie, then CEO of the group, see "Jaques and the Early Years in Australia," *International Journal of Applied Psychoanalytic Studies*, 2(4): 332–344 (2005).

STORY CHRONOLOGY

Mid-1970s: Sir Roderick Carnegie, CEO of CRA, sets goals to improve company international competitiveness, and to move from 14th to top 5 in the world by 2000 by bringing in the world's best management practices and "winning the hearts and minds of employees."

1978: Carnegie retains Elliott Jaques as advisor. This was a first try and then there was a gap when Elliott was brought back in l981/82.He decides to implement internally rather than depend on consultants and to lead the project himself at stratum VII. He also assigns stratum VI corporate executives and appoints stratum V organization development heads. Commits five percent of payroll to the project.

1979-81: Organization development projects were implemented at Woodlawn Mine, Broken Hill, and then Sulphide Corporation.

1983: Hamersley's management culture rejects first efforts to install requisite concepts in the CRA's iron ore division.

1978-83: Karl Stewart works as general manager at Weipa mine site making many major changes independent of Carnegie and Jaques work in CRA.

1984-86: Karl Stewart appointed stratum V group consultant. Jack Brady, stratum VI group executive. Carnegie asks Stewart to develop corporate systems theory to improve both organization development (OD) and organizational work processes. Stewart assigned to lead the OD team at Hamersley. Stewart and Macdonald brothers, Ian and Roderick, develop values theory as part of OD theory development. Productivity begins to improve after the 1985 restructure.

1985: NOT-TO-GO pilot project—success and ultimate failure with powerful learning.

1986: New Zealand Aluminium Smelter (NZAS) was restructured.

1987: Karl Stewart appointed stratum V managing director of CRA's Smelting business unit including NZAS.

1988-90: Period of dissonance at NZAS as management improves significantly and old myths fail as predictors of outcomes.

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STORY CHRONOLOGY continued from page 243

1990: David Brewer appointed general manager of NZAS and pace of system change increased.

1991: Employment Contracts Act passed in New Zealand legislating that an employee or a group of employees could retain the union as their agent, appoint a representative agent other than the union, or could represent themselves to negotiate their contract of employment.

1991: NZAS General manager and managers effectively removed overtime. Managing director offered staff employment contracts to all employees.

1991 and ongoing: Major benefits achieved.

Stewart had been assigned to lead an OD team to develop systems theory to improve OD and organizational systems and work processes in the unit. Burke and Macdonald were consulting with the OD teams, developing an implementation of Jaques's theories into an integrating working system of management. Our work together is a good place to start, because the lessons we learned there about systems and mythologies led us to successes later, first and particularly at the NZAS unit.

(For a fuller handling of the complexities of workplace mythologies and value analysis, and the stories we discuss, see our articles on the GO Society website.)[2]

A Failed Systems Design: What Went Wrong

The rail system at CRA's Hamersley Iron unit was one of the world's largest in ton-kilometers-per-day, and the rail operations and maintenance group had been the first part of Hamersley to go through the restructuring based on Jaques's ideas. The NOT-TO-GO system involved the maintenance of the rail stock, necessary to prevent expensive derailments. Created with the input of both groups, the new system increased work performance and cross-group communication. The crew superintendents of both the maintenance and the examiners said, "It has succeeded beyond our wildest expectations."

2 "The NOT-TO-GO Card," "Systems: The Drivers of Organizational Behavior and Culture," and "Structure Is Not Enough." And in *Systems Leadership: Creating the Positive Organization*, Gower Publishing, 2006.

It ultimately failed. Eight months after the implementation the new system had collapsed completely, except for a redesign of certain forms.

A careful review revealed a number of critical problems in project design and execution including:

- Project ownership had been assigned to the implementation team, rather than to the Rail general manager, where it properly belonged.
- A related problem was that the purpose of the system-improvement project was unclear with various parties holding different views.
- Adequate controls were missing and managers at various levels were allowed to change the new system without outside consultation or approval.
- We had not paid attention to how workplace mythologies, the stories and beliefs that different groups told each other (and discussed below), kept the existing system strong and in place. (The full theory had not been developed at this stage.)

We thought of the project system analysis as being primarily about the work itself. Instead, we came to realize that it was also very much about the associated systems, symbols, and behaviors and the core values that they demonstrate. These insights started us down a road that led to the great success later at CRA's NZAS unit, so it's worth looking at them in depth.

"Systems Drive Behavior"

A CEO has essentially three means of influencing the behavior of the people in the organization: behavior, systems, and symbols. His or her own behavior, while a powerful and important tool, is not always visible to the vast majority of employees, so it is potentially less influential than the CEO's use of systems and symbols.

Systems, the business methods and processes in use, are the major driver of the organization's behavior and culture. Systems are to organizations what habitual behaviors are to individuals. Both can be observed and both are interpreted as visible manifestations of who and what are valued positively or negatively by the leadership.

Systems are powerful because they operate all the time, even when leaders are not available, and they can form the culture. Like habits, they require such a specific repertoire of behaviors that operators become accustomed to and act in accordance with them over time. Systems, like habits, can be either good or bad, and even

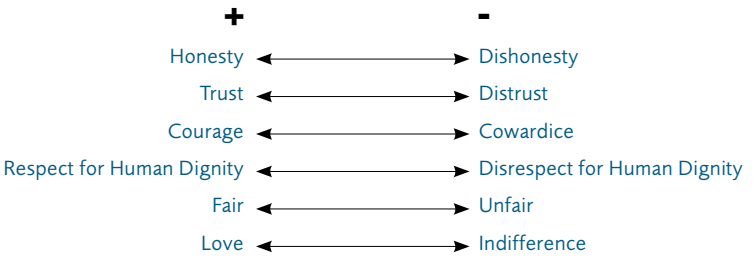

FIGURE 4.1.1: UNIVERSAL CORE VALUES

good systems can become outdated and counter-productive. As one of the authors (Stewart) said at the time, "Systems drive behavior."

Core Values

We believe, and have tested our belief in practice, that core values are the underlying principle that allow human beings to bind one to another. Working with the Hamersley Iron organizational development (OD) teams and Roderick Macdonald, we identified a set of six shared core values necessary for the continuing existence of human social groups. Behavior interpreted at the positive end of the scale strengthens the social group while behavior interpreted at the negative end weakens it, eventually destroying it.[3] (See Figure 4.1.1.)

Most of members' behaviors must be assessed to be at the positive end for others in the group to accept and rely upon them. Without positive, reliable behavior, social groups fail.

The basic propositions are the following:

For a group to maintain a productive relationship, members' behavior must exemplify the positive end of the scales of the core values.

If a group member demonstrates behavior judged by the others to be at the negative end, the person will eventually be excluded.

If several people exhibit behaviors that are similar but judged by the rest of the group to be at the negative end, the group will break into factions or separate groups.

3 Macdonald, Ian, Macdonald, Roderick, and Stewart, Karl. "Leadership: A New Direction" *British Army Review*, 93, December, 1989

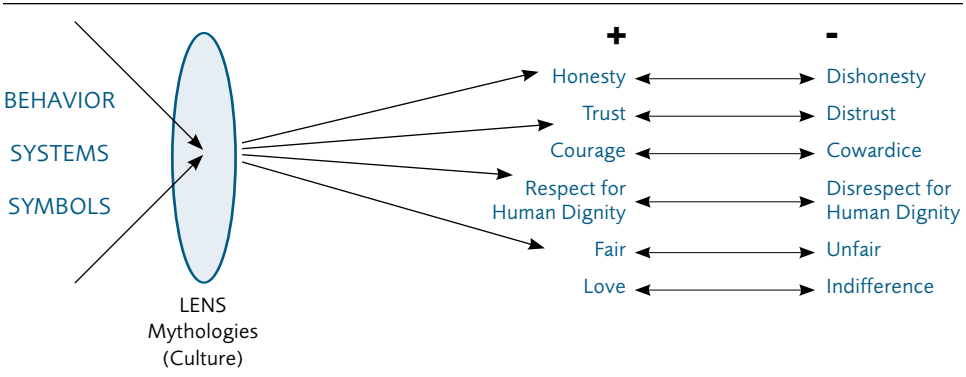

FIGURE 4.1.2: THE MYTHOLOGICAL LENS

Mythologies and Culture

A *mythology* is the assumption or belief that allows us to assign value to behavior and classify it as positive or negative on the scales of shared values. Throughout history myths have been stories that contain within them a fundamental truth. They define heroic and cowardly behavior, the meaning of human dignity, behavior that demonstrates love and caring for others.[4] They allow us to assign values to behaviours and to position them on a positive/negative scale. A behavior may demonstrate several values, each placed on a scale from positive to negative.

Because the myth gives meaning to events in the world, which provides predictability and safety, the myth is always true to the myth-holder, even though others may see it as bad or false. The mythology acts as a lens through which behaviors, systems and symbols are interpreted and arrayed on the scales of shared values.

Though core values may be the same, people from different cultures will often have quite different interpretations of the same behavior, system, or symbol. People of the same culture will have similar interpretations. This is because a culture is a common set of mythologies, and we interpret behavior through our mythologies.

Although *culture* is defined in many ways by anthropologists and others, we define it here as a group of people who share mythologies. That is those who judge specific behavior similarly on the values continua. (See Figure 4.1.2.]

4 Campbell, Joseph, *Hero With a Thousand Faces.* Commemorative ed. Princeton, N.J: Princeton University Press, 2004.

Railway workplace mythology was a major reason for the collapse of the Hamersley Iron NOT-TO-GO system redesign project. Previously, neither the examiners nor the maintainers received any recognition from their respective leaders for the work they did. The new system corrected this problem, and the system itself provided information that improved examiner and maintainer productivity and satisfaction and their inter-group relationships. These new behaviors directly conflicted with the old behaviors and myths underlying the former work culture. As we soon learned, the management of both groups depended upon these myths to maintain what they perceived to be their leadership authority. The new behaviors openly challenged this authority, often through information provided by the new system. And this led the threatened managers to alter the new system without consultation to re-establish the old predictable behaviors.

Another lesson that "systems drive behavior."

Systems Analysis and Design

To be a good leader you should understand your own mythologies, but you must understand the mythologies of your workforce. When you implement a system you must know whether it will be perceived as fair or unfair, honest or dishonest, as respecting human dignity or showing disrespect.

A good leader designs systems so the organization's good people, who are in the majority, see the new system at the positive ends of the values scale. Those who would cheat the system or use it to hurt their fellows should place it at the negative ends, because you are showing them they can no longer get away with poor behavior.

Good managerial leaders also design systems with a clear statement of authority, control, and audit. *Authority* says what an individual may do, and within what limits, carrying with it the accountability for exercising proper judgment. *Control* verifies that the system is being used, including a judgment of the quality of judgment used by the person given the authority. *Audit* checks that the controls are in place and being used, and that the system is achieving its purpose and functioning effectively as intended. Part of the failure with the NOT-TO-GO project came because the system design team had not yet recognized the critical importance of control and audit as system elements, but carried them out on an *ad hoc* basis.

The pilot project showed that the system design team had more work to do to understand the complexity of system design.[5] With more experience, later efforts worked. Carnegie presented a chart that shows the productivity gains at Hamersley beginning in 1985, after the first year of OD.[6] These insights and methods were carefully documented and built into a CRA approach to be used in systems design in subsequent years across the 25 or so CRA business units and they would find their first full demonstration at the NZAS unit.

Changes in Systems and Management Behavior

In 1989, CRA's NZAS was the second largest of seven smelters around the world that shares the same technology, but ranked second, third, or fourth on most measures of smelter performance. The cost of electricity to the smelter had risen substantially in recent years and additional increases were being threatened. This was placing significant cost pressure on the smelter as electricity made up almost 30 percent of its cost base.

David Brewer, who had led the requisite-based restructuring at the unit three years earlier, was now the departmental manager (stratum III) and Stewart was the new stratum V managing director of the smelting division business unit consisting of three smelters. They believed that they could improve NZAS both in performance and as a place to work by using their hard-learned lessons to change the symbols and leadership behaviors, thus changing the workplace.

With the general manager in a role at stratum IV, they started by reinforcing existing systems that had been allowed to drift. Training and education in these systems was followed by new enforcement. Managers also took strong action to improve safety. These were significant changes in manager behaviors that in turn began to generate dissonance such that the traditional workplace mythologies did not predict any more.

5 For a more complete discussion, see our book, *Systems Leadership: Creating the Positive Organization*, Gower Publishing, 2006.

6 Carnegie, Roderick. "Jaques and the Early Years in Australia," *International Journal of Applied Psychoanalytic Studies*, 2(4): 332–344 (2005)

Workforce Myths, 1987-90

The dominant myths of the staff[7] in 1987 centered primarily on love and fairness (the pay issue) and courage: "the company will not support us when we discipline someone;" "they will not take a stand against the union;" "they will not get rid of bad managers."

The dominant myths of the workers who were union members included a justifiable perception of "bad management behaviors" over the years, and union leadership found it useful to reinforce these mythologies. Reinforcing the old mythologies allowed union leaders to claim their ability to protect workers from poor management behavior, behavior interpreted as validating the myths. As a result of the changes instituted by Stewart from 1988, union leader efforts to maintain these old mythologies became less and less credible.

The entire workforce, non-union ("staff"), and union ("award"), during 1988–90 experienced profound dissonance. Management's changes in behavior, systems and symbols meant the old myths were no longer reliable models.

The change process at NZAS was not an attack on unions, union leaders, or the freedom of unions to function in a society. The change process was an open competition for the leadership of the workforce between the union's leaders and management, with management acting based on its understanding of systems leadership theory.[8]

More Systems Changes

Overtime was a significant cost burden for the smelter. The collective agreement often required paying overtime as double or triple time. Each successive management initiative to reduce overtime lost effectiveness as things reverted to "normal." A concerted effort in 1989 had reduced overtime from 45 percent to 20 percent of hours paid, but it was creeping up again.

The new general manager designed and introduced a system change that left the authority to assign overtime with the frontline supervisor, but required a written

7 Staff refers to non-union employees working under individual contracts.

8 The whole theory is covered our book, *Systems Leadership: Creating Positive Organizations*. London: Gower Publishing, 2006.

justification be sent directly to the general manager afterwards. The general manager reviewed the justification and sent it back to the supervisor with comments. The outcome was the effective removal of overtime at NZAS by September 1991. It was, however, not a system that could have maintained this outcome over time.

Staff Working Conditions Accepted

The managing director recommended that all award (non-staff) employees be offered staff employment, which the general manager and managers supported. The managing director required that they undertake workforce reduction at the same time. This began with an offer of voluntary redundancy, and with the clearly stated intent of forced redundancy, if the voluntary program did not reduce total employee numbers from 1500 to around 1100.

Letters signed by the general manager were sent to award employees at their homes explaining the proposal. The letter invited those interested to make a time for an interview with their manager-once-removed (stratum III department head), where a typical staff contract would be available for them to examine and take home. Another letter to all employees, again signed by the general manager, explained the intention to reduce total employee numbers.

All of the managers at stratum III went through detailed briefings and practiced interviews with each other to guarantee the coverage of issues and the consistency of response. In these meetings, managers explained the mechanics of staff employment, including that staff were required to perform any tasks assigned to them, providing they were competent to perform them safely.

When they decided to offer staff employment, the managing director had required that the general manager and his managers identify and analyze all the systems, symbols, and behaviors critical to the offer, acceptance, and maintenance of an all-staff workforce. This was done over an intense two-day workshop led by one of the authors (Ian Macdonald) who, as a consultant to Comalco Smelting, had suggested the idea to the managing director.

At a mass meeting called by the union leadership, which drew 850 of 1250 award employees, unanimous resolutions were passed rejecting the staff offer and appointing the union as the agent of employees. These same employees then returned to work and made appointments to discuss the offer with managers.

The salary incentive to join the staff ranks averaged about three percent. The other conditions of staff employment were superior, except that no overtime was paid. The great majority of staff worked additional time when it was required.

Employees were advised that they had the choice of (a) remaining an employee on the existing conditions; (b) accepting a redundancy package, the entire quantity of which was available to them; or (c) signing a staff contract of employment. Each employee was advised to think carefully about the decision and to discuss it with his or her family.

Prior to the interviews, managers-once-removed had identified employees they judged would have difficulty making the transition to staff. This assessment was given to the employee. Each employee was also advised that the decision whether or not to retain union membership was his or her own business. Each was told that the staff employment relationship did not allow for third-party intervention, except under exceptional circumstances.

Ninety-eight percent of the workforce who did not choose a redundancy package signed staff contracts. The redundancy option gave a dignified exit path to those who knew their performance would be unacceptable under staff conditions or whose philosophical position about unions did not allow them to join the staff of an organization seen to be "getting rid of" the union. The organization wanted many of these employees to leave anyway.

Discussion of the Process

Crucial to the move was the work done by managers at stratum III in their interviews. From their position as manager-once-removed, they could put the proposal into context, fully explaining the wider issues and answering questions with authority. The symbolic impact of their 16-hour days and interviews on night shift was not lost on the workforce. "This must be really important! Managers are here day and night!"

The work done in the intense two-day planning workshop to identify symbols, systems, myths, and behaviors and to plan the response was invaluable. The smelter management group had identified all the critical issues and was not thrown off course through the turmoil of the change. No CEO can know all the myths of his or her workforce nor recognize the impact of all the systems, behaviors, and symbols

that drive them. Bringing in a range of staff to assist in this analysis is an essential part of a successful major change process.

Results

While improvements in cost and performance had been predicted, the size and speed of this change was not.[9] After all, this was not a smelter in trouble!

Overall cost of production fell by more than 20 percent. Overtime paid and employee numbers changed directly as a result of new systems. Qualitative changes, such as current efficiency, off-specification metal, and high-purity metal, were the result of all employees paying attention and taking more care of the detail of their work, and of having the freedom to do so. As one new staff member said later, "I don't have to leave my brains at the gate any more."

While some initially perceived the changes as primarily to achieve cost reduction, the resulting increasing in revenue from improved quality far outweighed any cost savings. Revenues from additional tonnage of high-purity metal, which sold at a substantial premium, exceeded savings in labor cost from the 310 employee reduction in workforce.

Through changes of their own behavior, the systems and symbols of the organization, management had helped to create a new set of mythologies: that they could be trusted; they would do what they said; they had the courage to remove people who were not carrying their fair share of the load, including supervisors and managers; and that they treated their people with dignity and provided a safe workplace.

Caveat

This was not easy. Be warned, old mythologies do not die; they are only over-laid with new mythologies. One slip during the change process and the old mythologies will be stirred up like silt in a river. They will rise to the top, stronger than ever because, "Fool me once…"

Over time as the new mythologies become more deeply embedded, slips are seen as just that, mistakes. If, however, new leaders change the systems without under-

9 For run charts graphically illustrating the difference these changes made, see pages 249-256 in *Systems Leadership: Creating the Positive Organization*, by the authors of this chapter. Published by Gower Publishing, 2006.

standing the value interpretations embedded in them, or change their behavior in ways that appear dishonest, untrustworthy, unfair, or disrespecting of the dignity of their employees, the old myths will return, behavior will change for the worse, and one can expect support for union protection.

Conclusions

These two stories illustrate the earlier points: systems and a knowledge of mythologies are powerful tools a CEO has available to change behavior and the culture of the organization. They determine whether the CEO is perceived as a good or bad leader irrespective of what he or she thinks.

The key element is to recognize the design of systems, the design of controls and audit, and consideration of the values demonstrated by the system is a high-level task requiring minimum stratum IV capability. Corporate systems need to be designed at stratum V or higher. This is one of the primary tasks of corporate leadership roles. The CEO who recognizes the importance of systems and makes sure that they are designed to demonstrate value statements he or she wishes to promulgate in the organization, will also make sure they are not tampered with without his or her approval.

ABOUT THE AUTHORS

Catherine G. Burke, Ph.D., is Associate Professor at the University of Southern California, School of Policy, Planning and Development. Catherine's research focuses on organization and systems design, management theory, and leadership, using Stratified Systems Theory and Systems Leadership Theory. She has been a consultant to a number of public, private, and non-profit organizations. She has also served on a corporate board of directors.

Ian Macdonald, Ph.D. is managing partner of MAC Associates, Ltd. He was a Research Fellow at BIOSS working with Elliott Jaques, Gillian Stamp, and others on a wide range of civil service, mental health, and other projects. He has been a consultant to numerous public, private, non-profit organizations, churches, and communities in England, Australia, the US, Canada, Russia, and the Middle East.

Karl Stewart is a mining engineer. He was the group consultant to CRA, Ltd. where he led the development of implementation and system theories to allow managers to bring about positive organizational change. He later successfully applied this work as managing director of Comalco Smelting. Prior to these activities, he was the site manager at Weipa Bauxite mine and vice president of human resources of Comalco, Ltd.

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The Global Organization Design Society is a not-for-profit corporation registered in Ontario, Canada to promote the following objective:

The establishment and operation of a world-wide society of academics, business users and consultants interested in science-based management to improve organizational effectiveness for the purposes of:

Promoting among existing users increased awareness, understanding and skilled knowledge in applying concepts of Levels of Work Complexity, Levels of Human Capability, Accountability, and other concepts included in Requisite Organization and/or Stratified Systems Theory.

Promoting among potential users of the methods, appreciation of the variety of uses and benefits of science-based management, and access to resources.

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