

Catalytic leadership helped a Swedish CEO introduce organic, self-organizing principles, which helped save the company and pave the way for international success.

## CASE STUDY

# Catalytic Leadership and Sociocultural Homeostasis

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In light of the importance of innovation in today's global environment, it is imperative to remember that organizations are composed of constantly evolving social networks, rather than artificial structures as typically visualized and arranged by management. These emergent networks are organic, self-organizing entities, not machines. As such, they can be influenced but not controlled.

Consequently, human nature should receive the utmost attention instead of machine metaphors like the Industrial Age functions of management. What is most disturbing about the lack of focus on our evolved predispositions is the fact that most work is accomplished within informal networks with scant management oversight. Further, multiple perspectives consistently lead to fresh and more insightful solutions than simply putting new faces on old failed concepts. In the end, it all comes down to

dealing realistically with the unavoidable realm of "social emergence."

The purpose of this article is twofold. First, to share how the newly appointed CEO of Studsvik in Sweden relied on catalytic leadership (defined in the online segment) not only to prevent the company from closing but also to make it instrumental in developing a strong cultural and technological foundation that eventually led to it becoming an international leader in its field. The new CEO not only developed a novel vision for Studsvik, but he also persuaded its members buy into the vision. He accomplished this not through increased top-down controls but by building mutual trust with others in the company. In essence, he ensured that people had the freedom to design systems and processes to bring about the new vision from their unique, practical perspectives. Soon the organization developed a work



environment very similar to one where sociocultural homeostatic principles (defined in the online section) are applied consciously.

At that time, complex adaptive systems thinking was seldom on the radar screen of management. What then still firmly governed the list of top executive priorities were the functions of management—planning, organizing, staffing, directing, and controlling. Organizational thinking based on trust and self-organization was considered to be mostly a daydream. That is, companies were envisioned to function like well-oiled machines, not as organic entities. It is reassuring to see that such diverse fields as neuroscience and evolutionary psychology are *slowly* starting to impact management thinking positively. Studsvik essentially became an early and successful adaptor of organic self-organizing principles.

Second, the article presents a theoretical framework, which is presented in the online segment. This framework is based on the latest research in neuroscience and evolutionary psychology, which will provide the basis for an analysis of the processes and evolving success factors that lead to the successful turnaround of Studsvik.

## Studsvik Turnaround

### Company Background

Studsvik is a supplier of nuclear analysis software and specialized services to the international nuclear industry. The company is headquartered in Nyköping, Sweden, and has divisions in Sweden, Britain, Germany, and the United States, in addition to a global services division. The company employs 1,200 people in eight countries.

Studsvik was founded in Stockholm in 1947, as AB Atomenergi, to develop and operate nuclear power stations in Sweden. Initially it was 57 percent government owned, but during the 1960s the government acquired all of its shares. However, in the 1970s, as government funding was reduced, the company eventually became entirely industry owned, and its name was changed to Studsvik AB.

### Innovative Leadership

When Tõive Kivikas became the chief executive officer (CEO) of Studsvik in May 1990, the company was still government owned, and the decision had already been made to shut down the

organization. It was concluded that the task for which the company was originally founded—to develop new nuclear energy technologies—had not been very successful and that the pursuit of nuclear power issues overall was a dead end.

Further, the enterprise had shown continuous losses for many years and had encountered a series of problems and failures both in technology development and in business matters. Many employees had gradually lost self-confidence concerning their jobs, and their attitude toward the company was quite negative. Also, several turnaround attempts were carried out without any positive effects on profit. The decision to close the business, therefore, seemed the best alternative.

Clearly, Kivikas' primary assignment was to liquidate the company assets and lay off almost 1,000 employees. Originally he also felt that such an approach was the only logical option. Gradually, however, he started to doubt whether closing Studsvik was the only or even the best choice. Eventually he began to think that there had to be a way to put 1,000 highly qualified technicians to work rather than bidding them farewell. At first, however, he had no idea how to accomplish that feat.

His leadership was not based on any existing leadership model or management recipe. What guided him was his insight regarding how he wanted his superiors to treat him so that he was highly motivated, creative, and willing to make significant contributions to the organization. He used a management style that made most sense to him. He acted spontaneously and naturally in engaging his associates. In the process, he felt secure and comfortable in how the people responded to the new social context.

Kivikas started by organizing meetings that focused on identifying and analyzing options other than shutting down the firm. Further, all affected employees were invited to attend and to fully participate in the discussions. That, in itself, was an unheard of process, given that in the past the organization was managed in a hierarchical top-down fashion. Position power reigned supreme rather than any form of self-management.

Suddenly people realized that their fate was in their hands and that their goal was to create meaningful options that would lead to productive

jobs. The main selection criterion for any proposed alternative was that the approach had to be profitable. Conceptually, it all seemed like a relatively simple process. Operationally, though, it was another matter.

It was also obvious to everybody involved that they could not expect any external support. What needed to be done had to be accomplished internally. There was no question that the organization's future hinged on the competitiveness of its products and services on commercial markets. There were no longer any protected jobs at Studsvik. All jobs were threatened, and the crisis was evident to everybody.

Kivikas steadily gained more and more confidence that the participants in the organizational advancement process had more than enough knowledge and experience to bring about a successful turnaround. He had often observed how willing people were to contribute to an endeavor when provided a meaningful environment and ample opportunity to participate. He became convinced that the key success factor was having confidence in the self-management abilities of people. Essentially, that meant developing a "can-do attitude" and a sense of self-assurance between himself as the assigned leader and his associates.

Kivikas began to cultivate a work context where people were free to experiment and collaborate for the greater good of the organization. This eventually led to high levels of trust not only between the employees but also between Kivikas and all the people involved. Soon the organization evolved into a platform where creativity and innovation were top priorities.

Frequent and intense brainstorming sessions became the primary mode of operations. Everybody participated and contributed. Individuals who were a bit hesitant in the beginning soon joined in when they saw the first positive results and in what direction the company was finally heading. The old organizational silos suddenly disappeared and were replaced by extensive cross-fertilization between people from different areas and dissimilar backgrounds. Such emergent activities were unimaginable under previous administrators.

In addition, people who came up with good ideas, which passed the agreed-upon acceptance criteria, were immediately formally recognized

by the CEO for their contributions to the organization. Subsequently, these people became folk heroes and role models for others. Fundamentally, the new product acceptance process was not based on long, drawn-out deliberations chaired by the CEO. Rather, approval was centered on the bar set by the market and overall profitability.

In essence, an informal, yet practical structure developed around each product group. People found their roles and places in the teams through self-organization and not via formal assignment. There was a sense that everyone was dependent on each other and, although people assumed different roles and performed diverse tasks, no one was considered better or more valuable than anyone else.

Finally, as the company branched out into several relatively independent entities around core competencies, the informal structures turned into comparatively formal legal arrangements led by those who had organically assumed leadership roles as the groups evolved. There was no better option than to have these individuals manage the newly formed business units. After all, they had helped develop these groups into viable profit centers and, therefore, were best qualified to help run them. Overall, Kivikas felt that Studsvik had evolved into a very proactive, self-managed organization.

Unfortunately, the self-management principles put in place by the new CEO were not well understood or supported by the company's board of directors, who were accustomed to strict financial controls and top-down management. They felt that Kivikas had given employees too much freedom to operate on their own. Another problem for the board was the new flexible budget process. The budget was now updated every three months and was primarily used for future risks and opportunities analysis in order to be prepared when the anticipated events came to fruition. The board, on the other hand, considered the budget more as a strict plan to follow.

Occasionally Kivikas was in conflict with the board when he represented/defended the company's and the employees' interests. He was aware of the risks he then faced which, in some cases, had consequences for him personally in the form of reduced compensation. During his eight-year

engagement at Studsvik, board chairmen were replaced 10 times.

Further, except for some formal legal papers, Kivikas made it a practice to rely as little as possible on written communications. Instead, he had frequent informal discussions with people as he walked around the Studsvik facilities. During his walks his most frequent question was, "What are you currently doing, and why?" Usually, the discussions that ensued were quite lengthy but fruitful.

It was a very joyous occasion when, in less than a year, Studsvik's operations became profitable. For the first time in its history the company was self-supportive and had attained this feat without any external support. Employees felt respected, intelligent, and capable. They had also regained their self-confidence and were proud to be associated with the company.

As the company's business ventures grew, so did its profits, and three years after the turnaround Studsvik was ranked as the third most profitable company, in all categories, in Sweden. Instead of closing, it is now a lucrative growth enterprise employing more than 1,200 people. Today it is a global leader in providing nuclear reactor analysis software and nuclear waste services and is traded on the Stockholm NASDAQ Stock Exchange.

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### More Online

To learn more about the theoretical foundation associated with this case study, go to [asq.org/pub/jqp/](http://asq.org/pub/jqp/).



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# Theoretical Foundation for Sociocultural Homeostasis

## Concepts

Life is inherently a very dynamic process and, therefore, a constant balancing act, both at the individual and group level. Consequently, for an enterprise to succeed, its systems and practices need to have the flexible capacity not only to support its business goals but also the physiological and mental needs of its members.

Accomplishing that feat effectively requires a step back into our evolutionary past. That is, we need to become much more familiar with our biological/neurological makeup and how it has advanced our well-being over time. This is especially fitting considering the tremendous progress made in neuroscience and evolutionary psychology in the past few years. The best way to get started is to understand the multiple dimensions of homeostasis and how it relates to business success.

## Homeostasis

The term homeostasis is generally understood to signify the tendency of a biological entity to maintain its internal stability (such as body temperature and blood pressure), based on the coordinated responses of its components, to any situation or stimulus tending to disturb its normal condition or function. For higher-level animals, such as humans, this also includes maintaining a state of psychological equilibrium attained when a tension or a drive has been reduced or satisfied.

Homeostasis, however, is a much more complex process than the definition above might suggest and involves not only every component of our physiological makeup but also extends beyond our bodies. From a management perspective we need to be cognizant that every individual in an organization is constantly “innately” seeking to maintain his/her homeostasis far beyond pure biological needs.

## Integrated Brain Functions

Weighing only three pounds and containing up to 100 billion neurons, each connected to several hundred thousand other nerve cells, our brains are composed of incredibly complex networks with a billion connections. This extraordinary

self-organizing web gives each of us tremendous power for invention, exploration, and art.

To get a real sense of the superb capabilities of our three-pound marvel and its dynamic extended abilities beyond our bodies, we need to get better acquainted with its three evolved levels. The triad, in ascending order, consists of the hindbrain or the brainstem, the midbrain or the thalamus, and the forebrain or cerebral cortex.

The hindbrain is the earliest major component of our brains dating back about 500 million years. That is why it is also referred to as the reptilian brain. The brainstem has changed very little over time and we share it with all living entities that have a backbone. At this level, behavioral responses are governed by instincts and include regulation of wakefulness, breathing, heartbeat, temperature regulation, and body movements. The focus is also on self-preservation and the preservation of kin. Accordingly, the emphasis of behavior is on domination, territoriality, threat displays, and mating.

A note of caution is in order at this point. The well-known neuroscientist, Antonio Damasio, stipulates, “But the idea that the work of these nuclei is confined to the regulation of viscera, metabolism, and wakefulness does not do justice to the results they achieve. They manage life in far broader ways. This is the neural home of the biological value, and biological value has pervasive influence throughout the brain, in terms of structure and operation. In likelihood, this is the place where the process of making mind begins ...”<sup>1</sup>

The world-renowned sociobiologist, Edward O. Wilson, refers to the midbrain or thalamus as “the master traffic-control complex that regulates emotional responses as well as the integration and transfer of sensory information.”<sup>2</sup> This portion of the brain also maintains such functions as the regulation of hormone levels, thirst, sexual desire, hunger, sleep, and play.

In addition, the thalamus plays an important role in memory storage as well as the major emotions of fear and anger. Further, according to Damasio, the midbrain “both relays critical information to the cerebral cortex and massively



interassociates cortical information. The cerebral cortex cannot operate without the thalamus, the two having coevolved and been inseparably joined from early development."<sup>3</sup>

The cerebral cortex gives us our most human qualities. As Nobel Laureate Gerald Edelman explains, "The fundamental triad of higher brain functions is composed of perceptual categorizations, memory, and learning ... Perceptual categorization is generally necessary for memory which is, after all, about previous categorization."<sup>4</sup> Of course, the forebrain is also involved in voluntary motor activity and the integration of other higher functions such as motivation and speech.

As Damasio succinctly concludes, "In interplay with the brain stem and thalamus, the cortex constructs the maps that become mind. In interplay with the brain stem and thalamus, the cortex helps generate the core self. Last, using the records of past activity stored in the memory banks, the cerebral cortex constructs our biography, replete with experience of physical and social environments we have inhabited. The cortex provides us with an identity and places us in the center of the wondrous, forward-moving spectacle that is our conscious mind."<sup>5</sup>

What is even more significant about the cerebral cortex is that it allows us to extend our homeostatic impulse far beyond the single individual through the development of culture. Our closest biological cousins, the primates, have limited cultures that help them restore equilibrium in response to imbalances occasionally created by individuals that may compromise the overall well-being of a social group. Human cultures have, however, developed far beyond that by including economic, political, and medical systems to help with the homeostatic equilibrium needs of their members. Damasio refers to this general progression as "sociocultural homeostasis."

### Self-Organization

Another process sheds light on the emergent behaviors of biological systems. It is the concept of self-organization. Having looked at the three general levels of the brain, it should now be intuitively apparent that the whole structure operates without a controller and, therefore, is a self-organizing system. The triad's activities are not only fully integrated but also actively related to the entire body.

For instance, the cerebral cortex is not the boss. Instead, the cerebral cortex acts like a screen helping other parts of the brain make better decisions, especially in anticipating future events. There are times, however, when the brainstem processes override the cortex's helpful signals and we find ourselves fully enmeshed in a violent confrontation.

Fundamentally, all life forms are not only self-organizing systems by design, but self-organization also constitutes the primary process by which all organic entities interact with one another. Typical examples of this dynamic, from a relationship perspective, are the informal social connections we develop over time that are vital aspects of our lives within and external to our places of work. In general, self-organization includes the following features:

- An entity's intrinsic ability to change itself as it interacts with its environment and strives to maintain its identity.
- Interactions that produce self-referential patterns without the need to be designed or managed.
- Evolving patterns that are both sustained and transformed by spontaneous interactions.
- Creativity and destruction are part of the emergent process as are attraction and repulsion.<sup>6</sup>

In essence, people have not evolved to be controlled by others. That is one of the primary reasons why life within a highly control-oriented hierarchical organization can never be very fulfilling for its members. This was well demonstrated by the original conditions at Studsvik when the employees had little freedom for collaboration.

### Appropriate Group Size

There is one more success factor to consider before properly suggesting how adhering to fundamental sociocultural homeostatic principles relate to business success. It deals with the dynamics of group size.

Studies show that people function best in well-balanced social settings. Such contexts consist of individuals who express a mix of both moderate self-interest and outward-reaching altruism in a balanced fashion. That, for example, was initially the most difficult problem for Kivikas. That is, balancing not only the demands of the company versus the employees but also between individual members of the company. The bottom line is that well-balanced

social environments seem to promote vigorous “voluntary” collaboration and coordination of activities leading to mutually shared benefits. Limiting group size, however, is vital for the emergence of such positive relationships.

Research by anthropologist and evolutionary psychologist Robin Dunbar<sup>7</sup> and others has provided ample evidence that humans are physiologically limited in developing and maintaining mutually beneficial *voluntary* collaborative relationships in groups larger than 150 to 200 people. In larger collectives, relationships become fragmented, ties of common interest cannot be properly sustained, and hierarchical structures begin to encroach. From a sociocultural homeostatic perspective, small size is vital for the development of supportive environmental contexts where emergent positive relationships can flourish most effectively.

That, however, does not exclude the possibility of nurturing meaningful collaborative relationships within large enterprises and extended virtual networks. Firms consisting of more than 200 people can be segmented into small, mutually interdependent groups that are also well connected to other relatively autonomous parts of an organization. A vivid example of this is how Kivikas encouraged the “natural” formation of small groups, organized around core competencies, within the larger organization. Each team also maintained close ties with the other units inside the business.

Fundamentally, small groups provide ample opportunities for frequent face-to-face interactions among its members. In such a social context relationships become more intimate, leading to high levels of mutual trust. As neuroscientists John Cacioppo and William Patrick have stipulated, “... most face-to-face encounters in real life allow us to communicate through even more subliminal cues—body chemistry, body language, action semantics, mimicry—in addition to words and gestures. Once again, the mind that seeks to connect is first about the body, and leaving the body behind can make human connections less satisfying.”<sup>8</sup> As you may recall, Kivikas made a practice of talking to people instead of using written, one-way communication.

### Business Success

Keep in mind that all our mental maps have values and feelings attached to them. Further, how we react to our mental maps and images (real or imagined) depends more on the environmental

context that we find ourselves in than by our “purely rational analysis” of a given situation as suggested above.

What has become increasingly evident by the latest research in neuroscience is that biological entities, including humans, cannot and should not be fully controlled. They are emergent and constantly evolving complex adaptive systems. There is evidence now that attempts to control people in fact stifle innovation.

Thus, for innovation and productivity to thrive in an organization people need to be immersed in flexible biophysically and socially supportive environments. Put another way, all members of a business should benefit “equitably” (not to be mistaken for equally) by being engaged in a well-balanced sociocultural homeostatic system that is supportive of their life processes. Therefore, when attempting to develop effective organizations we need to be less dependent on Industrial Age cause-and-effect thinking and, instead, begin to rely more on the dynamic principles of self-organization.

As demonstrated by the Studsvik case, it should not come as a great surprise that traditional management concepts seldom work any longer, especially when it comes to knowledge workers. That is mainly due to the continued use of cause-and-effect theoretical constructs. People are not machines by any stretch of the imagination. They are organic self-organizing entities from their DNA molecules to their interactions with the external world.

For example, studies of breakthroughs in neuroscience by David Rock and Jeffery Schwartz led them to the following conclusions related to organizational transformations:

- Change is pain. Organizational change is unexpectedly difficult because it provokes sensations of physiological discomfort.
- Behaviorism doesn’t work. Change efforts based on incentive and threat (the carrot and the stick) rarely succeed in the long run.
- Humanism is overrated. In practice, the conventional empathic approach of connection and persuasion doesn’t sufficiently engage people.
- Focus is power. The act of paying attention creates chemical and physical changes in the brain.
- Expectation shapes reality. People’s preconceptions have a significant impact on what they perceive.

- Attention density shapes identity. Repeated, purposeful, and focused attention can lead to long-lasting personal evolution.<sup>9</sup>

Today, evolutionary psychology and social neuroscience are converging. Accordingly, if we want to expand the innovative and productive capacities of our organizations we need to pay much closer attention to human nature. Reinventing traditional methodologies will not help us advance any further even if they may have given us some success in the past. The new science of the brain and DNA is helping to rewrite not only the origins but also the innate behavior of our kind. That's where our attention should also be from a business perspective.

### Sociocultural Homeostatic System Principles

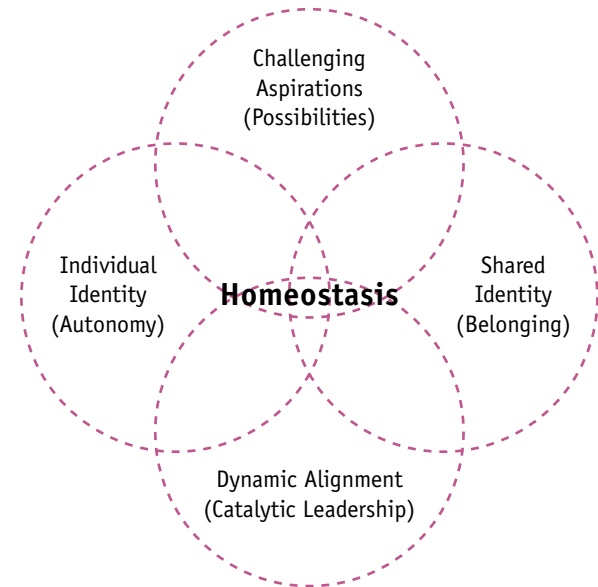
Keep in mind that a self-managing enterprise does not necessarily "always" produce stellar results. First, it takes considerable effort to find the right people. Subsequently, repeated, purposeful, and focused attention given to certain basic self-managing principles is needed before a well-functioning socio-cultural system takes shape. People accustomed to working in structured organizations have an especially difficult time finding solace in self-managing systems. Hence, the member selection process is one of the key factors for success.

Through multidisciplinary research and extensive administrative experience Ehin<sup>10</sup> has developed four general principles that provide a firm footing for the creation of a self-managing or socioculturally homeostatic enterprise. Bear in mind that the dynamic interactive principles portrayed in Figure 1 are *descriptive* rather than prescriptive.

Every organization is unique and, therefore, needs to explore and discover how to apply these principles. We have a tendency to overlook the fact that each social entity is made up of different people and, therefore, has its own distinctive social chemistry. This is true even when a venture produces the same exact product or service as another company.

The left-hand circle of Figure 1 depicts the principle of *individual identity*. It suggests that an organization should make every effort to recruit people who have a strong sense of their role responsibility and personal commitment to accomplish tasks that advance the enterprise. Having high levels of empathy and attunement toward one's colleagues is another prerequisite.

Figure 1: Sociocultural Homeostasis Principles



Finally, an individual who is asked to join the business must also have the necessary talents and skills to contribute to accomplishing organizational goals. This criterion seems to have been satisfied at Studsvik.

On the opposite side of the figure is the principle of *shared identity*. A vital component of this principle is the necessity of the members to have a strong sense of belonging. Ideally, associates should sense that they are part of a closely knit family. Of course, it takes considerable time for such mutually supportive relationships to evolve and flourish. Clearly, such groups need to value diverse individual identities and place considerable importance on mutually beneficial, reciprocal relationships.

Also, as stipulated before, groups with more than 200 members can seldom achieve the cohesion necessary for the proper functioning of a homeostatic, self-managing system. Essentially, the shared identity principle encompasses the integrated body of capabilities and practices that distinguish a group from others and make it effective. It was quite evident that a strong sense of shared identity developed relatively quickly as Kivikas openly encouraged mutually beneficial collaboration.

The principle of *challenging aspirations* sits at the top of the figure and is not a standard vision and value statement. Rather, it is meant to encourage members to look constantly for any new possibilities that might add to the success of the



enterprise. Thus, not only does challenging aspirations include shared organizational goals and incentives but it also places significant weight on individual goals and incentives. Both need to be well balanced for people to take full responsibility for the welfare of a venture. Finally, reflective thinking is also earnestly encouraged, ensuring that all members are on the same page and that the business is pursuing meaningful goals and objectives. The challenging aspiration principle came quickly into play at Studsvik as people realized that their fate and that of the entire organization was in their hands. Thus, they constantly looked for possibilities that were beneficial for both them and the enterprise as a whole.

The final principle, *dynamic alignment*, is all about catalytic or shared leadership. It stipulates that every member is responsible to take the initiative to lead as a specific situation presents itself. Catalytic leadership is founded on expertise, not position power. Ehin defines it as, "Encouraging others to participate in value-added activities that they are either not aware of or are hesitant to initiate action on their own, that would benefit everyone involved." In essence, it is all about value-added facilitation rather than attempting to manage or control others. Again, adhering to this principle led to the successful turnaround at Studsvik. Not only did Kivikas rely on catalytic leadership but so did most people throughout the company. That was basically how leadership evolved in the different product and service groups.

It is important to keep in mind that all four principles need to be fully in place before an organization is capable of functioning in a self-managing or homeostatic mode. Clearly, the guidelines presented are not easy to follow and put in place. Pursuing sociocultural homeostasis in an organization is not for the faint of heart. Every participant in such an operation is responsible with everyone else for the overall success or failure of the company. There is no place to hide or a boss to whom to complain. However, developed properly, as demonstrated by the Studsvik turnaround, a platform for sociocultural homeostasis is definitely worth the effort from both a business as well as an individual perspective. Cacioppo and Patrick describe it best why the effort is advisable:

"When we feel safe and secure within our social connections, we can move along free of biases and unwarranted expectations. Relaxed

and attentive, we can be in sync with the movements of others. With no expectation that we'll be excluded, our defenses, flight-or-fight mechanisms are not on ready alert. Free from all that distraction, we are able to detect more reliably whether any budding connection is promising or an invitation to the blues. Living more calmly in the moment, we can make better choices. Which has the added benefit of helping improve our larger social environment over time."<sup>11</sup>

## Conclusion

Complex adaptive systems thinking is vital today to properly address never-before-anticipated organizational problems and opportunities. Where conventional approaches consistently fail to bring success, more pragmatic approaches need to be found based on the latest multidisciplinary research in such fields as evolutionary psychology and social neuroscience. This is particularly true when dealing with innovation and leading highly qualified people. Therefore, it's prudent to place greater emphasis in our organizations on sociocultural homeostasis that benefits all members equitably.

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