The New Intelligence Leadership Strategy for iCAS

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Abstract

As humanity becomes more dependent on information and knowledge, the current concepts, theories and practices associated with leadership strategy have to be transformed. Fundamentally, the influence of the knowledge-intensive, fast-changing and more complex environment has initiated a shift in the mindset, strategic thinking, ability and style in the new generation of leaders. In addition, for all categories of human organizations (economics, business, social, education and political) their members are becoming better educated and informed, and consequently they are more sophisticated interacting agents with modified expectations. Leading these new intelligent human organizations is drastically different from leading a traditional setup. Consequently, the introduction of a new leadership strategy is inevitable.

Concurrently, in the new context, it is also highly significant to recognize that all human thinking systems and human organizations are indeed complex adaptive systems. In such systems, order and complexity co-exist, and they learn, adapt and evolve with the changing environment, similar to the behavior of any biological species in an ecological system. The complex and nonlinear evolving dynamic is driven by the intrinsic intelligence of the individuals and the collective intelligence of the group. Therefore, focusing and exploiting the bio-logic rather than machine-logic perspective is definitely more appropriate. In this respect, a better comprehension of leadership strategy and organizational dynamics can be acquired by “bisociating” the complexity theory and the concept of organizing around intelligence. The resulting evolutionary model of this analysis is the intelligence leadership strategy.
Keywords: intrinsic intelligence, collective intelligence, intelligent organization, individual leadership, collective leadership, latent/virtual leadership, intelligent complex adaptive systems (iCAS), self-organization, nonlinear strategic thinking, intelligence leadership strategy
1. Introduction

1.1 The New World and Leadership Strategy

Currently, many business corporations, as well as most other human organizations, still possess a machine-like structure that supports the requirements of the industrial era. Such a structure originates largely from the Newtonian mechanical mindset, which explains the physical world in a linear, mechanistic, orderly and predictable manner; the Decartes’ Cartesian geometry and the belief that the universe behaves as a huge machine; and the Taylor’s scientific management school of thought (Taylor, 1911).

The consequence of the above development is the domination of leadership and management theories that believe business systems must be controlled and managed like physical instruments of production, and workers must be engineered and re-engineered to fit the mechanistic structure. However, it is becoming a known fact today that most businesses led in this manner are moving farther and farther away from optimality. Human beings do not function like machine parts and business corporations are more than just pure mechanistic economic production systems. Similarly, all other categories of human organizations are not totally machine-like systems either.

A general shift from a machine mindset to a biological perspective is occurring. Humanity and its bio-related characteristics, in particular, the human thinking systems and their contents, are assuming a more significant role in today’s human system dynamics (Liang, 1998, 2001, 2002, 2004, 2004a; McMaster, 1996; Stonier; 1992). This new awareness is brought about by numerous developments. In particular, the new environment now encompasses the following critical factors/features that are responsible for the change:
1. Knowledge intensive
2. Fast changing
3. Highly networked
4. Fast and continuous learning
5. Smarter interacting agents (at all levels)
6. Modified expectations (for all interacting agents)

All these factors/features point towards intelligence as the new vital focal point. Humanity is gravitating into the nucleus of the information era, the intelligence era. Consequently, the transformation in leadership and management thinking and strategy for all categories of human organizations that focuses on the new critical factor, intelligence, is greatly essential. A new science/art of leadership must be conceived to lead the more intelligent and knowledge-intensive human complex adaptive systems (CAS) (Cassiman and Veugelers, 2006; Cleveland, 2002; Conner, 1998; De Geus, 1998; Ghemawat, 2005; Gladwin et al, 1995; Goldsmith et al, 2003; Goleman et al, 2003; Kelly, 1998; Knowles, 2001, 2002; Liang, 2004, 2004a; Mintzberg and Waters, 1985; Nonaka et al, 2000; White and Hodgson, 2003). This transformation is necessary to ensure the continual survival of the entire humankind in a more complex and nonlinear environment.

1.2 Basic Impacts of Chaos and Complexity

At the moment, the mismatch between the structure constructed to support operations in the industrial era and the vastly different requirements of the intelligence era, are apparently suffocating many human organizations (Begun, 1994; Langloris and Everett,
1992; Levy, 1994; McMaster, 1996; Liang, 2004; Pascale et al, 2000; Perry, 1995; Senge et al, 1994; Shenhav, 1995; Stacey, 1991; Thietart and Forgus, 1995; Westley and Vredenburg, 1997). Human systems with their complex adaptive dynamic are not always highly orderly and predictable at all times. Thus, comprehending and exploiting Chaos and complexity theory, in particular, the properties and behavior of CAS as a living biological system is a new thinking and strategy that can rectify many currently unsolvable problems.

In this respect, Chaos is a highly relevant scientific theory to examine and exploit in the new situation. The Chaos theory is first conceived by Edward Lorenz, Mitchell Feigenbaum, Stephen Smale, and some others prominent researchers during the 1960s and 1970s, to examine phenomena that cannot be explained by the classical/exact sciences (Gleick, 1987; Prigogine and Prigogine, 1989). It provides the primordial strata for a new strategic thinking to emerge supported by it core properties, namely consciousness, complexity, connectivity, dissipation and emergence. These five properties are tremendously vital as they inject life into the systems. The central axiom of the theory is the inseparability of order and chaos, that is, the universe is inherently chaotic and intrinsically orderly at the same time. And the universe is an immense tapestry of thought produced by the human mind. Consequently, Chaos emphasizes the importance of human intrinsic intelligence and its functions in the human world.

Lissack, 1999, 1999a; McMaster, 1996; Merry, 1995; Overman, 1996; Perry, 1995; Price, 2004; Prigogine and Prigogine, 1989; Stacey, 1995, 1996; Thietart and Forgues, 1995; Waldrop, 1992; Zeleny, 1985, 1987, 1990, 2005). A significant aspect of the complexity theory focuses on CAS, encompassing properties such as complexity, nonlinearity, learning, adaptation, autopoiesis, self-organization, edge of chaos (deterministic complexity), and the butterfly effect. All human organizations are composite CAS with the human thinking systems as their interacting agents. This interesting understanding and thinking of Chaos and complexity theory will have a profound impact on the future leadership strategy.

1.3 Bio-logic and Human Organizations

The above comprehension vividly indicates the close association between intelligent human systems and biological (life) characteristics. In recent years, the study of intelligent systems (both living and non-living) has gain momentum in many diversified disciplines (Allen and Strathem, 2003; Fioretti and Visser, 2004; Goldstein, 2000; Kauffman, 1989; Klein, 2004; Langton, 1989; Liang, 1998, 2004; McMaster, 1996; Price and Evans, 1993; Prigogine and Prigogine, 1989; Richardson and Lissack, 2001; Stacey, 1995, 1996; Stonier, 1992, Weeks and Galunic, 2003; Zeleny, 1990, 2005). The studies of how intelligence drives a system, how the human mind behaves and operates, how an ecosystem evolves, and how human organizations can be better led and managed with bio-logic, as well as the conceptualization of intelligence-centred theories, opens a significant new frontier and a new direction for humanity.

Inevitably, in the new situation, the mind must become the centre of analysis and concern. Human intelligence becomes the most valuable resource for all individuals,

All human systems, embedded with sophisticated knowledge structures, and information processing and learning capabilities of their interacting agents, and the right connectivity of the system are intelligent complex adaptive systems (iCAS). The dynamic of the iCAS encompasses fast learning, adaptation, quality connectivity, innovation, competition, smarter survival and co-evolution with the environment / composite system. Therefore, iCAS are CAS with a very high level of collective intelligence and other intelligence-associated characteristics. The characteristics of the iCAS and their associated leadership theory and strategy will be more deeply examined in this study.

2. The Study

Responding to the above recognitions, this study examines three aspects associated with the requirements to better comprehend, conceptualize and practice the new effective leadership theory and strategy for human organizations in the new context. The initial approach is to focus on a macro level framework that captures the general shift (global patterns recognition) in leadership strategy. Subsequently, the more micro perspective is analyzed and incorporated. Thus, the three domains investigated are as follows:
1. **To scrutinize the fresh mindset set and nonlinear strategic thinking needed for the new generation of leadership to flourish:** The transformation in mindset is inevitable because all aspects/components of the human world are now fast changing. The global environment and all its human organizations are becoming more complex, nonlinear, knowledge intensive and unpredictable.

2. **To conceive a new macro strategic leadership framework and to analyze its significance and benefit:** A new strategy that is based on “bisociating” complexity theory and organizing around intelligence, with reference to the unique dynamics between the future leadership and their more intelligent and complex interacting agents, is examined. This research frontier is highly significant for all categories of human organizations, as intelligence is the critical resource that drives the nonlinear dynamics of these systems. The greatly nonlinear characteristic of intelligence is clearly manifested at certain threshold, such as the emergence of the physical symbol set.

3. **To evaluate and conceptualize a fresh and more holistic leadership strategy by incorporating the microscopic dimension:** In general, the third aspect is an extension of perspective (2) and it examines more in-depth the interaction and interdependency among the different characteristics involved. As the leader-follower relationship is now more complex, nonlinear, and more dependent on many other factors, the effective self-organizing ability of the organization becomes a vital success factor. The model conceived in this investigation is the intelligence leadership strategy for iCAS.
3. The Fresh Mindset and Nonlinear Strategic Thinking

3.1 Necessity To Change

In the intelligence era, many concepts and strategies on leadership and management have to be transformed (Cleveland, 2002; Conner, 1998; Goldsmith et al, 2003; Goleman et al, 2003; Nonaka, 2000; White and Hodgson, 2003; Wheatley, 1992). First, fundamental attributes such as the mindset and strategic thinking of the future leaders have to be re-examined/re-created. As all thoughts originate from the mind, the mindset determines the types of thoughts emerging. A fresh mindset points a new direction. Thus, possessing the right mindset and nonlinear strategic thinking is the pre-requisite for mapping out an effective new leadership and management strategy.

In general, the change in effective leadership attributes with respect to the change in the key environmental characteristics is necessary for all forms of human organizations. The two variables have to be positively connected. Knowledge-intensive organizations existing in a fast changing environment are more complex, nonlinear and unpredictable. In addition, as the interacting agents become more educated and informed, the thinking systems possess highly complex and sophisticated knowledge structures, thinking dynamics, problem-solving abilities, and decision-making processes. This intense intelligence source embedded in the human brain is now the most valuable entity, over-riding all economic resources. A general and significant shift is the change in emphasis from the tangibles to the intangibles, such as intelligence, knowledge and connectivity.
Besides, the human mind is also the key node in all information processing and communication systems that contain the ability to deal with the nonlinear aspect of unstructured problems. To date artificial nodes are still not capable of assuming this function. Consequently, quality human connectivity and relationships should be allocated high priority, as a quality human network is positively correlated to a high collective intelligence in all human organizations. And a high collective intelligence is essential for handling unstructured and unexpected problems at organizational level.

In this respect, an understanding and exploitation of the nonlinearity and complexity of intrinsic human intelligence is of primary importance to the new leaders. First, the new leaders must recognize the fact that all individuals are intelligent biological beings. Next, they should realize that the constituents of all intelligent human groupings are human beings, each carrying a well-nurtured thinking system, the dynamo that generates the intense intelligence required. The new interacting agents are substantially different from the older generations.

Finally, they should observe that all human organizations are composite complex adaptive systems. And their understanding and ability to exploit the characteristics and capacity of such CAS is vital. All human organizations, together with their more intelligent and heterogeneous interacting agents, venture into the edge of chaos (both physical/environmental and mental) more frequently, and thus possess the opportunity to reap the enormous output arising from the butterfly effect, if appropriately led and managed.
3.2 New Strategic Focal Points

With respect to the above observations and comprehension, the mindset of the effective future leadership should at least encompass the following boundaries.

1. The mindset to maximize the contribution of each and every intrinsic intelligence source in the organization.
2. The mindset that recognizes the needs to nurture optimal collective intelligence.
3. The desire to exploit the complexity and nonlinearity of both the intrinsic and collective intelligence.
4. The mindset that focuses on the necessity to learn, adapt, innovate, evolve and co-evolve with the other interacting agents, as well as the composite system.
5. The mindset that recognizes the significance of nurturing an intelligence-based culture.
6. The recognition that the leader-follower relationship is now highly complex and nonlinear, and no more unidirectional.

Apparently, an effective leadership strategy needs a new focus. Complex adaptive dynamic has bottom-up recursive interactions. Thus, nurturing collective intelligence through more entrenched mass participation, quality networking and connectivity is inevitable. Therefore, the first and crucial ability of the new leadership is to orchestrate and facilitate the emergence of a group leadership dynamic. A highly effective leader is no longer one that maximizes his/her own intelligence alone and dominates the scene, but one that optimizes the collective intelligence of the systems and allows the latter to evolve, compete and succeed. In the new environment, both
the leaders and followers possess both direct and indirect functions. This is the collective leadership approach, and it is a vital aspect of the intelligence strategy (see Table 1 and Figure 1).

(Insert Table 1 and Figure 1)

Therefore, nurturing this new mindset and strategic thinking that can initiate and orchestrate the desired nonlinear, complex and emerging thinking dynamic is a primary requisite for all future leaders.

4. The Macro Framework of the New Leadership Model

4.1 Universal Expansion and Local Autopoietic Phenomena

Currently, it is believed that a form of energy known as the dark energy is expanding the universe. There is a general expansion pattern that increases entropy and does not support the emergence of detailed structure. However, microscopically, a reverse dynamic is occurring concurrently. This dynamic gives rise to structure, pattern, network, and life. These are localized phenomena. The energy driving this fascinating development is intelligence.

Intelligence is the unique form of energy that is embedded intrinsically in the universe to support autopoiesis and self-organization. It takes place in a localized space. For a human being the intrinsic intelligence is his/her own localized source, and for an organization its collective intelligence is the localized intelligence. And "collective intelligence involves the integration of intelligence sub-units into a coherent unit capable
of solving problems beyond the reach of the individual units" (Stonier, 1992: p 261). Thus, the ability to nurture collective intelligence is a highly valuable characteristic.

At the most basic level, the confinement of quarks in sub-atomic particles is an elementary autopoietic characteristic. This phenomenon allows sub-atomic particles to exist. At the atomic level, atoms that are stable do not react, and atoms that are not stable react chemically to enhance their stability. All these processes are autopoietic. In this case, the autopoietic needs is rather simplistic. It is purely physical in nature. From the approximately one hundred elements, countless numbers of compounds emerge.

As the intelligence energy becomes more intense and nonlinear, the autopoietic process increases in complexity. A significant threshold is the boundary between non-living and living matters. As the intelligence source increases in intensity up to a certain level, life emerges. Apparently, intelligence is not confined to living organisms alone. However, it is the more intense and nonlinear intelligence sources in biological organisms that further increase the complexity and evolution ability of the living systems. Apparently, the autopoietic needs of non-living interacting agents is more simplistic because it usually only involves physical stability. The autopoietic needs of living intelligent interacting agents is more sophisticated because it can encompass physical, biological and even mental stabilities.

As the organisms form a group, self-organization can emerge. An effective self-organizing dynamic only emerges from a system with relatively high collective intelligence. With the emergence of the self-organization dynamic, co-evolution is
observed. In human organizations, the self-organization dynamic is highly complex and nonlinear. Thus, mindfulness and interdependency are highly significant properties in this respect. Highly intelligent interacting agents as specified in the intelligent person model will have to balance between autopoiesis and self-organization with a high level of mindfulness and awareness so that a constructive self-organizing dynamic emerges whenever required (Liang, 1998, 2004, 2004a).

Mindfulness, the ability to focus inwards at the mental state of the mind is unique to human consciousness. Therefore, this special ability must be exploited optimally to create the advantage desperately needed in the red queen race. Similarly, many organizations today are aware of the changing environment to a varying degree but most of them are not orgmindful. A well-synchronized awareness and orgmindfulness approach will automatically elevate collective intelligence significantly. A human organization with the above characteristics is an iCAS. The above analysis leads to the following two postulates for the localized phenomena observed:

**Postulate I: (Law of Autopoiesis)**
Less intelligent interacting agents are “autopoietically” more simplistic (that is, their individual needs/stability is lesser/lower) (example, a hydrogen atom). In this respect, their autopoiesis also reaches optimality very quickly. However, highly intelligent interacting agents possess more complex autopoietic needs (example, a human being).

**Postulate II: (Law of Self-Organization)**
The less intelligent interacting agents self-organize more automatically, as their self-organized state is also relatively more simplistic (example, a crystal). It is more difficult
for a group of human beings to self-organize because they are “autopoietically” more complex. Special effort is required to nurture a high level of collective intelligence to ensure constructive human self-organization (example, a cosmopolitan city).

4.2 The Significance of Organizing Around Intelligence

This new understanding and belief strongly indicates that human systems designed around intelligence are the most adaptive and competitive. The intrinsic characteristics of intelligence blend more naturally with the requirements of the intelligence era. In fact, as specified in Chaos, an intelligence-based structure is the inherent structure of the universe and its microcosms at all levels. Highly intelligent systems learn, adapt, innovate and compete better.

Apparently, nurturing highly intelligent human organizations is vital, as iCAS are the best competitors in the knowledge-intensive environment. Therefore, the intelligence-related biological properties of CAS are crucial factors for closer examination. The ten core properties of human organizations are as follows:

1. Intelligence
2. Order and Complexity
3. Connectivity
4. Nonlinearity
5. Interdependency
6. Far-from-equilibrium (seeking dynamic equilibrium)
7. Learning
8. Adaptation
9. Dissipation
10. Emergence

Strong emphasis must be placed on cultivating, managing and exploiting the above set of properties, with a special focus on their interdependency to nurture the required iCAS environment. The ten key abilities/characteristics that subsequently emerge in the iCAS if the appropriate leadership and management strategies are adopted are as follows:

1. High Awareness
2. High Orgmindfulness
3. High Collective Intelligence
4. Quality Relationship / Connectivity / Mutual Trust
5. Mindful and Supportive Culture
6. Fast Continuous Learning
7. Quality Knowledge Management
8. Essential Autopoiesis
9. Constructive Self-Organization
10. Smarter Evolver

The above set of properties and characteristics clearly reinforce the close association between all human organizations and collective intelligence. Inevitably, organizing around intelligence is the most effective approach to adopt when leading, managing and nurturing all types of human organizations in the new context. The fundamental objective is the continuous elevation of the collective intelligence of the organization
so that an iCAS, as a smarter and smarter evolver, emerges. This is a vital strategic factor that the new leadership must recognize.

**Postulate III: (Law of Organization)**

Organizing around intelligence, both the intrinsic intelligence of the individuals and the collective intelligence of the organization, is the primary requisite for nurturing a competitive iCAS in the new environment. The basic intention is to nurture a smarter and smarter evolver.

**4.3 The New Strategic Macro Leadership Framework**

Fundamentally, leadership is a vital attribute that connects organizational objectives, strategies, functions and the other activities together. The basic essential functions of leadership are to provide a new direction, nurture a culture, and cultivate an “organizational soul”. Are these abilities within the reach of every human being?

In fact, every individual is endowed with a certain degree of leadership (intrinsic leadership) value/quality. But this intrinsic leadership quality in all the people that assume the role of followers is often suppressed by the structure of the system and its environment, especially in the past. With the new evolving environment, where individuals are better informed and educated, this naturally endowed leadership is at least subconsciously activated, and sometimes even more visibly manifested. A new advantage for any organization is therefore to elevate, optimize and exploit this natural endowed ability.
The command-and-control leadership is vividly losing its effectiveness. Even organizations with a highly hierarchical structure such as the military are gradually adopting a modified mindset and approach, soft voice and low key (Cleveland, 2002). There is a general consensus that the traditional leadership and its characteristics are becoming less relevant, if not obsolete. Different views and dissimilar schools of thoughts have emerged over time.

The different leadership approaches and characteristics have been occasionally examined and re-examined (Cleveland, 2002; Conner, 1998; Goldsmith et al, 2003; Goleman, et al, 2003; Nonaka, 2000; Wheatley, 1992). Briefly, some of the models compared recently are as follows (White and Hodgson, 2003):

1. Command-and control leadership
2. Empowering leadership
3. Learning leadership

In the present context, the highly rank-and-class domineering, command-and-control leadership is rejected by the current interacting agents in most types of human organization. Even the empowering leadership approach is perceived to be rank-and-class domineering. The lower ranking leaders have to be empowered with authority by the higher levels leaders to execute certain duties and responsibilities. The current trend is towards leadership emergence, beyond leadership empowerment. Consequently, the mindset of the learning leadership that appears to encompass biologic is more appropriate and appealing.
Inevitably, the general trend is from authoritative to consultative, and highly local/individualistic to collective/diffusive leadership. The more consultative and diffusive approach appears to be the new direction, transforming leadership from vertical to lateral. Apparently, traits such as acceptability, mutual trust and even compassion are becoming more critical attributes for the new leadership.

With respect to the above analysis some crucial facts associated with the transformation in leadership characteristics and dynamic has been observed. This study reveals that the following list of factors is highly significant:

1. There is a general shift from one prominent leader to collective leadership.
2. Leadership is no more associated with individuals at the top of the structure but has become more diffused with managerial/executive and even operational functions.
3. A critical requirement for leading effectively is closely associated with nurturing intense collective intelligence, and mindful and supportive culture in the organization.
4. The form of leadership to be adopted becomes more dependent on the types of activity or problem encountered, that is, more situations dependent.
5. The leadership is highly dependent on the characteristics and expectations of the interacting agents.
6. In the new leadership, the intelligence-to-intelligence linkages, that is, the direct links between the intelligence of the leader and the intelligence of the followers is a critical success factor.
7. Within collective leadership, a new category of leadership, the transitional (temporary) leadership is also emerging.

In this respect, the leader-follower gap has diminished significantly. Thus, in the new leadership dynamic of an intelligent organization, the followers have to be as much a part of the leadership process as possible. To connect them needs a more humanized approach. The way to enhance this development is to have effective and continuous communications through thought methodology, such as dialogue. There must always be effective and appropriate communications between the leaders and their highly intelligent interacting agents, and as the process evolves, new leaders emerge. This activity also ensures that the followers get their thoughts through and the leaders better manage the evolving dynamics, hence further increasing motivation and enhancing quality connectivity. The entire thinking and dynamic should be embedded in the culture, and they always emerge spontaneously. In this respect, leaders as well as the other interacting agents can then better exploit creativity at the edge of chaos, if necessary.

Thus, nurturing collective intelligence through mass participation is inevitable. Therefore, a crucial role of the new leadership is to orchestrate and facilitate an effective group leadership dynamic. This is the collective leadership approach. Collective leadership is more horizontal in nature. This investigation reveals that the interdependency between individual leadership and collective leadership is a critical component of the intelligence leadership strategy. The roles of leadership have diffused in the new environment. An individual leader that hopes to be effective has to depend on the effectiveness of the collective leadership. This observation further

**Postulate IV: (First Law of Leadership Transformation)**

A fundamental mindset of the new leadership strategy is to adopt a more lateral approach instead of the vertical approach. The new trend is towards collective leadership. The success of an individual leader is highly dependent on the success of the collective leadership.

**Postulate V: (Second Law of Leadership Transformation)**

The next new leadership mindset is that the lateral collective leadership approach can only be orchestrated effectively with a high level of collective intelligence, and a constructive emergent strategy that encompasses more consultation, diffusion, and mutual respect.

**5. Some Microscopic Dynamics of the Intelligence Leadership Strategy**

**5.1 Constructive Human Self-Organization Dynamic**

The above investigation and conceptualization leads towards a significant attribute, effective self-organization. Self-organization creates opportunity for the new leadership, but in some ways also negates the usefulness/presence of leadership. In a system with a highly effective self-organizing dynamic, where are the leaders, or is every member a leader? However, it does clearly indicate the fact that the presence of leadership is not entrenched in one person. Leadership is no longer with a charismatic person that pulls the organization along with his/her definition of what a successful direction might be.
Within the intelligence leader model, leadership is a natural phenomenon that results from intrinsic leadership and effective self-organization. In high collective intelligence driven self-organization the set of rules may even be latent, that is, not explicitly stated but implicitly embedded in the minds of the interacting agents. The interesting reality is that collective leadership and self-organization can be mutually enhancing. Individual intelligence, collective intelligence, self-organization and effective emergent dynamic are highly interdependent. Therefore, the primary aim of the new strategy is to nurture a group of self-organizing intrinsic leaders, that is, each interacting agent is behaving both as a leader and follower, depending on the exact situation and requirement. Thus, the roles and gap between a leader and follower is significantly reduced. And many interacting agents will have to assume both roles in order to be effective in the new knowledge-intensive environment, so that their organizations evolve successfully (see Table 2).

Insert Table 2

5.2 Latent Leadership: Highly Intelligent Leaders and Interacting Agents

A highly intelligent interacting agent frequently modifies and introduces additional meanings to his/her autopoietic self-enrichment dynamics. A more subtle approach is usually adopted compared to an ordinary thinking system. An intelligent person, both a leader and a follower, ensures that s/he has better long-term survival opportunities (Liang, 2004). The evolution dynamic of an intelligent person also encompasses co-evolution with the system through strong orgmindfulness. At all times, an intelligent person balances between autopoiesis and self-organization, and seeks holistic adaptive
solutions. In this case, the solutions may even be an option with short-term losses that eventually leads to longer-term gains because of mental, biological, physical and environmental constraints.

Therefore, an intelligent person being highly adaptive and nonlinear, focuses on longer-term survival, and also helps to orchestrate a more constructive system dynamic through the manipulation of both deliberate and emergent strategies. In this respect, an intelligent person is always making preparation for the sudden appearance of punctuation points. When the condition is right, a group of highly intelligent interacting agents with a high level of collective should self-organize very effectively at criticality.

The leader of such a highly intelligent organization could also adopt the latent/virtual leadership approach. The presence of the leader becomes latent when the leader orchestrates a dynamic with such great subtlety that the followers are not aware of his/her intention. As complexity is in the mind of the beholder, its intensity/impact is relative. A space with high complexity to one agent may only be moderate to another. Very likely it is the latter, the latent leader with intense intelligence, that observe the global patterns first. Consequently, through the “latent mind”, the collective intelligence and emergent dynamic is gradually nurtured, and when it exceeds a certain threshold, and a positive self-organizational ability always surfaces in times of crisis automatically. Quality connectivity, mutual trust, mutual respect, and other characteristics of the intelligent interacting agents are also responsible for this type of effective self-organizing dynamic, the latent/virtual leadership approach (see Figure 2). The presence of this trait indicates is a new level of organizational consciousness.
Postulate VI: (Third Law of Leadership Transformation)

The next mindset is on the special needs to initiate and orchestrate constructive human self-organization continuously at different group sizes and at all organizational levels in an iCAS. This is part of the intelligence emergent dynamic that allows a desirable state to crystallize when a punctuation point is encountered.

Postulate VII: (Law of the Ultimate Leadership)

The final mindset is the recognition of the strength and value of the latent/virtual leadership strategy for leading highly intelligent interacting agents in iCAS. It is an integrated and vital part of the collective leadership strategy that emerges from a “latent mind”.

5.3 New Leadership Strategic Factors

At this juncture, it is beneficial to recapitulate some of the appropriate key attributes associated with the traditional leadership so that the new leadership strategic factors can be better recognized. The former attributes extracted are as follows:

1. The ability to identify new directions and opportunities.
2. The ability to determine new objectives.
3. The ability to map out new strategies.
4. The ability to garner the support of the other members.
5. The ability to nurture an organizational culture.
With respect to the emerging new environment, the above abilities are still vital but have to be modified, depending on the situation or problem encountered. However, some additional vital leadership strategic factors must also be nurtured and embraced. The study indicates that the following new abilities are of high significance when leading iCAS:

1. The special ability to perform/orchestrate the above attributes continuously with a new mindset.
2. The special ability to continuously tap on the intrinsic intelligence of the individuals to enhance the collective intelligence of the organization.
3. The special ability of utilizing high awareness (focus externally) and orgmindfulness (focus internally) concurrently and effectively.
4. The special ability to constantly update the mental model of the interacting agents and the culture of the organization through quality interconnectedness, acceptability and mutual trust.
5. The special ability to change faster than the changing environment, as well as to change faster than all the other interacting agents, if needed.
6. The special ability to nurture a swift and effective self-organizing dynamic for the organization, especially to solve difficult unpredictable problems.
7. The special ability to switch between the deliberate and emergent path without difficulty. (The ability to effectively exploits the predictable and makes substantial preparations for the unpredictable.)
8. The special ability to lead in organizational learning and knowledge sharing at all levels.
9. The special ability to lead with new knowledge, theory and strategy whenever necessary, that is, always emerging in nature.

10. The special ability to orchestrate the emergence of collective, transitional and latent leadership dynamics and strategies, and to exploit them selectively.

11. The special ability to lead the followers to exploit the edge of chaos innovatively and creatively.

12. The special ability to look out for the butterfly effect and reap its enormous output.

13. The special ability to humanize the organization to a higher level of existence, a smarter evolver, with deep wisdom encompassing new attributes such as compassion (by sustaining high quality intelligence-to-intelligence linkages).

6. Conclusion

The intelligence leadership model conceived offers a more accurate glimpse into the highly complex traits and dynamics of the future leadership strategy. In intelligent human organizations, effective leadership and constructive self-organization are highly interdependent. The new leadership emerges with the processes and an understanding of the dynamics of the system, with a special focus on intelligence at all levels. It is now more explicit that to be at the forefront of the new leadership requires a more in-depth comprehension of the complex and nonlinear dynamics of complex adaptive systems, and organizing around intelligence. There is a shift in mindset from high predictability to the needs for a smart and well-prepared evolver. A critical factor is the quality of the intelligence-to-intelligence linkages. This is the basic foundation of the new intelligence leadership strategy.
The wicked leader is he who the people despise.

The good leader is he who the people revere.

The great leader is he who the people say, “We did it ourselves.”

-Lao Tzu
Leadership attributes

Complex and nonlinear dynamics

Interacting agent characteristics

Types of problems

Figure 1. Highly complex and nonlinear leadership environment.
Figure 2: General shift in leadership strategy.
<table>
<thead>
<tr>
<th>Traditional Leadership</th>
<th>New Leadership</th>
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<tbody>
<tr>
<td>Vertical</td>
<td>Lateral/Horizontal</td>
</tr>
<tr>
<td>Individualistic</td>
<td>Collective</td>
</tr>
<tr>
<td>Command-and-Control</td>
<td>Consultative</td>
</tr>
<tr>
<td>Machine-logic</td>
<td>Bio-logic</td>
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Table 1: Changes in basic leadership characteristics.

<table>
<thead>
<tr>
<th>Traditional Leadership</th>
<th>New Leadership</th>
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<tbody>
<tr>
<td>Total power-to-fear relationship</td>
<td>Direct intelligence-to-intelligence linkage</td>
</tr>
<tr>
<td>Total top-to-bottom dependency</td>
<td>Exhibit self-organizing ability</td>
</tr>
<tr>
<td>Intelligence confined to the top leadership</td>
<td>Huge and diverse collective intelligence source</td>
</tr>
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Table 2: Additional changes in leadership characteristics.
References


