

MANAGING COMPLEX INTERDEPENDENCIES : ECOLOGICAL INTELLIGENCE: A CRITICAL COMPETENCY FOR 21st CENTURY LEADERS *

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Abstract

Managing complex interdependencies is a critical challenge because of the complex times we live in. It requires developing in leaders another type of intelligence, an ecological intelligence, which differs from either managerial or emotional intelligence and can inform both. 'Ecological Intelligence', enables the understanding of complex, interdependent systems operating across space and time. It combines ancient wisdom with modern understanding and it can guide leaders who would attempt to manage living systems and provide public good. The leaders of the Coca-Cola Company require such intelligence as they enter the business of water in India.

Keywords: Ecological Intelligence, Business of Living Systems, Public Goods, Life Support Systems, Coca-Cola.

Executive Summary

This paper makes a strong case in favor of developing ecological intelligence. It is critical for managers when it comes to dealing with the business of living systems for the distribution and trade of public goods. Unfortunately, the current structure of management education has little to offer as far as ecological intelligence is concerned. As a result, today's managers are incapable of understanding the living systems that they seek to manage. This understanding is absolutely essential for sustaining such systems. The experience of Coca-Cola in India highlights a similar experience.

The paper makes an attempt to explain ecological intelligence in the managerial context. Ecological intelligence is distinct from scientific intelligence. While scientific intelligence is concerned with managing business, ecological intelligence attempts to engage rather than manage life. So, even if scientific intelligence can teach the means of conquering nature it cannot enable managers or leaders to rebalance the life support system. Here lies the significance of ecological intelligence.

The notion of ecological intelligence is not new. It is an ancient technique of understanding what cannot be completely known otherwise. It signals warnings. The twenty first century is threatened by the dangers of disruptive climate factors, global dimming and resource depletion.

* This paper was presented by the authors to the Academy of Management in Atlanta on August 12, 2006.

Under such circumstances “managing” alone is not enough. Cooperation across borders is necessary for handling these difficulties. In earlier times, people looked up to their leaders because they believed that the leaders had in them the ability to continue creation. Even today, the CEOs assert that their principal job is to “create a future”. This, however, is only possible with the help of ecological intelligence.

Ecological intelligence calls for a transition from mere management to stewardship. In fact, the paper asserts that stewardship has to be revisited in a way so that it can subsume management practice within it. This stewardship will become of crucial importance in cases where the private sector is engaged with the trade and distribution of public goods. In entering the business of water as managers rather than stewards of a critical resource, Coca-Cola went beyond the limits of the known mapped by the theory and practice of management.

Water is a vital resource because it is impossible to sustain life without it. Unfortunately, the human right to water is increasingly challenged by the economic uses of water for agriculture and industry. For companies like Coca-Cola, water is a critical resource input that must be managed if the company is to continue to prosper. But for the community from which that resource is extracted water is more than a critical resource, it is a vital one. Thus, any endeavor to manage water will bring them into the eternal business of water, the business of sustaining life, and its disputes. To be in the business of water therefore requires an active collaboration with life, a commitment to continuing the creation well beyond the limits of what leaders have been taught to include in their responsibility set. Ecological intelligence alone can enable managers to cope up with such complex interdependencies.

Ecological Intelligence : A Critical Competency For 21st Century Leaders

Introduction

As leaders attempt to manage living systems to deliver public good, they must be educated in a way that will enable them to understand these systems. Ecological intelligence is critical to understanding living systems. The experience of Coca-Cola in India is not unique except in its particulars. It will recur if we do not more ably equip leaders for the businesses they are intent on entering, the business of living systems.

All the economies of the world as well as its people depend on the ability of our leaders to understand living systems as well as they have been trained to understand how to manage mechanical flows. But few leaders have been trained to take on responsibility for the life support systems of our planet. More must be.

The idea of the world as a mechanical clockwork system of separate parts has, long ago given way to the idea of a world that defies a mechanical model. A new language and a new theory are emerging, but we have not yet fully incorporated these into leadership development.

While ecological intelligence is developed in ecologists and to some degree in software engineers and mathematical modelers, it is not emphasized as a part of leadership development except in societies the modern world often thinks of as primitive. As a consequence, our leaders are unprepared to take on the task of managing what may prove to be within our ability to understand but perhaps beyond our capacity to "manage". They confuse the art of sustaining a living system with the science of managing a business.

Thus, the leaders of companies like Coca-Cola take on challenges for which they are simply not well ill equipped. They are clearly well trained and able managers and strategists. But, the theory and practice of management, while necessary is not sufficient for the challenge of managing a critical element in the web of life, water. That will require ecological intelligence.

Ecological intelligence is not encouraged or enabled with current management theory or method. It is not something that we attempt to provide our business leaders with. But it will be required to balance the emphasis that management theory and practice places on prediction and control.

Today's leaders increasingly engage a world seemingly beyond the capacity of management thinking to control. This world is marked by a prevailing and interdependent pattern of life support systems at risk and is everywhere in decline.

Water is only one element of that pattern of life in decline. It is a living system on which we depend, a living system in dynamic interaction with other living systems that affect climate and the very conditions necessary for life. The business of water cannot be conceived as a business like any other.

As our leaders diversify into the business of managing living systems, we must learn how to equip them for a mission that affects us all. This paper suggests that we do not yet know how to do that. We do not know how to educate emerging leaders to manage with ecological intelligence, or perhaps we have simply forgotten.

Understanding Ecological Intelligence In The Context Of The Managed World

Humankind has a vast reserve of ecological intelligence, but this intelligence was largely

undervalued in the quest for an enlightenment that enabled humankind to predict and control rather than propitiate and collaborate. It could not provide a framework for economic growth based on extraction of what came to be known as resources. Instead, it encouraged collaborating with the forces of life rather than controlling what we selected to call Nature.

Ecological thinking required an understanding of wise use and what has been called the genius of place. It understood the elements of earth, water, fire and air to be ever in dynamic interplay with the North, East, South and West of our shared world. It recognized mind in matter and attempted to engage rather than manage life. Its philosophy of practice emphasized respect and reverence orchestrated in ritual.

But it could not deliver what humankind sought, a way to control creation, to leash it to human will. And it spawned a class of privileged priests who proved to be costly and ineffective in predicting and controlling the elemental energies they professed to understand.

It was scientific intelligence, not ecological intelligence that provided the framework for the agricultural and industrial revolutions that harnessed Nature to the plow and pulley of humankind. Science did not recognize mind in matter as much as explore the possibility of mind over matter. It did not attempt to engage life but rather to manage it.

Such intelligence provided extraordinary value to our species worldwide. It provoked a science of management with theory and practice that enabled the production of necessary goods and the creation of wealth. It created a new world of possibilities that were previously quite literally unthinkable.

But for all its benefits, it also exacted a cost. This cost was borne by the living systems upon which we depend. And this cost is now beginning to be measured and felt by all of us as parts of those living systems.

Scientific intelligence and its handmaiden management with its language, theory, and method allowed humankind to "conquer Nature", the explicit aim of the scientific revolution. But it will not enable us to renew and restore what we have conquered and exhausted. It will not enable us to rebalance our life support system, Earth.

For that, we will need to rebalance head and heart, will and reverence, management thinking with ecological understanding. Rebalancing is necessary in natural cycles. Revolutions in thought

and practice, like revolutions in climate, essentially destabilize. The world they tear apart must eventually be rebalanced.

This paper proposes such a rebalancing by encouraging today's leaders and those who develop them to become familiar with and practiced in the art of ecological intelligence. A similar proposal came from Daniel Goleman when he called for rebalancing the management of results with the art of relationship. His appeal for leadership training that would recapture the importance of emotional intelligence has had a significant impact on the education of leaders. It is our hope that the idea of ecological intelligence might similarly impact practice by encouraging inquiry and imagination.

Ecological Intelligence And The Limits Of The Managerial Mindset

The idea of emotional intelligence was not new. It was an old, even ancient idea that had lost currency and potency. It lost value as the world it nurtured and cultivated was transformed into an economic engine powered by interlinking parts. The emphasis in this world was not on cultivation of resources and relationships, but rather on hands on control of a powerful vehicle of change with a management gearshift. Business schools did not teach leaders to cultivate, but rather to command as they led the command and controlled the economies of the last century.

The idea of ecological intelligence is also not new. It too is an ancient way of mapping the world and of knowing what we cannot fully know. It lost currency when it failed to satisfy the mapmakers of a century determined to chart a world, which could be known and navigated by instruments, a world subject to the control of humankind. It indicated on those maps places uncharted and warned, "*Here there be monsters*".

One such monster is water, the monster encountered by Coca-Cola, but is only one of many. The biosphere, the matrix of life processes on which we all depend, is in trouble. We are now sailing into territory not only uncharted, but also potentially not chartable. Advising navigators or leaders to take care and to suspect their instruments is no more fashionable today. But, it is more critical.

Maps drawn of a known world and the instruments we have come to rely on to navigate it will get us only so far now before we face other monsters, like disruptive climate factors, global dimming and resource depletion that defies our ability to manage. The new world emerging will challenge our ability to command nature to our will and require cooperation across boundaries.

In this world, dynamic flows of interdependent and interrelated elements require that we balance what we think we know with what we cannot know. In this world, we will again be required to cultivate our relationships with each other and the natural world on which we all depend for life as evidenced recently and tragically in Louisiana.

And so, we must now advise that leaders do evidence care and help them look below the surface of old maps at older maps, ancient wisdom, and antique sounding language which might serve to inform action. Our ancestors understood much about the world as a complex living system and prepared their leaders to engage it as such. Not all or even many of these so-called primitive people believed that complex interdependencies were "manageable", although most believed that these could be safeguarded and stewarded.

Our ancestors believed that it was the responsibility of leaders to help continue the creation. Even today CEOs routinely specify that their job is to "create a future". But we may not be able to create that future without reframing our relationship with the world to include older ideas of stewardship and even co-creation. While each has had its moment in management theory neither has exerted much real influence on leadership development or practice.

We propose that the leaders of Coca-Cola would have been enabled by an education that encouraged them to explore these ideas and provide some questions to help that exploration at the end of this paper.

Mapping The New World: From Management To Stewardship

Current language, theory, methods and approaches can only take us so much farther before we exhaust their limits and the limits of our shared world. They have served an important purpose. They have enabled humankind to start and successfully manage an industrial and even post industrial revolution. And they have successfully enabled humankind to circumnavigate the world and create a global trading system of significant import.

But the new world will not be charted by the management mapmakers of the industrial revolution. The leaders of this new world will need to chart its realities and these realities include limits, not only limits to growth, but also to the extension of the idea of management.

The metaphor of management will not enable humankind to navigate the new world of global public goods where critical resources are traded across borders by private actors for strategic advantage. Every framing idea must eventually give way to a bigger picture. We are rapidly approaching the limits to management as an all-embracing frame for leadership action. We

suggest that it is time to revisit the idea of stewardship and to explore its potential as a framing metaphor, which might subsume management practice within it.

The word management itself conjures theory, method and an approach. It is an important idea and a popular one. As an idea, management provided a framing construct that enabled a revolution in the way work was done and in the way our world was organized. But it is a limited idea. It derives from the Latin word *maneggiare* and literally means to lay hands on a horse. Management enabled horsepower to move from the field to the four-lane highway, but it is unlikely to be a powerful enough metaphor for a future that will require over 9 billion people to share one limited life support system traveling through space.

It has already failed to be sufficient to organize the best efforts of so called talent or creative capital, which has proven resistant to the heavy hand of management. Creative talent has historically preferred the idea of being self-organizing and has wrestled with the idea of being managed. Artists bristle at the idea and poets are not keen on it.

But complex living systems are particularly unreceptive to being managed and experiments with their management have provided many examples of the limits of the managerial framework. India is rich in such examples. The Green Revolution in India as elsewhere delivered very little for the cost it exacted from life and left a legacy of dashed expectations among the rural poor. This legacy has had powerful implications that continue to influence politics in India and provide political leaders with a cautionary tale. Hydroelectric power, to date, has not provided more water for India's poor, but has severed them from land and often from hope. Genetically modified organisms promise to feed the hungry, but offer little by way of assurances that Indian farmers can "manage" the consequences of the decision to depart from age old cultivation practices and a heritage of robust seed stock.

Efforts at water management in India suffer the consequence of inadequate regulatory mechanisms, shortsighted subsidies and poor pricing schemes that do not reflect its true value and fail to calculate the cost of its mismanagement. South Indian states like Tamil Nadu, Kerala and Andhra Pradesh have come to blows on the subject of sharing river waters critical to farmers who pull out a bare living from these thirsty lands.

But it is not only in India that our collective efforts to manage what we like to call Nature have had limited success. They have enabled agriculture, animal husbandry and forest and fisheries management. But Nature is, like management, only another human idea, another framing construct.

What we call Nature is not a passive system of resources and recreation. Rather it is a complex and interdependent system on which all of life depends. It acts upon us as we act upon it. And that is a daunting idea and arguably ought to be a humbling one for leaders who aspire to manage the resources provided by that complex life support system.

Educating leaders in the stewardship of living systems will become only more crucial as private sector actors diversify their businesses to include the provision of a public good dependent on living systems. Those who educate and prepare leaders for this mission must inquire as to how to prepare them for the weighty responsibility of stewardship.

Had the leaders of Coca-Cola been educated about India's history as an experiment in the management of living systems and the political, social, cultural and even moral consequences of these experiments they might have been better prepared. However, only if they had been trained to think of themselves as stewards of the public good equipped with management tools, but informed by ecological intelligence and the wisdom of intimate knowledge of place eked out over time, would they really have been better equipped to enter the business of water, the matrix of life.

In entering the business of water as managers rather than stewards of a critical resource, Coca-Cola went beyond the limits of the known mapped by the theory and practice of management. Its leaders were and are unprepared to manage living systems, to manage life. They have not been sufficiently educated to execute this responsibility.

The Business Of Water: The Matrix Of Life

The business of water is the business of supporting life on this planet in enough variety and number to assure its continuance. Before water was imagined as a potential commodity for trade, it was recognized as a giver and sustainer of life. References to water as a source and sanctuary for life may be found in all spiritual traditions.

In the case of India, the spiritual significance of water is everywhere apparent. It is exemplified in the Ganges, the sacred river, and in the Ganesh Festivals in which the elephant god is immersed in the rivers of life.

But the significance of water as spiritual and cultural referent is not confined to India. It is everywhere to be found in our shared world and is as ancient as the waters of Babylon. Everywhere symbol systems and ritual practice point to water as the Source, the giver of life, and that which will ferry it away. Ancient wisdom confirms the findings of modern science. Water is

the matrix of life.

What we call water is a banana shaped molecule, a compound of elements of hydrogen and oxygen formulated on the periodic table as H₂O. It enables life on this planet and as such is a common property resource. Its grossest manifestation is apparent in rivers, lakes and aquifers, but it is also to be found in space and in our bodies. It is indeed such stuff as stars are made of and influenced not only by earthly events but by events in space.

Water is a resource so vital to human communities and to the conditions necessary for life that the United Nations has declared that human communities have a right to water. But a declared right is different from a protected one and the human right to water is increasingly challenged by the human uses of water for agriculture and industry.

Companies also demand and require a right to the water necessary for their products and processes. For companies like Coca-Cola water is a critical resource input that must be managed if the company is to continue to prosper. But for the community from which that resource is extracted water is more than a critical resource, it is a vital one.

For these communities, water is a force of Nature. In the preface to his biography of water, Phillip Ball refers to water as a force for social change and notes that it is a precious resource and must be treasured, nurtured and wisely used. If we do not do so, we risk deprivation, disease, environmental degradation, conflict and death. As Ball's research documents, the life and death of ancient and modern cities and civilizations rises and falls with water.

We are ourselves composed largely of water. But so is Coke. Our survival and the survival of the Coca-Cola Company depend upon it and in some cases contest for it.

The Coca-cola Challenge: A Framework For The Future

Coca-Cola, at this time, evidences no interest in attempting to manage water as the matrix of life or in managing its spiritual power. But any attempt to manage water will bring them directly and indirectly into the timeless business of water, the business of sustaining life, and its disputes.

To be in the business of water therefore requires an active collaboration with life, a commitment to continuing the creation well beyond the limits of what leaders have been taught to include in their responsibility set. Well beyond the limits of the known world of management.

It requires more than the artful hire of chemists, engineers and so called water experts. It

requires an understanding of hydrological systems and cycles, of the life sustaining properties of water and of the risks of entering a business that will tolerate few mistakes.

It would require leaders who understood the interdependent dynamics of chemical compounds, some Astrophysics, Biology and Cultural Anthropology. Such things are not impossible to teach. Most so-called primitive tribes consider them to be a prerequisite for leadership and undertake ritual, walkabout and initiation ceremonies to impart them to new leaders. But few business schools offer such training.

As Coca-Cola copes with the past and present challenges encountered in India, we believe it would be wise to also focus future forward on the business of water and what it will require of leaders. We have prepared some questions, which we believe can encourage the development of ecological intelligence and can enable its practice.

Developing Ecological Intelligence: 10 Questions To Guide Practice

We suggest that the following questions be used to encourage deep reflection and meaningful exchange and propose as a methodology, a guided and facilitated inquiry process, to be used regularly and routinely as part of leadership development and strategy formulation. Finally, as with all such questions, we suggest that the answers that they provide and the questions they provoke be valued and used to guide leadership practice throughout the company.

QUESTIONS

- ✍ How are we preparing leaders for the weighty responsibility of a business where not only profits, but life itself could be put at risk?
- ✍ Are our instruments sufficient? Can tools like SWOT charts, for example, be made to capture the complexity of an entry into a business such as water?
- ✍ Can we imagine and undertake a course of training that would encourage ecological intelligence?
- ✍ Do our leaders fully understand the responsibility of managing a compound element like water, so vital to our shared life support system and so intricately interwoven into the physical, material, economic, social and spiritual lives of a world community?
- ✍ Do we imagine that the business of water in India can be understood as separate from the business of water worldwide, separate from the business of life itself? If so, why?
- ✍ Do we imagine ourselves to be managers, stewards or co-creators?

- ✍ What is our role as private actors in the provision of critical public goods?
- ✍ How do we collaborate with and learn from and with actors in government and civil society?
- ✍ How do we assure integrity of intention and action through routine shifts in leadership and the changing demands of markets?
- ✍ How do we predict and measure a return on investment to shareholders that assures their interest as stakeholders in a common future that requires balancing profitability with the needs of the living systems of the planet to secure and sustain its people?

We also suggest that after actively and fully engaging these questions, the Coca-Cola Company should consider the wisdom of entering the business of life and begins to prepare its leaders fully to live the questions in practice.

This inquiry process will not supply certainty of action, but may re-acquaint the leadership with ideas of stewardship that has been so far under emphasized in result oriented leadership training. Framing constructs like stewardship and service are guides that can enable ecological intelligence to act in the world to effect management practice.

We recommend that these questions be amended, added to and acted on. We believe that when coupled with other methods they can and should guide the development and practice of ecological intelligence.

Conclusion And Recommendations: The Business Of Life And The Public Role Of The Private Sector

Historically, humankind has troubled over questions as to which actors and institutions hold responsibility for providing for the public good. Today, the role of enterprise in defining, securing, monitoring and measuring public good is much debated as the case of Coca-Cola water and India demonstrates.

As we begin to concern ourselves with questions of global public good, we can expect that this debate will intensify and grow more urgent as will calls for participation in this process and for transparency. We can also expect that civil society will come to question management as a framing construct for the business of life and will increasingly require from enterprise a commitment of stewardship informed by a comprehensive understanding of the living systems on which we depend.

We have proposed in this paper that the challenges facing the Coca-Cola Company will become commonplace in the future and suggested that the development of ecological intelligence is a

necessary competency for 21st Century leadership. We should also note that as individuals, most of us, lack this intelligence. We are unable even to grasp the complexity of the bio-system of our own bodies.

Therefore we cannot expect that either our leaders or their organizations are more competent in understanding living systems. They are not encouraged to be. Our accounting systems encourage externalization of the complexity of the natural world, our organizations discount its value and our economy construes the natural world as a low cost provider of commodities for sale.

Leaders attempting to create a future are not enabled by ideas from the past that do not help understand their relationship with life. Leaders of companies like Coca-Cola are trained to optimize gain and to create advantage. They are effective and able strategists. We need only to look at the steady precision of product diversification from water-based products to water as product to see strategic intent in action.

But our short exploration of Coca-Cola and the business of water are meant to illustrate that strategic intent effectively managed and executed, while necessary, is not sufficient when that intent involves access to and provision of resources necessary for public good. Managing the public good always requires management of complex interdependencies. Managing a critical resource vital to life also requires a commitment to life, to its stewardship and sustenance.

Today's leaders have not been educated or encouraged to make such a commitment. Tomorrow's leaders will not be able to escape it.

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