Chapter IX

Systems Thinking and the Internet: New Thinking for a New Era

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“The unleashed power of the atom has changed everything save our modes of thinking, and we thus drift toward unparalleled catastrophes.”
Albert Einstein

INTRODUCTION

In the past decade two movements have had a profound influence on the way we think and communicate—Systems Thinking and the Internet. Both are grounded in sciences and technology and complement each other in principle and practice. But the similarities almost end here. While one has become a household name, the other still remains a mystery. The Internet was born in the elite military and academic quarters, but has rapidly moved to public neighborhoods and has already become a mass movement. Systems Thinking also originated from scientific circles and is only now beginning to make a public appearance.

Despite their benign appearances, both Systems Thinking and the Internet challenge mankind’s age-old ways to think and disseminate information. At a fundamental level, they challenge the hierarchy and authority, and power and leadership. Through technology, the Internet has, in essence, brought down the boundaries that define business, trade and even nationhood. Through equally powerful scientific principles, Systems Thinking has broken the superficial dichotomies of the whole vs. the part, the individual vs. the community, integration and autonomy, and business and society.

In business and management, the last 20 years have seen concepts and paradigms that have dramatically challenged the prevailing workplace assumptions and practices. Among these are Just-in-Time production philosophy, total quality management, and more recently supply chain and enterprise resource planning (ERP). Each one of these paradigms has progressively removed the conventional boundaries between the organization, the customer, the supplier and the competition. Collectively, and now assisted by the power of the Internet, they have pushed our thinking and practice closer to a systemic integration of the enterprise.

**Why New Thinking?**

For well over a century, we have subscribed to a way of thinking known as analysis. In analysis, in order to understand something, a concept, a product, a law, an organization, the human body, we break it apart into pieces and study the pieces separately. This ‘divide and conquer’ approach has served us well. It has enabled efficient mass production of goods and services. It has brought a new social and economic order, which has produced unprecedented wealth and standard of living in the industrialized world.

Now in the dawn of the 21st century, this way of thinking is showing its age. The signs of divisions and fracture are increasing daily, begging for fresh approaches to stubborn and chronic problems. In the business and management field, this thinking has resulted in fragmentation of functions and has created complexity and cross-purposes within organizations. Today, the accelerated interconnectedness and interdependence of businesses, organizations, industries, economies and nations facilitated by the Internet is evident and inevitable. This sense of ‘globalization’ has resulted in a growing number of unions, alliances and joint ventures in recent years. At the political and trade levels, we see the emergence of EU and APEC and strengthening of UN, NATO and GATT. At the industry level, we observe the increasing convergence of airlines such as Star Alliance and One World as well as numerous partnerships and shared activities. In the health sector, integrated care, uniting the disjointed primary, secondary and tertiary segments, is becoming an international trend. In business and commerce the fast emergence of cross boundary and integrative models of management such as TQM, BPR, supply chain management, enterprise resource planning (ERP) and e-Commerce are manifestations of this growing interdependence.

Systems Thinking offers a new way of thinking based on the primacy of the ‘whole’ and relationships. It deals with hidden complexity, ambiguity and mental models. It provides tools and techniques to leverage change and to create lasting interventions.

Like computers, which used to be the domain of specialists, ‘systems science’ was considered a technical subject requiring proficiency in mathematics and computer modeling. Recent books have attempted to demystify (the field of) Systems Thinking and make it accessible to a wider range of audiences (Maani and Cavana, 2000).
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