

Building Intelligent Organizations (*)

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Target Audience:

Managers committed to put the US back on a path to economic growth and prosperity.

Summary:

Competitive businesses of the 90's will be intelligent organizations: They will capitalize on the intelligence, knowledge, and skills of their employees to explore new frontiers, to boldly go where no man has gone before.

Introduction:

The entropy of a system is the measure of its disorder - the extent to which the picture the system has of itself and its environment fails to be an accurate roadmap of its reality. In an organization, significant measures of entropy are those reflected in its costs of quality:

- Scraps, reworks and cancellations (non value adding activities)
- Costs of maintenance
- Overrun budgets (frequencies and amounts)
- The rate of absenteeism
- The rate of accidents
- The rate of turnover and depletion
- The delays in delivery (frequencies, cycle times and break-even times)
- Etc..

The most significant factor contributing to high levels of disorder in noncompetitive businesses is the obsolescence of their prevailing management paradigms: With a roadmap of San Francisco one gets easily lost in Los Angeles. Management's failure to realize this obsolescence leads to underutilization of the organization's human intelligence, knowledge and skills resulting into poor economic performance.

Where do we stand?

What could Winston Churchill have done if he were the Prime Minister of Albania? Many of our organizations look like Albania. Many Churchill's don't get a chance to show what they can do. In today's typical organization, resources are wasted in bringing short-term responses to system problems which require long-term visions. Managers don't communicate, don't interact, don't understand each other. They are in a "survival mode", underutilizing their intelligence. They have the capability of reevaluating what is important to them, but they have never learned how to utilize this capability. A great deal of efforts is spent coping with the system's frustration. Many are stuck trying to promote obsolete or newly espoused viewpoints not realizing that any resistance to a viewpoint is a proof of its incompleteness. The most fundamental organizational questions remain unanswered causing today's socioeconomic crisis: Why are we here? Where do we want to be? What questions should we ask ourselves to get there? What methods are available to answer them? What is critical for our collective success? How can we test the validity of our logic?

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How Organizations underutilize their Intelligence:

Traditional organizations are product/project focused. They retain people for specific jobs dedicated to a given product or project. If the demand for a product declines or if a project is canceled they try to assign people to new jobs or let them go. If the environmental pressures in their community become stringent, they go elsewhere to make the same products rather than trying to understand patterns of social changes in their community and search for alternative ways of utilizing its knowledge, intelligence and skills. In the short-term this demoralizes employees and depletes the organization of its know-how. In the long-term, because of the interdependence of its components, the society as a whole suffers reinforcing the infernal cycle of economic recession. It is after all not by underutilizing its resources that a society prospers. For example, by laying off people following the cancellation of 82 bombers, the defense contractor Northrop increases the demand on welfare. Increasing its welfare budget, the government will have less money to spend on defense. Making airplanes, Northrop management should know that even if an airplane can fly, its components cannot. The engineering skills and technical know-how required to design an aircraft cannot be too far from those needed to make any electromechanical system which has a market and will help people live a better life - an electric car for example. All Northrop's' management needs is a framework which will enable them to discover these new opportunities.

Toward harnessing the human intelligence:

To grow, to prosper, to protect investments, to pay dividends, and to provide jobs, organizations need to find strategies which can guide them in a changing environment. There was a time when a product like a given model of camera, a computer, or a car with a given set of performance characteristics could stay in market for years without being challenged. People could be assigned to specific jobs like on a conveyor belt. In today's world cameras and other electronic devices shrink on a continuous basis, cars become more performing, cheaper, more reliable...ideas become old by the time they are printed. In such a dynamic world, only those companies that harness the human intelligence can survive and thrive.

Organizations as thinking machines:

To the extent that the purpose of an organization, like that of an automated machine, is to provide appropriate responses to encountered situations to achieve a prescribed set of objectives, the evolution path of our organizations is likely to reflect the history of our automated machines.

The classical school. The first automated machine invented at the dawn of the industrial revolution was a simple mechanical device executing one single program like a dancing doll, an alarm clock, or a knitting machine. This is the model according to which the Ford assembly lines were built: Each individual has an assigned task - a program or a set of rules - to follow. This is the model according to which many managers think today by specifying job descriptions and behavioral rules. This is for example how a flight attendant has to read the same text independently of all flight conditions or factory workers have to punch in and out at specific time intervals.

The neoclassical school. The next generation of automated machines had a number of programs and a process for selecting among those programs. A thermostat for example can set the heater on or off according to the ambient temperature. A more complex version of the same system are electromechanical sensing devices like an inertial guidance used in missiles and airplanes to control their direction as a function of the velocity and the gravitational field. A few managers think today in terms similar to these machines: They give employees several alternatives to choose from, according to conditions they encounter. This approach makes the assumption that the most likely contingencies are predictable and will fall within one of the established categories. The subordinates are allowed to direct themselves but only according to roadmaps provided by managers. The critical assumption being of course that these roadmaps generated from managers' past experiences are accurate representations of the landscapes subordinates will face in the future. Managers solely competent to modify these roadmaps have a great tendency to deny any data provided by employees if they conflict with their roadmaps. The typical example is the multi-choice questionnaire: The manager assumes he knows what the subordinate should do, when, and how and asks "did you do this or that?" or directs: "Why don't you do this or that?" In this case the managers focus on control, i.e. he or she compares the employee's behavior to a model in his/her head assumed to be an accurate representation of the reality faced by subordinates.

Organizations of the 90's. The fifth generation of automated machines developed since 1970's is known as Neural Network. In this process the machine is given a number of experimental situations and a program to generate new situations and to test the fit of its generalization to the encounter situation. The interesting part is that the machine is not required to select any of the a priori alternatives but has capability to modify its existing categories and create new ones.

Two questions managers should ask themselves:

- 1) which one of these models is the most accurate representation of their employees' brain capability?
- 2) What will happen if any machine of the third generation or above competes in a changing environment with a first or a second generation machine?

Expanding management's conceptual framework:

To succeed in a changing environment, organizations need to:

- 1) Articulate a memorable and compelling statement of commitment.
- 2) Program the organizational memories with enough alternatives.
- 3) Promote a climate which rewards innovation.

Success in this process will not result from top executives running off-site to return with a mission statement which is filed and produced upon request. The purpose of a strategic statement is to channel the employees' resources toward maximizing their contribution to the organization and society's economic growth and prosperity.

This will not happen if managers go through the motion of writing a mission statement without really understanding the underlying cause-system.

To succeed, a company's executives should start by retaining the services of a person

competent to accelerate their learning of how to make a better utilization of their own intelligence. The learning process will start by expanding management's conceptual framework to increase their capability to:

- Learn faster, understand feedback without denial, and adapt
- Make sense of fuzzy inputs and conflicting messages
- Respond to situations with flexibility
- Take advantage of new opportunities
- Recognize relative importance of different elements in a given situation
- Find similarities between situations despite their differences
- Discriminate between different situations despite their similarities
- Synthesize new concepts by manipulating old concepts
- Establish and test new causal relationships
- Self-focus, self-organize and self-stabilize
- Come up with innovative ideas

Conclusion:

Management's mental structure predetermines organizational choices. An organization's capability to compete in a changing market is a reflection of its management's ability to utilize its employees' brainpower. Only through a better utilization of their own intelligence, will managers become capable of

- Better communicating among themselves and with the work-force to reevaluate what really matters
- Design and manage synergetic organizations capable of evaluating their performance against their goals, and their goals against the company's vision of its place in society.

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