THE ARCHITECTURE OF LEADERSHIP AND CHANGE MANAGEMENT

When written In Chinese the word 'crisis' is composed of two characters—
One represents danger and one represents opportunity. -- John F Kennedy

The Information Age is upon us. Change is occurring exponentially. The Past is unlikely to predict the Future. Consider these distinguished gentlemen who failed to "***Think Outside the Box":***

"Heavier than air flying machines are impossible," *Lord Kelvin, President, Royal Society, 1895*

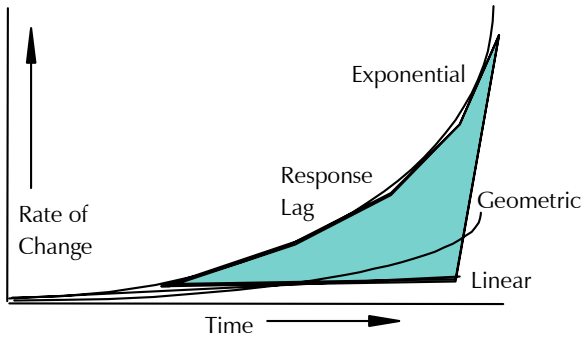
"*I think there is a world market for maybe five computers.*" *Thomas Watson, Chairman of IBM, 1943*

"There is no likelihood man can ever tap the power of the atom," *Robert Millikan, Nobel Prize, Physics, 1923*

"Why would you need more than 640K of RAM?" *Bill Gates, Microsoft, 1984.*

Organizations can be classified according to their ability to respond to change:

- Linear: Capable of very gradual change.
- Geometric: Capable of moderate change.
- Exponential: Immense adaptability to a changing environment.



The world is forever changing. Heraclitus, 250 BC

An organization's management approach must be commensurate with its environment. Most organizations were designed for linear environments, yet exponential change is commonplace. Organizations that adapt a cybernetic approach to leadership possess greater ability to thrive in such a rapidly changing world. Cybernetics is defined as the science of effective organization.

The Cybernetics Group LLC provides a comprehensive and scientific approach to Leadership and Change Management. We use a combination of management disciplines, scientific technologies and computerized applications that address complex problems in a creative way. This paper outlines a series of tools that when used sequentially create a powerful methodology for thriving in a changing world. Our comprehensive approach utilizes time, capital, personnel, information, workspace, and proprietary knowledge to optimize your viability. An engagement may employ a network of qualified affiliates to challenge conventional wisdom, to design, and to facilitate solutions to your most compelling problems. Quality is inherent.

Our Philosophy is based upon values and vision. Once there is an alignment of values and vision, strategic planning identifies the problems and opportunities associated with achieving the vision through the support of the organization's underlying values.

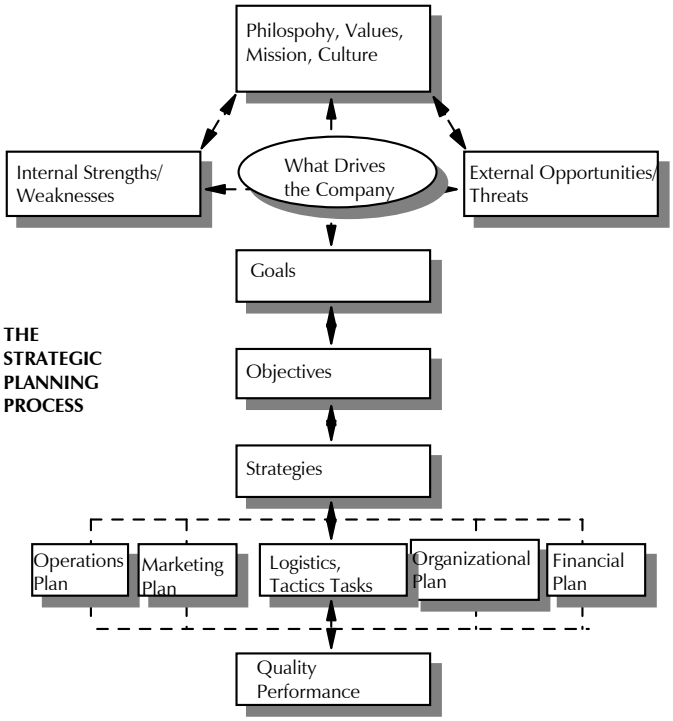
Once the Philosophical foundation of the organization is understood, the structure of the organization can be readily designed through the utilization of Syntegration. Once designed, strategy can be tested through simulation and implemented through project management processes.

In order for organizations to thrive, their workspace must be congruent with their Philosophy and Strategy. The "golden triangle" of leadership systems, habitat, and technology, creates viability within the organization. This is the ***Architecture for Leadership and***

Change Management.

The Oracle of Delphi- the beginnings of the consulting profession?

Strategy-- Strategic planning begins with an assessment of corporate values as part of a Management Audit or Diagnosis. Corporate values & cultures determine the level of **Congruent Leadership.** Surveys provide feedback to affirm areas of strength and develop action plans for change in areas needing improvement. The result is a set of managerial competencies that communicates corporate values and culture into demonstrated attitudes and behaviors.



THE STRATEGIC PLANNING PROCESS

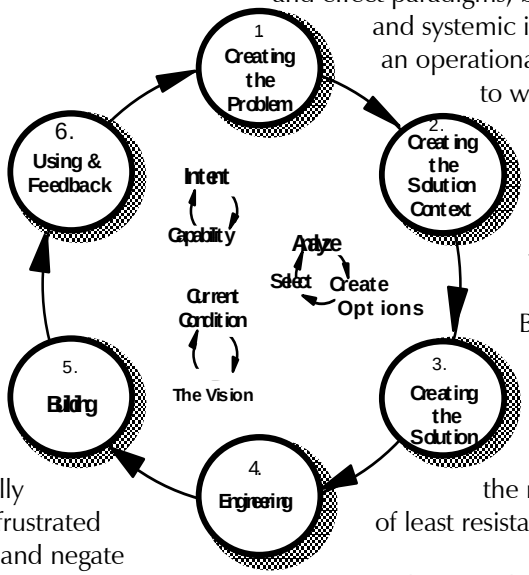
To be effective, Strategy must address the following areas:

- Philosophy-What values drive the organization?
- Organizational Design
- Business Planning
- Process Documentation
- Market research
- Financial Analysis
- Information Systems
- Habitat

"The World will not evolve past its current state of crisis by using the same thinking that created the situation."
--Albert Einstein

Using Systems Dynamics and Cybernetics in Strategic Planning.

The first rule of systems is "Don't fight the system. Change the rules and the system will change itself!"



Organizations are systems, and subject to the principles of systems. For the most part, because we do not understand the laws of systems, we continually attempt to violate them and are frustrated when the laws assert themselves and negate our efforts.

If you wish to produce lasting change within an organization you have to change the structure, not just the organization reporting structure, e.g., the blocks on the organization chart. You have to change all the pieces that represent the real structure, i.e., the processes, policies, procedures, incentives, rewards, management philosophy, etc. By transcending linear cause and effect paradigms, by studying patterns of behavior and systemic interrelationships, we develop an operational understanding that allows us to work with the system rather than against it. This understanding allows for the development of interventions to create lasting change accomplishing the desired intent.

Buckminster Fuller said that rather than attempting to teach people the right things to do, one should design organizations such that doing the right things was simply the path of least resistance.

Austrian Biologist Ludwig Von Bertalanffy defined **a system as an entity that maintains its existence through the mutual interaction of its parts.** Characteristics emerge from the interaction of the elements

within a system. Characteristics that are not evident when analyzing the individual elements. **The System acting like a whole IS NOT described by defining its parts...due to the principle of emergence.** For instance, consider water. One can study hydrogen and oxygen in isolation for an eternity and never discover the characteristic of wetness. 'Wetness' is an 'emergent property.' It is not found in either hydrogen or oxygen, but only emerges when the particular properties inherent in oxygen and hydrogen synergize in the water molecule.

Bertalanffy postulated that there is a set of fundamental structures that operate in the same fashion across disciplines. If one learns these fundamental structures, then moving from one discipline to another does not require relearning everything from the beginning. One simply learns the specifics within the new discipline.

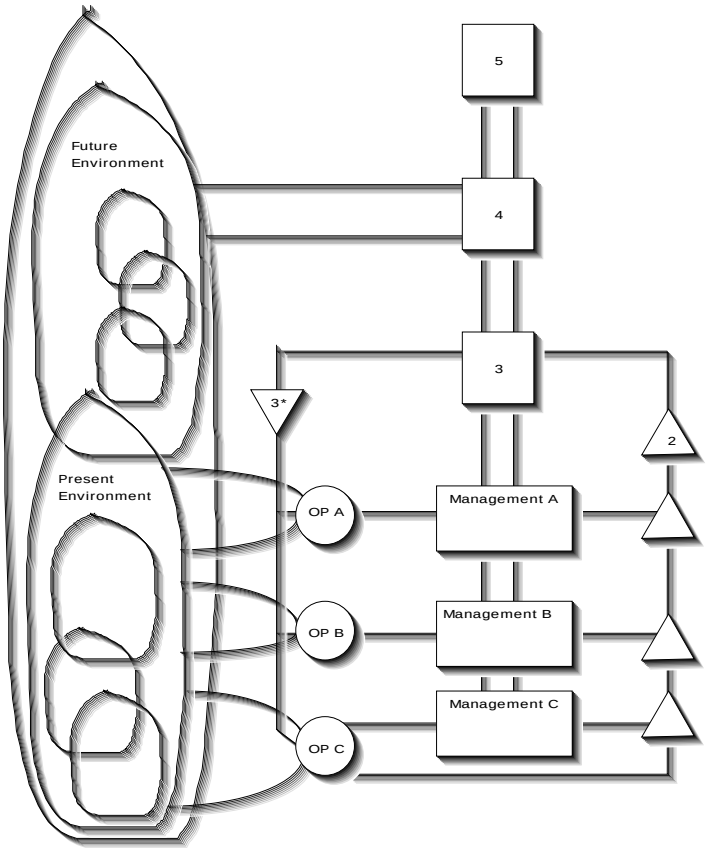
How you define the problem determines the possibilities for solutions. -- Stephen Hawking
Judge a man by his questions rather than by his answers -- Voltaire

Accordingly, System Dynamics is a mindset for understanding how things work. It is a perspective for going beyond events, to looking for patterns of behavior, to seeking underlying systemic interrelationships that are responsible for the patterns of behavior and the events. The foundation for understanding lies in interpreting interrelationships within systems. Interrelationships are responsible for the way systems operate and result in the patterns of behavior and events we perceive.

One of the pioneers of Systems thinking was Dr. Ross Ashby who discovered the "**Law of Requisite Variety**." Variety in this context means "the number of possible states within the system"-- the number of different ways that a person, product or a business can interact with its environment. To control variety- to achieve the envisioned goals and objectives, undesirable variety must be filtered out. Increasing complexity- the number of divisions, departments, the level of human interaction, mechanical components, increases the potential for something to go wrong... *unless we establish the appropriate* Requisite Variety.
For example, how can we ensure that enough of the right information reaches management? If personnel discover breakthrough solutions to operational procedures, but are not empowered to act upon their discoveries, or do not have communication channels for Management to act on their discoveries, then the organization suffers as a result of insufficient requisite variety. Conversely, if an Executive is interrupted every five minutes, then "excess variety" is limiting productivity.

The termite picks up a grain of sand, moves it till the sun hits it and drops it on the sunny side. Giant termite mounds are created from just such simple commands.

The **Viable System Model** includes organizational structure, functions, communications systems, and decision support systems. It makes extensive use of statistical process control, risk analysis, feedback, and simulation techniques. It has been used for thirty years in governments and corporations of all types all over the world.



Viable Systems Modeling depicts the organization's essential components according to the language of Critical Management Science. *This model highlights an obvious but often neglected reality: management exists to serve and support the operations that create value in a firm.* An existing or proposed organization can be mapped into the model to explore its ability to am-

plify or attenuate requisite variety. VSM has effectively operated small businesses, multinationals, and the governance of entire nations. Management of an organization is normally a blend of art and politics. The Viable System Model provides a scientifically sound, rigorous framework to support the art and politics of management. The Viable System Model is grounded in the sciences of cybernetics and information theory. It provides a proven, holistic approach to diagnosing pathologies in existing organizational structure and for designing more effective structures. The VSM offers a politically neutral basis for decisions regarding organizational structure. Ultimately viability depends upon perceiving a company as a unified organism effectively adapting to its environment. Effective adaptation, in turn, depends upon management that solves problems in terms of the needs of the whole, rather than in terms of isolated parts. The Viable System Model helps maintain this adaptive process as a learning/improving activity that continues through time and throughout the organization.

Some of the Key Elements of Viable Systems Modeling:

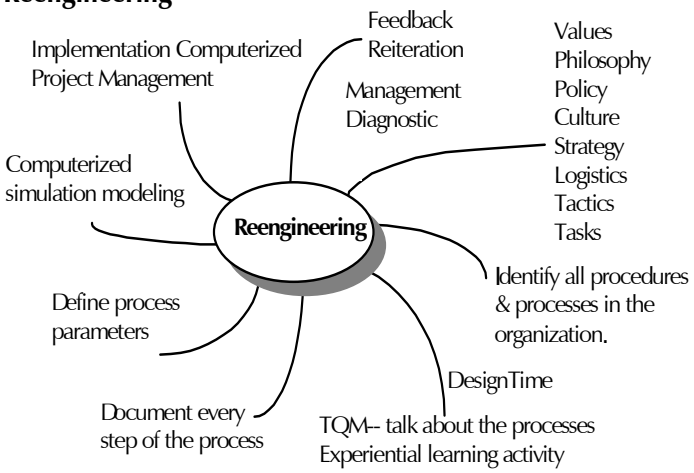
AUTONOMY WITHIN A COHERENT WHOLE: The VSM balances the values of decentralization with the needs of the larger organization to maintain a coherent identity over time. This provides a framework for clearly perceiving the organizational issues apart from the issues of personal power that tend to dominate many organizations.

THE ORGANIZATION IS AN INFORMATION SYSTEM: With the VSM, we see an organization as being an information system, not just as having one. The perception of the organization as an information system recognizes the central role of information in the modern company. This provides a much more 'solid' base for the design of the electronic information systems than static organizational charts or fragmented systems flow charts.

CONSCIOUS DESIGN OF CHANNELS: A particular strength of the VSM is its insight into the management of channels of communication, both within a firm and between the firm and its business environment. The VSM represents the organization in close interrelationship with its environment, influencing and being influenced by it at many levels, through many channels. This process strongly supports customer orientation in a company.

The VSM process is deeply embedded in the principles of Cybernetics. Norbert Wiener, a mathematician, engineer and social philosopher, coined the word "cybernetics" from the Greek word meaning "steersman." Stafford Beer defined cybernetics as the science of effective organization. Anthropologist Gregory Bateson observed that previous science dealt with matter and energy. The science of cybernetics focuses on form and pattern.

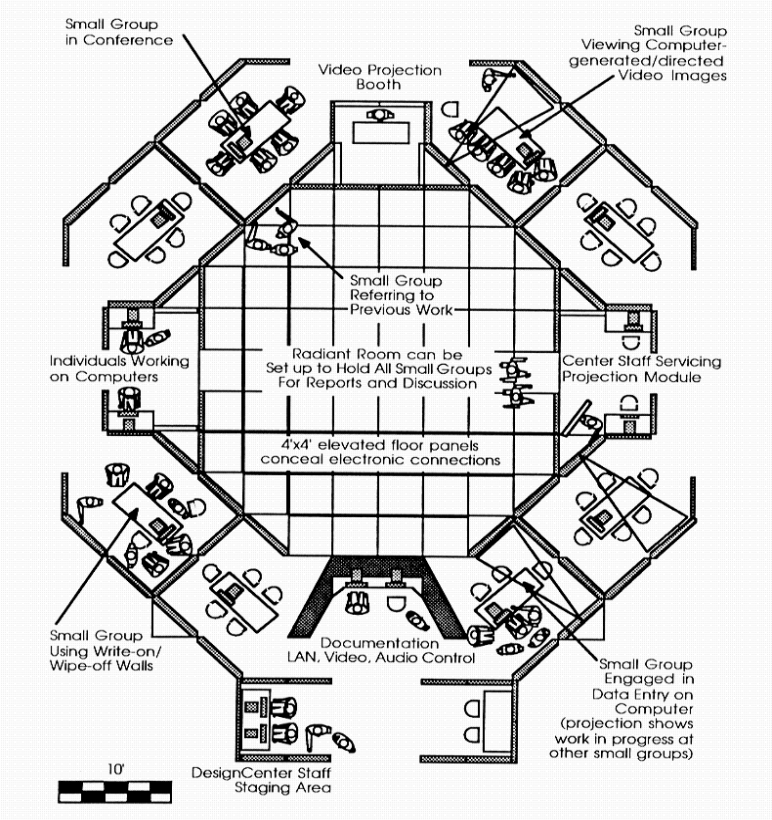
Reengineering



Reengineering is an attempt to engage the above principles into a mainstream management paradigm. Reengineering requires a process orientation; innovative objectives; breaking the 'rules,' and creative use of information technology. According to Michael Hammer and James Champy in Reengineering the Corporation, reengineering means "inventing a better way of doing work, tossing aside old systems and starting over, beginning again with a clean sheet of paper. It *does not* mean tinkering with what already exists or making incremental changes that leave basic structures intact. Reengineering is about rejecting the conventional wisdom and assumptions of the past, inventing new approaches to process structure that bear little or no resemblance to those of previous eras." This definition implies that business processes were previously thought out, designed, or engineered. In our experience, Reengineering is a misnomer because most organizational processes were never engineered *in the first place!*

Implementation— Is your working environment suitable for the next Millennium?

Improving performance requires the analysis and modification of three elements—organizational structure (processes), technology, and habitat. Although



technology and process are routinely addressed, habitat is often overlooked. The efficiency of the organization can depend upon the efficiency of its physical space. Improving habitat is often the catalyst to lasting transformation.

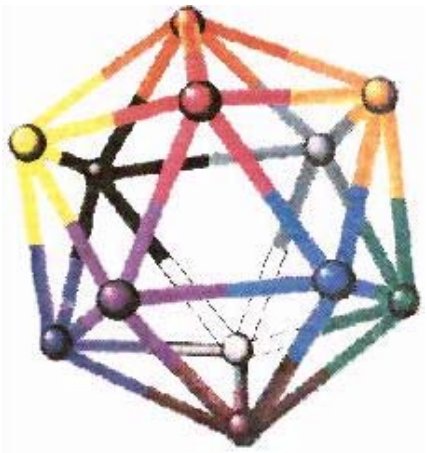
When Chrysler decided to build a replacement for the –K series cars, they didn't start with a fresh sheet of paper—they built a new campus. This campus reflected their new strategy and approach to business where engineers, designers, marketing specialists and assembly technicians work together in the same environment to develop new vehicles. The results? Reduced cycle time, reduced manufacturing costs, improved quality, higher customer satisfaction and demand.

Management Centers integrate quality space planning with computers, telecommunication equipment, and other technologies to create a work facility that enables individuals and groups to process tremendous quantities of information in "Real Time." The key function of a "real time" decision support system is to provide information on operations sufficiently rapidly such that problems can be dealt with as they arise. "Real-time" is defined in terms of the speed with which things can go wrong and the desired speed of management action. For a training program, real-time might mean weekly or monthly while in a flight control system it means milliseconds.

Management Centers developed over the past 20 years in response to the tumultuous rates of change, to remain proactive in lieu of reactive.

Management Centers allow participants to comprehensively access substantial amounts of information instantaneously thereby effecting appropriate decisions.

Inherent within the framework of Management Center is the ability to facilitate group processes that allow organizations to address complex issues in a few weeks that normally requires many months of meetings and memos to resolve. Structure is a key component in our consulting-- be it organizational design, habitat, or collaborative decision-making. Syntegration is a group dynamic based on Buckminster Fuller's innovative understanding of compression and tension in geodesic structures.

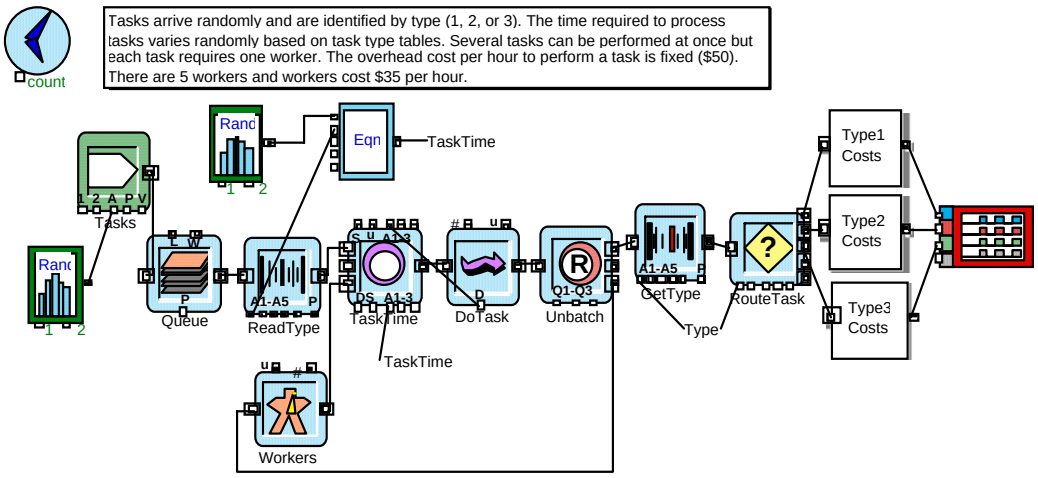


Syntegration can address complex issues in a few weeks that normally requires many months of meetings and memos to resolve.

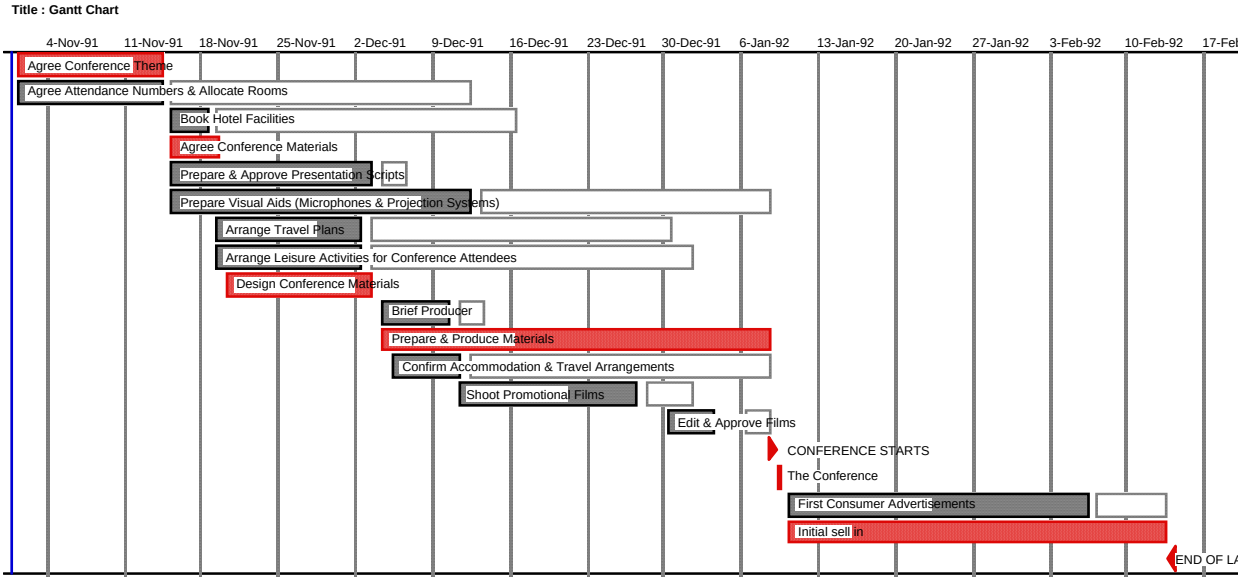
The philosophical basis of Syntegration is consensus and collaboration. By establishing a collective vision

and ownership of ideas, projects realize their fullest potential in the least amount of time.

Computerized Modeling and Simulation—



A model is: "A simplification of reality intended to promote understanding." Models help us to understand how things work and how to improve them. In business, spreadsheets, marketing analysis and information management systems help to formulate a model of how the enterprise is doing. Sometimes, though, these tools are not enough. Many problems are difficult to understand because they involve complex behavior, or situations where cause and effect occur in different places or are temporally separated. **Computer simulation is a modeling process that provides "what if" experimentation before implementation saving valuable resources and time.** Organizations learn whether their projects or ideas will 'fly' before they invest money, equipment, and personnel. One can quickly generate a large number of controlled experiments on the system with no possibility of doing actual harm to it. Four components are necessary to build a simulator: expertise in the business, modeling skills, an information system, and modeling software. These programs although extremely powerful, are easy to use and display information in graphical outputs allowing non-technical people to comprehend the results with just a glance.



Project Management

Once a model has been optimized, the next step is implementation. Any activity involving time and resources can be managed more effectively using computerized project management systems. The Cybernetics Group LLC uses various computerized project management, modeling or simulation software to address a variety of organization and management issues within organizations.

The Cybernetics Group LLC implements a global approach to project management called OPM-Organizational Project Management. The benefits of OPM are significant. Organizations rarely systematically address the number of projects undertaken vs. resources available. OPM evaluates an organization's opportunities relative to its capabilities, permitting rational decisions on how to best use resources in conformance with strategic planning.

Conclusion

Leadership is generally thought to be an intangible quality… a personality trait. This document demonstrates that through the implementation of Cybernetics, leadership can be more effective—producing more robust results. The components discussed herein are intended to interact with each other. Any combination of the above will improve profitability, the viability of the organization, and the overall quality of products and services.

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