

**FLUID MANAGEMENT IN AN OPEN SOCIETY:
ON ORGANIZATIONAL FORMS AND THEIR ABILITY TO RETAIN FLUIDS**

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ABSTRACT

The paper presents a description of the conditions that are generating business changes that are well beyond the limitations of traditional management principles and models. These conditions are in part brought about by a shift towards an open information society allowed by new technological systems associated with the potentials for internet creation, expansion and use. The most up-to-date and relevant information is no longer the private domain of an elite corner of society. Business organizations, as part of this societal transformation, are forced to respond to resulting change dynamics that were once thought to be unbelievable. We characterize this situation as “fluid,” where traditional organizational forms and modes of management are simply incapable of accommodating or managing. To date they appear incapable of even seeing the dynamics. This presents us with some long-standing systems problems and will now need to be resolved.

Keywords: Systems dynamics, fluids, organizational change, business development, hierarchical systems, open society.

INTRODUCTION

1. Internet capabilities have changed the ground-rules for human interaction. The “world wide web” encourages individuals to act as free agents in the relatively open terrain of cyber-land. The cost-of-entry into a new business venture, or cost of exit from a social relationship, are appreciably lower via the capabilities offered on the internet. Discovering this new and uncharted territory raises the human spirit. On the other hand, traditional management forms, structures and procedures for organization are being stretched to their breaking point. Classical norms, forms and beliefs cannot easily accommodate web-networked flows of ideas, philosophies and aspirations. The human aspirations index has become so fluid that concepts such as: “shifting loyalty,” “growing turbulence,” and “rapid change,” while used, largely fail to capture the underlying drama.

2. A 1998 survey of a high profile profession, architecture, found that close to 50% of new graduates entering the profession had left their first architectural job within a year. The study results suggested that the jobs these young people found were out of line with their anticipations, or unsuitable to human occupancy. More remarkable than these results

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was evidence that architectural graduates now had alternatives to which they could move via web-based information. These measures of systems performance allows for optimism and pessimism, depending on your attitude towards the permanence of the traditions, beliefs and organizations that structure society. A 1999 follow-up survey of the same profession found the exit percentage was still growing, and had surpassed 50% (AIA, 2000, p. 3).

3. Even though there is low unemployment, and relative ease in finding jobs in the current US economy, there remain significant difficulties for those with membership in the world of work. There is little of the historic loyalty expected and found in employees and employers. Using A.O. Hirschman's classic descriptions about the role of exit, loyalty and voice in the decline of organizations illustrates something unusual in the contemporary setting. There is a growing amount of voice linked to considerable exit (Hirschman, 1970)¹. Career counselors, advisors and employment search firms now advise their clients to avoid investing "too much" in single-track specialties and specialized firms. They recommend preparation for an average of seven different career tracks during a person's working life. There may be little relationship between any two. The best advice seems to be for people to "learn how to learn," and not stop at "memorizing and knowing the fundamentals."

4. During a recent lecture to a group of computer science students in Finland it was suggested that they think beyond the fame and security of employment with firms like Nokia (the major employer in the nation) if they want exciting and robust careers. Their response was that indeed none of them would work for large firms like Nokia, and in any event many of them were already involved in their own web-based ventures. In addition to there being very "fluid" attitude, they seemed confident of their abilities to design their own futures.

What do these widely spaced examples say about the emerging situation of society, its membership and the ordering systems that bind it together? Not only are the traditional norms, values and structures of social organization undergoing change, but so too are the mythologies that support and give meaning. Stability of myths is especially important since they provide the underlying rationale for making choices about societal form and value. The mythology of the human condition becoming improved via industrialization helped bind many divergence strands into a strong human force. Now this myth is widely questioned. Industrialization is no longer synonymous to progress, and hierarchies are no longer seen as the most efficient means to manage industrialization. The strands of industrialization are again diverging. Will a new mythology emerge to weave society together? Will the idea of communication be a new means for convergence?

¹ Hirschman argued that exit was the early indicator of declining organizational health, where those that could would get out. Loyalty was the second indicator of something wrong when those that remained would remain loyal to those in charge no matter how bad the situation became. Voice, i.e., speaking up, was an indicator of a healthy organization, with a built-in adaptation method for improvement. E-mail has encouraged the voice option in most organizations, although traditional procedures strive to "control" it.

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These are the concerns and questions that provide the interest behind this paper. There is a presumption that we have principles and models of management set and we have phenomena in need of management, and that there is a growing mismatch between the two.

Our journey begins with a historical review of systems set up to manage industrialization and ends at the edges of the current situation of an open information society confronting closed system management forms. We first look at the challenge of the 18th and 19th Century business community, which was how best to organize men, machines and material to improve the efficiencies of production. The chosen mode is clearly presented in a Silverman book, *Queen Victoria's Baggage: The Legacy of Building Dysfunctional Organizations*.

There is a strong likelihood that the roots of the current dysfunctionality beckon back to the seeds of the Industrial Revolution. These were the formative years in which the social and technical systems that we find in most of our organizations were born. Though the culture of the United States holds and nourishes some of the best technical design talent in the world, its organizational talent is anemic and relatively non-functional. Our technical systems have been revolutionized with no corresponding change in our social systems.” (Silverman, 1999, p. xiv.)

The essence of the 19th Century firm was the organization and management of “solids,” where the objective was to fit them into fixed processes. This came to be known as industrial production. The focus continued with solid phenomena into the 20th Century but shifted to how best to organize solids in motion; i.e., machines as organized mass that moves. The challenges of the 21st Century are quite different. Solids are melting and acquiring the characteristics of electro statically charged liquids. The problems in management liquids are very different. The methods used to attract “fluids” are different, as are the means to retain them. The context for this difference is clearly described in a 1995 book. (Negroponte, 1995)

We can speculate that the next stage may well be a serious effort to understand gaseous phenomena, and their management. We may come to see that concepts like “the virtual corporation” serves as a viable container for “gaseous realities.” Most probably it will not be the current sense of virtual, but the far more profound sense of it as defined by Susanne Langer where “Suddenly the element of representation is not only present, but seems to be the ruling element.” (Langer, 1953, p. 69). Once we look deeply into the situation that lies beyond the edges of current reality we may see that the phenomena in need of “future care” is similar to the one outlined in a classic book on human progress titled: *All That is Solid Melts into Air* (Berman, 1982). Our paper stops at the doorway to that world although it helps the content herein to appreciate the foggy future approach us.

Important in this paper is that technology has changed dramatically since the 19th Century, yet the principles of management have not. Hierarchy was the preferred mode of organization and control in the 19th Century and continues as the dominant form even though it sometimes elicits humor and anger. In fact, it holds little authority over the

flows coming from the free association of ideas in some leading corporations. None-the-less, is continues to be widely used in design of command and salary structures for most of the Fortune 500 companies.

EMERGENCE AND DEVELOPMENT OF MANAGEMENT MODES

Phase I: Management by “Decree”

The central challenge for the 19th Century corporation was formalizing and fixation of that which was solid; i.e., fixing machines into a production process. The activity, called management, provided the techniques to make the technology work. These managers, via their early success, came to be the rulers of the socio-technical process. In earlier eras, rulers were presumed to have somehow been appointed by a God,² and granted membership to a special ruling class by birthright. These rulers were granted the authority needed to manage society. When an action was necessary they needed only to send out a decree and as it was stated so it was done. Where it was not done, done improperly, or the ruler became bored, the consequences could be severe. Instead of complex assortments of carrots and sticks used by modern managers, these rules used ropes, chains and guillotines. Their style was clear, and came to be so revered.³ It was an easier time for the managers than for the managed. Some still dream of that former era and its clarity.

The early history of the Western world is written via the clarity of being able to managing by decrees, the initial acceptance of the process, and the eventuality of their final rejection. The importance of this basis comes from how legitimization to manage was derived from position and not ideas, and the position was in a hierarchical of a royal family or religious order. We continue to see residual traces of this belief structure in contemporary management structures. This is where managers come to believe they are rulers⁴ and their organizations are kingdoms. Too few employees are willing to question the situation, but a growing number are exercising the voice option of Hirschman.

The basic tenets of hierarchical management began in ancient courts and churches. The king or the pope sat atop an organizational pyramid with dominion over a vast array of subordinates just waiting to respond to every whim. Organizational specifics were

²They were responsible for management. It may be difficult for members in a democratic society to understand how kings attained their power. Perhaps it began when an individual did a remarkable job of hunting or fighting leading to his fellows attributing him with "godlike" qualities. Because he was allowed to hold a special place in society, it was easy for him to presume that his kin would also have the same special qualities. A dynasty was begun.

³The first record of such codification is seen in Hammeraby's Code, where if the product of the builder's work were to harm a user, the hand of the builder would be cut off.

⁴One indication of this was seen during a 1987 visit to a Chrysler factory where at the end of each main assembly line isle way were floor to ceiling depictions of revolutionary war scenes of General Washington and the troops accomplishing incredible feats (i.e., crossing the Delaware). It is interesting to note that the president of the company at that time had all the faces of General Washington replaced with his: e.g., "Lee crossing the Delaware."

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dependent on the characteristics and character of the individual ruler. Such describes the management of societal entities like the Roman Empire, feudal estates and the British Empire. This belief system was used in early industrialization, although it was soon discovered that more willful participation than that encouraged by fear was helpful. This led to the next stage of development of managerial ideals. It clearly overlapped with pre-industrial structures, but, beginning in the seventeenth century, it tried to be more professional. It resulted from the industrial requirements to find people with special talents to manage growing complexities. It was widely seen that birth did not guarantee competence. There was growing evidence of the weaknesses in giving control over societal processes for goods production and distribution to royal or inherited positions.⁵

Societies began to seek people with special talents or skills in leading others in the organized production of goods and services. The term for this came from the French concept of "manage,"⁶ which by the 16th Century entered the English language. The acceptance of this concept began the shift from reliance on those born into a position of authority (royalty). This marked a shift towards more professional managers in society, which was seen as essential to the implementation of industrialization. This eventually led to an effort to develop managers via using the same scientific development that was thought to be behind technical industrialization. This came to be known as science-based management.

Phase II: Management by “Science”

Changes in management theory and practice evolved in parallel to changes in industrialization. Industrialization of process achieved great production gains, but the results were highly fragmented. The growing need to weave the parts together required a much more from management. Specialization of ever-smaller parts, in an industrial production system, led to development of economical mass production, but the diversity that resulted required ever-stronger external control. This gave ever-higher credibility to hierarchical principles of organization which were similar to those previously used by royalty. It was clear that managerial competence was critical to industrial success, and that birthright did not insure competence. This brought significant change to society and the beliefs as to who should best rule it. Darwin became important to this process. He provided a model for why competence was important to improvement. Society thus began to look for people with highly specialized talents and abilities for managing others. The implicit objective was to create more “fit” organizations and nations.

Managers increasingly wanted to align themselves with the areas of science that they were reading about. Production processes clearly were set up via use of scientific principles, but it seemed difficult to apply these machine principles to social groups,

⁵The English have yet to fully recover from the limitations found in management lineage where lords and lady's pass on their organizations to the children. This is especially true in the construction industry and has been found to be a major reason for the difficulty of the same companies in today's dynamic conditions. Results of the "Conditions of Success" study illustrate the significance of this.

⁶The term "manager" referred to a man, standing in the center of a ring of horses with a whip in his hand. He would manage to get the horses to perform for him, and thereby for the larger audience.

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unless one could manage to get men to behave like machines. Doing this would make industrial processes and products more understandable, predictable and stable, as well as more manageable. Managers thus needed to encourage humans to behave like machines so they could be managed via the same principles.

As long as choice of outcomes, i.e., the products of production, were also kept restricted, consumers could also be treated like parts of the machine. By the end of WW II this system of order was cracking while democratic ideals were entering the workplace. The new agenda shifted emphasis from force and leverage to behavioral motivation using phenomenon such as carrots and sticks. The capabilities of science were thus turned to research on how and when to use each.

Once it was widely agreed that managers were people with skills for getting others to do what they would not naturally do it was possible to draw up some general guidelines. These could then be used to train and direct managers as to what they should achieve. Many years before, Adam Smith had set the mission and tone for these guidelines.

The greatest improvement in the productive powers of labour, and the greatest part of the skill, dexterity, and judgment with which it is anywhere directed, or applied, seem to have been the effects of the division of labour. (Smith, 1965, p.3)

The move towards scientific principles of management was also assisted by the historic work of a noteworthy follower of Smith - Charles Babbage. Babbage clearly liked the logic of Adam Smith, which he widely quotes, but Babbage went further. He combined Smith's economic logic with his own considerable logic of the future of machines,⁷ and set up a special agenda for management over the next 150 years.

Perhaps the most important principle, on which the economy of a manufacture depends, is the *division of labour* amongst the persons who perform the work. ...This division of labour into trades was not, however, the result of an opinion that the general riches of the community would be increased by such an arrangement; but it must have arisen from the circumstance of each individual so employed discovering that he himself could thus make a greater profit of his labour than by pursuing more varied occupations...It is difficult to estimate in numbers the effect of this cause upon production. In nail-making, Adam Smith has stated, that it is almost three to one; for, he observes, that a smith accustomed to make nails, but whose whole business has not been that of a nailer, can make only from eight hundred to a thousand per day; whilst a lad who had never exercised any other trade, can make upwards of two thousand three hundred a day. (Babbage, 1989, p. 127-8)

This early quest for principles of scientific management culminated in the significant work of the early twentieth century researcher Frederick W. Taylor. He gave further clarification to the Smith and Babbage agenda and guidelines. Taylor went further to address problems in how to manage men using machines in a special approach to what

⁷It is noteworthy that he is also credited with articulation of the first mechanical computation machine.

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he called “industrial science.” He applied Newtonian concepts of physical matter as metaphors to managing men as if they were as predictable as materials and machines.

The search for better, for more competent men, from the presidents of our great companies down to our household servants, was never more vigorous than it is now. And more than ever before is the demand for competent men in excess of the supply...In the past the prevailing idea has been well expressed in the saying that "Captains of industry are born, not made"; and the theory has been that if one could get the right man, methods could be safely left to him. In the future it will be appreciated that our leaders must be trained right as well as born right, and that no great man can (with the old system of personal management) hope to compete with a number of ordinary men who have been properly organized so as efficiently to cooperate. In the past the man has been first; in the future the system must be first. (Taylor, 1911, pp. 6-7)

Taylor's desire to simplify and clarify management principles and practices came to be codified in concepts of: time and motion studies, worker motivation techniques and piece-work organization. All three become critical to modern management theories. Taylor ideals continue as mainstream for many students of traditional business administration practices.

Phase III: "Management by Degree"

MBAs have become virtually synonymous to the concept of manager. On occasion there is some talk of forming a professional society for MBA degreed managers, like the societies for architects, doctors and lawyers. The argument is that MBA graduates expect to become professional managers, and employers expect their managers to have MBAs. None-the-less, there are signs of troubles.

Employees and employers are finding inherent weakness in the MBA educational process; especially its inability to adapt to emerging needs, such as tolerance of ambiguity. Via the brief 2-year MBA education students have insufficient time for more than a scant exposure to a few principles of accounting, finance, marketing and management. Those armed with an MBA often present themselves as knowing much more but in fact most MBAs and their employers now accept the obvious limits from such a brief investment. In addition, many of the management principles being taught are far too close to Tayloristic principles of early scientific management. Even the more recent tenants of behavioralism are too limited for current management challenges.

Current business conditions are far more complex than the settings that Smith, Babbage or Taylor, as well as Maslow, have described. Making pins and nails for a public eager to have anything material is no longer typical in today's complex business environment. Now we find increasingly sophisticated technologies, expanding regulations and customers with increasingly unrealistic demands. It's a tough time to do business, but also a very interesting time.

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Major criticisms of MBA training have emerged alongside the growing importance of the international dimension of business. International comparisons of business products, practices and procedures have centered considerable criticisms to MBA training. Two decades of extensive exchange with the major trading partners of the US in Europe and Asia illustrates how they have achieved significant management successes, and done so without much use of the US version of MBA training and degrees.⁸

Knowledge acquired in a typical MBA program is often unhelpful to management of the ambiguities resulting from rapidly-changing, technologically-based internationally organized environments with locally-based clients. Sometimes it is even harmful to appreciation of the diversities of a cross-cultural context.

The US version of MBA training may be another of America's famous but eroding institutions. Most of the troubles have to do with their inability to adapt and deal with the serious challenges of change coming from their context. A decade old *Fortune* article suggested this as a serious possibility before the end of the century, and provided some reasons for it.

A hard look at what business schools are turning out suggests that it's little wonder that employers aren't clamoring for the product. The sad fact gradually drawing on both employers and academicians: Business education has become largely irrelevant to business practice. Corporate recruiters complain the MBAs lack creativity, people skills, aptitude for teamwork, and the ability to speak and write with clarity and conciseness - all hallmarks of a good manager. Blame their teachers, in part: Professors seeking promotion churn out scholarly articles but somehow let the pivotal management concepts of the Eighties get past them.

Business schools completely missed the quality revolution, observes Robert Kaplan, a professor at Harvard business school. They remain oblivious to time-based competition and breakthroughs in technology and information management, he maintains. Who needs managers who have just spent two years with such an out-of-date crowd? In response to the problem, business schools have begun trying to change how and what they teach, groping for relevance. It may be too late. (Deutschman, Alan, 1991, p. 68)

The conclusion should not be that management is unimportant. It is in fact critical to success, but it needs to be of another, more adaptable, form. Something more robust is needed. Alternatives exist, and continue to emerge in leading international firms, but are not widely applied in schools or other firms.

Just now it is possible to get a job in almost any kind of firm with almost any kind of degree but that too seems to be about to change. Management training, as it is now formalized via an MBA degree, generates trouble and is in trouble. It can be seen to

⁸The shortcomings in the MBA model in general and the Harvard management approach in particular, its case-study methods describing managers as power brokers, have been extensively pointed out by leading management consultants, especially Tom Peters.

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cause many of the troubles in US business organizations. One manifest problem, and is becoming worse, are the extreme pay differentials within US corporations; a problem fostered by the leading business schools. Their high starting salaries, and their urge to fast-track to the top encourages large pay differentials to the more technically trained employees that have responsibility for a firms products. The differences are so large that they defy rationalizations beyond the simple, "That's the way it is." In major companies the pay differentials between the highest and lowest paid employees can be as much as a 1,000 times. In virtually all companies the pay of the top executives defines believe in normal value-adding processes. Credit taken for successful products thus becomes more like claim-jumping than product development. Consequences show up in national balance of payments deficits.

Company	Salary & Bonus	Long-term	TOTAL COMPENSATION
1. Computer Associates Intern.	\$ 4,600	\$ 650,824	\$ 655,424
2. TYCO International	4,550	165,446	169,996
3. Charles Schwab	9,000	118,900	127,900
4. Cisco Systems	943	120,757	121,700
5. America Online	1,575	115,510	117,085
6. IBM	9,266	92,983	102,250
7. GE	13,325	79,813	93,138
8. Citigroup	10,181	80,049	90,230
9. Compuware	2,200	85,321	87,521
10. Colgate Palmolive	4,200	81,117	85,318
		Average:	\$ 165,056

(In thousands of dollars; i.e., add 000, *Business Week*, 4/17/2000)

Figure 1 TOP-PAID US CHIEF EXECUTIVES

In other countries, where the differentials are closer to 15, a manager is expected to resign in disgrace when profits or product quality declines, or at least take a pay cut.⁹ US managers, on the other hand, manage a raise in pay even when things go badly for the organization. Even US customers prefer foreign-made products.

The important point here is that regardless of the pay, the knowledge base of managers is simply insufficient to contemporary needs. It is no longer possible to simply sit back and manage 5-period product life cycles, and watch herds of cash cows graze in calm

⁹The executives of foreign companies seldom receive more than 20 times the pay of their lowest paid worker.

meadows.¹⁰ All of the above has gone into motion with few islands of stability among the strong flows.

STATIC EDUCATION FOR DYNAMIC BUSINESS CONDITIONS

At a more general level, the emphasis in contemporary education lies with fragments and now with integration. The results tend towards more disintegration than efforts for integration. It is easy to see this in comparing separate disciplines with students side by side in the same universities; e.g., management and architecture.

Management themes are avoided in architectural training¹¹, just as management education seldom mentions the focus of architecture - design.¹² The results of both offer little benefit to either, and the mutual consequences do little to help the society that supports both. Clearly, architecture requires organizational skills found in management theory and management practice. In addition, architecture could clearly aid the content of product, process and organizational design. On the other hand, the potentials in increasing managers' awareness of design are large, and largely untapped.

A need to increase the designer's awareness of management was articulated by researchers such as Colin Clipson at Michigan. He initiated and built a program to demonstrate the importance of design linked to management, for improving America's competitive edge. That agenda, and his work, have largely disappeared.¹³

We could look at studies like Clipson's to gain insights as to the basis for architecture's attitude of non-management to anti-management education; i.e., ignorance. Management skills could clearly be helpful to architects who must deal with complex economic, political, aesthetic and technical situation, but it should not be the traditional approaches to management. Unfortunately, it is not widely known in architecture that there are new models available that would significantly increase the potentials for professional success. These new models mostly stem from a tight cluster of ideas that came from the "action research" work of a group at the Tavistock Institute in London. Their efforts, initiated

¹⁰Product life-cycle is the period that beginning with the product's design and ending when it loses its market. The product is a "cash cow" during the stage between the time that no more research and development is needed until the market for it radically slips.

¹¹While the accrediting requirements for schools of architecture do require some exposure to management principles, although in only three of seventy-four listed criteria, most schools do not see the subject matter as important. This paper outlines the reasons for this as well as possible solutions to it.

¹²A study of 700 business schools by Richard Blackburn, University of North Carolina, concluded that "despite a growing recognition of the importance of design to business success, only a few business schools in the US. offer courses in design. More would like to do so." *Wall Street Journal*, October 23, 1991. A May 8, 2000 article in *Business Week* described the extreme importance of product design to business success, yet few MBA programs still cover the subject.

¹³Colin Clipson, a Professor of Architecture, University of Michigan, organized ten case studies to be used in management courses in Michigan's Business School and elsewhere to illustrate the role that design can play in improving what a company does and how it does it, 1986.

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near the close of World War II, set the stage for radically different ideas about management. Two of most widely recognized ones are management via *autonomous work groups* and *socio-technical systems*. (Trist, 1959)

The Tavistock research initiated a fundamental shift in how work is perceived, organized and managed. Their ideas have become critical to emerging trends in management theory. They may also be key to the future education of architects. The autonomous work group idea is at the center of the Japanese model for work group design and management. It is also at the core of team-based product design processes, processes seen to show the best results in a wide variety of industries. Few American firms have seen that this team-design mandate could offer considerable advantages.

At a more general level, Tavistock initiated theoretical work on alternative forms of management, which spread to other research centers during the seventies and eighties. The majority of it came from speculation on how best to respond to the opportunities opened up by Trist, et.al. in the fifties. These theories include:

- The success of autonomous work groups where other group techniques have failed highlights the failure of research workers and managers to make basic changes in organizational structure, and in the nature and the organization of work. This failure has its roots in unquestioned acceptance of the methods and assumptions of scientific management and the traditional management theorists.
- Lou Davis's survey of management practices and assumptions about job design showed the strong influence of scientific management. Adverse effects of greatly reduced job content were thought to be adequately controlled by selection, training, incentives and working conditions (Davis, Canter and Hoffman, 1955). Miles (1964) demonstrated that long exposure to the ideas of democratic management had not changed managers' perceptions and attitudes; these were closer to those of Taylor than to McGregor's Theory Y.
- Taylor (1947) and the early management theorists believed that their proposals would eliminate the problems of restriction of output, lack of cooperation, apathy and worker-management conflict. The persistence of these problems over the years led to a succession of new approaches. Human relations and group techniques were part of this pattern, and had only limited success.
- There is very little awareness that new thinking about the structure and the design of work is a necessary condition for the elimination of apathy, restriction of output and similar problems. For this reason the Tavistock research and the transformation of Non-Linear Systems are of major significance. They both involve basic organizational changes and suggest

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improvement of rank-and-file worker motivation via increasing job content and control by workers of their work environment.

- It is widely argued that the Tavistock concept for autonomous work groups has more explanatory power than concepts deriving from traditional group-dynamic thinking. Their coal and textile studies could well supplement classical studies of Mayo and Lewin as the mainsprings of emerging management thinking and action. (Bucklow, M., 1969, pp. 199-212.)

The conclusion of this train of thought is seen in the principles of managing a negotiated order, as articulated in the 1970s. It comes from combined results of studies done in hospitals, coal mines, mills, and continuous production factory settings. Many now agree that the late Eric Trist is highly responsible for the formulation of these management alternatives. A negotiated order is perhaps the best description of what fluid management might be like. It arose from work in a hospital emergency room where in order to keep patients alive, individuals had to suspend job descriptions, work-rules, and self-glorification. Where these traditional attributes of workplace management came back into force patients began to die. The same can be said to happen in the architectural office design studio, although with less directly ominous results.

Architectural educators set up their curricula around an argument that the real potential of what architects do can only be seen in the design studio process. This is where the content of architectural technologies, humanities and critical thinking are, where possible, integrated¹⁴ into ego-centric based design proposals. An outside observer might not see signs of the integrative aspect of the studio. He could even argue that the process teaches students how to be inefficient, while giving too much encouragement to the shortcomings of egocentric and idiosyncratic behavior in both the teachers and students.

Whether or not it is true, it suggest to those in the building industry are wary of architectural design. They have learned to perceive design as more of a problem creator than a problem solver. This becomes the flip side of the problem of how to bring management knowledge into architecture training; i.e., how to bring design knowledge into management training?

*

Design is a critical variable in today's business success, and failure. It will likely become even more import during the next several years based on several studies (Hawk, 1991). In addition, it will become part of both management and architectural education, but probably will not be in any terms now used in architectural schools. That model of design education is clearly seen to be both too closed and too inefficient.

Architecture is also perceived as using a method of practice that end up being in opposition to what is now know as customer service. This may well be the result of the

¹⁴This highly ambiguous process shows its true colors near the times of major design reviews where students are expected to, and do, miss their non-design classes to devote themselves totally to "design." More often than not students learn during multiple semesters to procrastinate work on the design process while bypassing much in their non-design, content-based courses.

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profession's approach to design, one that thinks badly of the client's knowledge. This reality stands in opposition to the current wide acceptance that a business activity must be perceived as a service, by those who pay for it, in order for them to appreciate it as being valuable. This was a chief tenant of viable business but temporarily forgotten during the good production times after WW II. As long as there were more buyers than sellers of products it was easy to have many fantasies of production. Over the past two decades the Japanese helped reverse the situation and remind the world of the importance of service to products.

The implications of this are ominous for business, architecture and other professional endeavors if they do not find ways to redefine assumptions about the importance of the design and the role of the designer's ego in helping and hurting the designed results. This assumption has long roots, some of which challenge beliefs as to how the true masters of architecture treated their necessary but evil clients. Similar myths are also passed on during the MBA education.

To become participants in the emerging reality of society and business both architecture and management themes will need to be changed. Recent research into international firms involved in the construction industry illustrates why and what might be done to improve the industry and its products.¹⁵ Results of this industry study point to the source of clients' negative perception of architects and their role. Many of the clients in the study believed that architectural firms were both badly managed and anti-business. Clients had a sense that management theory had little to say about architecture. This came from the perception that architecture is filled with creative people and that creative people can't be and shouldn't be managed. Pity.

Architectural education will need to deal with the perception of others about architectural design. The greater inclusion of management education in that process could help, but the models presented need to be more innovative than what most MBA programs now offer. In the following section a three-stage model of management modes is outlined in order to clarify this agenda.

THE EMERGENCE OF VIRTUAL SYSTEMS

Figure 2, on the following page, outlines three very distinct modes of management, suggests their possible evolution, and allows discussion as to where we should go if we wish to meet the requirements of contemporary situations; i.e., to be able to manage fluid situations. The first two modes are presented to clarify the need for a significance of the third mode, which is very difficult for those trained in contemporary management practice to understand¹⁶.

¹⁵A study of 60 international firms involved in forming a new industrial approach to producing buildings. Done at the Stockholm School of Economics, Institute of International Business, 1992, *Forming a New Industry*, Swedish Government Publication, Hawk, D.L.

¹⁶This diagram was developed by an undergraduate honors management class of engineers and a graduate management class of executives. The "rat" notion was added by the second group of students.

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Mode One

The essence of the first approach is that management takes place in the confines of a narrow box. All a manager needs to be able to do is to get workers to head down a path, and then keep prodding them to go faster and faster and thus improve productivity. Workers, and most of the managers, don't need to know where they going. That is prerogative of top management; which gets paid to worry about mission and direction. You should not the fundamental role of the "rat" in the process. His role is to help keep the process moving by informing management of the level and location of worker discontent, so management can neutralized it prior to an upheaval or rejection of management's rule.

This model can be seen in traditional automobile assembly plants, and in many ways even in the larger automotive firms that design and operate them. There are exceptions in the auto industry, and they are growing, but they are part of a small minority. The Lordstown, Ohio GM plant represents the most traditional end of Mode One, while the Volkswagen Resende, Brazil plant represents the more innovative end of the spectrum that sees a need to leave Mode One behind.

Mode Two

The second mode obviously develops from the problems inherent to the first. In this case the straight lines become boxes within which people can be placed or arranged. Its now okay to, "think outside the box," as long as the box is present. The central role of management is no longer to force and prod. Its role is to "encourage" and "lead." Management is taught to articulate and speak to a mission that conveys inspiration to its employees; it gets them to buy into the organization and accept the limits of its democratic principles. Please note that the "rat" still exists, but its new role is to hide in mission statement and not be seen standing next to managers.

Electronics manufacturing clearly illustrates this mode, its strengths and weaknesses. The auto assembly line has been replaced with the flexibility of the job-shop office environment except the mission and overall operation of the organization is still kept vague to those below upper management. This is especially apparent in Germany firms but is widely visible in US firms like AT&T and Lucent. These last firms are trying to solve this problem by sending production problems out to suppliers.

Three Modes of Management

From Hard Management for Soft Times
Towards Soft Management for Hard Times

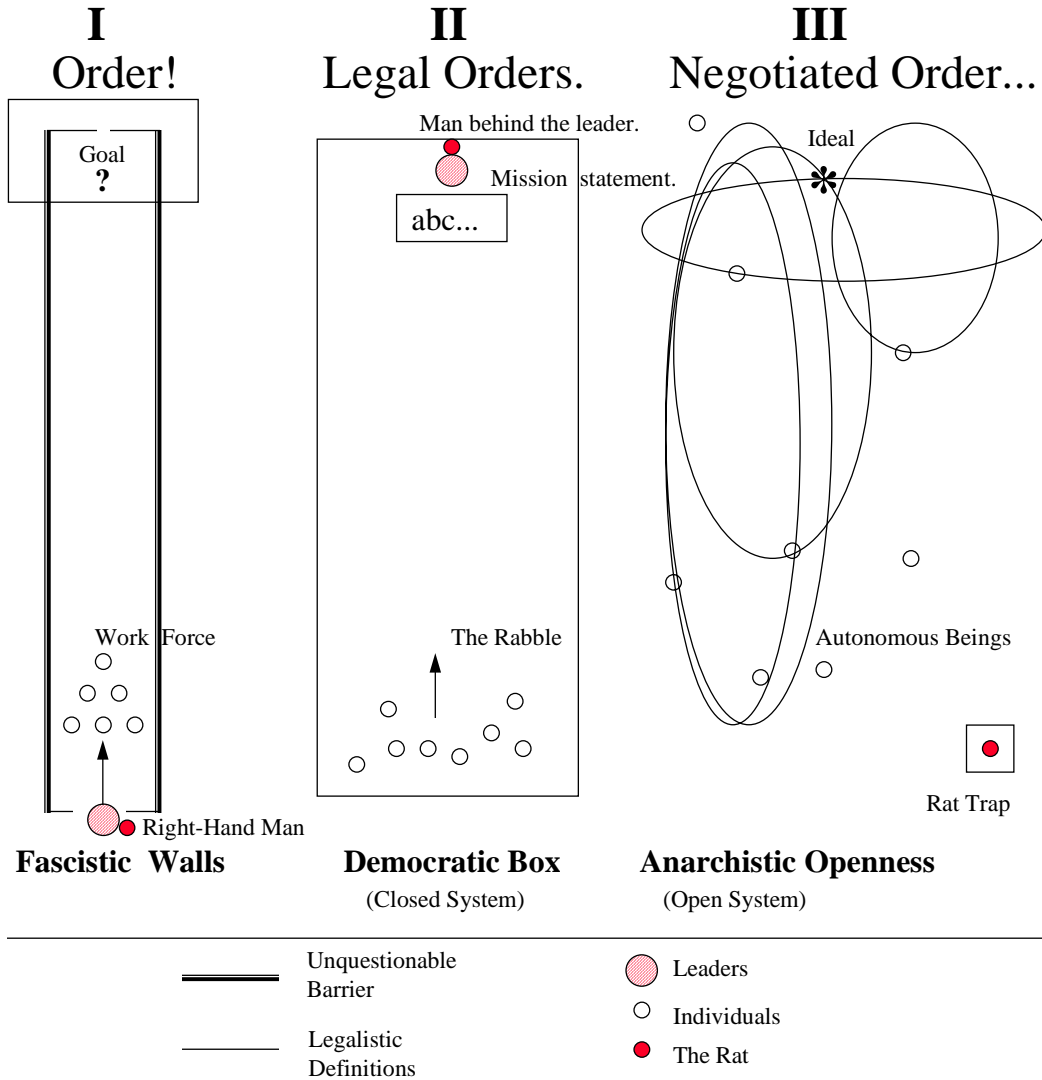


FIGURE 2

Mode Three

The third mode is not an evolution of the first two. It emanates from a different logical type of human understanding. It involves very different precepts about human behavior, motivation and conduct. It requires management to assume a very low, even vanishing, profile. Each employee is expected to increasingly assume responsibility for articulating

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and achieving common objectives as he/she sees them and feels fit to attain them.¹⁷ The role of management is to formulate and communicate the ideals of the organized entity. Where the ideals fade, or there are no ideas present, the entity dissipates to become fertilizer for newly organized entities. All parts as well as the entity are continuously flowing. This brings us very close to the situation of a fluid manager.

Companies like SOL of Finland clearly illustrate the spirit and form of this mode. These are highly unusual organizations.

While it is difficult to find examples of firms using only the third mode of management there are clear signs of its potentials for managing fluid dynamics emerging at the edges of most industries. Allowing flex-time, self-management, raising the importance of design, experimenting with innovative research and development, and emphasizing ideas over structures and hierarchies all represent early indicators of the transformation, although there is clearly a long way to go to understand this mode and how to manage it.

Of course, clear examples of Type I Mode organizations and management remain alongside the very numerous Type II Mode organizations. In addition, it seems that business education has yet to go as far as some innovative firms that are experimenting with Type III Modes of management. There is in fact almost no research underway on this third mode.

Perhaps its because the standard research methods for theses and dissertations in management require the used of closed systems, fixed research methods that can't see, let alone see and negotiate with the realities of fluid dynamics. This will undoubtedly change when enough firms have demonstrated ways to respond so that schools will have to accept that the alternative is real. At that point a wealth of systems models and methods will be available to carry out improved research methods design.

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¹⁷This approach uses the Einstein notion that in contemporary physics the shortest distance between two lines being a straight line is irrelevant. What now matters to understanding physical phenomena is finding the path of least resistance.

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