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Strategic planning and management reorganization at an academic medical center: use of the VSM in guiding diagnosis and design

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Two consulting assignments involving strategic planning and management reorganization in an academic medical center are presented in this chapter. The Viable System Model provided important guiding concepts for both. The way the model was used in assisting diagnosis and design is highlighted and some of the implications and consequences are discussed.

Serendipitous milestones in one person's journey: a tribute to quality Beer

In many obvious ways, this volume and its various contributions stand as a tribute to Stafford Beer and his work in management cybernetics. This fact gives the book a special aura since, despite the many sources of material and the myriad cases discussed, the spirit of one particular individual provides a unifying thread throughout.

Instead of beginning with a technical commentary it may, therefore, be entirely appropriate to start on a personal note, recounting the circumstances of my encounter both with the Viable System Model and with its author. This will serve as a means for acknowledging the importance that both have had on my own conceptual development. It should also clarify the particular manner in which I have found the model to be helpful in my

work, thus setting the proper context for the discussion of two cases of consulting assignments that will follow.

I was first introduced to cybernetic thinking when, in the mid-1960s, as an architectural student in London, I attended a series of lectures given by Gordon Pask at the Architectural Association. I was then involved in issues of urban and regional planning and was immediately drawn to the new material presented by Pask, sensing that although the subject matter was different, there was much of significance in common. I went to work as a junior research assistant at Gordon's uniquely eccentric Systems Research Laboratory, widening my reading in the available cybernetic literature and making my first acquaintance with Stafford's early work.

At the same time I had also become deeply involved with the work of Buckminster Fuller responding, with others, to the challenging vision he was projecting of social evolution, the future of the planet, and the possibility of a peaceful global development through a humane and effective design.

The years were times of great intellectual excitement and much talk about the dawning of a new era. The sense of urgency and anticipation was manifest in student unrest that erupted all over the Western world and it found vivid expression in the arts as well as in the widespread youth movement seeking new life-styles. Bob Dylan, the Beatles, the staging of *Hair*, and, of course, 'Woodstock' became popular symbols of the time.

For me, much of it boiled down to the question of change and thus to the whole issue of constancy and adaptation. Change: how can one sensibly approach it in the enormously complex domain of social systems? To what extent can it be designed? How could it best be 'managed'? Could it be mediated with minimum stress and not too much violence? What underlying processes are essential to bring it about effectively?

My interest was thus shifting from three-dimensional design, which at the time still dominated approaches to urban planning in architectural schools, to questions of underlying processes. A concept of planning was gradually emerging as the activity of searching and specifying viable options in the dynamic process of managing complex affairs. I use the term 'managing' in its broadest possible sense, for it was slowly becoming clear that whether the context was that of urban, regional, or global planning, whether it was related to a single enterprise, a piece of biology, or a whole ecosystem, there was a similar underlying logic throughout. It clearly related to the problem of balancing various, sometimes conflicting, forces in a coherent, regenerative, self-reinforcing manner, mediated by a purpose and a set of primarily qualitative goals, which, depending on the context, are subject to particular constraints.

The concepts of 'regulating for viability', of 'planning', and of 'manage-

ment' were thus becoming inexorably related, and as I was beginning to grapple with these questions it was, again and again, Beer's work that facilitated making the link between the general cybernetic theory of regulation and a newly emerging view of management processes.

But this was not all. Soon after graduation I joined Fuller's operation in the United States. Among the various exciting projects actually taking place or contemplated in those days, one was of particular historic significance. It was Fuller's concept of the 'World Game'. The idea called for a giant simulation facility, with an emphasis on dynamic visual displays, where data on humanity's world-wide conditions, needs, resources and trends would be made available to teams of players, potentially linking satellite-monitored world-wide information with actual decision-making processes. Members of such teams—policy-makers, scientists, researchers, statesmen, lay persons—would be engaged in a cooperative effort of developing winning strategies for our planet's future viability.

In the face of practical expediency and the short-sightedness that dominates world politics, here was a tremendously ambitious, perhaps outrageously naive, blueprint for a conscious, whole-system, problem-solving approach to real-time management of world affairs for the benefit of humanity as a whole.

Many difficult issues, philosophical as well as technical, were obviously raised by such a vision and novel tools were required for dealing with them. I was searching for such new tools and gradually became convinced that one could look to general systems theory, and particularly to cybernetics, for help. Between them, these fields of inquiry appeared to have developed not only the appropriate language for dealing with complexity, but also an entirely new general paradigm and the conceptual means for realizing its design. I soon found myself, therefore, back in London pursuing a doctoral program in cybernetics under Pask, while commuting to the United States to continue my association with Fuller.

Then came the year 1973 and with it the third Richard Goodman Memorial Lecture and the first public account of the work Stafford was doing meanwhile in Chile. The news was very exciting indeed. Here, to my mind, was an early prototype realization of a World Game operation. It was embodied in an actual physical facility, backed by the appropriate, even if relatively simple, technology, and firmly founded on sound scientific insights. Personally, a lot had come together at this point and I felt a strong sense of intimacy with Stafford's work, although I never had the chance, until then, to meet the man himself.

It was thus with a true sense of awe that I undertook the journey to the remote quarry in Wales, when Stafford turned out to be the external examiner for my doctoral thesis. There, at the old Black Lion Royal Hotel

in Lampeter, on a dark and stormy winter night (really). I was treated to a ritual of a rite of passage that, with Gordon and Stafford presiding, enacted in a mysterious and powerful way the story of cybernetics itself.

By now the euphoric sixties were giving way to the more sober seventies. Fuller's World game, in spite of early promises, was never funded on the scale that would have made its realization possible, although the concept is kept alive through university workshops and other similar types of activity conducted by faithful disciples. The story of Chile is known. I was beginning to establish a management consulting activity in New York and was soon entirely absorbed by the surprisingly intense demands of a growing small firm and the needs of its clients.

Our firm has been set up as a general-purpose management consulting firm and the intention has not been to focus deliberately on any specific methodology. Nevertheless, for me, management cybernetics and the ideas inherent to the VSM have always been there, ever sharpening my discrimination faculties in the face of complex management situations. This comment is significant insofar as it will help clarify the role of the model in the approach developed for the two projects that I am about to describe. The scope of the cases involved was such that a comprehensive institution-wide view was essential and in this the model was extremely useful. It provided the conceptual framework for both diagnosis and design. In neither case was the model itself the purpose, nor was the focus on precise and full mapping of existing situations on to its mold. Rather, the model offered a set of concepts which, not unlike a craftsman's tools, were essential, but often remained invisible to those who made use of the products.

I am neither a researcher nor a scholar in the academic sense of the terms and my interest has not been in refining the theory or offering critical comment on its efficacy. Rather, within the limitations of actual client assignments, I have been interested in making use of the useful. I am fully aware of the dangers underlying such an approach and the connotation of superficiality it may evoke. Nevertheless, it is precisely on this level of sharp-tuning and honing one's perceptions that I have found the model most helpful.

The point is this: In approaching systems of exceedingly high complexity we need tools that help simplify without trivializing; tools that can help clarify confusing events, and that are accurate, focused, and potent enough to ultimately effect proper actions. It is precisely in this regard that the VSM is immensely powerful. For above all, it provides a set of concepts that help orient our thinking and guide our actions as we try to come to grips with high-variety management situations.

This compressed meta-comment should not detract from many other aspects of the model for, indeed, the work is monumental and in the whole

of management literature is second to none. In addition to its technical merit and logical consistency, it has other important dimensions as well. In fact, I often think about it as about a work of art. For there is passion in this work and poetry, love and desperation, and deep concern for humankind, its 'Actuality', 'Capability' and 'Potentiality' . . .

So on to the more mundane realm of the cases I chose to describe, in which an attempt was made to give a working expression to some of these qualities.

Design for a strategic planning process

Background

From the early days of our firm's inception we have been involved in planning for the health care industry. After undertaking a number of planning assignments of different degrees of complexity and varying scope, the opportunity arose to tackle a comprehensive strategic planning effort at a large academic medical center in New York. The project involved all questions that were pertinent to the organization's future and, from a management point of view, it was conducted in a particularly favorable environment, where careful design for the planning process, as well as a consistent and thorough execution, were possible.

The organization, The Mount Sinai Medical Center, is a proud institution recognized as a leader among the nation's academic medical centers. It began its existence as a 45-bed hospital founded in 1852 by leaders of the Jewish community in New York. The hospital grew over the years, changing locations, expanding its services, and increasing the number of its beds. By the turn of the century, it had settled on its current site on the Upper East Side of Manhattan, gaining prominent reputation among medical institutions as a major medical resource.

By the early 1960s, the institution had reached an important turning point in its history with the realization that, in order to ensure its position of leadership and secure its tradition of clinical excellence, a growing commitment to clinical and basic research, as well as to medical education, would have to be made. A bold decision to establish its own independent medical school was made by the board of trustees and, in 1963, the Mount Sinai School of Medicine was founded. An ambitious program was soon under way to ensure the appropriate nourishing support for the school's development and growth.

At the time we became involved, the center comprised a 1200-bed hospital where some 36,000 inpatients were discharged and some 250,000 clinic visits and 60,000 emergency visits were recorded annually. The

medical school enrolled some 460 medical students, offered PhD and MD/PhD programs in addition to its MD degree, and oversaw a substantial number of active research projects. Strong teaching affiliations were maintained with a number of other medical institutions in the New York area. Operating budgets topped 200 million and 70 million dollars in the hospital and school, respectively. The center had an extremely active board of trustees, a dedicated faculty and medical staff and, at the time, a management intent on progressive and innovative practices. From a purely managerial view-point, it presented, as with other similar institutions of this type, a particularly interesting set of management problems. This was so particularly because of the need to blend and integrate essentially different activities that by their very nature respond to management strategies of a different kind. Many aspects of the hospital's operation, for example, could clearly benefit from a typical model of rigorous corporate-type management control. The more elusive requirements of successful education and innovative research obviously called for a somewhat different approach.

By the late 1970s, the sense was growing among the leadership of the institution that the time was ripe for a process of self-assessment and renewal. A relatively new management team, having just emerged from an effort of resolving financial difficulties and streamlining internal operations, was ready to orient its view to the future. A planning committee of the board of trustees was established and the center's planning department, unusually strong among institutions of this kind, became the focal point for a new and intensive planning activity. The climate was ready to pause and take stock, review the institution's position, establish new priorities, and reach consensus on future directions for growth. Our firm was retained to assist the medical center in designing the appropriate planning process and developing the center's long-range plans.

Key planning principles

Much discussion took place at the outset concerning the planning effort, its appropriate scope, and the most suitable approach. The issues were numerous, as were the opinions, and for a while it was difficult to see the forest for the trees. Fundamental concepts developed in management cybernetics, and particularly those embodied in the VSM were helpful in sorting things out, separating the essential from the trivial, giving events a clear definition as well as a coherent structure, and communicating to others the essence of the task. I kept returning to these sources for guidance, again and again, as the process unfolded.

In viewing the most relevant ideas involved, distilling their essence, and

expressing them in the context of the challenges presented by designing and carrying out this strategic planning assignment, a number of principles emerged as essential concepts. They are accompanied here by a set of diagrams that were used originally to convey the meaning and gain acceptance for the approach. They can be summarized as follows:

A whole-system view of the institution

The notion of whole systems, relating to complex identities comprising interacting, inexorably interdependent parts, is fundamental to the view of the world that is inherent to the VSM. It is rarely, however, the view adopted by management, whose attention and energy, more often than not, are focused on specific special cases that are symptoms of current crisis events. It was typical of the early stages of the planning process, for example, that different participants would narrowly focus their view on specific isolated problem areas, as though this or that particular issue was in itself the most important to resolve.

Shifting the emphasis at the outset to a whole-system view of the institution became, accordingly, a vital consideration in laying out the blueprint for planning. This was achieved by developing a series of visual representations—'system diagrams'—an example of which is depicted in Figure 1. The intention was to highlight the key factors that affect the institutional totality and draw attention to the manner in which such key factors interact. The interdependency and mutual effects of the key components was thus explicitly recognized at the fore, and specific planning issues could be placed in the context of the complex whole.

This essentially pedagogic device was extremely useful in scoping out the planning effort, identifying pertinent systemic boundaries, defining the appropriate levels of resolution, and developing consensus concerning the critical areas which ought to come under review.

The commitment to such a whole-system view and the understanding of underlying systems dynamics is important if one is to avoid the potential risk of developing policies which would turn out to be only partial in scope.

Planning as an issue-driven process

At the heart of the systems view of the world there is implicit an 'organismic' view of organization, be it involved in economic enterprise, government, or other aspects of human affairs. This view, which brings a touch of biology to societal systems, has its roots in the pioneering work of von Bertalanffy, and it is clearly in the very essence of the VSM itself. The underlying approach is significant insofar as it replaces a static

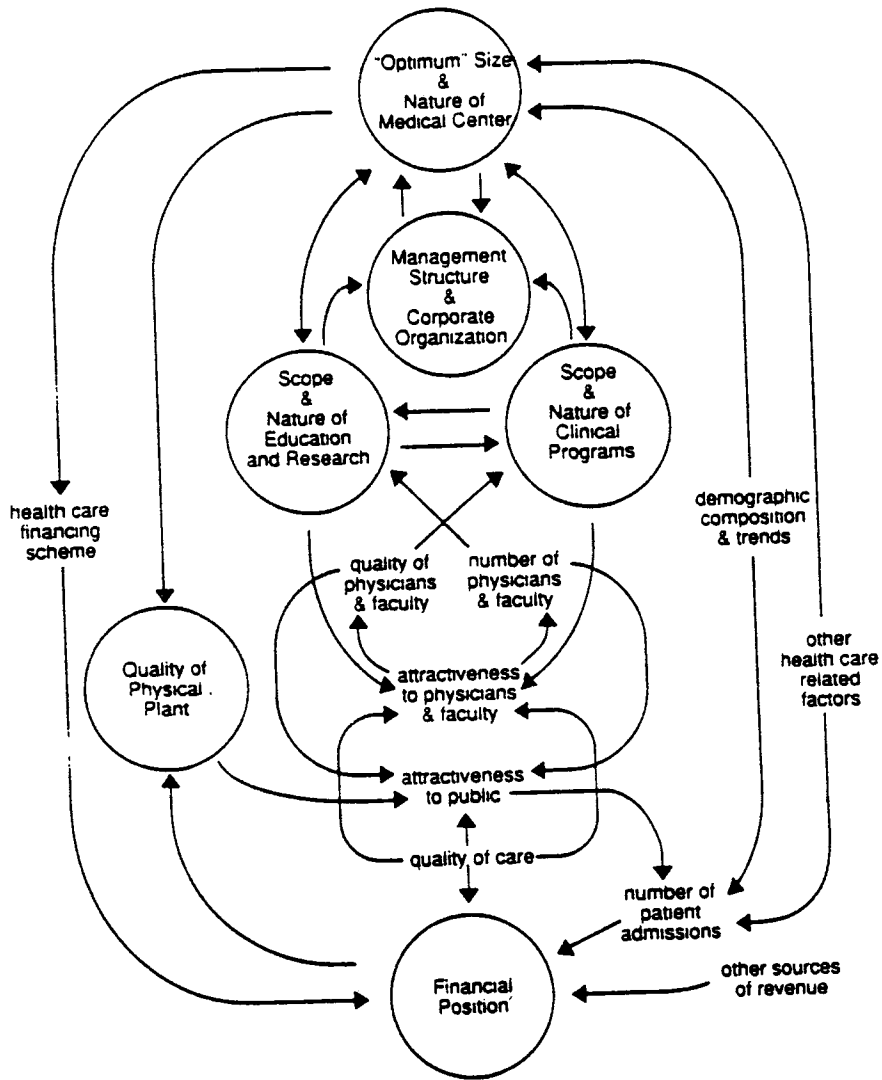


Figure 1. A systems view of a medical center. Reproduced from Ben-Eli (1988) by permission of Hemisphere Publishing Corporation

view of organizational entities with an emphasis on their dynamic and, ultimately, evolutionary properties. Observable behavior is linked to a specific internal anatomy, the structure of which involves dynamic interactions that specify the characteristics of the system itself.

There is a legitimate sense in which even a complex and multi-faceted organization, such as the medical center involved, can be regarded as a living individual. It is an extremely active 'living' system with its own personality and style. It has its own tradition, internal culture, many active constituencies, competing interests, and sometimes conflicting internal drives. It has its own peculiarities, idiosyncracies, definite 'ways of doing things', and, not unlike the case of a patient, a therapy prescribed by planners which if it does not fit its temperament and most important critical needs could very well fail.

Above all, perhaps, the momentum of an institution's ongoing activities cannot be halted while a 'master plan' is being developed, nor can all institutional problem areas be dealt with at once. From the viewpoint of strategic planning, therefore, it is important that at any given time attention is focused on identifying the most critical issues requiring long-term resolution, those that are clearly central to questions pertaining to effective survival and future growth.

Accordingly, the planning process at Sinai was issue-driven, and the process of issue identification, although time-consuming, was given special attention. By separating the critically important from the secondary, and sometimes even the merely 'smokescreen' types of problem, the target areas for the planning process were clearly defined, consensus about their content was reached, and much potential confusion was avoided as the process continued to unfold.

The process of issue identification, incidentally, was derived from an exhaustive 'external environment' analysis, as well as an extensive review of various institutional profiles. The key to effectiveness in such a process is in conceptually linking external events to internal activities in a way that has general adaptive significance, but also a clear and specific enough operational meaning.

The primary role of purpose

At whatever level of recursion, the type of organizations that the VSM seeks to depict are first and foremost purposeful systems. As is typically characteristic of social organizations, they are 'ideal seeking' in the way suggested by Ackoff, a fact that is sometimes lost in the confusion and shuffle of daily affairs. Their purpose is often projected on to their external world, as it relates to whatever they seek to accomplish; but above everything else it has to do with the essence of 'selfhood' itself.

Perhaps of all the issues that are relevant to strategy development, the issue of purpose ought to come first. It is, in my view, probably the most important. Around it revolves the whole question of institutional identity, its internal cohesion, and the very reason for its being. In fact, without purpose, the whole notion of planning is quite meaningless.

Too often, however, planning processes are driven by an almost reflexive quest for data. Their early activities are automatically focused on information gathering, without establishing first a clear idea of what it should deny or confirm. Data are obviously essential for backing arguments, for testing, for validating, calibrating, and refining ideas; but it is a sense of purpose, even if vague, that gives it a framework for meaning. It is ultimately purpose that is responsible for fueling the imagination, inspiring commitment, and galvanizing action. From the viewpoint of cybernetics, in fact, whenever variety proliferates uselessly, a purpose acts as the most effective variety-reducing device.

At Sinai, the idea of tackling the issue of purpose was greatly resisted at first. Most participants felt that it was much too obvious a question to be of any use and that it was unlikely to yield anything but vague and, from a practical viewpoint, meaningless results.

'Everybody knows what the center is all about' was the typical attitude. Yet, upon insistence, the issue was faced and soon acknowledged to be of vital importance when it became clear that fundamental differences of opinion and attitude existed among key players about policy issues concerning the institutional mission.

To resolve these differences a process involving trustees, management and medical staff was launched which, after a few intensive and, at times, surprisingly tense months, yielded agreement on a clear statement of purpose. This, in turn, greatly facilitated decision-making later on in the process, when questions of program priorities, resource allocation and the like had to be faced.

The concept of levels of management

The concept of levels of management, differentiating between functionally and logically distinct domains of management concerns, is central to the VSM. For any given recursion, the distinction roughly corresponds to normative, strategic and various kinds of operational questions. The pertinent point is that approaching problems that are related to each such level requires a different conceptual orientation, a different language, a different method of handling, different emphasis, information aggregated at different level of details and, more often than not, a different group within an organization.

In a much simplified form, as shown in Figure 2, these essential

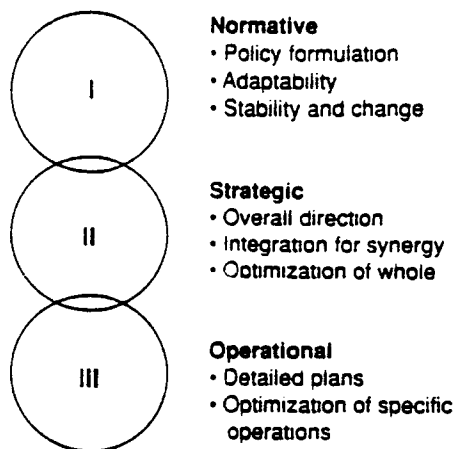


Figure 2. Levels of management/planning. *Reproduced from Ben-Eli (1988) by permission of Hemisphere Publishing Corporation*

distinctions provided an important concept for structuring the planning process. It helped in organizing the content and sequence of issues that had to be dealt with, and in defining the key fora for study, discussion, formulation of recommendations, and review and decision-making, as related to each step. The concept was helpful, not only in sequencing activities for the planning process as a whole, a sequence depicted in Figure 3, but also in helping to dismiss at the very beginning those operational issues which were persistently raised but did not necessarily belong to the proper domain of strategic concerns.

Planning issues were thus sorted out by a two-dimensional matrix: by functional type, such as financial, organization, program-related and the like, as well as each with respect to the appropriate level of management to which it logically belonged. This particular practice was useful in avoiding

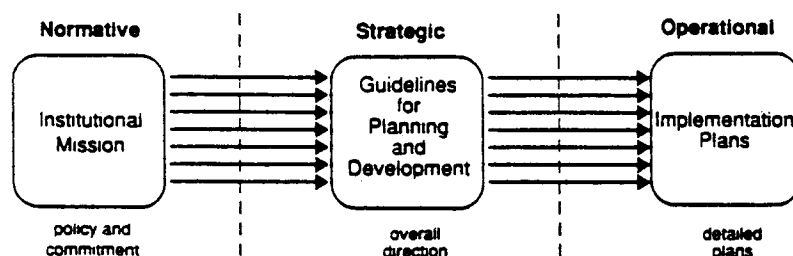


Figure 3. The planning process: conceptual sequence. *Reproduced from Ben-Eli (1988) by permission of Hemisphere Publishing Corporation*

a typical confusion that often results when issues that ought to be logically separated are dealt with without the proper distinction and all at once.

Commitment through participation

A strong commitment to the idea of participatory planning was at the heart of the planning process and, given the character of the institution involved, it would have been difficult to proceed otherwise.

Academic medical centers such as Mount Sinai have been recognized in management literature as particularly complex institutions. They are often highly diversified, pluralistic organizations, where decision-making and authority are diffused and where many key individuals play a number of different—sometimes even potentially conflicting—roles. A clinical chairman responsible for medical services at a teaching hospital, for example, will typically wear the hat of departmental chairman of the medical school, belong to some framework in which private medicine is practised, and be expected to play a central role in management of the center as a whole. The same individual could have a significant function, accordingly, not only at different levels, but simultaneously at entirely different recursions.

Further, a corporate-type management structure is normally superimposed on the practice of medicine, while at the same time leaving the question of authority, responsibility and accountability in control of resources largely unresolved. For example, many physicians—'volunteers' as they are sometimes called in America—use the hospital resources for treating their patients but are not individually and directly accountable to management in the usual corporate sense of the word. As a result, management by broad-based consensus is a matter of necessity rather than merely a question of style or choice.

Consequently, it was clear from the outset that in order to be effective, the planning process would have to be deliberately designed so as to encourage a considerable degree of participation. The underlying considerations were that key players, policy-makers and those responsible for implementation alike, should be authors of the plans, and that extensive and open participation in all stages of the planning process would be essential for building the institutional consensus, as well as the individual commitment, required for successful implementation.

Participation expanded as the planning process developed; at its zenith, when implementation plans were being developed, some 200 individuals, including trustees, management, faculty, staff, representatives of important public constituencies, and various specialty consultants, were involved. Orchestrating all the different activities and integrating the different contri-

butions into a coherent whole was, in itself, an important aspect of the planning process.

From the viewpoint of cybernetics, of course, the notion of broad-based participation relates directly to the idea of making full use of an organization's potential variety and enhancing its own self-organizing capabilities. To be successful, however, the process has to be carefully staged. Though popular in recent management literature, the concepts of 'participative management' and 'participative planning' are not easy to accomplish. The energies that such processes release can easily turn things into chaos. They must, therefore, be thoughtfully channeled in order to achieve an effective result. This requires discipline, sensitivity, some skill, and, very importantly, an appropriate structure.

The need for an underlying structure

Perhaps because planning is often regarded as a 'staff' function—merely an on-tap specialized technical support, an adjunct to the mainstream of management activities—the need for an underlying structure for planning is not always obvious. Structure is the vehicle through which processes actually take place, and the need to embody the planning process in an appropriate structure cannot be over-emphasized. In fact, one of the classical contributions of early cybernetics was due to the insights of Wiener and Rosenblueth, who linked the characteristics of observable systems behavior to their underlying structure.

In too many organizations a well-functioning institutional structure for planning simply does not exist. In such cases, if a serious planning effort is contemplated, such a structure must be deliberately designed, put in place, and encouraged to persist. A well-designed structure will clearly define the major components—committees or groups—that are to be involved in the process, their roles, mode of operating, and manner in which they interact. At Mount Sinai, the planning process was embodied in a structure depicted in Figure 4. It consisted essentially of a governance-level steering committee, a senior-management and faculty planning group, a number of specially appointed institutional task-forces, and a core group of planning staff and consultants who provided the technical support and overall management of the process itself. Overlapping membership was used as a means to ensure continuity.

As a formal mechanism this structure was designed to reflect the various functions and tasks required by the planning process in a manner consistent with the VSM's concept of levels of management. In the way that it integrated activities and people it acted, in a sense, like a giant homeostat,

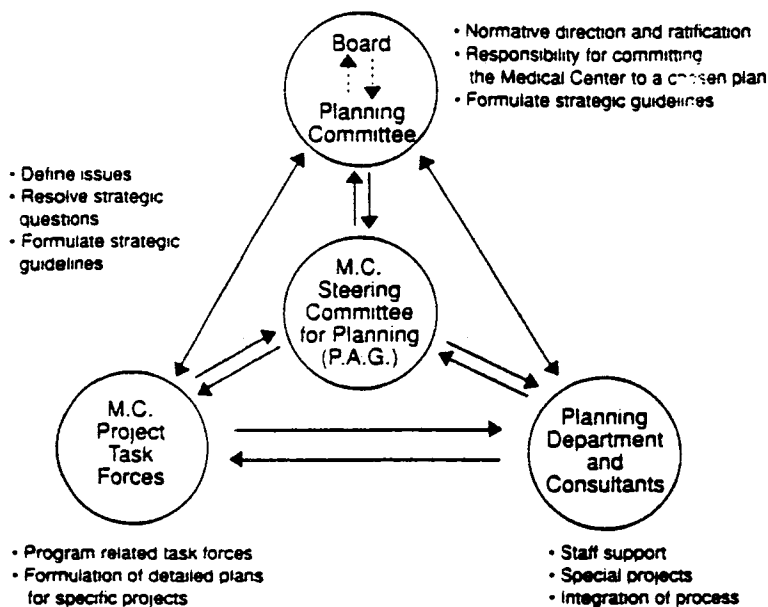


Figure 4. The planning process: structure

mediating the various processes involved and facilitating the resolution of issues, formation of consensus, emergence of decisions and reinforcement of the necessary commitment.

Process overview and summary

The planning process proceeded in a sequence of reiterative steps moving from the general and relatively open-ended to the ever-more specific and precise. Planning issues were identified, sorted out, analyzed, and their implications spelled out. A mission statement was developed while alternatives for future developments were being reviewed and various options studied and narrowed down, until a general sense of the institution's strategic direction emerged, was clearly expressed, and finally ratified. This general 'strategic posture' was then given sharper focus with the development of a strategic plan in which the scope of particular programs was specified and questions of timing, priorities, resource requirements, sources, and allocation were addressed and resolved. Implementation planning in all essential areas then followed.

Two and a half years were required in order to complete the whole effort, from a short but critically important period of 'planning for

planning', during which the stage was basically set for all that followed, to the final ratification of the strategic plan by the board of trustees. Work by the various committees and groups was intensive throughout the period, with the institution's leadership clearly on a special footing. This continuously sustained mobilization was modulated by various institutional events that occurred at significant milestones, and included a few special retreats with the full board, designed to review and ratify recommendations for important decision. The circumstance and ritual of these occasions combined with thoroughly prepared presentations and solid analytical staff work to produce an emotive ambience that encouraged the spontaneous emergence of institutional commitment and energized the process for the next required step.

The process as a whole is depicted by Figure 5. It unfolded in a way that, in its dialectic characteristics, could best be described by Pask's Conversation Theory. Like a vast 'entailment mesh', a new fabric of concepts was being woven by groups of different participants. Ideas were sketched out, reviewed and tested, at times to be rejected and then returned to again, until agreement was reached and with it a stable footing secured for moving on to the next relevant topic.

The strategic planning effort at The Mount Sinai Medical Center was completed successfully. It was hailed as a pioneering effort because of its

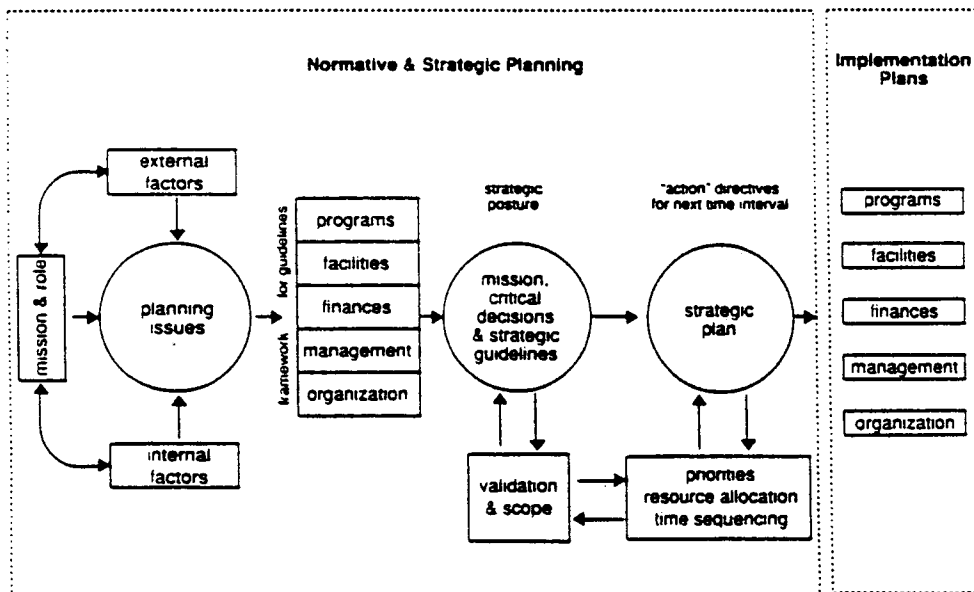


Figure 5. The planning process: overview

quality and unprecedented scope, and it positioned the institution confidently before yet another significant step in its long history. Of all the lessons learned perhaps the most surprising was the time and sustained level of effort that were actually required. There is a definite gestation rate related to major institutional decisions, and time is needed for common concepts, for a common language, as well as agreement, to emerge. The front-end period dedicated to planning for the planning process was crucial, as was the energy and focused attention devoted to orchestrating and managing the process itself.

A special effort of this kind may well be required periodically, for it can rejuvenate and refocus institutional vision which can otherwise lose its edge through the dulling effect of daily routine. But even more significant is the need to incorporate the concept of planning in the very fabric of management at all levels, so that it becomes an integral and consistent part of every manager's role instead of an effort to be carried out by a specialized team. This concept is inherent to management cybernetics and is important enough to merit a few additional comments.

Cybernetic theory has generalized the concept of regulation and, in an abstract formulation that is largely due to Sommerhoff and Ashby, produced a rigorous definition of regulation that is independent of the particular fabric of the system involved. By making 'regulation' synonymous with 'management' a view is obtained that focuses on questions of process, structure and outcome, de-emphasizing the usual preoccupation with conventional, specific management disciplines, such as marketing, accounting, production, finance, and the like. In the context of this theory, the concept of management can be interpreted as the continuous dynamic activity of matching varieties between organizations and their context. It involves the conscious balancing of variety, amplifying or reducing it as the situation demands, so that coherent identities are maintained and allowed to evolve.

In a more familiar vein, management involves organizing structures and processes, and executing activities such that specific desired outcomes are obtained. In this regard planning focuses essentially on the process of deciding 'what to do' and specifying 'how to do it'. It relates to articulating the context of management activities and involves, for any given level of recursion, formulating and reformulating goals as well as specifying procedures for their attainment and for monitoring the results. The two concepts, management and planning, are sides of the same coin, or better, the fabric of the same continuous loop. They coexist and are inseparable.

In the practice of management, however, the function of planning is often misunderstood. The predominant tendency is to regard it as a remote, vaguely intellectual, even idle, activity, whereas management is a 'hands-on' job. The constant pressure for immediate, 'practical', short-

term results leaves little room for thoughtful contemplation: for the typical manager, planning is a time-consuming luxury regarded with some degree of suspicion, even with scorn. In fact, a deep dichotomy exists in our management culture between the notions of 'doing' and 'thinking'. Planning and managing are seen as two entirely separate types of activities. A definite premium is put on quick, 'resolute' action, whereas planning is delegated a secondary role and is all too often compromised.

It is because of this attitude, perhaps, that management, at all levels of society, often finds itself in a difficult vicious loop. Since effective planning is not done, management must continuously stagger from crisis to crisis, and alas, there is no room for planning when one is constantly operating in a crisis mode. . . .

A case of management reorganization

The existing situation

As the development of the strategic plan was drawing to a close, attention was given to organizational issues and future management needs. Since it was felt that this obviously sensitive subject could disrupt operations and interfere with the smooth progress of planning, it was delegated to a small task-force of three trustees, including the chairman of the board, and was dealt with outside the mainstream of activities of the planning process. By then I had spent considerable time reflecting on the medical center's organization and was asked to assist this group in its work.

Primarily because of its long history and the more recent addition of the medical school, there were aspects to the existing organizational structure which were somewhat confusing. Various important features represented a sequence of makeshift measures that, in response to legitimate needs, were added piecemeal over time without the blueprint of a coherent and comprehensive design. Recently added features overlapped and coexisted with organizational aspects that did not change from an earlier time. This is not an unusual circumstance, of course, and just as is the case with their mission, or other aspects of their operations, organizations can obviously benefit from a periodic consolidation of their management structure. Thus, as new plans were being developed at the medical center, attention was directed to the question of future leadership and of simplifying the overall structure so that it could effectively meet future needs.

From a management viewpoint the existing situation was briefly as follows. The medical center consisted of three separate, legally autonomous corporate entities, none of which was a legal subsidiary of another. The three were The Mount Sinai Hospital, the older and initially dominant

force: the Mount Sinai School of Medicine of the City University of New York; and The Mount Sinai Medical Center, Inc., a non-operating entity, conceived as a means for facilitating the interface between the school and the hospital and raising and distributing charitable funds for both.

There were a number of ways through which integration between the three entities was effected, although officially there coexisted three different organization charts, each with its own board, president and other typical functions. There was a great deal of overlap in management roles, with individuals assigned particular corporate responsibility and holding a similar title, vice-president for finance, for example, reporting to a different person depending on which entity one would choose to focus on.

While some such instances of overlap were not particularly harmful (as for example, in the case of the separate boards that had overlapping memberships and met conjointly), other cases of overlapping functions contributed to some degree of confusion and tended to aggravate potential conflicts that would have existed anyway; for example, the typical tension over resources that existed between the hospital and the school.

In a nutshell, key management-related features of the three individual corporate entities can be summarized as follows.

The Mount Sinai Hospital

The hospital was the primary operating unit. In addition to patient care and education, it provided to the rest of the organization all basic maintenance and support services, such as financial services, payroll, housekeeping, materials management, security, administrative services including data processing, and the like.

The key officers of the hospital were the chairman of the board, the president (a position which was then vacant) and a director who acted as chief operating officer. In addition to the hospital's board of trustees and its standing committees, other important governing or management bodies included the Medical Board, a policy-making body of the medical staff responsible essentially for issues concerning patient care, and a Senior Management Group consisting of vice-presidents and heads of various management support services responsible for hospital resource management and operations.

The Mount Sinai Medical School

The school was the second operating entity discharging all academic and administrative aspects of medical education and research. It had an unusual contractual arrangement with the City University of New York which

made it officially one of the many colleges of the university, although the latter had no significant fiscal or management role in its operation.

Key officers of the Mount Sinai School of Medicine were the chairman of the board, and the president and dean (one position as specified in the bylaws) who acted as the chief administrative and operating officer. In addition to its board of trustees other governing bodies at the school included the executive faculty and the academic council, responsible for academic excellence and for advising the dean on issues of policy related to academic affairs. In a somewhat similar fashion to the Senior Management Group at the hospital, a Senior Dean Group was responsible for policy implementation and day-to-day operation of the school.

The Mount Sinai Medical Center, Inc.

As mentioned, the Mount Sinai Medical Center, Inc. was a non-operating entity, established in order to provide coordination and act as a fund-raising body to channel resources for the hospital and the school. Key officers consisted of the chairman of the board and chief executive officer, a president and chief administrative officer, an executive vice-president, senior vice-presidents for academic and clinical affairs, and vice-presidents for various administrative functions. A President's Advisory Group consisting of departmental chairmen and key managers developed recommendations for the president on center-wide policy issues.

Imagine, then, three different organization charts, of the familiar conventional type. They would look roughly as follows. *For the hospital* there would be a box representing the board of trustees, under which there would be shown a position of a president to whom a hospital director reports. The latter would have directly reporting to him the various administrative and support functions and, in a matrix fashion, he would interact on matters concerning control of resources with chiefs of clinical services officially, through the medical board. *For the school*, the president and dean would be shown reporting to the school's board of trustees; and in turn, to the dean, there would be shown reporting three types of groups: the chairmen of the school's departments, various deputy deans and associate deans for different areas of academic concerns, and a group of vice-presidents and directors responsible for corporate-type management functions. Finally, the organization chart *for the center* would show a president reporting to the center's board; and to him, in turn, there would be reporting an executive vice-president in charge of all key administration and management support functions.

A significant degree of functional overlap existed across these three organizations which could be summarized as follows:

- There was an extensive overlap in membership among the three boards of trustees, and the three entities had the same chairman of the board who acted as chief executive officer.
- The president of the Center Inc. was the same individual as the president and dean of the school, and the executive vice-president of the Center Inc. was the same individual as the director of the hospital.
- The chairmen of the departments of the school were the chiefs of the corresponding clinical services in the hospital, and all medical staff of the hospital were members of the faculty of the school.
- Almost all of the senior management staff (e.g. vice-president for planning, vice-president for finance, vice-president for personnel) held the same or equivalent positions in all three entities.

Organizational diagnosis and design

Behind the apparent complexity there was a subtle but enormously significant aspect of organizational reality: namely, that the institution was caught in the midst of a natural evolution, toward full integration of its autonomous and for a long-time completely independent hospital, and the recently created but separate School. The fact was that a concept of the 'Medical Center', distinct from the existing non-operating legal entity, the Center Inc., was used organizationally and functionally to describe Mount Sinai's total activities as an academic medical center. Formally, however, it still did not fully exist, although some aspects were functioning as though it did.

For example, in a partial attempt to strengthen the 'center' concept, two new positions were created approximately at the time that the strategic planning effort was launched: a senior vice-president for clinical affairs (held by the chairman of surgery), and a senior vice-president for research and education (held by the deputy dean). Both were supposed to provide the executive vice-president with input on clinical and academic matters. This in itself was not a sufficient move towards full integration and, in fact, superimposed on things as they were, added some ambiguity to existing relationships.

From the viewpoint of looking at the center as a total entity, a number of other significant ambiguities related to the existing status of things. For example, the president of the Center Inc., who was also the president and dean of the school was not an officer of the hospital; the director of the hospital had a direct reporting relationship to the chairman of the board and the board of trustees and also reported, both as hospital director and as executive vice-president of the center, to the president of the center. In spite of his position as executive vice-president of the

center he was not an official of the school; the directors of various support services for the school (e.g. finance, personnel) reported directly to the dean, but in their hospital and Center roles they reported to the director of the Hospital and executive vice-president of the center. Equally significant, the Senior Management Group, which reported to the executive vice-president and saw itself as a center-wide function, had no membership from the academic component.

These and other type of ambiguities tended to accentuate problems of divided loyalty, constantly required various organizational adjustments, and consumed energy which could otherwise be clearly focused on the progress of the center as a whole.

Many of the related problems could clearly be given an interpretation by the Viable System Model. In fact, it was precisely the use of the model which made it easier to untangle the complex web of relationships as presented by official documents, personal interviews and observation of the behavior and practice of key players. It thus became clear that the language, concept, and practice of management at the medical center confused different recursions as well as different functional levels, mixing them up in one not-sufficiently differentiated view.

Many of the existing organizational difficulties were there, it appeared, because the 'center' concept was emerging as an operational and psychological reality, but was not yet given complete and unambiguous expression in a clear organizational form. Put in the language of the VSM, the first recursion, that of the institution as a whole, existed in an incomplete embryonic form, and it was mixed up with the legitimate functions of a second recursion, related to each of the major individual operating entities which were resisting the need to give up a measure of their respective autonomies in order to reinforce synergetic qualities of the whole.

With this in mind, the subsequent organizational intervention focused on Systems 5, 4 and 3 of the VSM. The emphasis was on the functioning of the first recursion, underlining the center concept as an operating total whole, with the hospital and the school as its two primary operating units. Note that in this regard at least three different recursions could be of relevance. The first, the one dealt with in this case, pertained, as mentioned above, to the academic medical center seen as a whole. The second would relate separately to the hospital and the school, and the third would focus on single departments as elements of a framework within which patient care was rendered, research conducted, and medicine taught.

With attention focused on corporate management, even a quick sketch-mapping of the VSM on to the existing reality, as roughly depicted in Figure 6, revealed important deficiencies. These related primarily to the functional distinction between the integration of operations on the level of System 3; the appropriate mechanisms for formulating strategies at the

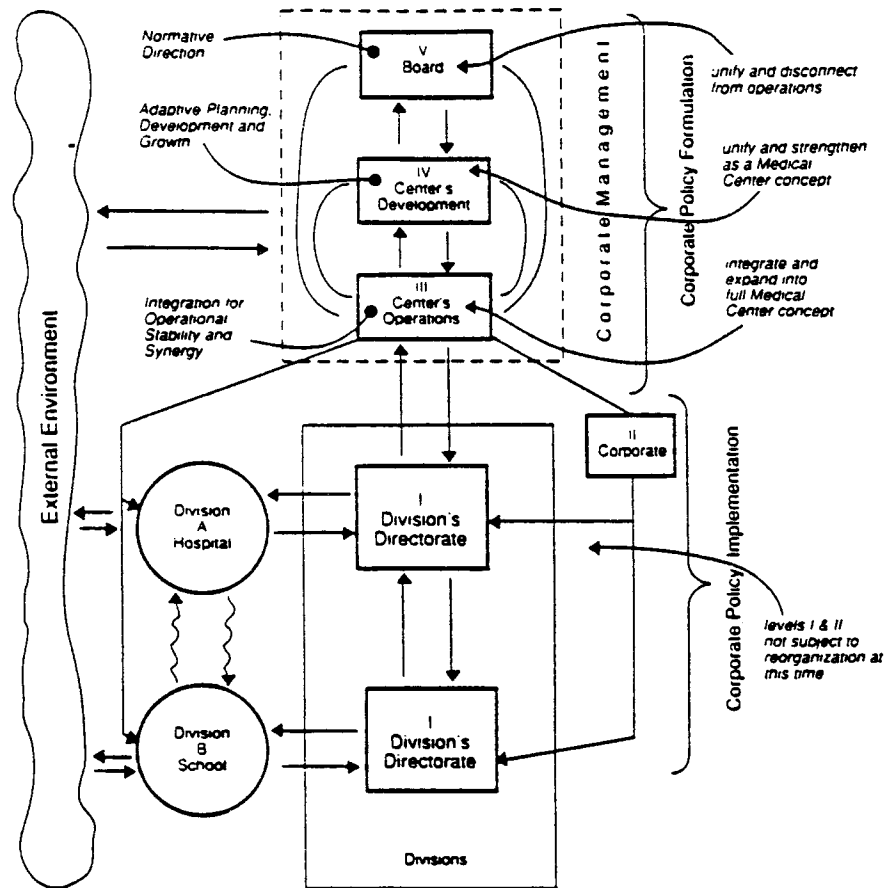


Figure 6. First recursion: medical center view: intervention at Systems 5, 4 and 3

level of System 4; and the role of the board as the embodiment of System 5. Even from the viewpoint of a functional concept only, and without considering titles, positions, individual roles, or questions of executive overlap, it was clear that the appropriate mechanisms, both for integrating operations and for policy formulation, ought to be better defined, strengthened, and institutionalized in a clear and recognized form.

As these issues were reviewed there began to emerge a 'center' concept as captured in the structure shown in Figure 7. It identified the need for a distinct center-wide policy formulation function, balanced by an appropriate mechanism concerned with the integration of center-wide operations. The first would be embodied in an office of the center's president and it would be concerned with questions of effective adaptation and the continu-

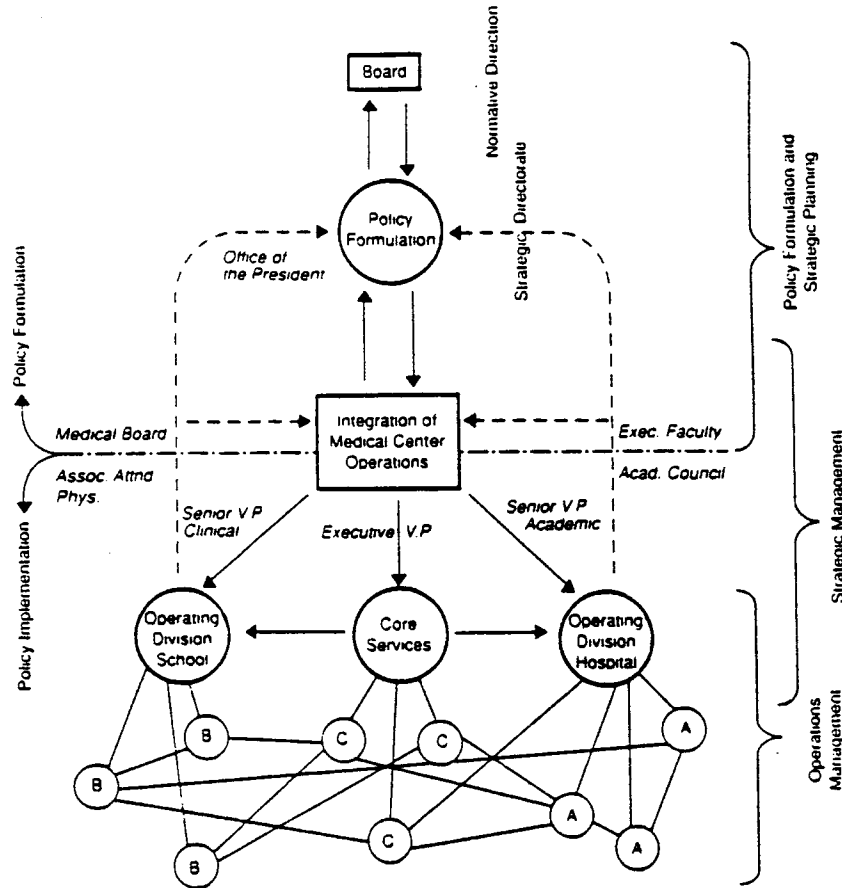


Figure 7. Consolidation of medical center structure

ous balancing of external events with the institution's own aspirations and needs. The second, embodied in the office of the executive vice-president, would be responsible for integrating internal operations, and, by overseeing the core management services, integrating the needs of the operating units for well-balanced results.

Both functions would incorporate clinical, educational and administrative considerations in a way appropriate for their respective levels of concern. Thus, for example, the executive vice-president would preside over a senior management group, expanded to include the appropriate clinical and academic inputs, as required for the smooth management of the center's operations. At the same time, the office of the president would be designed to incorporate the institutional mechanisms that were recently

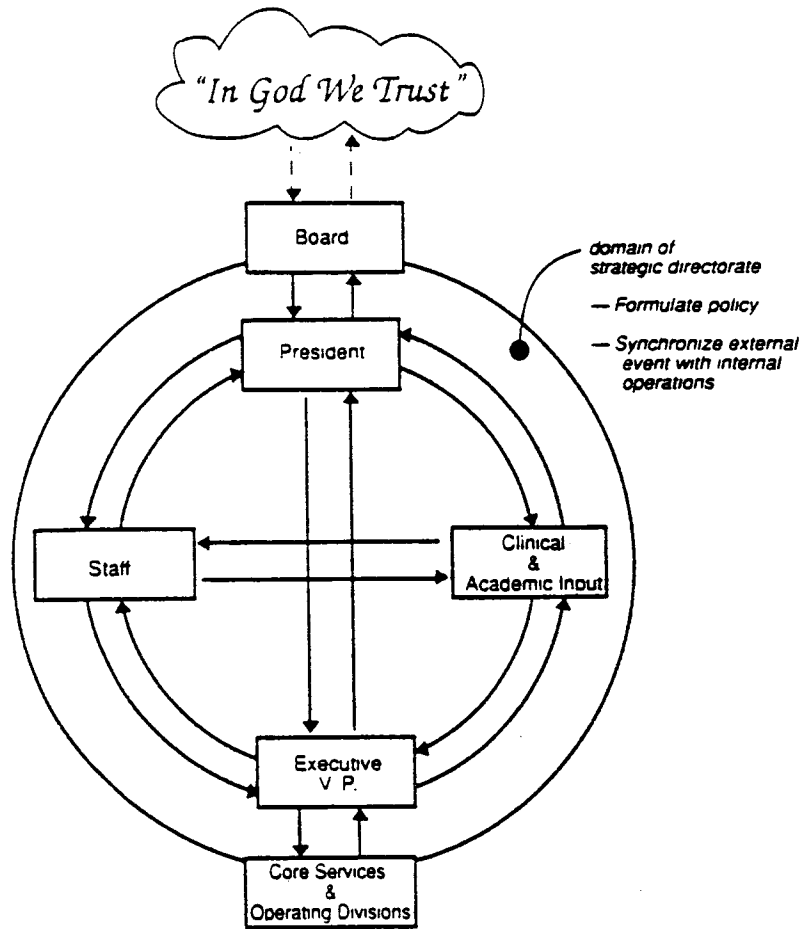


Figure 8. Design for a strategic directorate

put in place for the needs of the strategic planning effort. These would be institutionalized in a manner depicted in Figure 8 and, under the president's leadership, would constitute a permanent 'strategic directorate'. As a general function it would include the executive vice-president, an expanded version of the President's Advisory Group, with its key clinical, academic and basic science members, as well as other selected administrative and corporate planning staff.

From a center-wide viewpoint, these mechanisms would each provide a specific forum for an essential management function corresponding to Systems 3 and 4 of the VSM. At each level they would enhance integration of requisite domains of activity and ensure the broad participation that was

advocated by those concerned as the appropriate approach to management.

One particular issue concerning the role of the board, and thus, related to the functions of System 5 had to do with the fact that, at Sinai, the board had a long tradition of active involvement and it sometimes occurred that members of the board's standing committees issued instructions and requests directly to lower-level line managers, thus not only circumventing normal management channels, but also involving board members inappropriately in an operational role.

These kinds of general considerations, together with a review of organization and management structures at other medical centers, provided the

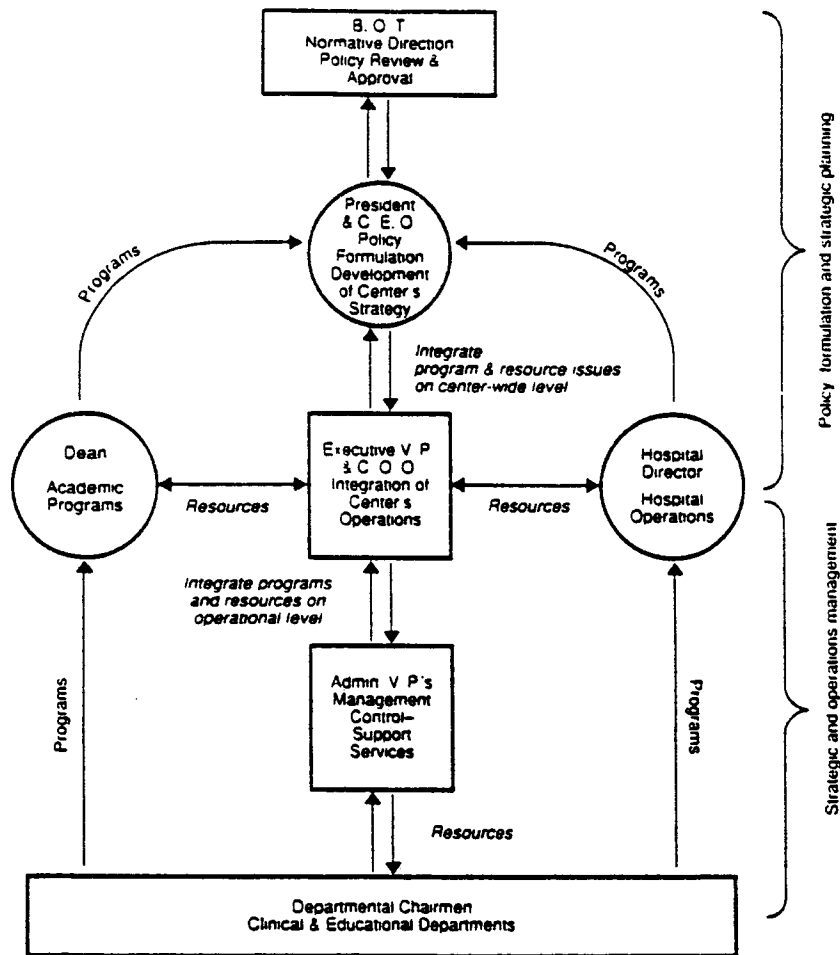


Figure 9. Design for management reorganization

general background. Ultimately, two major considerations fueled the deliberations on the need for reorganization. One focused on perceived weaknesses in the existing structure. The other pertained to the organizational and management implications of the strategic plan, particularly in light of the major commitment it made for an ambitious development effort that included a major rebuilding program for the Hospital.

In its final report to the board, the task-force recommended full implementation of the center concept. As a general framework it adopted the structure shown in Figure 9, which gave a clear expression to the idea of the center as an operating umbrella entity providing for distinct but organizationally integrated medical school and hospital components. It called for the appointment of a new president who would act as a chief executive officer of the center as a whole and provide the authority and focal point for institution-wide leadership. It recommended separating key management responsibilities (president/dean; executive vice-president/hospital director) and restructuring these functions with emphasis on effective integration.

In order to alleviate some pressing management problems, particularly in relation to the need for managing the hospital's rebuilding programs, the report also called for implementing a transition phase in the reorganization while a search committee was established to select a new president. The responsibility for implementing the full center model and finalizing all the specific organizational details would be left for the new president.

Comments on the aftermath

Implementation of the proposed reorganization did not fare well, in my judgement. The board of trustees adopted the recommendations for management reorganization in their entirety and set about looking for a new president. The task took longer than anticipated and meanwhile there ensued a period of some obviously predictable unrest. Unfortunately, things did not quite stabilize when a new individual was finally recruited. In fact, while the crucial decision of vesting in one office the authority and responsibility for unifying the medical center was being implemented, the spirit, concepts and key structural features of the proposed center model were being compromised.

For ultimately, unlike the open participative approach underlying the planning effort, the work on management reorganization was conducted in relative isolation. The conclusion did not convey the full richness intended. Even the language in which recommendations were expressed, although essentially correct, had to use familiar management terms, thus suppress-

ing the variety of important underlying ideas. In retrospect, insights which drove the design were not shared, they were not part of the motivation that fueled implementation, and thus they simply could not succeed.

There was also involved the question of management conviction and personal style. In prior years, a progressive outlook of management had been introduced at the medical center and its practice was slowly evolving. It was committed to an open process, to participation and shared information, to planning, to team building, and to thorough professionalism. With all its possible faults, it was fundamentally positive in orientation and nourishing and constructive in attitude. It showed an interest in innovative management concepts, as well as in operational results, and was championed by the executive vice-president and hospital director, and a small group of associates. Together, they led the center to a period of management renaissance, which, among other things, made the strategic planning process itself possible.

Now the mood was changing. The new president (a surgeon) brought with him, in my view, a fundamentally primitive concept of management. As he took office, he moved decisively and quickly to consolidate power and, in a series of steps that were welcomed at first as signs of purposeful rigor, proceeded to reduce management variety that was previously distributed, deliberately, throughout the organization.

A fundamental conflict of personal outlooks and management styles was inevitable, and the executive vice-president, who by now was acting as president of the hospital as well, had to bow out. As he departed, other parts of the management structure, which had taken a long time to cultivate and develop, were dismantled and participation in policy formulation and decision-making was greatly reduced. Before long, a senior management structure emerged with a flat chain of boxes reporting to one source.

An autocratic management style was firmly imposed, which, while in itself is not necessarily always negative, in this case was intrinsically destructive of the collaborative management framework to which many had become committed. Its power-centred mode of operation fostered a climate that did not bring out the best in people. The management process was starved of essential variety; and all the symptoms of poor leadership, as manifest in widespread dissatisfaction, suspicion, mistrust, and non-cooperative behavior, rapidly proliferated.

Thus it was that my naive eagerness to contribute to enhancing the organization's creative viability was dealt a sobering blow. Given the idealistic intent, the personal emphasis is perhaps appropriate. For a while I blindly believed that the coherence and logical argument provided by using the VSM for guidance would dominate events, simply because they were correct. But logical correctness and managerial integrity are obviously not

what institutional politics of power is about, and slowly but surely the destruction of a fragile management fabric went on.

Medicine continued to thrive at the medical center, but its management processes retreated, almost tangibly, to a dark age. Now, an observer, I watched with apprehension as basic management principles that I advocated, together with others, were being persistently compromised. Some vindication, perhaps, finally came, when as acts of managerial arrogance continued to mount, the new president was suddenly dismissed in a manner, which entirely uncharacteristic of the institution itself, was as brutal in its abruptness as the style of this short reign.

Reflections from the meta-level

In closing we come full circle to face the Viable System Model again, for there have been many lessons derived from its use. Where do they lead?

First, perhaps, a brief comment on a question that is often raised with respect to the efficacy of the model and its ability to address the complexity of human behavior, and the fact that, by necessity, it is of significantly lower variety than the organizations it seeks to describe.

The model recognizes structurally distinct levels of management as abstractions of functional prerequisites for viability. In real-life institutions, such a structure is embodied in something more like an amorphous cloud. Humans constantly move around. They come and go, appearing and disappearing at various levels, at different times. They constantly agitate, follow their own self-interest, and are motivated by ambitions that do not always align with neat, well-specified organizational demands. The immediate impulse is therefore to charge that, while the model could perfectly fit an ant-hill society or a system of a well-programmed automata, it is simply not rich enough to deal with the evident 'mess' of human behavior, which by necessity transcends the model's tidy design. To argue thus would be to miss an important point: for as a meta-statement about viability, the concepts inherent in the model are invariably comprehensive enough to contain the notion of such dynamic behavior and, as it turns out, it is precisely this kind of redundant untidiness which underlies the ability of complex systems to fulfill the conditions for viability that the model prescribes.

Notwithstanding financial constraints and accounting convention, the fact is this: ultimately the stability of complex organizations is embodied in their very complexity. Their fundamentally redundant structure, with all their imperfections, makes it possible for them to absorb tremendous punishment. In fact, they can even survive bad managers! This inherent complexity is important to bear in mind, for when we map the VSM on to

an organization we usually address the formal management structure. But it is not through that structure alone that management for viability, in its broadest sense, is mediated. It is actually achieved by the numerous interactions between individuals and the enormously complex web of communications that ties them together in a common, self-actualizing process. The VSM offers an excellent metaphor for this process. It provides categories of thought that are immensely potent in diagnosing management pathologies and guiding organizational design, but the model's tidy structure should not be mistaken for the actual 'real thing'. Ultimately, as long as an organization exists, it is in some sense viable and thus, by definition, it must in some way fulfill the necessary conditions for viability even when their functional embodiments are not immediately apparent, or when they exist only in partial form.

Complex living organizations are necessarily richer than any single specific attempt to portray them. But in the realm of management applications, the critical lack of sufficient variety is not so much in the model itself as it is likely to be in the way that the model is applied. It is the model-user combination that is crucial, and it is to this combination that Ashby's Law of Requisite Variety must apply.

The process by which application takes place is, therefore, important. To succeed, it should itself be constructed to embody the principles of viability and, in any organization, become an integral part of the management processes that the model describes. Creativity and innovation in application are thus essential for amplifying variety, while too literal and pedantic an approach is likely to prove brittle, perhaps even harmful, ever evoking the image of the sorcerer's apprentice's fate.

The focus on the user begs the question of the individual, again. It is precisely in pointing to the role of the individual as a participant in organizational life that the VSM offers one of its more important and challenging insights. For in every human organization, the basic unit of autonomy, the ultimate recursion, is the individual himself. It is the individual human who is the source of initiative, creative variety, and the constant unbalancing, agitating and unpredictable acts which ensure that the door to future possibilities is kept open. To this primary force, constantly seeking the viable route, driven instinctively to explore, sometimes blindly, for the next adaptive move, the rest of an organization can only respond. Whether such a response is designed to enhance this creative variety or suppress it is at the root of the question of liberty. Thus is closed an important loop that ties the individual to the communal and specifies the requisite conditions for the continuous viability of both. Here, the underlying spirit is more significant than the technical details. For the technical details can help us correct and refine the existing, whereas the spirit behind the model can help us find the way to the next important plateau.

In this regard, there is inherent in the VSM, and the tradition from which it emerged, a number of crucially important ideas: that the way we manage our enterprises, institutions, communities and societies has an inevitable impact on the well-being of the whole, as well as the identity, integrity, fulfillment, and self-realization of the parts; that in a true evolutionary sense, management processes have a great significance to human affairs since they constitute a loop through which humans can participate in guiding their own destiny; and finally, that the whole complex process is accessible to understanding and can be made a subject to conscious design.

These are very significant ideas, especially as we face a world of growing complexity, where critical questions of threatened viability are being constantly raised all around. The need for wise and effective counsel, for a fresh conceptual reorientation, and new tools for approaching complexity, is becoming increasingly apparent. Ultimately, the future of our planet is at stake and ensuring its lasting viability is, perhaps, the greatest current management challenge. To this very end, the Viable System Model has already made an important contribution.

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References

- Ackoff, R.L. (1970). *A Concept of Corporate Planning*. New York: Wiley-Interscience.
- Ashby, W.R. (1962). *The Set Theory of Mechanism and Homeostasis*. Technical Report 9, Electrical Engineering Laboratory, University of Illinois, Urbana, (1962).
- Ben-Eli, M.U. (1988). 'Cybernetic tools for management: their usefulness and limitations', in *Science of Goal Formulation* (eds. Sadovsky, V. and Umpleby, S.). Hemisphere Publishing Corporation.
- Beer, S. (1975) 'Fanfare for effective freedom—cybernetic praxis in government' (the third Richard Goodman Memorial Lecture), in *Platform for Change*. Chichester: John Wiley, pp. 423–51.

- Bertalanffy, L. von (1969). *General Systems Theory*. George Braziller.
- Pask, G. (1976). *Conversation Theory*. New York: Elsevier.
- Peters, J.P. and Tseng, S. (1983). *Managing Strategic Change in Hospitals—Ten Success Stories*. Chicago: American Hospital Association.
- Rosenblueth, A., Wiener, N. and Bigelow, J. (1943). 'Behavior purpose and teleology'. *Philosophy of Science*. 10. 18–27.