A Viable System Model to Analyze an Organization's Metasystem

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Abstract:

Organisations in any economy are rapidly changing as they considered being complex and dynamic systems and they are incorporated in a complex environment which establishes a need for a new methodology to help the analysts and the banks in making better decisions in assessing these organisations. This paper used a systems thinking approach by constructing accurate models to illustrate how problems could be identified in an early stage. The Viable System Model shows that it could provides the analyst with a deeper insight into the organizational structure of any firm and helps in identifies problems that need to be addressed.

1. Introduction

It is accepted that the four m's of traditional management language: men, machine, materials and money, are no longer sufficient to deal with the difficulties of contemporary business situations. In order to characterise the "stuff of management" today it is more appropriate to use the word "complexity" which has as its basis the four m's. But which, in addition, takes account of the increasing number of equally relevant issues of concern that arise as a result of the interactions of the system within a framework of extremely rapid change: complexity proliferates and has become virtually unmanageable with existing managerial tools" (Beer 1979). The book-keepers managed to quantify the four m's in terms of money and we still try to manage all our systems through the accounts. But these accounts do not include complexification. The nearest we come to recognising it, is indeed as a cost: the cost of ever increasing installations of data processing. People say: the world is getting complex and we need all these expensive machinery to handle it. But is this true?

If we cannot measure complexity except as the cost of a data processing activity which is itself a major cause of complexification , we are in a circular trap"(Beer 1979) .

The focus of the new management language emerges in the notion of viability in order to unfold the complexity and understand the different interactions inside any company. Beer suggests that the most meaningful way in which to characterise an enterprise is as a viable system, viability being interpreted as being able to maintain a separate existence. This is what we observe the enterprise to be doing. Of course it has all manner of declarations to make, in public and private about what it is doing but it will change its declarations if what they say becomes inconvenient; it will erect new norms of every sort, so that it looks like a different enterprise altogether, if that is convenient; but it will, if it can, survive. It will maintain separate existence, survival is a purpose that closes in on itself; it is a matter of preserving identity' (Beer 1979). Thus, enterprises change but they do survive if their separate existence (identity) remains uninterrupted.

It is Beer's thesis that the organisation of viability has a generic character and that this character is invariant to the particular embodiment. 'The question of organisational structure is the most important. If the structure is dysfunctional, then no amount of financial wizardry, of insightful man-management, of business techniques, will save the day. Increasingly, it seems to me, the organisational structure we inherited do not work' (Beer 1979). Every viable system is organised as a system of five sub-systems. Furthermore, complex viable systems are composed of viable sub-systems that again have this five- level structure. To be viable, a division of a firm should be organised this way. the recursions of a viable system remind us that we are not talking loosely about any kind of systems contained inside another, but about an absolutely precise definition of viability'(Beer 1983).

2. Components of a Viable System:

Beer considers the human organism as three main interacting parts: the muscle and organs, the nervous systems and the external environment, basically, body, brain and environment as shown in figure 4.1 which illustrates the basic VSM diagram.
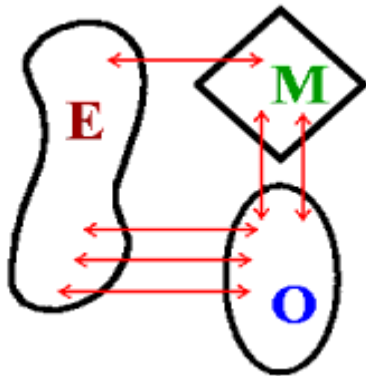

Figure (1) the basic VSM diagram (Taken from Walker)

These are generalised in the viable system model as follows:

First: The operation (O). The muscles and the organs, it's the bits which do all the basic work, or the primary activities
Second: The Environment (E). The parts of the outside world which are of direct relevance to the system in focus
Third: The Metasystem (M). The brain and nervous systems, it is the parts which ensure that the various operational units work together in an integrated harmonious fashion, or holding the whole things together.

The VSM considers an organization as a number of operational units, and the systems needed to ensure they work together or cohere as an integrated, harmonious whole.we introduce an analysis of the organisation's metasystem to analyse the robustness of this organisation as shown below:.

System Two:
System two represents the sympathetic nervous system. Its job is conflict resolution and ensuring stability between operational units. It focuses on implementing decisions smoothly, and it keeps track of the information on hand.

System Three:
This system represents the base brain which oversees the entire complex of muscles and organs (S1 units) and thinks "if this one does this and that one does that, then the whole thing will work more effectively". Its main job is internal regulation, optimization, & synergy.

System Four:
It represents the mid brain which is the connection to the outside world through the senses .it makes sure that the whole system can survive in a changing environment, looks for threats and opportunities, so it is there to do an important role in future planning, projections and forecasting.

System Five:
System five provides the ground rules and the means of enforcing them to ensure that the system in complete, and provide the ultimate authority. Usually it represented by a board of directors who set policies and take decisions.
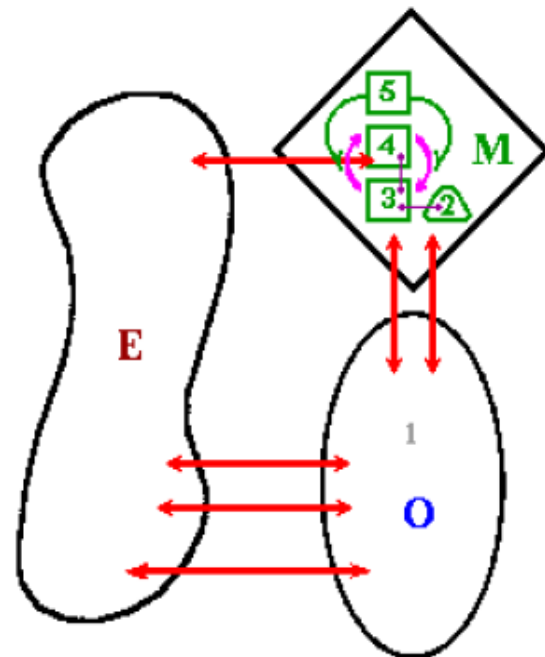

Figure (2) the Components of a basic VSM system (Taken from Walker)

In our VSM diagnosis we will re-think our organisation in terms of these five systems. The best most powerful approach is to visualise our understanding as a diagram something like the above figure. This diagnose will be done through a set of questions that the analyst must consider in his analysis. Each of these questions will support the analyst in his judgment
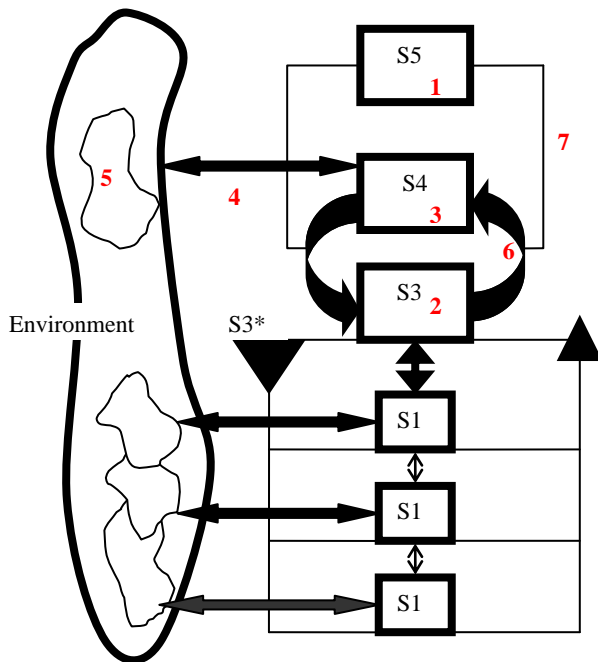
3. The VSM structure in an organisation:

Figure (3) the VSM Structure

The analysis of the above metasystem (numbers 1 to 7) as shown in the above figure is analysed as follows:

3.1 System Five (Number 1 on figure 3)

Policy concerns the context and the ground rules which have impact on everyone in the organisation. System five is the ultimate authority that sets the directions, the policy and the strategy of the organisation; it's the "Top Level Ethos". System five supplies what is called "logical closure" to the loop between system three and system four and monitors all the processes in the whole organisation by its policies and rules. And, finally, building and maintaining the organisation's identity.
 system five should always be alert and awake to deal with any necessary action if required. The analysis involves these questions:

Q1: What is the purpose of the company?

Most people give the answer "to make money". This is obviously important but this will happen if the company is viable. A system is what a system does. The main purpose is to continue to exist, i.e. to be viable. This purpose gives a company its IDENTITY. This purpose is set by System Five. The purpose must be understood of all sections of the company so this question will be repeated to various other sectors but it is absolutely vital that System 5 clearly defines a purpose for the company.
The analyst will evaluate the answer according to the main purpose in the firm, if it's purpose is well known and clear to the management and if they are using it to set their policy and goals, or whether they inform all the departments in the company about this purpose and overall goals so they all can corporate with each other or not.

Q2: Is the manager's responsibility clearly defined? And how does he manage to solve complex issues?

The responsibilities should be clearly defined so he can set effective and useful ground rules and be able to handle complex organisational issues effectively.
The analyst will interview the company's manager to study how he manages the company and oversees all processes in the company. Also how he coordinates the company's parts, achieving better communication and interactions that helps to solve the main problems and issues in the company.
A good evaluation will be given if there is a clear command structure in the firm that enables the manager to do his job and to take any necessary decision without being interrupted by some one higher than him.

Q3: Can anyone replace the manager at any time?

It's a weak point in the company if there is no one in the company that can take the manager's role and when he is ill or away for any reason. In this case, the work will be postponed in the company until they fined someone to take decisions or to cover for the manager in his role in planning, co-ordinating, supervising, and controlling routine activity.

Q4: How many managerial positions are held in the company by the same manager?

To make sure that system five is doing its job correctly; it is normally separated from other departments. It can then make its decisions without any interference from other departments that have specific needs or interests. Different departments are responsible for each different process with their own manager. It is a huge mistake when one manager is responsible for many

departments especially if these departments are not related or if they are working against other. This would earn a bad assessment.

Q5: Are there any meetings held regularly between the head management and the company's staff?

The company's management should hold regular meetings to provide the manager with an overview of staff's needs, suggestions to improve any part in the company, or even to motivate or reward the staff for their work and to fulfil any gap between the company's members.

It is not enough to held a yearly or quarterly meetings in the company as it will be difficult for the staff and the management to update their information or to communicate and discuss the main issues, while it is more convenient to make these meetings on a weekly basis or at least when necessary.

Weekly meetings enable both the staff and the management to negotiate their ideas and plans and discuss any important issue and solve any problems.

3.2 System Three (Number 2 on figure 3)

Stafford Beer considered system three as the everyday control of system one by the organisation's senior management. This part of the organisation in focus is the part which optimises the interaction of the export, import and production departments (the operational units). It sits right in the middle of all the operational activities. System three has a cohesion role that gives commands to the operational units and asks for reports to confirm the status of these units. System three's main concern is to manage the "inside and now" for the company.

Moreover, system three can control this mission by re-allocating resources of people and money inside the organisation in order to fill any gaps and improve performance which is a very significant role (as explained in the third question in this section). Actually this is the cohesion mechanism for system three; resource management, management intervention, supported by monitoring and co-ordination channels

The analyst therefore will make sure during his interviews and analysis of the existence and the efficiency of this system as this system have the ability to intervene within any operational unit in the firm to ensure that the firm's viability as a whole is not threatened by that unit.

Q6: Which part of the organisation looks at the performance of import, export and production departments and looks at the way they interact? How does this improve these interactions (weight : 2)

This question consists of the most important job for system three, and covers its main functions. System three has the same functions in any viable system. These functions are:-
It has an overview of the entire collection of operational departments.
It looks at the way these operational units interact.
It looks at the ways of optimising the overall efficiency of the entire operational department to improve its performance.
This improvement by system three is called generating synergy which is system three's job.

A good evaluation for this question will be given after the interviewer is convinced that system three in the firm under investigation does all the previous functions effectively and is really capable of generating synergy between the operational departments.

Q7: Who decides the implemented procedures and rules by system two in the organisation?

One of system three's tasks is to supervise the co-ordination activities of system two to make sure that system one implement these changes efficiently. It sets the rules that must be implemented by system two to make sure that system two does his work perfectly in coordinating the operational department's activities. A good evaluation will be earned here if there is a department or someone set the rules that are followed from system two, and supervise and make sure that system implements these new rules and procedure under the direct coordination of system two.

Q8: Is there any part of the organisation that determines how the distribution of resources should be among the component?

If there is, then this is system three. It's an essential role for system three to determine the distribution of resources among system one's component because resources are usually limited. Since the operational units are embedded in a changing environment, these units will need always to respond to these external changes and at the same time these units will have to

respond to system three's commands witch leads to disturbances in the resources available to cover these jobs.

Therefore, system three in the company must allocate these resources according to the company's needs, and the analyst must assures that this cohesion management is doing its job in allocating the resources in the company by asking for certain reports that give a clear idea about the resource in the company as these resources and their distribution may vary according to the technological and strategic considerations (Viplan). A good evaluation for this question will indicate that there is some department or someone responsible for allocating resources within the operational departments such if there is a shortage in sales staff, then system three will know that immediately and try to fulfil that shortage by transferring staff from other department which has an extra number of staff to the sales department. System three must aware of all the resources in the firm such as the number of employees, how much cash, products needed in each department. If the same staff shortage happens and there is no one knows about that or if there isn't an immediate support, then the sales process and the productivity will be much slower which will eventually will affect the firm's performance.

3.3 System Four: (Number 3 on figure 3):

System Four is the part of the company which looks at the development management in the company. It examines and requires an understanding of the total environment in which the company is embedded and produces strategies for future planning through its communications in both directions with the environment and the company's implementation.

The analyst considers this part crucial in measuring the organisation's viability. It is important to study the connections between system four and the environment, so the analyst will looks at the company's future plans, strategies and how it set these plans and according to what? What sort of planning? Is there is any research going on that have been taken into consideration in setting future plans

Q9: Does the management have a long range plan? Is it goal oriented?

Any organisation should have a plan for the future. No such strategies mean that this organisation is working under a very poor management which is a big problem for the bank to which this organisation applied for its loan. It is poor also to set these plans according to its internal regulations only and to its manager's point

of view (Bititci, 1999). Research enables the organisation to sets its strategies according to the future, or according to its goals which gives the company high points.

It is stated that "Every regulator must contain a model of that which is regulated" (Beer 1981, 1985). To manage something, one must have a model of how it works. This model is usually part of System 4. What –if analyses would take part here. How does the system four know what is happening or how the company will react?

The rating for this section is only for system four it self, we will rate system four's   connections with the environment and with system three and system five in the coming sections.

3.4 System four's connection with the External Environment   (Number 4 on figure 3)

The arrow that connects system four with the external environment is very important in completing system four's job in setting future plans and strategies.

System four must understand the external environment specially the areas which is beyond the capability of system one (the operational departments) in order to fulfils its function.

Stafford Beer found that we need system four to deal with the large external environment and to regulate in its regard, which he called outside and then. In the second place, Beer said that system four also deals with "the problematic environment of the company. This is also outside the collection of system one environments; but it is especially concerned with the future" (Beer, 1979,).

For our company under investigation, the management should be looking at the external environment to keep up with events, new products, new government policies, laws and regulations which are crucial in the import and export business and new technology products that facilitate its processes.

The analyst would be interested in checking how the company interacts with its environment and use its intelligence to cope with the changes out side its boundaries, so the analyst will keen to have the answers to the following questions..

Q10: Does the management have a clear vision of the market and the new products? Does this vision support the company's viability?

The organisation's management will be in a very strong position if it's possible for it always to have connections with the external environment to study the market as the organisation is embedded

in an environment which is full of challenge and opportunity. Looking at the new products, the competitors, any new laws that affect the company, any new services or products the company would produce, and the conditions of its industry to set its future plan according to the expected   circumstances in the market are essential tasks of system four.

The analyst will be interested to check if the company under investigation is viable enough to be wholly innovative to cope with these changes in the environment, and whether it is able to "find the right things to do" not only "does things right" (Espejo 2003).

4. Conclusion

This paper illustrates the meaning of Cybernetic Audit by examining a organisation's structure. Through a set of questions, we have tried to enable the analyst to assess and understand the organisational structure of a viable company. This analysis through viable system models enabled the analyst to get a deeper insight into the complex interactions inside the organisation and assess the robustness of its structure.

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