
Structural Faults: The Mechanistic Organization

Bureaucracy is the last thing that most executives want to see in their organizations. Yet despite leaders best efforts many organizations seem to be sluggish, inflexible and peopled by apathetic staff. How does this happen? What can be done to avoid it? This paper describes the mechanistic paradigm that gives rise to bureaucracy¹, outlines why it is inappropriate for current business challenges, providing some practical examples of how it affects hi-techs, and offers some suggestions for how to escape from its limitations.

The Organization as a Machine

The roots of many organizations lie in the metaphor of the machine. Traditional organizations are divided into departments with responsibility for functional areas, which are further subdivided until the individuals who perform the actual work are reached. The structure is like a pyramid with information and control travelling in a vertical direction. The organization consists of discrete parts, which can be assembled in a mechanical fashion to realise the whole. Like a machine, if we can understand, order and control the parts then we can control the whole.

This model assumes that the organization and its members are subject to well-defined, mechanical laws and **forces of push and pull, cause and effect**. Order and control are highly valued, disorder and freedom feared. The assumption is that management is a process of planning, organization, command, coordination and control. Organizations should be **rational systems** that operate in as efficient a manner as possible.

Associated with this model there are a number of implicit management rules: Shift responsibility for the organization of work from the worker to the manager, use rational methods to determine the most efficient way of doing work, select the best person to perform the job, train the worker to do the job efficiently, and monitor performance to ensure that procedures are followed and appropriate results are achieved.

The main human requirement is to fit the functional requirements of mechanised organization. The assumption is that if you engineer the organization correctly, the human factor will fall into place. Executives know, however, that people and organizations don't conform to these rules in reality and rarely apply them to the extremes just outlined.

¹ The description of mechanized organization presented here borrows heavily from *Images of Organization*, by Gareth Morgan

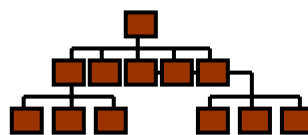
The Mechanistic World versus Business Reality

Table 1 outlines the conditions that must be present in order for the mechanistic organization to work well. It compares these requirements with the actual reality in the typical Hi-Tech.

Where Mechanism Works	Actual Hi-Tech Reality
The task is straightforward	The task is complex. Creativity and innovation are at a premium
The environment is stable enough to ensure that products produced will be the appropriate ones	The environment is highly unstable. Standard product is unlikely to match customer needs
One wishes to produce exactly the same product time and again	Product life-cycle is typically very short
Precision is at a premium	Good enough fit with client needs is more important
The human 'machine' parts are compliant and behave as they have been designed to do	Skilled people are far from compliant and highly unpredictable

Table 1: Mechanistic Prerequisites Versus Reality²

It is clear from the above table that the mechanistic model is highly unsuited to today's fast moving, turbulent environment - yet many companies are unwittingly designed according to mechanistic principles. The following is an example of a typical organization chart:



Each area such as Sales, Marketing, Finance, R&D, Product Development, Professional and Customer Service is a separate department managed by a single individual. Each manager is responsible for and measures his/her staff's performance. With this structure there is little or no incentive for motivated people to get involved or collaborate horizontally. It can result in fragmentation; competition, inflexibility and silo mentalities where the wider goals of the organization take second place to individual agendas.

² Adapted from *Images of Organization*, by Gareth Morgan

Case Study: The Sales Versus Engineering Problem³

The Sales Versus Engineering Problem is a dysfunctional relationship in a Hi-Tech between the technical and commercial sides of the organization. It can be recognised by the following symptoms:

- Sales gets tantalizingly close but can't close the deal
- Sales cannot convincingly diagnose why they lost the deal
- Engineering wastes time changing development strategies
- A contentious relationship develops between Sales and Engineering
- The company loses contracts to inferior products
- A culture of finger pointing is rife

Typically, standard product doesn't exactly fit the prospect's needs and requires customisation from product development. This distracts production from their 'main' objective: delivering the next planned version. Two or three such prospects can cause development to become paralysed through repeatedly changing schedules while still trying to maintain a predictable roadmap. The situation is hampered further by a mechanistic (Specify, Design, Build, Test, Release) approach to development that cannot cope with change without large management overhead and thrown away work. Product development becomes defensive and resistant to requests from Sales. The sales force become frustrated and disillusioned with product development and a vicious cycle begins, with both sides appealing to a higher authority (usually the CEO) to defend its interests. It is a headache to manage.

In this scenario, the targets and performance measures of Production and Sales conflict and bear little relation to each other. Teamwork (essential for solving real customer needs) is difficult at best and often impossible. Organizations tend to respond to such difficulties by creating Special Project Teams, Matrix Management, Professional Service Departments and mediation such as Product Management. These are all mechanistic approaches and do not address the underlying problem: lack of flexibility, teamwork and a 'whole organization' approach in each function. These can only be addressed through re-examining the top down departmental model and the mechanical product development methodology.

Case Study: Quality

Locating Quality Assurance (QA) as a separate entity on the organization chart seems quite logical and fits well into the mechanistic approach of placing separate tasks in discrete organizational units. However, one is likely to hear the following complaints from QA in an organization with such a structure: (1) We don't have enough product knowledge, (2) we don't have sufficient technical skills, (3) we frequently receive shoddy versions which fail rudimentary tests, resulting in wasted time, effort and poor morale, (4) deadlines are imposed without adequate consultation, resulting in insufficient

³ See *Creativity and Conflict: Recognizing and Resolving the Sales Versus Engineering Problem*, <http://www.ascendant.ie/Resources>, for a detailed discussion.

time to test the product, working late, and being forced to release products we are not happy with, (5) we don't have adequate capital and human resources, (6) generally speaking, we are at the bottom of the priority list, and (7) we get blamed when customers complain, despite all our warnings about poor quality.

Executives hearing such complaints often feel powerless to address them. After all, there is a limit on the amount of available resources. Skilled engineers typically don't want to work in QA. Customers generally need products earlier than we would like to deliver them and most executives do their best to take engineering's advice when making commitments.

But the real problem is structural: Accountability for quality should lie with the producers; otherwise they won't take sufficient responsibility for it. If production is responsible for quality, then problems 1 to 3 (and possibly also 4) will disappear! Problem 5 and 6 may or may not be present, depending on external factors. Problem 7 now locates the responsibility where it belongs.

Other Disadvantages of the Mechanistic Model

Operational problems are solved at the wrong level causing delays, poor decision-making and management stress. Complex issues cannot be resolved where they arise due to the fragmented command and control structure. They rise to senior management level, by which time information has been lost and distorted as people hide the true nature and magnitude of problems for fear of being held responsible. Senior executives have to make decisions about issues that are ill defined and which they have no real idea of how to approach. Unanticipated problems are rarely covered by existing procedures, so ad-hoc solutions are continually required. Inaction and lack of coordination disrupts normal operations resulting in backlogs of routine work. The Sales Engineering Problem discussed above is an example of this.

Mechanistic job descriptions discourage taking responsibility for problems and encourage attitudes such as 'that's not my responsibility' or 'I'm here to do what I'm told, not to make decisions'. Clear job definitions inform everybody of what is expected of them, but also let them know what is *not* expected of them. Hierarchical organization of jobs builds on the idea that control must be exercised *over* the different parts of the organization, rather than *built into* the parts themselves. Supervisors, through monitoring performance of workers, also remove responsibility from them.

Mechanistic organization hurts the human spirit, fostering lack of pride, apathy, cynicism and feelings of powerlessness. It discourages initiative and risk-taking, encouraging people to obey orders and keep in their place rather than to take an interest in, and question what they are doing. People in a bureaucracy who question decisions are often viewed as troublemakers. Initially enthusiastic people learn over time that they cannot solve problems that directly affect their work and drop into acquiescence and apathy. Individuals and the entire organization suffer due to this waste of human motivation, creativity and potential.

Why do we use the Mechanistic Model?

If the mechanistic model is so inappropriate, then why do we still use it? There are some fundamental reasons:

It is imprinted in our culture and in our consciousness, to the extent that we are mostly unaware of its existence. When thinking of an organization it is almost second nature to think in terms of a structure of clearly defined activities, linked by clear lines of communication, coordination and control. Despite its drawbacks, most of us have great difficulty in escaping from this way of thinking. A paradigm change is required. And this is no easy matter. Thomas Kuhn, in *The Structure of Scientific Revolutions*, says that what ultimately causes a paradigm to change is the accumulation of anomalies – observations that do not fit into and cannot be explained by the prevailing paradigm. These anomalies have to be presented over and over because there is a social determination not to see them.

There are no immediately obvious alternatives. It is the only frame to which many executives have any knowledge or previous experience. We are all likely to have worked in organizations that were at least partially mechanistic. If we don't have alternatives that promise to work better than what we have then we can hardly expect to drop current ways of organizing. We can read books and articles about leadership and organization, but without first hand experience it can seem like too big a step to make.

Change is potentially painful. This is why most people resist it and is one reason that most organization change initiatives are disappointing and fade over time as people revert back to old, familiar patterns of behaviour. Changing from a mechanistic, command and control model requires that senior managers themselves change - not just their employees. This is not as easily done as redrawing an organization chart. Old habits, styles and sources of comfort have to be given up. This will inevitably challenge our very sense of identity that we have worked so hard to build up and maintain. Unless the pain of existing ways of thinking and behaving is great, or the promise of the new ways is very desirable, the temptation is to avoid the issue and settle for inefficiency, mediocrity and low energy. It may not be pleasant but at least it is familiar.

It provides executives with the illusion of control. Control is very desirable for most people, especially those who are measured through the actions of those whom they manage. Abandoning the mechanistic framework means that we must, to some extent at least, let go of this illusion of control. It requires us to consistently give away more power to those on our teams, to accept that the environment is more complex than we can fully understand, and to trust that enabling people at lower levels of the organization will provide significantly better results. This can be an unnerving experience, at least until one learns to become familiar and comfortable with it.

What are the Alternatives?

Revisiting Table 1, we can redraw it in terms of the implications for management and organization, to arrive at Table 2:

Hi-Tech Reality	Implications for Management
The task is complex. Creativity and innovation are at a premium	The task is too complex to grasp or control. Encourage initiative, teamwork and creativity at all levels
The environment is highly unstable. Standard product is unlikely to match customer needs	Enable flexible teamwork across functional roles. Provide overall business visibility at all levels and functions
Product life-cycle is typically very short	Iterative development methods based on wide collaboration & consultation
Good enough fit with client needs is more important	Build collaborative relationships with key clients
Skilled people are far from compliant and highly unpredictable	Leadership is more important than management. Soft skills are vital

Table 2: Hi-Tech Organizational Requirements

What emerges from this table is the **prime importance of people, relationships and teamwork**. Better and stronger relationships, within teams, across the organization, with customers and other stakeholders, leads to better results, higher morale and increased personal fulfilment and satisfaction for managers and staff. What is required is a shift of viewpoint from command and control to facilitation and coordination on behalf of managers. Emotional intelligence, the ability to manage oneself and ones relationships, becomes a key requirement for managers in any non-mechanistic model.

Changing ingrained mindsets requires time, effort and practice, but the first step is an awareness of the limitations of the existing paradigm. This allows us to at least consider other possibilities. We will explore alternative structures, such as the *networked organization* and we will examine how *leadership* can be fostered throughout the organization in further articles. However the underlying principle is that attention to people and relationships, rather than narrow focus on rational control and excessive attention to the bottom line, will better serve both organizations and all the people who work within them.