

Organizational Efficiency Engineering

A New Area for Professional Efficiency Applications

Presented by

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There is work that is necessary and convenient for gaining performance through the efforts of others. This is management work; and certain tasks are appropriate to each management position. If the work is not performed where it is appropriate, inefficiency results.

OEE is the original application of the logic of scientific management to the performance of management as work. It develops, and then relies upon, the almost startling realization that management work is not only subject to pre-definition, but to measurement and prioritization.

Once this hurdle is past, application becomes a repetition of the basic work of Frederick Taylor, Elton Mayo, the Gilbreths, and others who founded our traditional efficiency engineering disciplines.

It is only a small step to the efficiency engineering of internal support. The internal organization is how the senior manager gains performance through those who do the productive work. It is also subject to the same analytic approaches.

By happy circumstance, I am the one who realized our potential for gaining efficiency in the performance of management. This new area of efficiency engineering is made possible through a new use of our regular work-based IE techniques. In my efforts at publicizing my unique work, I am also President of OEE, Inc. This is a private corporation doing business as The Management Upgrade Shop.

I am widely experienced in general industrial engineering work. I have six years experience supporting R&D manufacture. I have several years doing general manufacturing engineering. I have over two decades of IE experience providing internal management support for logistics, contracting and facility engineering efforts.

OEE and Industrial Engineering

Organizational Efficiency Engineering is the application of the principles of Scientific Management, largely as presented by Frederick Taylor in his 1911 publication, to the work of management and internal support.

The tools are traditional. Establish the results that have to be obtained. Eliminate work that does not progress toward those results. Simplify the work that remains. Develop jigs, fixtures and other work aids that support the performance. Design the work of groups so that workers complement each other's performances. Train those who perform so that they operate efficiently. Develop management support systems.

The first casualty is the modern concept of an "exception manager." The performance approach starts with an assumed need for performance by a manager in charge, and an insistence that the appropriate manager does the work. Even the hiring of people to react to immediate needs should be based on having sufficient reactive work to justify that person's pay.

Scientific Management applications arise from identifying areas where we now need performance; but there is no one managing over performance. The general direction of cure is identifying the productive result, and assigning performance responsibility to those who will be given authority over management system resources. This is the establishment of basic management in an area where it is now missing.

Consider that we now have "rule of thumb" approaches to the management of business structures. The potential for improvement through designed structures is staggering.

Office automation has been on the decline for the better part of a decade, in spite of major technology advances. The value of internal support is fixed by the needs it serves, and the basic office needs for handling information have not changed materially in the last four decades. The dollars flow from automation users into the pockets of automation providers without increasing the earnings of customer businesses. This indicates the challenge.

There are new potentials that are so vast as to defy easy presentation. My purpose here is to showcase the new potential. I have more to give away as loss-leaders than most others have to offer as product. What we have is a whole new area for the exercise of the efficiency engineering expertise. Today's industrial engineers are in the forefront of a major change in business, and there are remarkable benefits to be reaped by those who lead.

That leadership has not been established. As the techniques are directed to managers, and most require managerial action, I have principally directed my past efforts to getting OEE approaches and techniques to senior management where they can be most effective.

Even as with the original application, Scientific Management is challenging for modern managers. The original application of scientific management was given to time study analysts, the forerunner of the modern Industrial Engineer. It is entirely appropriate that a technical specialist with expertise in efficiency become the source for the next advancement.

Structure of this Presentation

Demolition, Prepare the Site, Establish a Plan.

A Failure to Address Mid and upper-level managers.

Management work that should be performed.

Management Modules and Module Management.

Modular Management Systems.

How to Use OEE to Your Benefit.

In 1983, I discovered that the Army was spending over \$12.00 to process a requisition through the local tracking and delivery process charged to the operation of the Installation. If a procurement contract was involved, the cost jumped to more than \$50.00. I wrote up a suggestion to drop tracking requirements for requisition items that were less than \$50.00, and contract items that were less than \$200.00. The eventual apologetic reply was that those who understood the benefit were not able to implement.

As an efficiency professional, I went looking for the error in the suggestion program, and it was working as designed. I went looking for the design flaw, and the program was in accord with accepted good-management practices. I looked at how we manage, and discovered the lack of management. I went looking for correction, and found that the lack of management was endemic. I went looking for how I might correct this; and thus I began the path to OEE.

This presentation addresses a study that had been progressing for more than 15 years. I am only able to hit a few of the highlights in this forum. My presentation will be effectively limited to establishing a basic understanding of the scope of OEE. The larger study addresses profit-based structuring decisions, profit-based process design, and profit-based management techniques and approaches. This presentation is just a window into a magnificent and untouched area of potentials. "Now" is one exciting time to be an Industrial Engineer.

Traditional Efficiency Engineering

Work Methods – Eliminate and Simplify.

Workplace Design – Establish Efficient Work Site.

Work Groups and Production Line Methods.

Plant Layout and Performance Studies.

Work Standards – Cost accounting.

I have read Frederick Taylor's landmark publication, The Principles of Scientific Management, and found that I had missed a great deal by not reading it during my general education. It addressed a highly personal and effective way of dealing with people in establishing improved work performance. Taylor's work is misrepresented even in our modern IE textbooks.

The change accomplished in the Scientific Management Movement was conversion of the straw boss into the modern foreman. The 19th century boss was the owner's representative, and had the duty of setting workmen to their tasks until work was performed. The 20th century foreman took responsibility for performance, and organized and supported workers in their efforts.

The new vision of work management was a team effort with the foreman providing the key organization and direction to both the group effort and the personal efforts of individual workers. The result of having an effective team leader was to effectively double the productive output from the average worker.

Workers were not made more efficient, they were just managed more effectively. It was work management that was made efficient; and improved group management increased the average performance for workers. The primary efficiency change was in management rather than performance.

Missing Pieces

Application Limited to Production.

Authority Within Production Management.

The Authority-Based Performance Model.

Separation of “Managers” from “Foremen”.

Production-Group Design and Process.

No higher-level Management Process.

The authority model is built upon distribution of authority, not on performance. Each manager is given a part of the authority of a superior manager or managers for the purpose of exercising that authority to achieve productive purposes.

There is only one reason to hire a manager, and that is to accomplish something through the efforts of others. This is the definition of management. There is no special purpose in having someone in authority to direct people to their efforts. Management only exists because there is something to gain through others.

Where the Scientific Management Movement changed straw bosses to foreman, there was no corresponding change in higher-level management. Those managers have continued as bosses, directing subordinates to their performances without taking effective responsibility for supporting those subordinate performances. This indicates a failure to take responsibility for gaining through the efforts of subordinate managers.

The performance team concept demanded by the changed definition of management was not applied. The authority model continued in effect; and the efficiency improvements generated by the initial application of scientific management were not accomplished above the work-group level.

OEE is the potential solution. It provides a way to define the tasks of management as work, so that the principles of scientific management can be applied to good effect. It is a way to arrange for the more senior manager to be the team leader for a management system, taking effective part in performing internal command and support functions. It is a way to address the efficiency of the performance of management as a work effort.

Management as Work

- Something to Accomplish Through Others.
- Immediate Conflict with Exception Manager Paradigm.
- Exception Model Screams of Inefficiency.
- Define, Simplify, Teach, Monitor and Support Management.
- Managing Over Management as a New Concept.

What is it that the manager has to accomplish? We can return to the original application of scientific management; and we can learn from what works for subordinate work groups.

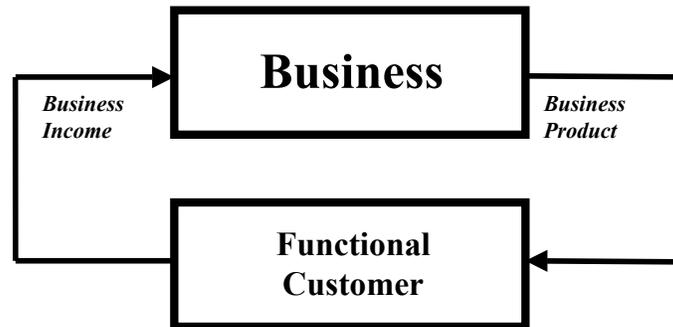
The modern foreman designs the work processes, and trains workers to perform those processes. He or she determines what outputs need to be gained to achieve the group result; and assigns those outputs to workers. The foreman arranges the workplace to support the performance; and arranges the work efforts so that they are additive. The modern foreman arranges internal support for workers. The modern foreman is the central control point for all group activities.

This same general function needs to be performed by the modern higher-level manager to assure performance by his or her subordinates. The actual tasks are different, but the needs for general managerial support are the same.

There is more a question of how the application will be made, than what it is to accomplish. To make a management effort efficient, the technique is to eliminate unnecessary work by subordinates, and to simplify the work that remains. It is to identify efficient processes, and to train subordinates to those processes. It is to coordinate their efforts by giving assignments of non-overlapping productive requirements, and to assure that these subordinates are able to coordinate their efforts effectively.

The application is still a challenge, as the specifics have not been developed for management and internal support efforts, but the direction is clear. We have a foundation for building a new management model.

The Pairing Principle



The Pairing Principle is a basic tool of Organizational Efficiency Engineering. Applying this tool effectively is part of the discipline.

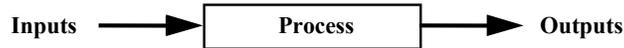
The Pairing Principle is also a statement of basic purpose. Every productive part of any organization has, by definition, a productive purpose. It has something to be performed or a situation to be created. It has a basic definition of value that relates its activities to its reason for existence.

The Pairing Principle is a restatement of this truth in functional form. Every functional product goes to a functional customer. Every functional customer receives a functional product, and returns value to the organizational element because it receives that value. The definition of a functional product is meaningful only with the corresponding definition of a functional customer. The two must be defined in pairs.

The obvious strength of this principle is that it maintains focus on value relationships that guarantee the continued existence the organization under study. The application for organizational efficiency work is even more valuable, supporting the clear identification of functional product and customer.

The general rule is that the ones who resource or fund an organizational element are its functional customers. Whatever these people must receive in order to feel justified in continuing their resourcing or funding is the functional product. This defines what the organizational element must produce and deliver in order to continue its basic existence

The Engineering Blackbox



The engineer blackbox performs a process that converts inputs into outputs.

If you know the inputs and outputs you don't need to know what is inside the box.

A second tool for OEE is the Engineering Blackbox, an organizational element or entity that uses an undefined process to convert its inputs into its outputs. It is purposefully left undefined, as the important elements for using the Blackbox are its inputs and outputs, and the value relation between them.

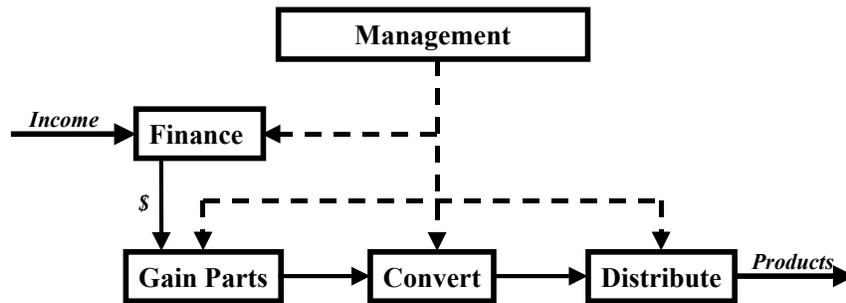
You will immediately note the use of engineering blackboxes in defining the Pairing Principle. We have a business entity blackbox that receives inputs from a functional customer, and converts these inputs into valuable products. We also have a functional customer blackbox that receives functional products from the business blackbox. It converts these functional products into the resources or funding used by the business.

The concept behind the engineering blackbox is that it supports functional analysis by ignoring processes. The processes involved are simply defined by value relations, by the conversion of inputs into outputs. Blackboxes deal with values, not with performance details.

A second source of value is the close relationship between management and the engineering blackbox. A blackbox, by definition, has inputs and outputs and performs a valuable conversion. Management, as gaining through the efforts of others, can be functionally redefined as gaining through a blackbox conversion process. Where we have these two value determinations, we have a manageable process. If either inputs or product are unknown, the process becomes unmanageable.

This provides the Industrial Engineer with a tool for simplification, and for focus on essentials.

Blackbox Analysis



Use of the blackbox is not limited to whole businesses, but can address internal elements of a business organization. It is here that the industrial engineer is able to perform functional analysis of business structures.

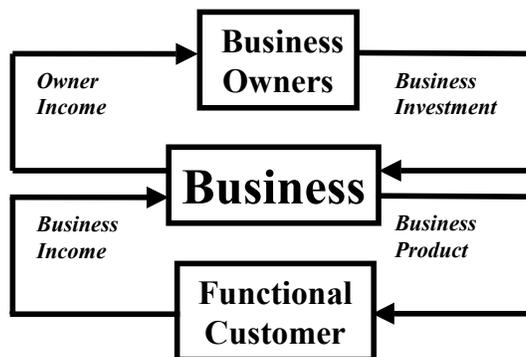
Two valuable characteristics are available for the industrial engineer application of blackbox analysis. The first is from manageability; from the necessary relationship between blackbox inputs and outputs assuring that every blackbox becomes manageable. The second is from organizational function, from observing the conversion process. It justifies the continued existence of the organizational element under study through comparing its outputs and inputs.

Blackbox analysis can point out groups that should be eliminated as being unmanageable. Blackbox analysis can point out groups that have no functional products to justify their continuation. Blackbox analysis can point out functional products for groups that have poor understanding of their basic purpose.

Consider the simple example of a finance function. It handles the organization's financial resources. It supports buy-and-sell decisions, and assures the availability of dollars to perform the work of the business. We commonly think of this function's inputs and outputs in terms of dollars. The same dollars that pass into the function, also pass out of it. There is no functional conversion, and dollars define neither the inputs nor the outputs of this function.

Dollars have another function. Whichever way the dollars flow, the value flows in the opposite direction. We pay workers to gain the value of their time and effort. The functional customer for a financial group will not receive dollars as a functional product.

External Business Model



The basic OEE business model includes business owners and investors along with the elements common to our first pairing principle diagram. The reason for this is basic. It allows us to examine the purpose for the existence of the business, and the product that it has to produce to justify its own continuation.

Organizational efficiency analysis is based on fulfilling purposes, and these purposes are built upon the reason that organizational elements continue. By addressing these elements as engineering blackboxes, we also assure that the various elements of our model are manageable, that someone will be able to gain performance through them.

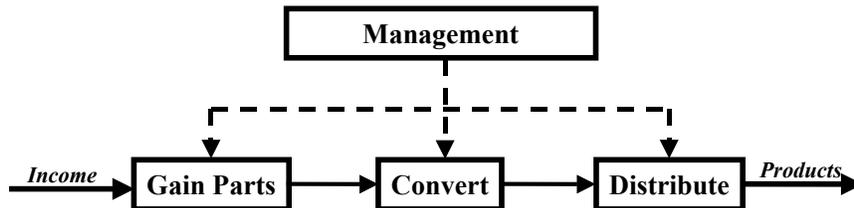
Consider the purpose for a business owner. The owner may continue the business as a way to assure income for a family, or as a mark of prestige, or as an amusement, or even as a way to assure the personal effectiveness of that person's decisions. That purpose is not predefined.

The purpose for an investor is more certain; and involves a return on investment. It addresses profit.

The business purpose, unless otherwise stated, probably involves profitable operation of the organization. Profitable operation is the purpose, and profit is the functional product for delivery to the investors to assure their continued investment. This establishes a pairing principle relationship between investors and the business.

The earlier discussion of the Pairing Principle addressed the relationship with functional customers. Investors turn out to be functional customers for a key business product.

Simple Blackbox Model



The simplified business model is a simple application of functional blackbox analysis. It takes a business process, and defines it in terms of internal blackboxes. This is a technique for further defining organizational operations by means of blackbox inputs and outputs.

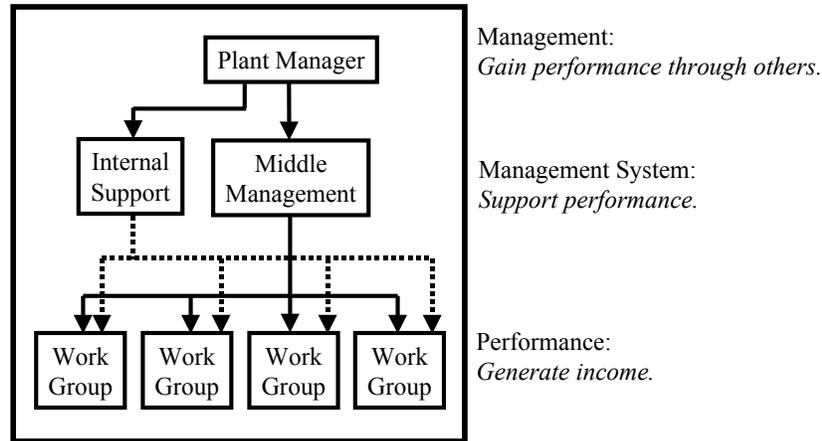
One important efficiency rule is that every output for an internal blackbox must leave the business, or be the input for another blackbox.

For Organizational Efficiency Engineering, this is the key to unlocking the potential for managing over management. Management has a product that it provides as valuable input to other parts of the operation. The value of resources that management consumes in providing products is measurable. The value of management products to those who receive them is also measurable. We have the foundation for measuring the efficiency of management.

In more general terms, we also have a foundation for identifying products that have no value, and can be eliminated. Where we know the management products required by others as their inputs, we have a basis for simplifying internal work to generate just those specific products. We are developing a foundation for basic efficiency engineering applications to the work of management.

Specifically defining this work remains a challenge, but we can point the direction for our future development efforts.

Robust Blackbox Model



Things get interesting when we take the next step and apply the blackbox approach to management itself. We quickly discover that there are three functional areas within business organizations, and they all relate to the definition of management.

The senior management function represents the organization as a whole. The senior manager is the person who has something to gain through the organization.

The performance area is made up of work groups, the ones who gain the product envisioned by the senior manager.

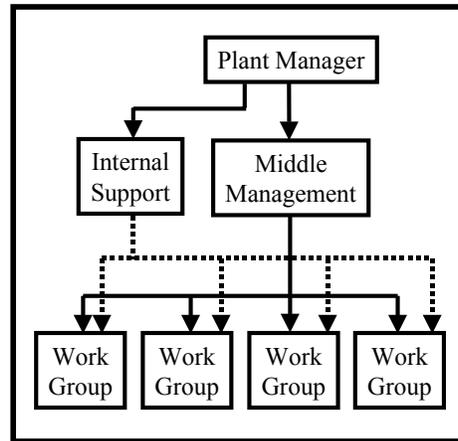
The management system is everything else. It is how the senior manager gains performance through those who are doing the work.

As noted in the Blackbox Model, each blackbox unit has its own inputs and outputs that define its conversion process. Its functional products have value defined by those who receive the products. Each blackbox is manageable by its inputs and outputs.

This has some correspondence with our traditional business model, but there are minor differences between senior management and modern executives. There is a great difference between the functional management system and mid-level management, as the management system contains all the organization's internal support efforts. The foreman-level manager is almost the same as the direct manager of the blackbox model.

The functions indicated for each subordinate blackbox in the model shows the value to be produced by each. If that value is produced, the operation of the blackbox is a success. The efficiency of producing that value is found in how much it costs to get the performance

Division of Functions



Management:
Gain product through others.
Assign product & commit resources.

Management System:
Implement directives.
Operate management system.
Support performance.

Performance:
Convert inputs into outputs.

One almost exciting result is the vertical division of management functions. The first product of our analysis is a functional separation of management duties based on the elements portrayed in the model.

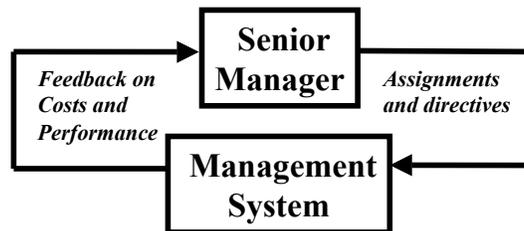
Organization-level management determines the business product for those within, and sets internal products to be gained by subordinate blackbox units. In order to manage these, the senior manager must assign the product (manage performance) and resource the effort to assure success (manage costs). Again, the engineer blackbox model addresses inherently manageable entities.

The performance area completes the business portion of the pairing process with the customer. It receives income, gains parts and materials, converts these into products, and delivers product. It is most important to note that performance includes delivery of product, for that is how value is realized. Line functions go beyond production.

The management system has two classes of function determined by its two customer relationships. It serves the senior manager by assuming ministerial management responsibilities, and by implementing directives. It serves the performance area with various supports, including both ministerial management and supervision.

Another specific lesson from this is that the management system is not to be given effective authority to direct the performance area. It is a service group dedicated to the purpose of assuring subordinate performances through the support it provides. Senior manager authority is not divided among these immediate subordinates. The Senior manager is more likely in this model to assume direct authority over those groups that see to his or her organizational performance.

New Management Paradigm



In a very real sense, Organizational Efficiency Engineering addresses the area managed by a senior manager. Most of its applications are for the direct benefit of the one who has something to gain through the operation of an organization.

We are addressing this area by assuming management over it, which implies that there is a current lack of management. Addressing senior-management functions involves a new management paradigm, one of gaining performance through an organization. The senior manager is the one who arranges his or her subordinate organization and its processes to assure an efficient gaining of his or her desired product.

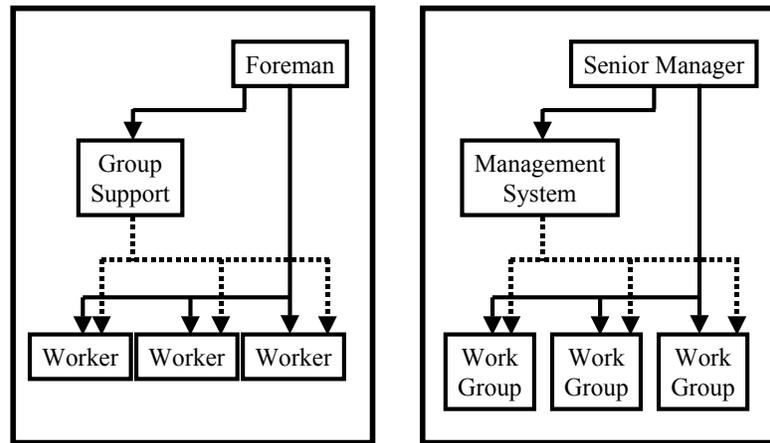
Going back to the definition of management, and the blackbox model, the senior manager cannot manage until he or she has something to gain through a subordinate effort. If the senior manager lacks such a product, then he or she will not be able to manage the effort to gain it. There would be no difference between a successful and a failed performance.

Also, senior management is work. It involves assignment of the product and assurance of sufficient resources to support the performance. It involves gaining information on performance to see to the delivery of product. This is work that must be performed by the senior manager if that manager is to be in charge of the performance effort.

The senior manager must effectively self-assign this work if it is to be efficiently performed. The mid-level manager has a slanted understanding of priorities, as he or she will have their own assignments to perform; and a subordinate manager should not be making decisions affecting areas in which he or she has no productive responsibilities.

Structuring the organization, and resourcing its parts to assure their proper and effective contribution to organizational performance, are tasks that can only be performed effectively by the appropriate senior manager.

Work Group Lessons



Mid-level managers are support personnel. A senior manager, like a foreman, is an action manager with a productive result to obtain by directing others to their efforts.

One valuable lesson is that the function of a senior manager over subordinate elements of an organization is much like the function of a foreman over subordinate workers. The senior manager is more closely aligned with a foreman than with mid-level managers.

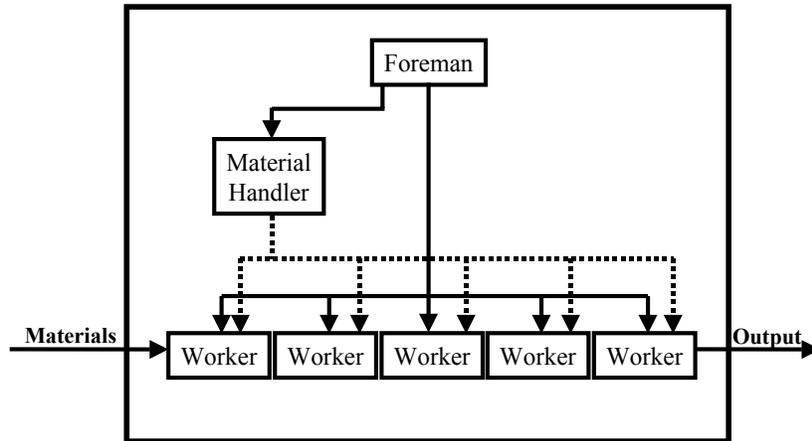
We have an existing body of knowledge of good-management practices addressed to foremen over work groups. Much of this knowledge can be applied to establish good-management practices for senior managers over organizational elements.

The first concept for the Industrial Engineer is that the senior manager is to be the team leader for the productive effort of subordinate groups. The team leader has direct responsibilities for his or her subordinate production-oriented effort. These include providing structure and organization to subordinate efforts. It includes establishing individual responsibilities for subordinate members (elements of the organization).

The senior manager is the one who is responsible for eliminating unnecessary or ineffective subordinate processes, and for simplifying those that remain. The industrial engineer should be directed to providing technical support, identifying the processes to be eliminated, and suggesting simplifications for those that remain.

I am addressing a whole new role, and a new area of performance, for our profession. It is indeed an exciting time to be an Industrial Engineer.

Internal Support Efficiency



Blackbox analysis provides another general lesson that replaces much of our present understanding of efficiency work within management. The comparison between the foreman and a senior manager provides a way to see efficiency relationships within operating entities.

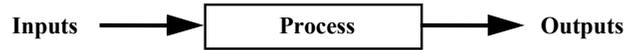
The utility operator on a production line is there in case a worker has to leave their station during production time. The utility operator takes their place, and production continues. It is an internal support effort that assures whole-group productivity.

This utility work does not produce the product of the group. Attempts to make this utility operator more efficient at what he does would not be meaningful. He will be just as efficient doing nothing when no one is absent, as when working hard in an open station. His efficiency does not affect group performance, only his completion of assigned responsibility. Doing more or better support work does not yield more or better product from the group.

The same is true for the internal support group within an organization. The business does not increase its output when a new ADP system is purchased. It does not earn more income, though it can suffer cost both through the need for additional training, and increased need for technical support to keep more advanced computer systems working effectively.

Our current attitude toward organizational efficiency has efforts to make every part of the organization efficient. This is a known bad-management practice called suboptimization. Efforts to make internal support areas efficient will often lead to incurring costs without any expectation for increased income, an effective loss of efficiency.

Blackbox Efficiency



Efficiency = value of outputs / cost of inputs

The value generated by a business is in product delivered to customers. Neither management nor the management system produce value.

Internal value is determine by impact on cost of operations and the value produced by the business for its customers.

To give this greater definition, efficiency is the relationship between value of products delivered to customers and value consumed in producing and delivering those products.

When we address the efficiency of an organization, we are addressing the value delivered to functional customers, divided by the cost of all business operations. When we are addressing the efficiency of the senior manager, this officer manages the cost and benefit of the larger organization, and shares in organizational efficiency.

The efficiency of a production group is similarly measured by comparing the value of its outputs to the cost of its inputs. The value of the product of all production groups is the value produced for the functional customers of the organization. A foreman also shares in the efficiency of the group he or she manages.

Internal support has a different relationship. The value of its products is determined by the needs that these internal products fill for others. The products are not inherently valuable, but have value determined within receiver groups. Producing more or better internal support products is unlikely to generate any additional value in support-receiver groups. Efforts to make internal support groups more productive or efficient are often counterproductive.

Common efficiency approaches now include increasing support requirements placed upon receiver groups. This involves support groups gaining more effective support from support-receiver groups. It is common, for example, to have supply people in customer groups that use our military supply system. This reduces the cost of the support system by putting supply work upon its customers, attacking the reason for having a support effort

Structural Anomalies

Harmful Competition: Internal Affairs

A Police group is missioned to police work, but is constrained by an external IA group that would regulate the behavior of police officers performing their duties.

No Product: Information Security

A security group has no output used by other groups as input for their performance processes. There is nothing for a manager to gain through this group; it is unmanageable by definition.

Cinderella Group: Billing under Finance

The bill collection effort is not a finance function, but an operating area function for gaining business inputs. Subordination to a staff function causes inefficiency.

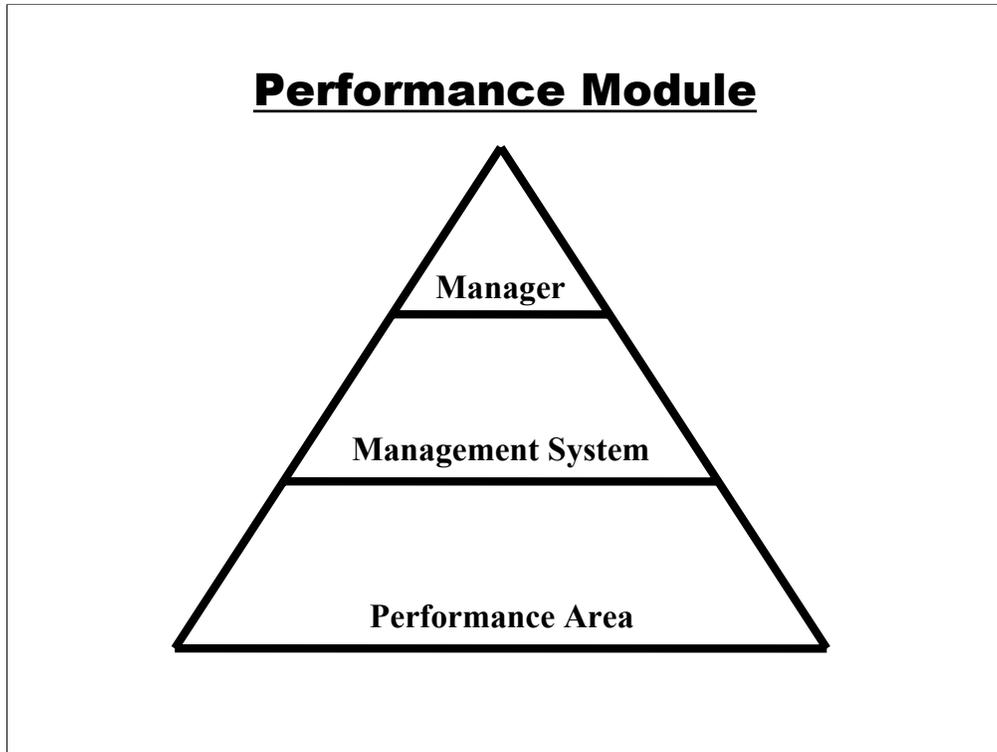
It is easy to find examples of Authority-based structural anomalies.

The internal affairs group in a police organization has the purpose of containing the performance of police officers to legitimate police work. It addresses management as a competitive effort for direction. Efficiency is gained by putting the correct performance requirement on direct police managers, and requiring them to provide the appropriate productive result through their management over individual police officers. The need for the Internal Affairs Office is then eliminated without cost.

An information security office has no product that is consumed by any other office in the organization as an input to their processes. It is an inherently unmanageable group, with no measurable difference between successful and failed operation. Solution is to make secure data handling the product of groups that handle information for others. This has a product that is measurable, and the application is by those who have something to accomplish through their labors. The security requirement is then a manageable part of the product.

Billing is now commonly placed under a financial manager. Billing produces useful income. Financial management produces internal support information for use in making intelligent management decisions. The billing product is not a subordinate part of any financial management products. The anomalous priority arranged by this structure can cause confusion, or even loss of income. Billing personnel can easily be redirected from their primary function to serve financial management purposes.

The lesson is that Organizational Efficiency Engineering provides the basic tools for structuring organizations to support efficient operations. Our more common authority model often leads to expensive structural anomalies



The effective purpose of Organizational Efficiency Engineering is to establish manageable organizations. The model established to this point is obviously limited by the capacity of the senior manager in charge. For example, the Chief Officer of the United States Postal Service cannot be expected to personally authorize and organize a 100,000-person effort across the nation. We have to limit management to manageable-sized groups.

The blackbox with its requirement for product is the perfect tool for establishing manageable production units. We have already accomplished this as to direct management organizations, noting a three part structure consisting of management, performance, and a management system that provides internal support.

By limiting this to the products of a group, rather than that of a whole business, this organization gives a functional definition to a management module. A module has this basic structure, with the requirement that the senior manager in the module directly defines and manages the productive outputs of the subordinate groups within the module. The module's senior manager is able to define the module by the scope of his or her decisions.

A collection of these modules can function as a unit, personally managed from the top of the unit as to its local performance. A small business is a natural module. A single operating plant at a local site is almost always a single module, even if it is part of a larger organization. A separated headquarters of a major corporation is often a single module.

The key reason for using modules is that the modules themselves are inherently manageable, having costs and products that can be managed from above.

Situs as a Module Concept

1. Situs is also A Management Area.
2. Direct Management and Personal Decisions.
3. Indirect Management and Effective Area.
4. Situs Manager as Module Manager.

Situs is a module concept, deriving from the word “sit.” It defines a sitting for the authority of a local situs manager. Situs is the decision area where that senior-manager’s decisions are directly effective in attending to management of a performance.

The foreman is a situs manager as to the work group, providing the decisions that establish the work for members of the group, and managing the overall group result. The senior manager of a larger situs does the same functions for managing organizational members, and managing the larger result of their efforts. A management module is a situs by definition.

Not every manager is a situs manager. The situs manager is the one who has a unique product responsibility, and is generally given independent authority over the resources that are directed to generating the group product.

The CEO of a business is, by definition, a situs manager; and he or she will have a situs area where direct decisions impact on performance. The senior manager at a remote work site is generally a situs manager, with responsibility for the productive efforts at that work site. The foreman or direct manager over a work group is generally a situs manager as to the performance of the group mission.

By definition, each situs manager has unique responsibility for directing subordinates to generate a productive result. Where there is no unique performance responsibility, as with a regional manager over an oil processing firm, the administratively-senior regional manager is not a situs manager. That regional manager has only the same products as those assigned to plant managers, and the local site managers are the ones uniquely responsible for the product of their local plants. They are in effective authority to direct the resources of the plants to generate their assigned products.

Situs Manager Workload

1. Unique Situs work must be performed.
2. Subordinate management work may be done.
3. Direct manager work may be assumed.
4. Production work may be self-assigned.
5. Any ministerial work can be delegated.

Situs provides a new management concept, managing the area of responsibility for the one who has production to accomplish. In larger organizations, the situs manager is not able to direct individual subordinates to efforts that generate product. They rather direct subordinate parts of the organization, and the managers in those subordinate parts are the ones who direct resources to performances. The situs manager applies management to groups, and the groups perform.

Rather than providing the general example for situs management, the foreman is the exception. The foreman manages over performance by individuals, who function as groups of one person. The more-senior situs managers manage over groups that can vary from one staff person to intermediate managers who have authority over their own subordinate management structures.

In any case, the situs manager has the potential for managing the size and shape of the situs he or she manages. He can choose to make decisions or to delegate them, setting limits on what he or she will and will not handle as situs management matters. This manager can choose to make decisions that would normally fall into the responsibility of subordinate managers, effectively expanding the size and complexity of the situs affected by that manager's decisions.

The new management concept is one of managing the size and shape of the management area. It is a potential for intentional determination of the amount of self-assigned management work that the situs manager will choose to perform. Organizational Efficiency Engineering supports the intentional management of the work that the situs manager self-assigns for performance, managing the affect this manager will have on the area directly affected. This is a whole new area for management efforts, a new area for managing over a management effort. It is also a new potential area for technical support for the manager.

Self-Management of Situs

1. Prioritize and Resource Subordinate Work.
2. Priority of Senior Manager Efforts.
3. Priority of Structure and Mission Concerns.
4. Election to Perform Other Tasks.
5. Workload-Analysis Potentials.
6. Managerial Cost Accounting Potential.

As noted, Organizational Efficiency Engineering is new because it addresses the performance of management as work. The new concept is that most management work is not exceptional, but is self-assigned for the purpose of gaining performance through a subordinate organization. It is an intentional effort by the situs manager; and he or she performs that work to become an effective part of the subordinate performance effort.

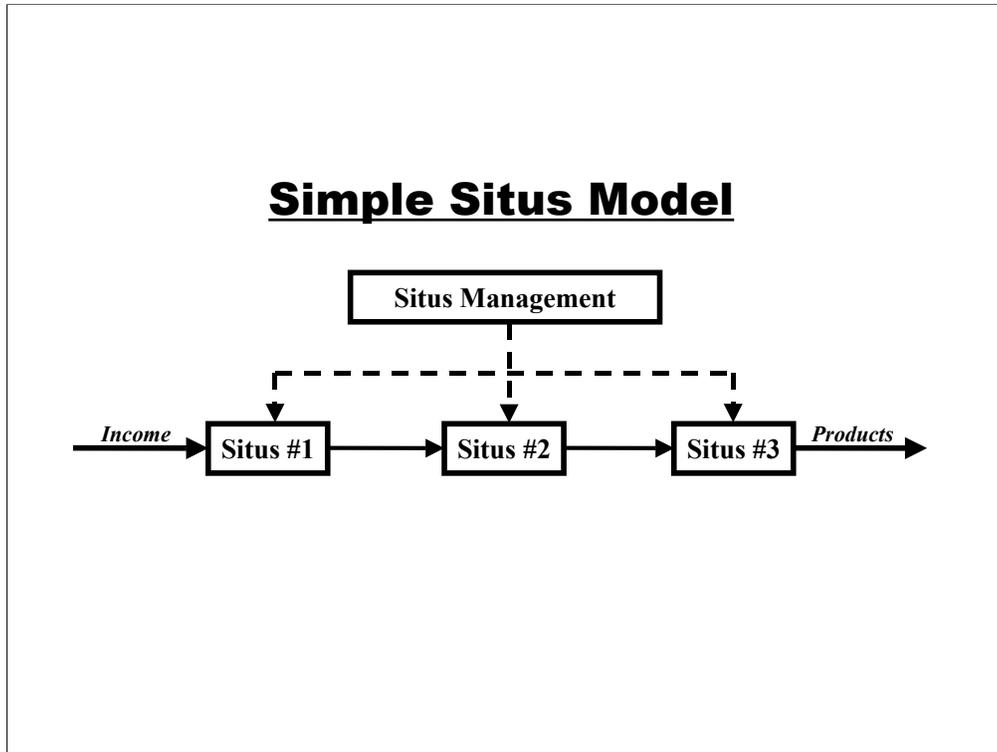
The work of situs management then becomes itself manageable. It can be planned for accomplishment, with the potential for self-commitment of senior manager time as a resource. It can be measured as to performance, giving feedback to demonstrate accomplishment, or to indicate an exception situation. Any exception can be handled as another directed work effort.

This provides a foundation for efficiency engineering of the work of situs management. The situs manager is able to apply efficiency engineering logic and approach to the work of situs management. Unnecessary work can be eliminated; and necessary work can be simplified based on what it has to accomplish. The work can be analyzed and refined based on the productive purpose of gaining performance through a subordinate organization.

Still further, this opens the door for a new level of cost accounting, a tracking of man-hour expenditures in the situs management effort in pursuit of management accomplishments.

Situs is a concept for managing management. The assignments made by the senior manager to those in subordinate management positions can be planned and tracked as any work effort, with assigned feedback available to assess the use of resources and accomplishment of management over performances.

This indicates a new potential, but speaking to this potential is clearly beyond an introduction to situs management. There is even less opportunity for advanced subjects like cost accounting applied to that management. We have to continue.



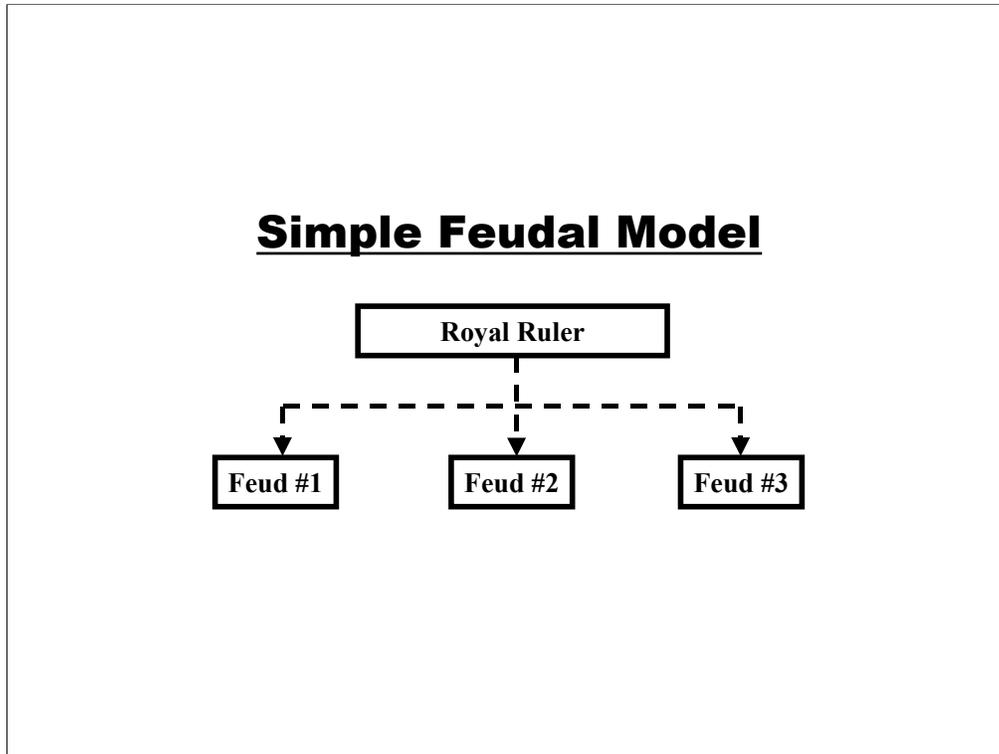
One good reason for having a management module is the ability to use that module as a unit of construction. I am addressing modular management structures.

The key understanding is inherent in the nature of the situs module. It is, by definition, a performance unit. It is a grouping of business resources and authorities that is based on generating a productive result. It is, in this sense, a blackbox element of a business structure.

As with a remote plant, or a whole business, the situs module has to be self-sufficient. It has to be a performance unit in and of itself. It cannot be highly dependent upon the function of other units without denying that it is a situs.

We can reverse our blackbox analytic technique, building organizations up instead of dissecting them. We can generalize their productive processes instead of trying to determine how their performance efforts are divided.

One efficiency observation is that not every manager is in charge of a situs. As only situs managers have blackbox units, we immediately simplify the layers of authority required to gain a performance result. Each situs can be handled as an independent blackbox unit within a larger structure.



Our modular approach is not based on authority at all, but upon the family concept of privilege. The father rules the family business because he is the head of the family. The King rules the nation because he is its head. The family nature of business is an important foundation for understanding situs structures.

The model for family management is based on privilege. The King rules by right, and only distributes authority to rule over others when it is necessary due to the amount of management work required to assure assigned performances. In general, family members are given first choice to feudal holdings, where they will then rule as subordinates under the authority granted by the King. The King gives authority to family members, as they can be most trusted to support and protect the royal family; and not to attempt to use their privileges over resources to revolt against their King.

Feuds were not granted to those most able, but to those most trusted. The king, in order to have a larger nation and more national resources, granted rights to locally rule over royal resources. This accomplished two important ends. It tied family members to the land, assuring that their personal wealth was dependent upon taking care of that land and the people who worked it. It bound the family members to the authority of the king who granted the land, and who could always demand its return.

The King enjoyed the ability to tax, and employed the feudal chiefs to collect taxes. The King had a right to conscript the people on the feud to national projects and needs. These are still the bases for granting feudal authority.

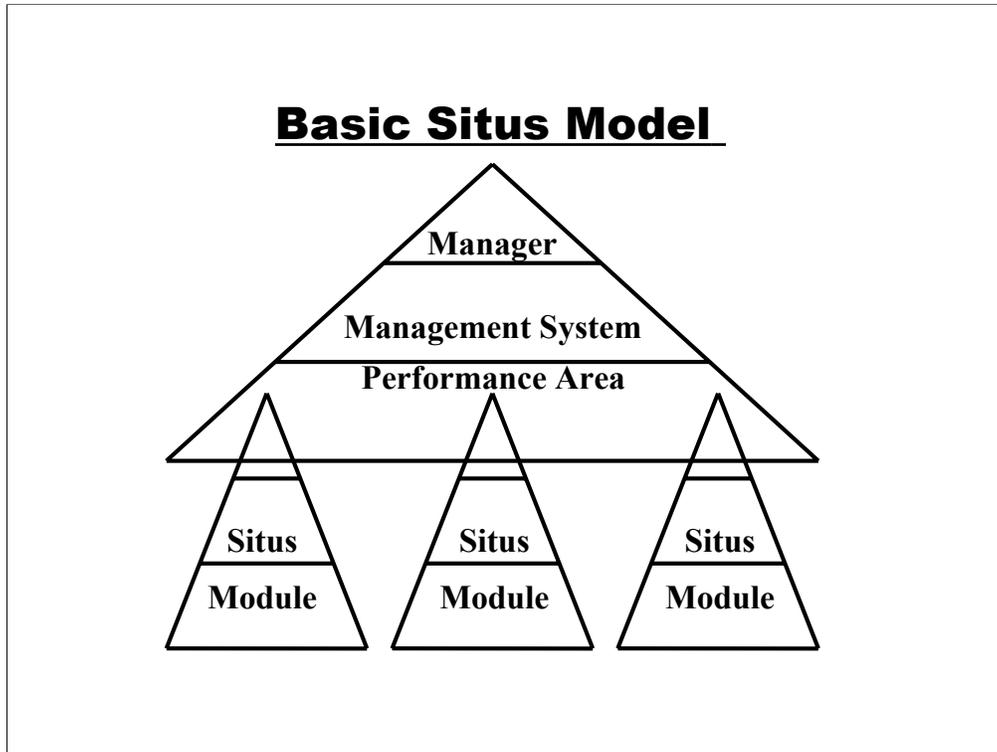
Feudal Structures and Situs

- The Executive Family and Situs.
- The Glass Wall – Separating Family.
- Crossing based on Mutual Trust.
- The Executive Family and Privilege.
- Situs Manager as a Feudal Lord.

The executive family in modern businesses is a feudal management group, held together not by purpose, but by ability to trust one another as family members. The witness to this separation between feudal chiefs and serfs is in the glass-wall phenomena. Subordinates are not advanced into the executive family. Local executives are adopted, and become part of the local management family. Remote site managers are chartered, being given resources and responsibilities and told what they are to provide back to the central authority.

Feudal family is not in charge because of ability, but because of privileges granted. The same is generally true of situs managers, even though this is certainly not a part of the modern structuring approach. Management has this family relationship as a necessity. The CEO is not able to do all management, but must delegate large parts of the performance effort to subordinates. The natural human way to gain results is through feudal concepts, through granting the subordinate a relatively free hand in using resources to gain specifically required productive results.

Situs is a feudal concept. There is intelligence in proceeding with feudal approach in order to efficiently and effectively assure performance through a subordinate organization. In many ways, the situs manager will function as a feudal chief over a performance area, directing resources to performance and dealing with all internal exception matters as the final arbiter. Again, this emphasizes the importance of the independence of blackbox units when it comes to structure decisions.

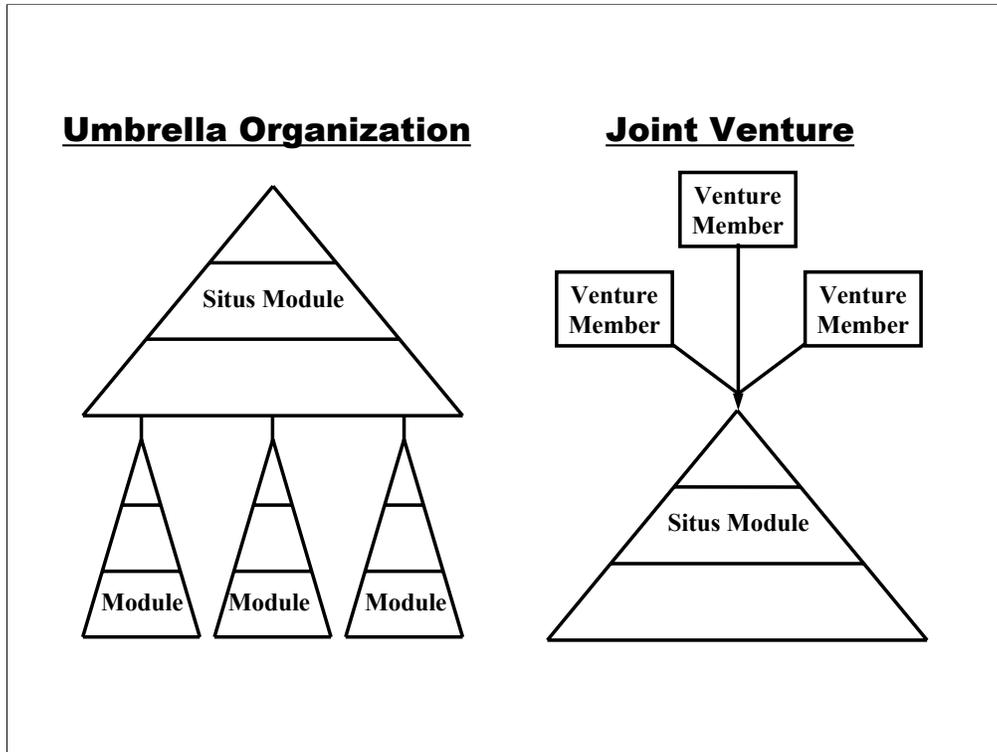


In our earlier analytic model, we had a business where the senior manager obtained performance through a management system and a production area. The production area was made up of production units that were given specific productive assignments.

The key to expansion is to realize that the productive units in the production area are blackbox objects in their own right, and analysis was independent of the internal conversion process that each performed. These blackboxes can be replaced with other blackboxes. Most specifically, they can be replaced with more involved situs blackboxes. Those situs blackboxes can, in their internal structure, similarly contain subordinate situs units that have productive purposes.

This yields a very flat management authority structure where each part has either a productive purpose, or a supportive purpose that adds to the productive capability of those who do produce. It assures that every part of the structure is manageable through measuring its inputs and unique outputs.

Different levels of situs managers are connected by executive family ties, they share purpose and approach. The chief officer in each subordinate situs is a member of the operating area of the next superior situs, and is entrusted with authority over resources for a productive or supportive purpose. That purpose is fulfilled through generating their assigned productive result using the resources provided by the superior situs manager



There are two special structures that are sufficiently common to warrant mention. The first is the umbrella organization, exemplified by a modern university made up of many schools. The second is the joint venture.

Neither of these is well structured using the modern authority-based model, and tend to be unmanageable under modern approaches.

The umbrella organization is one where the subordinate situs are owned by, but not part of, the umbrella situs that owns them. The senior managers in the subordinate situs units are not a part of the central umbrella family. The senior umbrella blackbox does not share mission with the subordinates. It provides supportive services as products that the subordinate efforts can receive and consume.

The joint venture has independent businesses functioning as the owners of a single subordinate situs effort. Modern joint ventures tend to be run by one or two of the senior members to the venture, and these get most of the benefits earned. A more effective structure comes from recognizing the necessity of independence, and hiring an independent situs manager to operate the venture as its CEO. The effective relation of the venture to the venture-member businesses is then one of investors in that venture, with a pre-planned division of the results when the venture is completed.

The Basic Engineering Process

A General Procedure for Engineering a Change.

Demolition: Identification of Existing Shortcomings.

Preparation: Establishing Foundation on Which to Build.

Plans and Materials: The Tools of Organizational Engineering.

Construction Management: Monitoring the Application.

Look back over what we have accomplished with an eye on how an IE disciplines can put it to use. We have a great deal of materials covered, along with several potent new concepts such as situs and modular management systems. Other concepts have been sharpened by reference to purpose, as with production areas including distribution and management systems. We have added considerable definition to internal support systems.

Putting this new knowledge to work is a different challenge for the efficiency professional. There is an existing, and most contrary, system for efficiency application that is in place in modern business culture. Demolition is accomplished by demonstrating several of the more important reasons to change. The authority-based management model is inherently inefficient in its operation.

We have also laid a very potent foundation for a different management approach, derived largely from the definition of management. This is a foundation sufficient to support a much expanded understanding of efficiency and efficiency engineering.

We have also discussed several intellectual tools that can be used effectively in constructing a better approach to management. The pairing principle provides a new way to look at customer relations, one that yields manageable relationships, and manageable performances. We have a new tool in the situs module, with its focus on manageable units of performance. We have a new tool in recognizing the importance of family relations. Again, these can be used to build efficient organizations.

Of even greater moment is our discussion on management over management, on the work of management being itself subject to management. This provides a new direction for development that is far too wide to even be well introduced in an hour presentation

The IE Within Management

Traditional Limitation to Production & Projects.

Identification of Shortcomings and Improvement Potentials.

Plans: Technical Support for Change Management.

Construction: Point of Application for Senior Management.

Exception Management: Ability to Maintain Focus.

In a sense, this new knowledge provides a redefinition of industrial engineering, or at least an expansion into an area previously considered beyond its applications. This is going to involve changes to other people's positions, accepting a new expertise where they were previously considered the experts, and new technical knowledge that replaces what they have learned.

Change always generates stress, and stress can cause unpleasant reactions toward the most obvious source of stress. Change management should be considered part of any use of this information.

The change will be fueled by dollars. Efficient operation costs less than inefficient operation, and there is likely to be support for change from the top. Any application should include ways to garner that support. That support is best garnered by addressing efficiency improvements that have dollars attached.

The senior manager (or your direct supervisor acting with this senior manager) are the ones who will have to implement the change. The local senior manager is the point for application.

A second service is intellectual. The industrial engineer is one of the few people in the organization who can maintain the focus on the senior manager's larger product and cost-tracking requirements. This promotes use of the industrial engineer as technical staff answering directly to the one in charge. This may not be a current position possibility, but it is almost a certainty for long term development.

Investments in an IE

The Cost of Change is Very Personal.

The Perspective of the Senior Manager.

The Monumental Cost of the Larger Application.

The benefits of Change depend on Management.

A Lesson from TQM: Changes without Value.

Now is the time to shift gears, and look at industrial engineering support from the viewpoint of the senior manager in charge of a situs. That manager is likely to respond to investment logic.

It behooves the industrial engineer to make presentations in these same terms, cost and benefit analysis. This is how the industrial engineer is best able to provide intelligent support to the senior manager's decision process.

The costs of change are huge when it comes to a larger application of Organizational Efficiency Engineering. It is likely to cut the size of internal management and support efforts in half, leading to a corresponding reduction in personnel. Rapid implementation will threaten everyone in the organization above the foreman level.

Every potential change needs to be evaluated by the senior manager based on his or her own vision of the needs of the business. An orderly plan may be adopted at the option of the one in charge, but only if it serves his or her personal decision processes. Industrial engineering is a support for the change manager, not a driver.

As a practical lesson, I offer the OEE response to the now popular TQM phenomena. There is nothing that a manager should even expect to get from TQM applications that would not already be there if the management system was working correctly. If you fix the broken management system, TQM provides nothing. It is a band-aid technique for certain very specific operational problems.

Stopping ongoing TQM applications is also a change. Simply turning off one of these efforts could be counterproductive, even if it turning it off improves efficiency. The manager in charge should be the only one who makes such decisions, and should be encouraged to make them in accord with his or her own unique vision of how the business should run.

How-to Engineer the Change

Advertising the Potential for Benefit.

Making Technical Support Available.

Making the Outcome Appear Certain.

“Pay Me Now; or Pay me Later.”

Investing Now is Good Management.

The next consideration is the investment that the senior manager is to make in industrial engineering to support his or her decision process. This is another issue that the industrial engineer should be prepared to support. There are various management engineering services, and levels of service, that an IE can provide to the senior manager. Each of these should have an appropriate cost in hours that have to be expended or redirected to provide the support.

We do have some general thoughts on how best to approach the presentation of costs and benefits to a more senior manager. The first is that efficiency improvement is certain. The changes that lead to a remarkably more efficient organization are going to be made. It is only the timing and the path to reach that goal that are in question.

Another useful approach is one used by many of the programs that have been successful at selling themselves. A senior manager is going to pay for OEE support services sooner or later; it is probably sensible to begin accepting the costs now and reap immediate benefits. A senior manager earns no rewards for delaying.

It is generally good management to be proactive. It is especially good management to be proactive when it leads to improved management process, and probably to reduced operating costs. The only control is the personal relationship between the various managers (in a management family) such that they hesitate at causing each other harm or discomfort. Change is not comfortable, even if it is inevitable.

Special Considerations

Suggestion to Replace Suggestion Program.

Disenfranchises Those now in Authority.

Efficiency by Reducing Resource Requirements.

Sensitivity to Others is Good Management.

I actually submitted a suggestion to replace suggestion programs with a system that tracks implementation of improvements, with responsibility for improvement on those who were in authority over processes. The response was that this was not a valid suggestion, and would not be evaluated.

Change is not simply a matter of coming up with improvements. The improvement was both obvious and relatively immediate. The challenge was that it would change someone's job. It would put requirements upon those who had previously gone without any real responsibility for the exercise of their authority. It caused discomfort.

In this case, it never got to anyone who might have implemented the change. The suggestion program was managed from the top of the organization, where the problem with the suggestion program's operation was not visible. It went nowhere.

In the final sense, efficiency improvements are reflected in the resources that are expended to accomplish a productive purpose. Whenever efficiency is accomplished by internal adjustments, there is a reduction in the resource requirement. As efficiency usually addresses personnel, this is a threat of people losing their jobs.

The industrial engineer should be keenly aware of the challenge that efficiency work places on others, and be very obviously sensitive to the concerns of others. This is especially important when supporting the senior manager, who will have similar concerns. Effectiveness is not measured only by efficiency of operations. It can go to supervision over the resources of the business. It can go toward assuring that resources are maintained ready for direction to productive purposes.

Looking Back

Current Approaches are not Working.

Management Blackboxes and Modules.

Modular Management Structures.

Management as Work to be Managed.

Self-Management by the Situs Manager.

Much More – Organizational Flexibility.

This has been a long hour's presentation, both because of the time and effort expended, and because of the nature of this material. We have addressed change management, and it puts a certain amount of stress on everyone who receives change potentials.

Our examination of blackbox models, situs management, and modular systems supports a deep and abiding change in how we address management. We have made a giant leap beyond the authority-based management models in use today; and have learned to look at management in terms of work to be performed. We see the senior-manager potential for self-assigned work for the purpose of gaining through the efforts of a subordinate management structure.

Even as encompassing as this may seem, it is but the tip of the iceberg. Beneath the surface, we have potentials for managing organizational fat, tools for managing the flexibility and responsive of the larger organization. We have potentials for incorporating change management into the very structure of an organization, so that regular improvement and adjustment become a part of normal operations.

We have potentials for structuring organizations to deliver product to customers and profits to investors. There is a whole new concept for the relationships that exist between business elements. We have barely touched upon the possibilities for internal investments in management system operations.

To this we add potentials for new management tools; and for major expansions to existing tools, so that they perform the work of management more efficiently and effectively. The Scientific Assignment Process gives another such potential, providing a clear target for a later presentation. Assignment is the principle tool for incorporating general management, exception management and productive work into the same organizational process

Towards the Future

Anticipating the Next Presentation.
The Art and Science of Assignment.
The Notebook is now available.
New potentials and New Practices.
It is an exciting time to be an IE.

Scientific assignment process is planned as a presentation to be given at a later meeting. Those who receive this scientific assignment presentation will never go back to using the abbreviated and ineffective way that we now make assignments. The purpose of scientific assignment is seen by gaining things through the efforts of others, not through effective use of authority over resources. Scientific assignment involves a substantial redirection of a major management approach, and it achieves remarkable results.

Another address of OEE application is available through The Notebook, a pocket book that touches on many of the highlights of Organizational Efficiency Engineering. It summarizes what we have received in this presentation, and it also gives additional perspectives and development. The Notebook is available for sale. It is a tool to better communicate the message of OEE.

This evening's presentation was to introduce a potential for addressing management as work. It was to open a new area of efficiency engineering for new application by industrial engineers. It has accomplished this purpose and much more. The area is not only open, but has been explored as to several directions for development.

It is true that this was not aimed at supporting an IE in technical application, but to introduce a potential. As such, the clear applications are few. Instead, we have a general direction for application that is ready for further development. We have not just given a few new techniques, but have laid the foundation for something really spectacular.

Industrial Engineering is the technical management specialty supporting the performance of management. As the time-study analyst supported the foreman in designing efficient processes, so the industrial engineer can support senior managers in designing and operating efficient organizations.

The Speaker

Jesse Brogan was born in 1944 in Iowa as the middle child of Howard Brogan, English Professor, and Isabel Brogan, Teacher. He largely grew up in Northwest Ohio.

Jesse Graduated from the University of Massachusetts in 1967 with a BSIE, graduating in the top third of his class. His primary claim to fame for this period was athletic. He lead the varsity wrestling team and was three times New England Champion. He competed twice in the Nationals and receiving a medal for fifth place his final year.

On graduation, Jesse went to work as a traditional methods and standards engineer for the Department of Army at Picatinny Arsenal in New Jersey. This was a very large research facility, with Jesse working as the primary engineer doing work standards on the manufacture and processing of propellants and explosives in support of research.

It was during this period that Jesse received his degree in American Law and Procedure from LaSalle Extension University.

At his tenth-year high school reunion, Jesse got together with Charlene Alberts, a member of his graduating class who was a practicing attorney in Florida. They were married in Florida. There, Jesse worked for a time in various local businesses; but the work was not steady. With the coming of his son, Jesse Brogan V, and the scarcity of traditional industrial engineer work in central Florida, Jesse moved to Maryland, and returned to Federal Employment.

It was at this time that Jesse put in the suggestion to shortcut many of the Army's property tracking regulations as being prohibitively expensive. This suggestion gave foundation for the development of OEE.

Jesse also worked two years for the Navy in a field division of the Navy Facility Engineer. His special efficiency work began to take shape in response to the initially confusing structure and operation of this organization.

Jesse returned to Fort Meade, this time working for the Installation's Facility Engineer. Here he became the local expert in ADP applications, and first worked specifically as a management engineer. For a good part of this time, Jesse dealt with customer agreements, development of video and slide-based presentations, technical support for billing reimbursable customers and general IE support.

It was during this same period when the study of OEE began to take its present form. The macro-techniques that address CEO-level applications were coherent by 1993. OEE, Inc. was established in 1993, and Jesse began the long and frustrating effort to gain publication of results. Various attempts at developing seminars proved that the subject was far too advanced to be easily received. Several book MSS have been written on aspects of this study, and are being reviewed by commercial publishers.

Jesse now heads the Management Engineering Systems Branch with responsibility for both ADP and management engineering support for the Directorate of Public Works at Fort Meade.