

MANAGEMENT OF "WHITE COLLAR"

PRODUCTIVITY PROGRAMS

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INTRODUCTION

1. Fundamentals

The economic performance of the U.S. economy is deteriorating. A combination of unfavorable external circumstances plus an increasing shift of labor to working on intangible services has produced a situation which is bound to remain with us into the foreseeable future. Under current conditions of adversity, we need to become concerned with fundamentals which perhaps we had taken for granted.

- What motivates people to join a particular organization and then dedicate their efforts to its purposes?
- What conditions attract and hold a work force that identifies itself with the objectives of the organization?
- These questions need to be answered if we want to manage increasing productivity of our workers.

2. What is Productivity?

The aggregate labor productivity of the U.S. economy--unit payroll cost per annum--is currently increasing at a rate of approximately 1.5% greater than unit GNP output per capita. This gap has resulted in the steady increase in inflation during the past three years. With continued wage inflation, we can expect this trend not only to continue, but to accelerate unless a change takes place. The necessary change is: improvement of the overall productivity of the U.S. economy. This would arrest the steady deterioration in real wages we have been experiencing recently. In this sense, productivity improvement simply means:

- getting more output for a given level of resources used, or
- getting the same output for less input of resources, or
- getting higher quality for a given level of resources where more resources would be otherwise needed to achieve this objective.

To get more output, to eliminate unnecessary activities, or to obtain higher quality without increasing costs means that organizations have to commit to tough new targets. People must be willing to change their behavior. It means a commitment to higher performance standards and a willingness to accelerate adaption of new technology. It means an upgrading of skills, a willingness to be measured, and a readiness to rearrange economic relationships. Only confident economic organizations motivated to excellence can do all of this. Therefore, increased productivity is ultimately the result of increased dedication and motivation by people towards a higher standard of work. This paper will relate the various factors that need to be controlled in order to improve the performance of the U.S. economy through increased productivity.

3. Productivity Improvement Factors

The principal variables that make up a productivity improvement program are:

- Human Factors
 - Increased training and skills improvement
 - Job design
 - Increased commitment to the organization's goals
 - Improved job morale and attitude
- Organization Factors
 - Acceleration in the profitable uses of capital resources to displace labor
 - Procedure simplification
 - Organizational specialization
 - Processes to improve the work environment
 - Establishment of measurements which define productivity
 - Incentives that increase productivity
- Workload Factors
 - Achieving economies of scale as workload increases
 - Work stability and work leveling
 - Work predictability
 - Reduction in workload complexity and quantity
 - Reduction in workload quality

A net increase in productivity rarely comes as a result of improving only one factor. Cumulative results from many small interrelated changes are necessary for permanent improvement. Therefore, the primary task of management is to manage--through careful integration--the introduction of productivity improvement factors. It is this skill that needs to be especially rewarded through monetary and other incentives. If management performance appraisal methods are directed toward this objective, managers will recognize the priority that is placed on productivity as one of their key contributions to the productive performance of their respective organizations.

4. Measurements

There can be no successful productivity improvement programs without meaningful measurements. The measures of productivity are the roadmaps by which an organization identifies where it is and where it wants to be.

The National Productivity Commission has defined productivity measurements by the following ratio:

$$\text{Productivity} = \frac{\text{Quantity of Goods and Services Produced}}{\text{Quantity of Labor and Other Resources Used}}$$

The following interpretations of the above formula are also possible:

- Output per man hour
- Unit labor required/unit output
- Unit index or composite factor/unit output
- Cost per unit of work
- Time expended per unit of work

Some of the "white collar" examples which may be applicable, if tracked over a period of time, would be:

- Cost per invoice
- Cost per purchase order
- Hours per service call
- Mean time to repair
- Mean time to failure
- Cost per employee per year
- Cost per page
- Cost per copy
- Cost per transaction

Productivity measurement must be directed at a sufficiently low level of responsibility so that it can be used to influence the accountability for results at the first, or certainly not higher than at the second, level of supervision. Preferably, all small organizational groups should perform against one or more indices of productivity, which should guide their plans and objectives.

Productivity measurement should be simple, straightforward, and easy to understand. Preferably it should measure the aggregate performance of a service to a specified "customer" so that the measurement can be validated independently. For instance, on one of my projects, we obtained fifteen performance indicators. Yet, only two simple indices were really relevant to the ultimate user of the service; the others were internal technical measurements of considerable complexity that were useful for diagnostic purposes only. In another case, one of our teams reported faithfully on its "productivity" for more than eighteen months. When an inquiry was made, it was discovered that the manager of the team kept his own score sheet without any validation.

Productivity measurement should be a routine by-product of the system a group is using to accomplish its tasks. This may necessitate redefining either the objectives of a group or restructuring the organization of tasks.

Productivity measurement must have a measurement frequency that makes sense. For instance, average payroll costs per capita can be useful only on a long range basis--perhaps semi-annually. On the other hand, mean time to repair computer equipment needs to be observed on a shift to shift basis.

Productivity measurement must include all applicable factors. For instance, an inventory control activity should not only include full expense ratios, but also the cost of capital. Similarly, programming unit costs should include not only labor and expense charges, but also direct computer expenses. In this respect, it may be necessary for many organizations to revise their budget center costing practices, which frequently exclude significant elements of cost that are clearly subject to control. Most clerically intensive organizations, and especially large bureaucracies, are especially lax in assigning direct on-going responsibility for the use of capital resources (or "overhead" services). Consequently, trade-off decisions usually focus on the most visible measurement variable: "headcount", which is at best a simplified index of a group's productivity performance.

Productivity must be measured so that it can be a factor in incremental investment decisions. With the increased scarcity of cash and of other performance improvement resources [such as systems analysis manpower, office equipment], each group will have to support its demand for new investments by showing the expected effect on future unit costs. These expected unit costs will then become a management commitment to be used in performance appraisals.

5. What Measurements Are and What They Are Not

Productivity measures are:

- Primarily after-the-fact "score-keeping" techniques, covering repetitive operations or similar tasks. They show, in comparison with planned targets, what has actually been happening.
- Applicable to directly measurable activities such as found in manufacturing, sales, engineering, clerical and administrative activities which are reasonably associated with identifiable outputs.

The fact that many functions do not lend themselves readily to measurements should not inhibit the gradual extension of productivity assessment methods. There are some non-repetitious tasks which lend themselves to productivity measurement, such as can be found in procurement, programming, and design/drafting. To do so requires rethinking some basic assumptions concerning the organization of such groups. It also requires making investments in new measurement techniques.

To sum up, productivity measures are:

- Techniques to help managers identify past trends in resources expended per unit of final output.
- Devices for predicting and then gauging future trends in unit costs resulting from planned changes in organization, systems, capital equipment and facilities.
- Research tools for examining basic causes of productivity changes in functional areas common to several organizations.
- Basis for reporting productivity changes to management.

Productivity measures are not:

- Substitutes for other measurement techniques used by managers, budget analysts, or other evaluators. They supplement or round out other measurements, especially qualitative performance indices. Since productivity measurements are usually unit cost related, it is most important to make sure that reduced unit costs are not obtained by degrading quality standards.
- Complete measurements of overall performance for a manager. Productivity measurements cannot reflect-- in the short run--results obtained from additional management tasks such as personnel development, talent acquisition, etc.

SPECIFIC TECHNIQUES

1. Work Enlargement and Enrichment

The best understood productivity improvement technique is applicable to small groups of employees performing well defined functions such as: order entry, book editing, accounts receivable management, service dispatching, etc. It is called "work enlargement". Here are some of the concepts behind this method:

- Most jobs cannot be viewed as a fixed and defined set of tasks.
- To set up a "work enlargement" environment, individuals or a group need to be first encouraged to start thinking about work structures. They need to rearrange existing tasks to give a better work flow. For example: if order entry functions were handled sequentially and work moved from one "station" to another, examine the individual steps to see if the job can be done more effectively by recombining multiple job steps into a single task. At this stage, it is important to give a significant role to the individuals themselves, who can best determine whether the rearrangement should be in the direction of either work specialization or work diversification.

Even though most work enlargement projects involve an individual's job diversification (called job enrichment), there are cases where the opposite results in best productivity, especially if work specialization calls for increased skill level, such as the use of a more sophisticated technology. Individual preferences also should be considered. Some people want specialization and others diversification. Personnel selection should accommodate a diversity of possible individual choices.

- Once a productivity group is set up, it must be given a chance to keep improving its performance through continued inducement. One of the most attractive methods for getting a productivity program going is to allow a group to acquire responsibilities for tasks that were previously assigned to the next organizational level. For instance, in a geographic hierarchy, a Branch should be able to remove tasks from the Region, a Region from a Group, a Group from Corporate. Or in a functional stacking of jobs, computer operators should be able to assume systems software decisions, programmers the systems designers', systems designers the functional managers', and so forth.

Again, each situation should be judged on its own merits, the principal rule calling for a continued pulling down of tasks from higher levels as the unit which becomes more productive (and shows ability to reduce its unit costs) can enrich its status by absorbing additional responsibilities. The obvious candidates for pulling down are jobs that need not be done by higher paid personnel in a lower salary grade. For instance, if Branch Administrative personnel can assume the responsibility for certain sales administrative tasks, both the productivity of the sales and clerical people will go up. If both groups are monitoring their unit productivity, both should agree to the shift in the responsibility for the tasks if the shift were the result of a jurisdictional dispute.

- The reciprocal of the pull down dynamics is push down. In addition to seeking opportunities to push down tasks to others, each unit must be able to get rid of burdensome activity, either by eliminating the task entirely or by automating it out of existence. For instance, one of the push down strategies for secretaries is to acquire editing typewriters to eliminate the need for retyping the entire text for minor editorial changes. Since work groups are usually jealous of their own status, the group must be encouraged to seek push down initiatives. For instance, it is undesirable to "punish" a group which displays a push down initiative by immediately removing its savings, while groups who have practiced accumulation of spare resources are not affected.

In case of a squeeze on resources through budgetary cuts, the productive push down organization will perceive itself as being more vulnerable than a "fat" group. Solid push down accomplishments ought to be immediately recognized by monetary or other rewards. The successful group should be given some share of the savings to reinvest in its work enlargement capabilities for a stated time period, after which all savings revert to the parent organization.

- Lateral movements of job tasks should be also encouraged to achieve job enrichment. This does not have a direct and immediate bearing on productivity except that it gradually leads to improved morale, improved task accountability, and lowered turnover. There are examples where job enrichment involving the combination of several tasks initially increased unit costs due to increasing job complexity and added training requirements.

Ultimately, the integration of the tasks to produce a sense of accountability results in improved performance and thus a lowered demand for labor. For instance, a telephone company used to have a highly specialized approach for handling customer calls. Inquiries were assigned at random to customer service people, who in turn directed the complaints to dispatchers who reached specialized teams of repairmen. This procedure involved so many specialized steps that it was hard to find anyone who felt accountable for getting a particular request fully answered.

Although figures showed declining unit costs, the volume of the activity was artificially inflated by repeated activity required by incomplete or unsuccessful service efforts. Jobs were then combined to give full responsibility for end results to a team. The dispatch function was restructured for direct customer contact. Although unit costs went up temporarily, the reduced service activity as well as redefined productivity measurements improved overall results. In effect, jobs were enriched to produce an increased sense of personal accountability for performance.

2. Feedback Design of Organization

People involved in productivity improvements must have on-going feedback control of their activities. The ideal example is my experience with the installation of "on-line" computer terminals allowing access to central data bases from remote locations. Under the old system, errors in transaction documents from the remote site could be tracked only if a laborious and time-consuming audit was performed. Also, error registers took about a week to come back from the site of the controlling staff; and an error detected at the headquarters may never be communicated back because it was simpler to correct it centrally. Computer terminals now provide overnight feedback of error experiences directly to each individual involved. As a consequence, error rates have come down dramatically.

Another example is the experience at one of the Data Centers for which I am responsible. Due to dissention concerning "acceptable" service levels between users and the Data Center which were never quantified, feedback of operating results did not exist. When accepted performance measurements were finally developed and posted for everyone to see, dramatic improvements followed in short order.

The ability to structure jobs that are capable of feedback monitoring becomes a critical new dimension of a productivity program. For instance, one of the reasons that the individual secretarial job is not subject to productivity improvement is its poor design for self monitoring of performance. This need was one of the variables that led to the grouping of secretarial personnel into an APC [Administrative Processing Center] organization which operates as a production oriented organization. The former secretary is now in a "feedback" environment.

In setting up feedback systems in organizations, it is important to follow the principle of self-monitoring. Each group must have a way of knowing by themselves how they are doing. The design of information and control systems should allocate most resources to providing adequate feedback data at the lowest levels of the organization. From the standpoint of feedback communications, the most desirable method is to create within the first or second supervisory levels complete awareness about performance and productivity. I believe that too many of our feedback systems in our organizations are designed to give performance and productivity data at levels which are many layers removed from the action scene.

The only explanation for this phenomenon is the superior bargaining position enjoyed by individual staff people to obtain a large share of available information systems resources. For proper feedback, it is therefore essential to place staff analysis personnel at the lowest possible level in the organization. They then become a part of the direct cost, which they would have to improve upon.

3. Technology and Support Services

In a large sample of successful productivity improvement programs, it was shown that in more than half the cases at least four techniques were used:

- Systems Analysis
- Work Measurement
- Computerization
- Formal Training Programs

Any group wishing to organize its productivity must have ready and direct access to resources and services of specialists and consultants that can support the development and installation of new methods. Planning for the acquisition

of technology and of support services must receive high visibility. Since specialists of any kind tend to be identified as "overhead", they are choice targets for cost reduction activities. This is frequently done in disregard of the specific resource needs to support productivity programs. Therefore, all internal, as well as external, technology resources should be placed on a "direct cost basis" chargeable fully to respective productivity programs and thus justified through their "customers'" needs.

4. Explicit Organizational Design

Groups with highly predictable tasks perform better with formalized procedures and well defined management hierarchies.

Groups that perform uncertain tasks requiring complex problem solving are more effective in organization structures that are less formalized and that emphasize self control in decision-making.

When launching a productivity program that leads either to specialization or to diversification, organizational design requires formal planning in the same sense as systems, technology, or training activities need planning.

One of the primary tasks of a manager is then to design and develop organizations that possess the kinds of processes that effectively deal with the specific nature of the tasks to be done. According to all published literature that I have examined, this skill is the least understood element among the various elements that impact on productivity, perhaps because organizational structure determination is often strongly biased by personality and political considerations.

There are, however, a few ground rules that seem to have a sufficiently large number of supporters to warrant mention:

- Given the new needs of a new generation of employees for more autonomy as well as the rapid rates of social and technical change, the more participative management approach is to be favored whenever possible.
- Organizations with predictable tasks and relatively steady work environments such as are found in mass production environments need well established lines of authority and clearly designed jobs. Relationships

need to be precisely structured. Procedures need to be specific, uniform, and comprehensive. Planning horizon must be short-term, that is: days, weeks. Executive control must be strong. Management style should be more task oriented.

- Organizations with completely unstructured tasks and unpredictable work environments, such as is found in pure research laboratories need to develop relationships having as little structure as possible. Procedures should be minimal, loose, and flexible, but definitely end-goal oriented. Planning horizon must be long-term--in years or even decades. Executive control should be egalitarian without losing sight of the fact that individual scientists are here to deliver answers to business needs for innovative technologies.
- Whenever possible, achieve the maximum possible pull down, push down effect through decentralization. Since the word "decentralization" is so frequently misused, it is defined in the context of productivity improvement as the maximum feeling of autonomy as seen from the first line management's standpoint. This is the "bottoms-up" view. It is subject to a test. The test consists of an audit of responsibilities and functions to find if a particular first or second level manager has a degree of latitude in any one of the following management tasks:
 1. To trade off resources within targeted unit costs and performance measures.
 2. To possess the capability to change the methods of performing tasks.
 3. To enlarge the capability to change the methods of performing tasks.
 4. To be involved in target setting.
 5. To possess his own feedback mechanism.
 6. To acquire technology.
 7. To provide a high degree of job identity for his people within the confines of his organization.

If an organization at the first, second, or third levels of supervision receives a high rating on each of the above seven factors, then it can be said that it has achieved a high degree

of decentralization. If, at these levels, supervision is given from central management clear ground rules for performance within which they have choices about how they will achieve a productive result, then I still think that we can call this decentralization.

If the score on more than three of the above factors is "low" or "non-existent", we can say that employees will perceive their work environment as highly centralized, regardless of what managers several layers up may claim.

Instead of continuing conversations about organizational designs in terms of vague centralization or decentralization arguments, we should precisely define the organizational level at which the management responsibility for each of the above listed seven factors is placed. If, for instance, factor #2 responsibility is clearly placed on the first supervisory level, then this would rate a "decentralization" attribute.

To achieve stated productivity objectives, decentralization is generally preferable, but not always attainable. If decentralization is to be achieved, a long range plan for organizational redesign is needed at each successive stage of development. It requires gradual redesign of the information and control systems. It requires a carefully planned sequence to install new measurements. It calls for redeployment of staff personnel. It necessitates redefinition of jobs and rethinking of compensation levels to reflect shifts in responsibility. Of all management tasks, organizational redesign to achieve improved productivity through increased motivation at the working level is the most difficult to achieve. For starters, we need to remove this task from the realm of abstract argument or strictly personal "style" and make it explicitly subject to specific planning. We need to examine existing organizational structures to show where decisions are made and where they ought to be made. As the next step, we need to show specific management actions to move decisions in the right direction--down the organization, in most cases, but not always.

What concerns me is the magnitude of the organizational design task. In an organization of about 10,000 employees, there should be about 100 centers which require explicit organizational designs. We need specific plans to develop organizational characteristics which will fit the nature of the tasks to be done. In the structural extremes between pure research and predictable tasks in a factory or on a telephone switchboard, there is an infinite variety of factors to be combined

with regard to relationships, procedures, planning time horizon, span of executive control and management "style". I guess that is what the art of management is all about. But it will not happen without focus. And that focus is clear organizational goals associated with specific organizational designs. These should permit people to identify their personal job goals with the objectives of the organization for which they work.

5. Incentives

A basic challenge of management is to enable employees to make work more productive and thus enable them to be satisfied through their achievements. The evidence is overwhelming that the traditional external motivators--mostly monetary rewards--do not work any more as the primary means for providing incentives for people. Each of the traditional means work up to a threshold, beyond which the motivators become qualitatively different. This is not to diminish the importance of traditional motivators--if their potency falls below a given level, they automatically assert their importance. They also retain their value as an indication that a job was well done or that a particular job is relatively more important than another.

In a recent AMA survey, high salaries and better benefits were ranked low as remedies to lagging productivity. "Financial incentives programs" were given a high rating. The same view is shared by the National Productivity Commission, which notes that greater monetary rewards can help to improve productivity if tied directly to individual or group performance, provided the relationship between the contribution and the performance is directly visible.

When we examine the portfolio of incentives available to American management, we find an overwhelming reliance on promotional increases and benefits in an increasingly rigid compensation structure. With the future economic picture permanently influenced by steady inflation, and with the competitive situation most likely not allowing price increases or greater budgetary allocations to match all of the inflationary economics, it is of utmost importance that productivity of U.S. employees moves up to the 3-5% per year improvement range to compensate for unfavorable raw materials and trade balance situations we have suddenly encountered at this stage of our economic development. One way of achieving this target is through drastic cut-backs in the growth of

expenses. Even though this is perhaps the only viable short term technique, I believe that the most likely result of cutting back resources without changing the work environment will result in a deterioration of our overall standard of living and ultimately in a negative effect on productivity.

The method that will most likely bring the best result is through more output based on increased employee performance. The issue then is how to reduce manpower and increase output at the same time.

I believe that our organizations should move very gradually and cautiously in the direction of non-monetary as well as monetary rewards to stimulate involvement of its employees in decentralized, self-motivated productivity improvements. Caution needs to be exercised so that a shift towards those kinds of rewards and away from base compensation plus escalated benefits is properly managed. The key to this gradual evolution, which may take many years to become realized, is the ability of the various organizations to acquire indices of performance and to monitor their levels of productivity. It will also require a cultural change from current tendencies which seem to strengthen opposite tendencies towards increased bureaucratic rigidity, wage regulation, and institutionalization of job relationships.

During the transition period, we need to reduce the overall pool of funds available for general increases and to concentrate on a special merit award program that recognizes individuals who have been successful in delivering productivity improvements. Such a program should evolve to a system of one-time performance bonuses to be shared both by the employees and their management. This evolutionary step is necessary because as you induce people to expand their job responsibilities, they should be paid more so that they continue having incentives to restructure their environment. To maintain a proper balance between profitable productivity improvements and inflationary pressures on compensation, an increasing fraction of the immediate productivity gains will have to be used up for one time rewards rather than for expanding the salary and benefit base. Organizational profitability will then occur from the cumulative effect of permanent productivity changes.

All of the incentives need not be monetary. Non-monetary rewards should be applied to an increasing extent. Employee surveys demonstrate that improved management methods such as task systems, recognition events, job enrichment, career development, training courses, better facilities, improved

communications, flexible working hours, increased participation in making decisions about the immediate work environment (such as office space), all significantly contribute to a sense of participation and identification with the organization. It is important that decentralized management be given increasing latitude in the use of rewards so that the entire incentive system can be used with the greatest possible effect on the immediate work environment. At the same time, the cost of the rewards should flow into direct cost, so that the relationship between the cost of the reward and the overall productivity performance is not lost. As an example, let me note some of the experiences we have had in providing job enlargement training for programmers.

Since a technically oriented programmer derives his job satisfaction partially through his training opportunities, the size of the training budget as well as the frequency of course attendance becomes a significant motivator. Only after programming education became a resource purchased by the programmer's management have we achieved a sufficiently aggressive education program that is directly responsive to the specific needs at the lowest level of the organization. At the same time, line management has learned how to use education as a resource which needs to be used to achieve productivity objectives.

6. The Role of Line Management

As Peter Drucker points out, the highest skill in a business environment is the managerial know-how that integrates a complex variety of input factors which result in the ultimate measure of productivity of an enterprise--which is profit, or, if we deal with a non-profit institution--satisfactory service at a low cost.

If an organization wishes to increase profits or reduce costs of services, it must rely on the decision-making effectiveness of its managers, especially at the first and second supervisory levels. The fact is, however, that an increasing number of decisions are made far from the execution level. This is justified by an expanding interdependence of tactical and strategic decisions. The net result of such a tendency is decision-making by central staffs and the accumulation of talent, rewards, and power at the center of the organization. The long-term consequence is the impoverishment of talent at the execution levels.

Modern communications, technology and the increased need to interrelate many new variables clearly reinforce this centrist tendency. The heightened importance of central staffs is hard to debate. But that does not remove the responsibility to resist a creeping bias by established central staffs to stimulate the concentration of decisions as close to the top as possible. This bias becomes reflected in many institutional forms and gives rise to a steady growth in overhead functions that are not directly measurable as to their productivity. For example, such bias can be found in the existing system for evaluating jobs. Generally, "staff", "consultant", and "Assistant to" jobs receive compensation which is frequently greater than that received by people they are merely "coordinating" or "watching". If we shall expect more from our line managers, we need to equip them with the proper and explicit strategic guidance so that they can develop within their own organizations the basis for tactical decisions. We also need to award to them appropriate compensation ratings for performing the essential management job of resource administration.

There are, however, important exceptions to this. There are organizations which are either too big, or too specialized, or too integrated to be genuinely decentralized. There are a large number of functions which gravitate to the highest level of a central organization because there is simply no good and practical way of breaking them up into fully integrated and completely self-sufficient organizational units. To make sure that these functions remain responsive and not acquire a centrist bias of their own, new organizational forms have been created which have been given the name of "simulated decentralization" by Peter Drucker.

These techniques set up one function, one stage of a complex process, or one segment as if it were a distinct business with genuine profit and loss responsibility. This activity now becomes subject to productivity as well as performance measurement indicators. A number of existing central functions within our large non-profit institutions or Government agencies may become more responsive if their services were accountable by treating their transfer prices or overhead allocations as if they were realities in the market place. Even though this creates the accounting fiction of "profit" and "performance", this is nevertheless one of the most practical ways of converting unaccountable organizations into responsive services.

CONCLUSION

Productivity is the economical management of resources. It is the balancing of interrelated human factors that affect the conversion of resources into a useful product or service.

It will be one of the basic tasks of American management to bring up productivity from the current low levels to a range of values that will materially compensate for the deteriorating standard of living induced by current inflation rates and by increasing shift of labor from highly productive "direct" labor [such as is found in agriculture and in factories] to "indirect" labor [such as is found in offices, government, and services].