
Strategy for Higher Productivity

L. K. JHA

The author, in a very lucid way traces the various reasons, why productivity in the Indian context has not attained the desired levels. In his inimitable style, making use of his rich experience, the author presents several suggestions for remedying the situation.

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I

Introduction

Ever since independence we have been striving for higher production. The rate of growth, which measures the increase in output from year to year, rightly receives a good deal of public attention. The shortage of resources, particularly capital, has been identified as the main hurdle in the way of stepping up growth ever since we embarked on planning. People with low incomes cannot save much; many cannot save at all. The paucity of savings results in low capital formation. The consequent inadequacy of investment comes in the way of raising production and income levels. It is this vicious circle of low income resulting in low capital formation which perpetuates low incomes in which India like all developing countries, was caught in the early phases of development.

Additional Resource Mobilisation

To mobilise more savings by curtailing consumption, we have been raising the level of taxation from year to year. For each Plan, the Planning Commission fixes targets for additional resource mobilisation. In the reckoning of resources, account is taken of savings in the household sector as well as surpluses generated out of investment both in the public sector and in the private sector. In actual fact, particularly because of surpluses in the public sector falling far short of targets, the exercise of additional resource mobilisation, referred to as A.R.M. for short, becomes synonymous with arm-twisting taxation.

Enviably Rate of Savings

Even so, we can certainly congratulate ourselves on having succeeded in more than doubling the rate of savings in the economy which has for a number of years been above 20% of our national income. This rate of savings is not only unparalleled in any democratic country with such low income levels, but is well above the rate of savings in many affluent countries. On hearing the Indian rate of savings, the U.S. Secretary of State, Mr. Shultz, himself an economist of high repute, said, "I wish we could achieve a similar level of savings in our country".

But this increase in the level of savings has not led to a corresponding increase in the rate of growth. Over the last three decades, the growth has not been rising proportionately to the increase in the rate of savings. In fact, there has been a trend in the economy to use more capital per unit of output than in the past. The rise in the capital output ratio which means a decline in the productivity of capital, has undermined the success of our resource mobilisation effort.

Why Low Growth ?

Unfortunately, instead of asking why the productivity of capital has gone down, the trend has been to try to mobilise more resources in order to step up the rate of growth. But clearly the level of production is determined not just by the volume of resources which are harnessed into productive channels but also on how efficiently they are utilised and how high their productivity is. Recent research into the economic performance of different developed countries has brought out very sharply that the major factor which explains the different rate of growth in different industrialised countries is not the savings generated in their economy but the manner in which the savings are deployed. Considering how heavy is the burden of taxation which falls even on the lowest income groups in the country, the time has surely come when we, in our effort to achieve higher levels of production, must place much greater emphasis on improvements in productivity than on more taxation.

Judicious Resource Deployment

The importance of raising the productivity of resource is not of course limited to capital alone.

There are many other inputs which are involved in production. There is energy and there are raw materials. In the context of the oil price explosion, every country has made tremendous efforts to reduce energy consumption through appropriate changes in technology. We have done not too much in this direction. Lowering the consumption of energy per unit of output in industries, like fertilizers, steel and aluminium and many others, would reduce their costs and relieve the power shortage and thus help raise the levels of production generally.

Raising the productivity of land is of special importance in agriculture. The availability of arable land, particularly irrigated land is low. Only by improving yields per hectare can we hope to remain self-sufficient in regard to our needs of foodgrains despite the rising population and higher levels of consumption. We have also to pay attention to raising the output of oilseeds because we are spending hundreds of crores of rupees in foreign exchange on the import of vegetable oil. Cotton, jute and sugarcane are other key crops for us. It is only through higher productivity that we can not only be self-sufficient in agricultural products as a whole but have exportable surpluses in some of them. The Green Revolution in fact was nothing more than an attempt to improve the productivity of land by the judicious use of fertilisers, water and high-yielding varieties of seeds, but this quantum jump in productivity has been confined only to certain crops, mainly wheat, and certain areas. It has to affect our agriculture as a whole.

The productivity of land is relevant in the non-agricultural sector also. For urban housing, a more intensive use of sites through the construction of multi-storeyed complexes instead of the single storeyed residences which were affordable in the past, can make more housing available. Many industrial units acquire far more land than they really need. Any land which is not usefully employed lowers its average productivity.

Finally, about the labour. Because we have a very large unemployment problems, there is some measure of opposition to improving labour productivity lest it should aggravate unemployment. Since we have a

surplus of manpower, *prima facie* it seems better that industry should engage more labour than it really needs rather than attempt to reduce the number of man-hours needed per unit of output. It is a subject on which deeper thought is clearly needed.

First of all, the benefits to the workers from an increase in the productivity of labour need to be more widely recognised. If less of capital, less of energy, less of land and less of labour are employed per unit of output, prices would come down. Workers would be able to buy more out of their wages. Further as productivity of labour goes up, wages must be raised. If some countries can afford to pay their workers as much for an hour's work as the Indian workers earn in a whole day or even a whole week and yet sell their products at cheaper prices than we can, it is because of improvement in productivity.

Secondly, the fear that rise in productivity would result in unemployment because fewer workers would be needed for particular volume of production presupposes that the volume of production would remain static. In fact cheapening of costs brings products within the range of consumers with lower incomes and therefore enlarges the volume of production. In consequence employment usually rises.

The point is best illustrated by looking at the historical experience of developed countries. When the steam engine was invented, there were riots because it was seen to pose a threat to employment. But over the years the countries which replaced manpower by mechanically-generated horse power forged ahead industrially and the number of workers engaged in mechanised production began to increase by leaps and bounds.

A further point to note is that sometimes as a result of improvement in labour productivity, employment in one sector shrinks but in other sectors it gets a boost. The railways, trucks and buses have no doubt reduced employment for those plying animal driven vehicles but they have generated a tremendous volume of employment for others by enabling apples produced in the hills of the north to be sold in the south, by moving coal from Bihar to provide energy for industries in Gujarat or Kashmir, and by making it possible for coir-matting

produced in Kerala to be sold at a cheap price in Delhi, Bombay and Calcutta.

In saying this, one is not arguing against labour intensive techniques being fostered in Indian conditions. Their main advantage lies in the fact that they need relatively less capital and, therefore, the higher productivity of capital offsets the lower productivity of labour. Since we are very short of capital and have a surplus of labour, the special incentives given to the handloom industry and other similar industries are fully justified. But even in such industries, attempts should be made to improve the productivity of labour with a view to raising their wage levels.

II

Improving Productivity

Having said so much about the importance and significance of raising productivity, let me now ask what steps can be taken to give a special boost to productivity in India. The prime responsibility for improving productivity is that of the producer himself. If he can economise on the use of capital, he can raise his output without having to seek more funds. Further he can lower his costs. His profits would improve on two counts: firstly because he would sell more goods and secondly because his profits per unit would go up. In conditions of keen competition, units whose productivity is low begin to lose ground to those whose productivity is high. Therefore, there is a race to raise productivity, to find new methods of production, to improve technology, to eliminate waste, to ensure better industrial relations and do all the other things that would raise output and lower the costs. In the process, not only the producer but the consumer benefits as prices come down.

Unfortunately in India there is very little by way of competition. Most products enjoy a sellers market. Demand is in excess of supply. In such conditions not much attention is given to productivity.

The prime reason why industries in India do not have to face much competition lies deep rooted in the paucity of resources. On account of the shortage of foreign exchange, imports of products made in the

country had to be severely restricted and external competition was virtually shut out. In addition the shortage of domestic capital also reduced, if not eliminated internal competition. Through industrial licensing, capacity in each industry has as a rule been restricted so as to be not more than the estimated demand. Since in actual fact demand usually turned out to be higher than the estimate, while the capacity on the ground fell short of the licenced capacity, most of the industries developed after independence enjoyed a somewhat monopolistic position and were not exposed to the chastening influence of competition.

Some of the well-intentioned measures taken to deal with the problem only aggravated it. To curb monopolistic trends, restraints were placed on the larger business houses expanding their output. In consequence, competition was further reduced and the bigger producers sought to enlarge their profits by raising prices which in conditions of scarcity the consumer could not resist. The attempt to control prices also led to some unfortunate side effects. The practice in fixing controlled prices was to allow for costs in full and to provide for a certain rate of return on the capital employed. As a result, industrialists had no incentive to reduce their costs, as lower costs would not mean more profits to them but would only lower prices. On the other hand they began to be lavish in the use of capital because the administered price would give them an adequate return on the capital even if it was extravagantly used. Such an approach to price fixation had an adverse impact on productivity. Industries which lost interest in cost reduction had no reason to worry about productivity and the prodigal use of capital actually tended to lower its productivity.

Of course, side by side with the pursuit of these policies there were agencies which did try to focus public thinking on the importance of productivity. Somehow in the prevailing atmosphere they did not make much of an impact.

Fortunately in 1982, a radical change in outlook was introduced. When the Prime Minister designated the year 1982 as the "Year of Productivity", many of the old practices came under review.

The actual increase in production in 1982-83 has,

for a variety of reasons, such as the failure of monsoons, a prolonged textile strike in Bombay and shortage of power among others, been rather poor. But during the year certain important policy decisions were taken which were calculated to increase productivity.

Industrial Licensing

The most significant of these related to industrial licensing. The trend which had developed of treating the licensed capacity of an industry as a ceiling on its output was reversed. Instead of asking a unit which produced more than its licensed capacity to explain why it had done so, its licensed capacity was enhanced to a still higher figure than the production it had achieved. The distorted view which had crept into industrial licensing that to produce more than the licensed capacity was a crime, if not a sin, was abandoned. Since industrial licensing had been introduced to conserve capital with the intention that the demand should be satisfied with the minimum deployment of scarce capital, the change in policy was not in derogation but in fulfilment of the basic objectives of industrial licensing. Unfortunately, often those who administer a control forget its objective and begin to treat it as an end in itself rather than as an instrument to achieve certain ends.

Another significant reform was to relax some of the rigours of the MRTP Act in respect of industries of national importance, which needed huge investments which in the private sector, only the bigger business houses could undertake. The object was to expose the monopoly houses to greater competition from each other in order that they may pay greater attention to costs and consumer interests.

Government have decided, in principle, that capacity in key industries should be regulated not on the basis of short-term estimates of demand but with a longer time perspective in view, particularly for industries in which it takes quite a few years to set up new units. I hope that in consequence the fact that some units are unable to sell their products will not be treated as evidence of inadequacy of demand, and that instead there would be an examination of the reasons why some producers have a well-filled order book, while others are accumulating unsold stocks.

Similarly, in regard to controlled prices, while there have been significant moves in the right direction, as in the case of cement, there is need to be more questioning of the trend for industrial units to seek a higher price merely by claiming to have higher costs. It is only when industries realise that those with higher costs must make lower profits or even suffer losses that due attention will be given to the importance of productivity.

To bring about this change in outlook, as said earlier, there must be more competition. With a large number of products on the Open General Licence for imports, external competition is on the increase. However, imports cost foreign exchange of which we are short. More than competition from imports, we should rely on increased domestic competition. That there should be freedom to import a product without a licence but similar freedom should not be available to produce it at home seems to me to be somewhat illogical.

In raising productivity, technology and management make the maximum contribution. Technological research in the country is too often directed towards finding indigenous technology to replace imported technology. It would be desirable to shift the focus of research to the more specific tasks of improving productivity, discovering ways of minimising the use of capital, energy and other scarce resources. Further, a more liberal attitude towards import of technology, which is calculated to improve productivity should be adopted. Let us not forget that when we import a product, we are not only importing the materials that have gone into its manufacture but also importing and paying for the technology embodied in it. For items under Open General Licence for imports, a very liberal attitude towards import of the technology to produce them in India should be adopted.

Finally, in regard to management, there is a growing awareness of its importance in the economy as a whole. Graduates of the Institutes of Management have no difficulty in getting employed. This is a healthy sign. The only suggestion on the subject would be that much greater attention should be paid to management in the public sector which should get the best men in position

to do the job and give them the requisite freedom from bureaucratic or ministerial interference in the discharge of their responsibilities.

III

The importance of productivity needs to be recognised and reflected much more than it has been in the formulation of plans and in the critical debates which follow their presentation. Planning has so far concerned itself primarily with new investments to attain certain targets of output. Getting more out of investments already made in the previous Plans, is not treated as a part of the plan exercise and the resources needed for the purpose have to be found outside the plan. Accompanying this approach is the view that plan expenditure should have priority over non-plan expenditure.

Modernisation Imperative

In consequence, while there is money available for a new project, old projects may languish and become unproductive because there are no resources to replace worn-out equipment or buy spare-parts. We have the sorry spectacle of new power plants being put up while power generation by the existing plants is far below their capacity because resources to improve their performance seem to be lacking. This happens in other fields as well. New steel plants are being put up, even while the existing steel plants are desperately in need of funds for modernisation to improve their productivity; and when the productivity in one key sector goes down, it affects productivity in other sectors as well. This is particularly so in regard to power. Production in many key industries like steel, cement, aluminium and others is below par because of the shortage of power and we have to spend huge sums on imports when domestic production capacity is partially idle.

The low productivity of huge investments already made in the past is in evidence not in the industrial sector alone. If we turn to agriculture, we again find that massive irrigation projects which have harnessed tremendous quantities of water at a very high cost to the economy are not irrigating as wide an acreage as they should be because a relatively small investment

needed within the Command Areas to provide feeder channels to the fields has not been made. Our dependence on the monsoons can be drastically reduced if in further investments in irrigation, priority is given to sectors which would result in the maximum increase in the productivity of the soil.

Need for Productivity Orientation

Against this background, one can suggest that in the next plan, the outlays in different sectors should be determined not on the basis that they must go to new projects only, but with due regard to the possibilities of fulfilling the production targets, partly by improving the productivity of existing projects and partly by setting up new ones. If such an attempt is made, it is my expectation that the growth rate can be stepped up with much less of additional resource mobilisation. In short there should be a productivity-oriented plan and not an investment-oriented plan.

Such a re-orientation will necessitate a change in

the conventional yardsticks which are used when each plan comes to be evaluated, criticised and commented upon in the press and in the legislatures. We have got into the habit of assessing each plan and its priorities in terms of the outlays it provides for and not the output it aims at. Investments, like controls, should not be looked upon as ends in themselves; they are but the means to achieve certain ends. The judgement of both planning and performance should be based not on the volume of investments but on the returns which the investments give in the shape of production and also profits which can be ploughed back for more production.

That the Seventh Economic Development Conference has decided to focus on "Strategy for Higher Productivity" is, to my mind, a most encouraging development and one hopes what has been said above will be helpful to those participating in it to come out with concrete constructive ideas.



Productivity and Social Change

DR. MAN MOHAN SINGH

Dr. Man Mohan Singh, focusses on Productivity from various angles and more importantly from the social angle. The paper is based on Silver Jubilee Lecture delivered by him on April 26, 1983, at New Delhi.

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In a poor overpopulated country like India characterised by scarcity of both land and capital, the importance of securing maximum possible returns from these scarce resources can hardly be overemphasised. This is indeed the central message conveyed by the productivity movement.

Productivity growth has basically two components even though it is not easy to decompose productivity changes into these two components :

- (i) Technical progress, i.e., the introduction of new technology which leads to an expansion of the best practice production frontier and thereby yields higher output even with given inputs of resources.
- (ii) Improvements in efficiency which yield higher output even with a given state of technical knowledge, higher output being the result of improved management practices, better industrial relations, gains flowing from experience in the process of learning by doing, improved mechanisms for anticipation and adjustments to external exogenous shocks, etc.

Thus viewed, productivity growth is the result of a complex interaction of a large number of technological, political, institutional, psychological and economic variables. There is no agreement among social scientists about the precise mechanism of their interaction or even about the choice of what may be regarded as strategic or control variables. Having been associated

countries of West Asia.

If this technological gap is to be closed early, there is clearly no alternative to a liberal import of techno-

abilities and perception of new opportunities and challenges on the part of the management group. Availability of material resources has no doubt an important influence on the growth process, but no less

with the process of policy formulation in our country for more than a decade, I venture to submit some tentative thoughts on measures designed to secure higher productivity in our economy.

constraints, it may cease to be a major determinant of the pace and direction of investment. As a result the information provided by such a plan may turn out to be a misleading guide to the likely developments in

important is the task of organising and mobilising human capacities for making the most effective use of available resources. A far sighted management can play a major role in enlarging the national pool of scarce resources and in bending skilfully the constraints on the growth process.

Clearly, if Indian industry is to meet successfully the challenge of modernisation, business management must have a deep commitment to growth and social change. Management has to recognise its role in the realisation of national priorities, particularly in the areas relating to technical progress, conservation and economy in the use of energy and orderly management of our balance of payments through a judicious mixture of export promotion and import substitution. Operating in the framework of an open society, managements must recognise that modern industry is a cooperative activity and they must, therefore, seek active cooperation of other agents, particularly the workers and consumers, for the proper performance of their functions.

Industrial Relations

Industrial relations have assumed a central role in corporate strategies all over the world. There is a growing recognition that productive efficiency depends ultimately on the effective mobilisation of human capacities represented jointly by the management and the work force. Modern industry is characterised by considerable economies of scale. As a result, concentration of a large labour force in a single enterprise is unavoidable. Industry is increasingly becoming a cooperative endeavour and, therefore, it is necessary to create a proper social environment in which all agents of production work in harmony to achieve the full potential. Worker participation in decision making processes is increasingly being accepted as a superior alternative to autocratic management patterns where all decision making powers are concentrated in the hands of a few individuals at the top of the hierarchy. After all, increased morale of workers is an important determinant of efficiency, and systems which seek to increase workers' morale by giving the workers sense of involvement make a major contribution to the removal of psychological barriers to efficiency. It is,

therefore, essential that our enterprises should develop an effective long range perspective with regard to industrial relations. Any such perspective must recognise that workers want to be involved and consulted. That trade unions are an essential element of the institutional structure of a democratic polity and that, therefore, their influence on public policies cannot be wished away in a democracy. We have to evolve appropriate institutional structures, inter-personal relations, personnel policies and work practices consistent with this design of industrial relations. This requires an updating of the legislative regulatory framework for industrial relations which would lay greater emphasis on participation to secure more effective involvement of all productive forces in industrial processes. But legislation can achieve its objective only if there is willing acceptance of a more democratic and participatory approach to the solution of problems on the part of management. Recent analytical studies of industrial relations in Europe suggest that a more democratic leadership style is likely to be associated with a more positive attitude to work and a greater sense of involvement in the job on the part of workers. A more democratic leadership style does not necessarily imply a weak or indecisive leadership. In fact, a management which is conscious of its obligations to its workers and consumers at large, and believes in effective consultation and fair-play, is likely to be a much stronger wicket in dealing firmly with unreasonable demands from whatever quarters they may originate. For, in all such cases, it can rely on the firm support of public opinion which constitutes a powerful sanction in a democratic polity.

Some recent developments in industrial relations in our country, particularly the prolonged textile strike in Bombay, suggest that the time has come when we ought to have a fresh look at the existing approaches and mechanisms for dealing with the complexities of Industrial relations. India is too poor a country to countenance prolonged strikes or lock-outs as a normal means of settling industrial disputes. We must search for more constructive and humane mechanisms, which seek to promote the resolution of conflict by rooting out its basic causes. So long as India remains committed to the ideals of a humane and open society, the only viable path for securing harmonious industrial

relations is that of industrial democracy. The experience of both Japan and West Germany is a powerful indicator of the potentialities of a viable system of industrial democracy for mobilising latent human capacities in the cause of higher productivity.

Containing Elite-Mass Contradictions

A high rate of capital accumulation is necessary to secure the gains of technical progress since new technology is often embodied in new equipment. I have also referred to the important role of adequate investments in the nation's education and health services in raising productivity. Thus a substantial increase in national savings rate is essential. We cannot expect these savings to come from those living below the poverty line. These have to be provided essentially by those having secure jobs or otherwise earn incomes above the minimum essential level of consumption. In this context, special responsibility rests on the better off sections, or the elite, whether they are Civil servants, politicians, managers or businessmen.

A modern technological society requires leaders in various walks of life and a certain amount of distance between the elite and masses is perhaps unavoidable. But if not controlled, elite-mass contradictions can be highly disruptive and destabilising. If the elite sections use their power and influence for personal material gain and comfort this will lead to distortions in the

allocation of scarce resources. At the present stage of our development, overall resources being limited, the insistence of a small privileged minority to enjoy living standards comparable to those prevailing in advanced post-industrial societies will inevitably result in the production structure being biased in favour of luxury goods at the very time when the great mass of our people do not have access even to elementary necessities of life. The insistence of the elite on a life style incompatible with India's resource endowment can give rise to serious political and economic tensions which can affect the growth of productivity and much more. For one thing, under such conditions the elite will be unable to persuade the mass of working classes to accept a degree of restraint on their consumption and, therefore, on wage claims, in the interest of faster accumulation of capital. The resulting struggle between workers and employers for a higher share of the national cake can easily degenerate into hyperinflation of the type, one comes across in Latin America. It can also give rise to authoritarian political and economic structures which seek to preserve, through the use of brute force, the privileges of a ruling oligarchy. If we really cherish the values of an open society, we must ponder over the consequences of a small elite group appropriating for consumption a disproportionate amount of national resources. A democracy will find it difficult to operate an economic system which lays emphasis on incentives for the rich and the super rich and harsh discipline for the poor.



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Quest for Higher Productivity

S. K. BHATNAGAR

Development is a trans-disciplinary process requiring team-work and strong links between innovation and productivity. The determinants of productivity vary with changes in the human values and attitudes of the society. There is thus a continuous need for re-assessment, and devising of new and appropriate strategies modulated to the changing needs, according to the author.

Shri S. K. Bhatnagar, Secretary, Ministry of Industry & Chairman, National Productivity Council.

The progress of productivity movement in India during the past 25 years is certainly a matter of satisfaction. The National Productivity Council which spearheaded this movement has played a key role and its Silver Jubilee marks a turning point for evolving plans and strategies to gear itself to meet the emerging needs and challenges in the years ahead, particularly in relation to management technology, manpower development, resource mobilisation, conservation and re-cycling.

In retrospect the experience of productivity movement has been that productivity improvements are of a positive nature in societies which are characterised by fairness of justice, favourable working conditions, appropriate rewards, and improvement in the education systems giving due cognizance to the economic and social environment prevailing in the country. The concept of productivity now embraces much more than economic or technical efficiency. In its expanded context, it is not merely related to the production of goods and services, but is forced to recognise that "quality of life" is different from, and somewhat more than what is meant by "standard of living", and that the two are not identical.

Our first Prime Minister, Pt. Jawaharlal Nehru, a great visionary, and an ardent believer in productivity, had rightly stressed the paramount need of the Indian economy "to maximise production and productivity". His words still beacon us :

"...The National Dividend depends on Productivity. Wages and salaries—in fact, all forms of

remuneration—depend on the National Dividend. The need, therefore, of higher productivity is obvious not only from the country's point of view, but for individual workers, etc. The first thing to do is to create an active atmosphere in favour of higher productivity, and of better techniques. But mere atmosphere and enthusiasm are not sufficient unless we have some practical ways of dealing with the situation...".

The Early Phase

The direction given to the productivity movement in its earlier stages rightly recognised that higher productivity was not an end in itself, but a means of promoting social progress and strengthening the economic foundations of human well-being. Its approach strategy had two basic considerations—the 'popular approach' which concentrated on depending the public understanding towards productivity and, particularly, at the industry level in generating an awareness about the usefulness of productivity methods and techniques; and the other, the 'scientific approach' to achieve effective deployment of resources through the application of productivity techniques, methods and processes. As a result, productivity has now transcended its narrow boundaries into a more purposeful approach both in economic and non-economic systems. In fact, as one goes through the past record, the impression is rather indelible. The upsurge in favour of productivity in the sixties was visible and industrial management, trade unions, government and international agencies like the International Labour Organisation (ILO) and the Asian Productivity Organisation (APO) all extended their whole-hearted support to productivity efforts. Productivity movement was thus put on the rails, and what it needed was the necessary momentum and the speed. In the seventies a major task faced by the productivity movement was to create a multiplier effect through the development of trainers and consultants and it was rightly recognised that general exhortations and platitudes on productivity had to give way to more specialised field services in conformity with managerial and technical requirements of business, industry, commerce and administration.

The Eighties

As the productivity movement entered the eighties,

the need to generate surpluses both in the industrial and agricultural sectors became essential to plough back the resources for greater investment, and for creation of more employment as the prime determinant of growth with social justice. Generation of surplus at the corporate level was further regarded as the product of managerial efficiency combined with technology development and its application. Management of technology became the focal point of economic growth process posing a major challenge of human resource development, its adaptability and its competence to handle technology. The growth of value added operations further unleashed immense potentialities of diversification in the manufacturing sector for the dispersal of employment far across the nodal centres of economic activity.

Apprehensions and Misgivings

Despite the acceptance of the importance and the need for higher productivity, it was found that productivity application at the operational level continued to be somewhat inconsistent. This was primarily because of certain distortions and misgivings about productivity. The term "productivity" was reckoned as a qualitative or, at best, a semi-quantitative exercise. It was argued that there was hardly any linking between wages and productivity, and that any drive towards increased productivity in the traditional and the rural sector or the application of new technologies in the manufacturing sector could lead to either reduced employment or decreasing employment potential in the future. Another factor mentioned was the complexity of the measurement of productivity and sharing in the gains of higher productivity. It was further argued that any exercise to arrive at a total factor productivity had a direct bearing on technology and R & D efforts, organisation and management, and not merely labour productivity. It was considered difficult to delineate each one of these factors to identify their respective roles in the framework of socio-political considerations and to ensure that micro concepts of productivity did not run counter to the socio-economic benefits to the community.

National Planning and Productivity

The basic objective of national economic planning has been to provide to the people the opportunity to

lead a good life. This is sought to be achieved by democratic measures in a rapidly expanding and technologically progressive economy under a social frame which would promote human and social welfare. The national economic planning has to operate under certain pressures, compulsions, perspectives and directions which supervene over the idea of productivity in terms of input-output ratios or technology advancements or capital-output ratios. The over-riding considerations have four major components which constitute the segments of economic planning. The first is the development of economic infrastructure; the second is the specific development of production in nodal economic areas, such as industry, agriculture, etc.; the third is the essential input scenario to the very sectors of economy in terms of materials and machinery, technology training and research; and the fourth is the planning of social utilities like health, housing, as well as basic education. As such, any approach to productivity based merely on production planning has no validity unless it is supported by output services in terms of foundational as well as infra-services which should be planned to function as a network. This is important since in our country production centres have to be as widely dispersed as possible, to cater to the vast Indian market of 700 million people. It is a dismal situation that in the economic sense, the Indian market has not been exposed beyond 25 per cent. In fact, our untapped or virgin market is larger than possibly the markets of several countries put together. We cannot open new markets without distributing, diffusing and decentralising the purchasing power. The only solution to the problem in our situation is how best we can horizontalise the centres of economic activity to generate more employment. Pitted against the socio-economic realities of our country in which 40 per cent of the people have an income of less than Rs. 5,000/- a year, the state of technology or the advances in technology cannot have an over-riding consideration.

In formulating a pragmatic approach to productivity, we have to strike a balance between the demand for distributional justice and the need for work incentives. Inflationary pressures can be resisted only through higher output and increased wages in the form of incentives, recognition of the power of collective bargaining and the social needs to articulate priorities

by holding fast to the long-term social and economic objectives. An emerging feature in the industrial scenario has been the growth of the public sector which has to catch up fast and at the same time provide for the emerging social needs. Productivity planning has to be adapted to various stages of growth and the capacity of the system to measure up to the task, and to radically alter the character of work and work behaviour.

In the ultimate analysis, productivity reflects the will of the people, a sense of determination based on an abiding faith and the need to have a positive link between the social objectives and the planning mechanism. While technical advances and improvement in the quality of working life are regarded as important instruments for increased productivity, the two do not run in congruity. The spread of technology and the evolution of attitudes have to be considered in the context of the development achieved, and the symptoms of a transformation in the way of life leading to newer patterns in the cultural ethos and life styles. During the past several years, factors which have gained precedence over mere economic considerations are the requirements of health, education, conditions of work and environment, and opportunities for growth and advancement.

Experience of Productivity Year 1982

On the clarion call given by our Prime Minister, Smt. Indira Gandhi, the country observed 1982 as the Year of Productivity. It marked a turning point in the drive for higher productivity by making coordinated efforts to maximise capacity utilisation in all sectors of the economy and to achieve greater efficiency in the implementation of projects. While launching the Productivity Year, our Prime Minister had rightly stated:

“We must get more out of every acre under the plough, out of every spindle and machine, out of every technologist and worker, out of every rupee spent. Decision-making must be expedited and there should be a greater delegation of financial and administrative powers, simplification of procedures, improvement in work environment, better maintenance of plant and equipment for increased capacity utilisation.....”

The efforts made at all levels and particularly by the National Productivity Council have established the imperative for improvement in the capacity utilisation of plant and equipment, and to achieve cost effectiveness and quality improvement through reduction in the unit cost of production. It has further highlighted the need for balancing between generation of additional capacity and the effective use of the existing facilities. The improvement of productivity in the core sectors of economy which provide the infrastructural support can lead to an acceleration process in productivity in public utilities and public services. Six specific areas of national endeavour were identified, *viz.*, Energy Conservation, Materials Management, Maintenance Management, Labour-Management Relations, Pollution Control, and Small Scale, Khadi and Village Industries.

Two major achievements of the Productivity Year deserve special mention. It was for the first time that Industry-wise Productivity Boards were established for 7 major industries, *viz.*, Power Generation, Transmission and Distribution Equipment; Industrial Machinery; Cement; Machine Tools; Automobiles & Ancillaries; Paper, Pulp and Allied Industries; Leather and Leather Goods, with the following tasks assigned to them:

- (a) Preparing plans incorporating technology, manpower, energy and marketing for achieving higher productivity and integrating the same with the national economic plans;
- (b) Identifying productivity constraints and advising the government, industry and trade unions on the measures to be taken to overcome the bottlenecks;
- (c) Monitoring implementation of productivity plans, evaluating the actual results achieved and identifying the specific factors which have helped or hindered in achieving higher productivity;
- (d) Advising the Government on policy issues such as establishing industrywise norms for major inputs/factors of production, linking wages with productivity, instituting productivity awards for higher performance etc.; and
- (e) Establishing a standard data base for evaluating Productivity performance.

The Productivity Boards have already embarked on a 7-point action plan which include (1) Quality improvement and Cost Effectiveness, (2) Productivity Measurement and Monitoring, (3) Generation of Productivity Data Base Service, (4) Preparing Industry Plans on Productivity, (5) Generating Productivity Consciousness, (6) Improving the Quality of Working Life, and (7) Productivity Agreements and Sharing the Gains.

A national scheme of Productivity Awards which was launched for the core sector industries, *viz.*; Heavy Engineering, Cement, Paper, Coal, Fertilizer, Sugar, Thermal Power Generation, Road Transport (Passenger) and the Small Scale Sector comprising Chemical, Engineering, Electrical and Electronics. The important criteria for evolving the scheme were the inclusion of those factors which were identified as major areas of national endeavour during the Productivity Year 1982, *viz.*; Capacity Utilisation or Value Added, Energy Conservation, Materials Utilisation, Maintenance of Plant and Equipment and Manpower Utilisation. Constant vigilance of these factors has certainly helped in improving capacity utilization, promoting productivity audit mechanism, and establishing macro-micro linkages for productivity improvements.

Human Resource—Axis of Development

In the entire gamut of productivity, it is recognised that manpower resource has a key role to play. The expanding and diverse requirements of the economy need a large reservoir of skilled manpower and managerial talent. In this context the role of Research for Productivity becomes highly significant, and adequate resources have to be made available. Also emphasis has to be laid on Productivity in education. In addition utmost attention has to be given to the training of workers and supervisors in productivity and occupational safety. Orientation of trade unions in productivity is equally important to dispel the lurking apprehensions and mis-givings in the minds of workers, and to convince them of the usefulness of its application under defined parameters.

Looking Ahead

Development is a trans-disciplinary process requiring team-work and strong links between innovation and

productivity. The determinants of productivity vary with changes in the human values and attitudes of the society. There is thus a continuous need for re-assessment, and devising of new and appropriate strategies modulated to the changing needs.

Productivity is certainly not an end in itself, but a means to an end. As such, it is necessary to take an overall view of socio-cultural factors in order to achieve the broader objective of providing human satisfaction as against material goods and services which are not enough. Change is inevitable. It might even be

painful, but it is certainly needful. We can't overlook the welfare of the people. They have to be involved in the process of decision-making. Social pressure, therefore, becomes important for generating positive response of the society. The success of productivity efforts ultimately lies in the basic faith in progress, in expansion and growth, in the willingness to experiment with new ideas, to accept risks, to adjust to social changes, regional and occupational mobility, and awareness to social responsibilities in order to contribute to higher productivity which is the prime need for nation's progress and prosperity.

THE RIGHT TOOL FOR THE JOB IN HAND SAVES
TIME AND MONEY





Shri Narayan Datt Tiwari, Union Minister of Industry and President, NPC, Shri S.K. Bhatnagar, Secretary, Department of Industrial Development and Chairman, NPC and Shri D.V. Kapur, Secretary, Department of Heavy Industry discussing the recommendations of the Inter-Ministerial Working Group on Utilization and Conservation of Energy

Emerging Strategies for Trade Unions

DR A. N. SAXENA

Organisations and associations of workers are not ends in themselves. They are formed with a view to enabling the workers to give strength to their demands and to bargain effectively with their employers. However, with the passage of time and collective ownership of productive resources the militant approach has given place to more constructive one namely negotiation and participation. The author says, it is no more necessary for the unions to dissipate their energies in 'Strikes'. They should become pace setters of mutual negotiations and collective bargaining to ensure that productive process continues unhampered in the interest of large socio-economic well being.

Dr A. N. Saxena, Director General, National Productivity Council.

Keeping in view the compulsions of our Economy labour movement has to evolve new strategies and pursue policies which are conducive to the national economic development. Experience of countries similar to ours have proved that labour organisations in these countries have tried to restrict their activities to collective bargaining within the legal framework provided by the national legislation on industrial relations. This they have tried to achieve without being overdependent on the State machinery. They have also recognised that any over dependence on the State Machinery in the long run may weaken the very fabric of the labour movement.

With the advent of freedom a new social order has come in the making and it is realised that industrial relations have to operate in the new setting. The powers and forms of business and organised industry are changing. The business enterprise in the growing collective economy is no longer as self-sufficient or as self-determining as it was formerly. National economic policy and economic Plans reflect on its working in various ways. Instruments of taxation, subsidies and licences operate as deliberate means of economic control. Private rights in industry have to give way to collective needs. Public administration penetrates into the sphere of industrial management on many points. Many industries are operating at the nationalised level. The National Government is seeking ways to create an economy more stable, more efficient and more equitable than that of the competitive capitalism. This radical change in the growth of collective economic machinery and policy has altered the character of industrial relations.

Consumption cycle—it is continuous

Traditionally Economists have always viewed Trade Unions as economic institutions. It is no wonder that the economic and industrial functions are pre-dominant even today despite a growing realisation of the changing pattern in the conduct of trade unions. The economic and industrial functions as traditionally evolved have had three objectives : (1) raising the levels of wages; (2) improvement in the working and living conditions; and (3) organisation of labour. Another constraint to which Trade Unions are being subjected is that our industrial economy cannot be subjected to—capital output ratio as a measure to increase labour output ratio proportionately, because in developing economies sometimes inflationary or deflationary situations are caused due to extraneous fluctuations which are so sudden that a mere spiralling up of wages is hardly of any avail unless it is adequately matched by a corresponding productivity rise. Moreover, owing to lack of incentives and the deployment of traditional methods and techniques of production the level of consumption, savings, and investments does not operate in the same manner as in the case of developed countries. Such implications bring about the need for orienting the pattern and behaviour of labour organisations in economic matters. Their responsibilities fall under two broad categories :

1. To restrict consumption.
2. To bring about an increase in the level of production.

The need for restricting consumption is of vital importance because any undue increase in the demand for consumer goods or semi-necessities manufactured indigenously or imported from abroad does exercise a pressure on the price level as a result of demand outstripping the supply.

Political Environment—its impact

In our country labour management has evolved in an atmosphere of political consciousness. In the post independence period it has developed under the structure of political democracy. Since the success of democracy is basically dependent on party system, each political party in India has tried to establish its base and influence on labour. There can be no doubt that

labour organisations have certain legitimate political functions and it will not be desirable to restrict their activities only to economic and industrial fields. Workers, when they come to work, do not cease to be citizens and as members of the community, they have every right to exercise their civic and political rights. Therefore, if they look to the trade unions for advice and guidance in these matters, it cannot be denied.

Labour organisations today exercise an effective role in the enactment of laws and they want these laws to be progressive and to be concerned more with social security and equality of status in society. They have, therefore, to secure representation in the parliament and legislatures and for this they even need to have political funds. However, what is more important in the labour movement is a realisation that in the long run socio-economic needs should not be subjected to political needs or should be deferred until the instrument of political power is captured. In fact the proper course would be that socio-economic needs should precede the determination of the areas of political operation.

Inherent Conflict—its relevance

It is believed that there is an inherent conflict between the workers on the one hand and the management on the other as to the sharing of the gains. Even if it be so, it can still be possible to place industrial relations on such a footing so as to enable both workers and management who depend for their living upon the output, to make the maximum productive effort. It is an unquestionable fact that between the two partners of industry, i.e. workers and the management there is an identity of interest in so far as their livelihood depends on the results of their labour.

A frank recognition and acceptance of this fact is a prerequisite to the determination of policies designed to soften this inherent conflict and to spotlight the mutual interest of both the management and workers, establishing the best and most friendly relations which enables them to cooperate in the production process of goods and services of right quality at the minimum cost.

Union Management Cooperation

A categorical meaning of the term 'Union Manage-

ment Cooperation' may be defined as 'joint action'. Usually formal in nature; in areas of mutual interest beyond the issue of wages, hours of work, working conditions and grievance which normally come under the scope of collective bargaining. There are two phases of cooperation one which deals with union bargaining and their representation in matters concerning collective bargaining with the management which may not be purely voluntary and the other as suggested above which are purely voluntary.

Obviously union management cooperation can be based on harmonious collective bargaining and relationships. Only after this stage has been reached that it is possible to expand the sphere of joint action into new areas of cooperation. Cooperation does not imply in the absence of militancy on either side, rather it signifies mutual respect and recognition of the inter-dependence for major goals.

Importance of Industrial Harmony

Industrial harmony implies that the state of industrial relations in which the two elements of industrial organisation viz. management and labour are fully and adequately harmonised, that is to say, all such factors which lead to disrupt this harmony are eliminated. It is the state of bliss in the realm of industrial relations, and such a state can be achieved only when there is identity of purpose and identity of interest between labour and management, a situation which is sometimes referred to as difficult to comprehend under the present conditions. Industrial harmony in the absolute sense may not be feasible. We may, therefore, interpret the term industrial harmony as an instrument of fostering harmonious relations and not merely negation of conflict.

In fostering harmonious relations, it is necessary to minimise as far as possible the influence of actions and interactions of forces which often lead to industrial conflict. Such factors mainly are 'wages', working and service conditions and recognition of the personality of labour and its organisation. Wages and working conditions are essentially the subjects of collective bargaining.

An effective and purposeful collective bargaining is

feasible only when the personality of labour and its organisation has been recognised by the management. The recognition of the personality of labour and its organisation takes concrete form in joint consultation, together with effective communication, collective bargaining and participation in the management.

It is no less necessary if good relations are to be fostered and maintained, to afford the trade union, or unions, complete recognition and provide facilities for the union officers to carry out their duties effectively and ensure that agreements once made are strictly observed. Personally I feel even guaranteeing the above things will not meet the justice. The sense of distrust has got to be eliminated, and a sense of confidence and goodwill restored. The mere fact that during the last one year there has been a remarkable reduction in the industrial stoppages cannot be taken as a sine-qua-non of good order and good relations in the industrial realm. We still have a long way to go. Production is still insufficient to enable us to be self sufficient. The obvious question remains. Can we improve our industrial relations and thus achieve the production we require both in volume and quality?

Role of Trade Unions

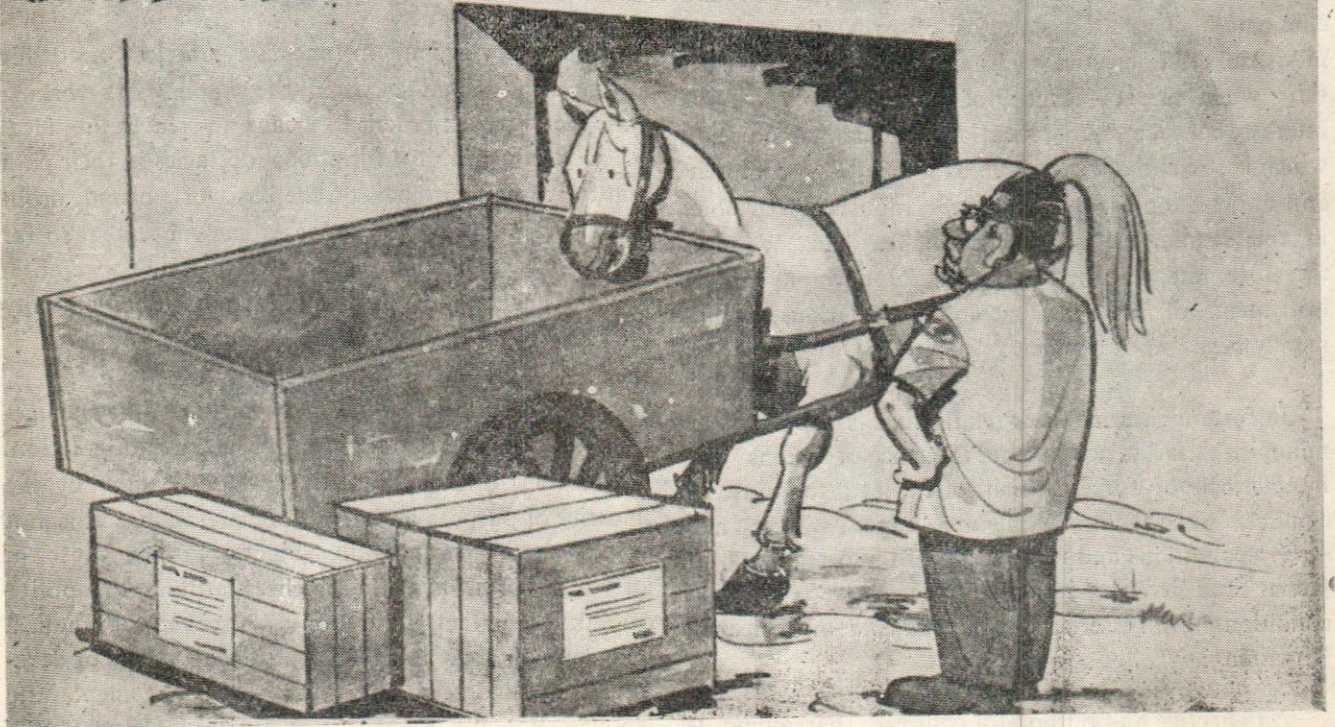
Democracy in modern times is a practical need for a Government that serves all the people. The working class have to seek practical means to reach the ideal of social justice, to surmount obstacles in their path and to adjust their goals on the basis of current problems. In adopting to change, labour movement so far has no fixed philosophy except that of trying to find a way to make a better nation and a better community life.

The question of workers' participation in management is primarily a question of attitude-orientation. Favourable attitudes can be developed only by the sincerity of purpose and depth of conviction. It is not at all a matter of paying lip sympathy to the cause of lofty ideals or a tongue-in-the cheek attitude to a political fad; it is in fact, a question of discovering practical and mutually advantageous ways and means of developing an understanding between management and labour. For the management it is also a matter of

enlightened self-interest. As such to hold that these schemes are idealistic and impractical will be real short-sighted. It is also no less significant to recognise that any basis of coercion, duress or confrontation can never promote participation. It can grow only under a situation and belief of mutual trust, cooperation and understanding. Reasoning, thinking and taking a wider and a perspective view is essential for a sustained

process of participation. Small but definite beginnings born out of sincerity of purpose will see us through the "crisis of confidence" which has been afflicting our organisations and particularly the industrial life in the country. Time does not wait for any one and Trade Unions have also to carve a way out to make themselves more meaningful and satisfying in the larger interest of human and social welfare.

ILLCONCEIVED PROCEDURES TEND TO
REDUCE EFFICIENCY



Productivity of the Professionals

DR. DAVID S. BROWN

Increasing Productivity

The message of the 1980s is clearly one that calls for increased productivity. This is a message that transcends national boundaries and cultures. It is one also that must be heard by all levels of society and, more to the point, all levels of the work force. Most important among these are white collar professional workers.

Decades of "business as usual" where ancient customs, traditional divisions of labor, long-standing patterns of performance, extravagant executive perquisites, and non-productive individual styles have determined what one does, and how it is done are no longer acceptable. As populations and their needs multiply, better ways must be found of meeting them. Said another way, we must improve substantially existing administrative practices.

National planners usually focus their attention upon particular segments of the economy. A nation's agriculture may be falling short of supplying domestic needs. Its industries may not be competitive. Its transportation system may be unable to deliver goods in an assured or predictable fashion. The nation may suffer from the inability to market successfully what it produces. It may lack both energy and skilled manpower. It is no longer innovative.

National plans aimed at remedying these problems make good sense from a macro-economic point of view, but unless they give attention to the administrative support that each will require, they will probably fail

Some professionals have argued successful over the years that the work they do cannot be quantified and that to attempt to do so would result in a reduction in its quality. The author contends performance measurement is a fact of life and those that will not practice it will not survive in this competitive world.

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once more. This support must come primarily from the white collar work force.

The Professional

By its nature, it includes a wide variety of members, some professional, some not—which perhaps helps to explain why they are so often excluded from productivity improvement efforts. Among the white collar workers are directors and chief executives at the top; high level and middle managers immediately below them; the professionals with knowledge and expertise in a hundred different fields; the technicians who are asked to apply what the professionals have laid out for them; the functionaries who abound in all organizations; and, finally, the clerks and menials at lower levels.

These make up the great bulk of the bureaucratic systems which govern and administer both public and private enterprises. In the United States, they represent over 65% of the total work force and similar proportions hold in many other countries as well. That a high level of white collar performance is essential to a nation's welfare must certainly be accepted by all who have looked into the matter.

Not only do white collar workers represent an organizational elite but those who are managers and professionals are a primary source of ideas and influence without which their institutions cannot properly function.

They bring a greater knowledge to the organization than do others, and often a greater personal commitment as well. Many of them have been with their organizations for years, with a corresponding knowledge of institutional history which goes with it. (This is true of much of the clerical force as well.) And yet, for a variety of reasons, many of those in these positions are falling far short of performance levels they are capable of achieving or the organization needs.

Undoubtedly, much of this is due more to the nature of the systems in which they work than to either a lack of zeal or initiative on their part. The histories of organization reveal patterns that no longer serve objectives they once did. Work systems without strenuous efforts to the contrary easily become

bureaucratized. Rules and regulations that once performed a useful purpose remain as vestigial reminders of another time. Promotions take place because of length of service, or by class, rather than because of performance or ability. There are few rewards for individual risk-taking, and much punishment if they do not work out. Employee development lags and dysfunctionality is everywhere in evidence. Professor Galbraith says of what is happening: "The corporate organization—the technostucture—has a tendency, as does any large organization, public or private, to clone itself." Unless some thing drastic is done, "Corporate senility" is the result¹.

The white collars themselves, of course, are not without responsibility. Professional and technical employees have, for one reason or another, become more satisfied with the status they have acquired than with the achievements of their organization. A position in government or major industry is often seen as the ultimate goal of one's career, not the beginning. Those at lesser levels find that the power to direct subordinates and clients, or to prevent them from receiving some benefit to which they may be entitled, is sometimes a satisfaction in itself.

Resistance

There is evidence also that the white collar work force, even more than their associates at lesser levels, resists efforts to improve productivity *per se*. Some professionals have argued successfully over the years that the work they do cannot be quantified and that to attempt to do so would result in a reduction in its quality. Many professions feel that they should be permitted to determine their own standards and that they should not be judged by others.

This has helped to create what Herbert Simon, the winner of a Nobel prize for economics, calls "satisficing" behaviour. One does what is acceptable, not necessarily what the situation calls for.² This is an old

1. John Kenneth Galbraith, "Corporate Senility", *The Washington Post*, Op. Ed. page, Feb. 11, 1981, (Dr. Galbraith is a former U.S. Ambassador to India).
2. Herbert Simon, *Administrative Behavior: A Study of Decision Making Processes in Administrative Organizations* (New York; Macmillan, 2nd ed., 1960), See pp. XXIV, 38-41, 80-1, and 240-4.

complaint and leads to the development of a general managerial malaise³ which, like all communicable diseases, rapidly spreads throughout the organization. It is tolerated because most professions, including those charged with the organization's management, find it convenient to close ranks against those who question what the system is doing. As Hannah Arendt has said, bureaucracy is "rule by Nobody" because "there is no one left who could ever be asked to answer what is being done".⁴

Yet despite the rationale which the system provides itself, those in white collar positions at whatever levels must recognize that they are being judged as their organizations are being judged, *on performance*. A private sector company that is unprofitable cannot long exist. A government agency that does not achieve goals within its budget will surely face parliamentary scrutiny—and will have to take time from other things to defend itself. All institutions, in fact, must be prepared to meet their commitments to their supporters. Performance measurement is a fact of life and those that will not practice it will not survive.

Defining Productivity

Wanting improve productivity is, of course, not the same as getting it. A first step in this direction is understanding what it is and what it involves.

Broadly defined, productivity improvement concerns itself with the goals and objectives of the organization as well as with the manner in which they are to be achieved. It involves both "doing the right things" (which is *effectiveness*) but also "doing them right" (*efficiency*).

Organizations are created and maintained in order to achieve goals, purpose and objectives. Over time, however, their specifics change. Such changes occur because condition change and new and sometimes substantially different approaches must be undertaken. Often also, individual and organizational patterns

depart from the original as new problems develop. Continuing attention must accordingly be given to organizational effectiveness. Is the agency or the company doing what it should be doing? Is it meeting the clients needs? If not, what should be done? This is an area where professional workers can make some of their most substantial contributions to productivity improvement.

Efficiency, on the other hand, is a comparative term. We are more (or less) efficient in doing what we are doing than we were before; or we are more (or less) efficient than someone else doing the same things. It is a ratio between input and output. A focus on efficiency alone, however, overlooks the importance to objective achieving of what we ought to be doing. We may be greatly efficient, for example, in producing goods or services no one any longer needs or wants. That does not mean we are being more productive.

Productivity is, accordingly, a combination of effectiveness *and* efficiency but with two additional factors. One of these is client acceptance. The other is member satisfaction. Both are important to the organization and must be addressed.

These are the outputs, the performance units. The input is the cost of what we do. This can be measured in terms of monetary units (dollars, rupees, pounds, etc.) or in terms of the time invested by employees. Sometimes one is preferable, sometimes the other.

The equation this produces is a complex one but there is no easy way around it:

$$\text{Productivity} = \frac{\text{Effectiveness} + \text{Efficiency} + \text{Client Acceptance and Member Satisfaction (Output)}}{\text{Cost (input)}}$$

Such a formula cannot easily be expressed by a single figure although macro-economics may produce one. The manager will, therefore, find it simpler to use a number of numbers. More will be said about this later on.

The Agenda For Action

For a productivity improvement program to succeed among white collar workers, it must be carefully

3. For more on this subject, see, David S. Brown, "The Manager's Responsibilities for Productivity Improvement" *Armed Forces Comptroller*, Summer 1983, pp., 5-15.

4. Hannah Arendt, *On Violence* (New York: Harcourt, Brace and World, 1969) pp. 38-9.

prepared. This requires a logical and systematic approach. Preliminary to undertaking it, the following five points should be considered.

1. *Manager Commitment.* Basic to any really successful approach to productivity improvement is a commitment by those with major program responsibilities to it. A truly committed manager will first of all be well prepared for the assignment. This means not only having a familiarity with the techniques/approaches to productivity improvement but an understanding of the problems which are associated with it.—and a willingness to persevere against them.

One undertaking such an assignment, particularly where there is likely to be substantial resistance to it, should be thoroughly conversant with what others have done in similar circumstances, how they have done it, what has caused them to succeed or fail, and what might better have been done. This is not an assignment for those of faint heart or small courage.

One must, of course, be thoroughly conversant with the activity one seeks to modify and, if possible, with the views of those who operate it.

2. *Support from the Top.* A program for increased productivity will not ordinarily succeed without the knowledge and active support of those in leadership positions in the organization. Some may feel they can mount such an effort without this and a few have actually succeeded—but most such programs call for support and resources which those higher up the organization ladder have a large say in providing. A manager committed to improving the performance of his own people should not hesitate to take the initiative in involving higher ups if they are not already interested.

How this is to be managed, assuming that those in leadership position have not urged it first, will depend upon already existing relationships between the manager undertaking the program and those in higher level positions. Whether it is to be announced as such or not is a matter which individual circumstances should determine preliminary to its being undertaken.

Gaining top level support is often not as it sounds and frequently has personal advantages to the initiator

as well. The point is that the backing of secretaries or ministers is vital at those times when the specifics of productivity programs are questioned by subordinates, clients, the press, or all three, as they sometimes are. They provide credibility and resources, and also moral encouragement as well.

3. *Measuring Performance.* It is essential that standards of measurement be developed for all productivity improvement efforts. (Without them, how is one to know whether there has been achievement or not?) It is not enough to depend on eyeball assessments, no matter how experienced the assessor. Likewise seat-of-the pants judgements—to use another anatomical term—can also be disputed. So can clientele endorsements, no matter how welcome, unless one is clear how representative they are. This is why the wise manager will need to find quantifiable ways by which objectives can be set and achievement determined.

Quality of performance can, of course, be measured along with quantity. The latter may be more easily done and is the more traditional but there are many examples at hand where quality is expressed in quantifiable terms. We judge art, dramatics, a variety of athletic events (such as gymnastics and figure skating) university work and many other kinds of performance by the ratings which experts give them. There are hundreds of examples in both government and business where the quality of a good or a service is expressed in terms of numbers or scales. For such measurements to be acceptable, however, there should be agreement between manager and members concerning them and their applicability.

4. *Involving the participants.* The most delicate part of a productivity program—but also the most rewarding—is the involvement of one's associates and subordinates in it and the gaining of their support for it. Most people, whether white collar or otherwise, are likely to suspect new programs foisted upon them from above, particularly those which are critical, whether directly or indirectly, of present performance. And, as every manager knows, they are capable of thwarting those which for any reason they distrust.

This, however, should not be taken to mean that they will necessarily be opposed to the idea of performance improvement, particularly where the system

itself is being addressed. Many will be well aware of its shortcomings, some will have already suggested ways of approaching it which have fallen on deaf ears, and others will see improvement efforts as an opportunity for their own upward progress. One should never forget that the members of the organization have its interests at heart, and that they too want to be associated with programs that are successful ones. They also have strong feelings about self-improvement as well as national improvement.

There are good reasons, of course, why they must be involved—and good reasons also why some of them may not be too happy with a number of the things which are likely to be proposed. They may accept, for example, a need when it is properly presented, but may take strong exception to the specifics of what is being asked of them. Or they may have other—sometimes better—ideas which over time no one has listened to.

There are numerous instances in which one's associates and subordinates have been successfully involved, and many instances where they have given strong support as a result. The wise manager is well advised to proceed cautiously in this area, with proper consideration not only to the feelings of those who are likely to be most intimately concerned but with an awareness of their power to block, if they care to do so, much of what the systems analysts have devised.

5. *Standards and Goals.* Work norms exist in almost all organizations, white collar as well as blue collar, but much of the time they are the result of habit or "standard practice"—Simon's "satisficing" behavior. The undertaking of a productivity improvement program requires that new ones be set—consciously set—and work directed to their fulfilment. Their achievement becomes a point of satisfaction and self-fulfilment. When shortfalls occur, it is merely a time for re-examination and analysis.

Organizations, like individuals, work best when they understand their goals and objectives, how these are to be achieved, and the part each is to play in the process. This is why the time that managers spend in refining and articulating these goals and making clear to others what they are is so important. A part of the process

they should not forget is that of listening to what others have to say about them.

Gaining Support

Knowing What is Going On. There is an old rule that an attorney should never ask a witness in court a question to which he does not already know the answer. Likewise, those who undertake productivity improvement programs should be well aware before they undertake them of what needs to be done and, in general, how it can be brought about. This calls for an understanding in as much detail as necessary of what is currently taking place within the organizational unit for which he or she has responsibility. It calls also for an awareness of what others in similar fields are already doing.

Knowing intimately both the systems and the equipments that are being used in one's office or shop is an essential background requirement. This is not to suggest that the manager will have answers to the problems found there but there must be a familiarity with the on-going processes if credibility and motives are to be accepted.

All of this is preliminary to undertaking the productivity improvement program itself.

Distinguishing White Collar Differences. While white collar workers can be distinguished from those who perform industrial tasks, farm labor, and, in fact, manual labor of any kind, there are, as previously noted, distinctions between them which managers will be well-advised to observe. Some, as previously noted, hold important managerial positions themselves. They belong to administrative cadres with long traditions and high status. Others are professionals on whose contributions a modern society must depend. Still others fill service, technical, and clerical roles.

The manner in which individuals with such varied backgrounds can be asked to work together on specific assignments of, say, a team-building nature will depend upon the manager's judgement of the need for it or their willingness to do so. (They are, of course, a part of the same agency or company and do work together within it.) There are many examples in Britain, the

United States and Japan where the team approach has been highly successful. But there are examples also where more selective approaches have been undertaken. This is a matter that is best left to individual decision. It should be noted, however, that some of the most useful results are obtained when there is a suitable mix of participants.

By definition, of course, professionals at whatever level—and that includes managers and administrators whether they are traditionally thought of as professionals or not—have a personal commitment to productivity improvement. The successful passing of an examination, whether in one of the administrative services, in law, in medicine, or any other professional area, is merely the *pro form* requirement of entrance to a sphere of work which demands more than basic job descriptions prescribe. Professionals carry our organizational tasks. They fulfil responsibilities which often go beyond their professional roles. They are part of an intricate system in which they influence others and are influenced by them. By becoming managers, they obligate themselves, as do other managers, to act morally and productively. This is the genesis of professionalism.

It is also the *ethos* which professions demand. Professionalism implies quality of performance. It underlines professional standards. It demands a commitment to excellence.

Providing Information. White collar employees must be informed not only what being done but also of the rationale for it. This should be on a continuing basis for all white collar workers. While there is sometimes information that is a sufficiently confidential in nature that it cannot at once be shared, it is better to err on the side of too much rather than too little.

People work best when they know what is wanted of them, why, and what the alternatives are. They also support what they help to create. All of this is of particular importance to professionals (who have so much to give) but it should have bearing on one's relationships with all white collar workers as well.

Working with others is not a one-way street and individual consultation and meetings with various sized groups are to be encouraged. If business as usual is

no longer the order of the day, those directly involved should be aware of it. Information-sharing meetings provide a precedent for suggestion-making ones. An investment in such a process will pay long-range dividends even if not always immediate ones.

The "No Blame" Approach. Habits become practices and practices, systems. Systems that have been permitted to go on unexamined for a long time are usually both effective and inefficient. This is one of the major criticisms of bureaucracy, private as well as public. Marc Holzer, one of the leading proponents of public productivity in the United States, says flatly that "dramatic increases in productivity...are achievable only if we recognize an enemy that contains both public and private productivity: bureaucracy." He continues: "Supposedly an efficient tool for organizations in both sectors, it is increasingly apparent that the unintended consequences of the bureaucratic structure have a very limiting effect on productivity."⁵

The blame for permitting this to happen is better placed on the existence of traditional systems, many inherited from other times, than on those who are currently members of the system. Certainly, to blame the latter if one wishes their support in helping to rectify what time and inattention have done, makes little sense.

One of the major roles of the modern manager is that of negotiator. Performance improvement will put this to the test. He/she must negotiate with all those involved—higher-ups, outsiders, associates, and subordinates—the acceptance of new work norms. The ability to persuade others—and persuasion is a major element in such an assignment—that new approaches must be found is the mark of the modern manager.⁶

The Search for Improved Performance. Those most directly concerned must inevitably be involved in the productivity improvement effort. After all, they are most knowledgeable as to what can be done and certainly among the most committed.

5. Marc Holzer, "In Defense of the Public Sector" in *Public Productivity Review*, March/June, 1982, p. 104.

6. These new managerial roles are discussed in some detail in David S. Brown, *Managing the Large Organization: Issues, Ideas, Precepts, Innovations* (Mt. Airy, Md.: Lomand Publications, 1982) Chap. XX, pp. 217-226.

They must see this not as a means of getting them to work harder but of working smarter. Nor should they be permitted to believe that they will be working themselves out of a job. If management is to get their cooperation, then it has certain commitments to make to them. If a smaller staff is likely to result, it is to the organization's interest to make it clear that this will be accomplished in an incremental way—by not filling vacancies, preferably. (Perhaps also, a smaller staff will even make possible higher pay for those who remain.) Opportunities for training and individual development should certainly be provided for employees who remain but whose duties have changed. And, of course, transfers to other units should be made for those who become redundant. The good intentions of organization must be made clear to all.

Obtaining the commitment of those in the work force to productivity improvement can be expected to have its problems. There will be those who, given their previous experience with the organization, will be reluctant to believe new promises. There will be unions and employee associations which need to be convinced that what is being asked of them is fair and reasonable. Getting employee support, in fact, is often an exercise in trust and most managements will need to demonstrate clearly their trustworthiness.

There are, however, few alternatives to such an approach. The key to the problem is the rationale for it. If the case can be made that it is in the interest of the nation, the organization, and the individual that productivity be improved, there is a strong likelihood that it will occur.

Performance Measures, Standards, and Feedback. Employees, whether at high or modest levels, must understand the importance of the measurement of their performance and the setting of acceptable work standards. This is often one of the more difficult tasks the manager will face, yet it is one of the most important.

People who readily accept the need for greater productivity often object to its being measured, or at least to its being done in conventional ways. Professionals in particular object to certain kinds of standard setting although, it is interesting to note, that they have traditionally accepted other performance guidelines. The

manager who undertakes an improvement program should be familiar with the many ways, individual as well as organizational, by which measurement is had.

The other side of this coin is that measurement, once instituted and accepted, becomes important to the employee as well as the organization. It is a yardstick both can use. There should be regular (continuing) feedback of performance to both the individual and the group concerned so that adjustments as needed can be made.

Timing is important—and so is agreement upon the measures to be used. Figures should be available frequently enough so that one is able to relate them to what has been done. Otherwise, they lose their meaning.

The emphasis here upon measurement should not be interpreted to mean that everything that is done must be measured. Quite to the contrary. Peters and Waterman in a book that has had a profound impact on American management (*In Search of Excellence*) have emphasized the importance of "simultaneous loose-tight controls".⁷ What this means is that there should be selectivity in setting measures of achievement. Standards should be visible, meaningful, and achievable but not overwhelming.

For a number of reasons, a variety of standards may be set, an acknowledgement that changing circumstances will make it difficult or impossible for all of them to be met. Those, however, who fail to meet certain goals will often exceed others. Managers as well as members learn from such experience as new goals are undertaken.

Productivity improvement is not a one-shot undertaking. It is a continuing process. What is good enough for today will hardly meet the requirements of tomorrow. Thomas Jefferson said that "eternal vigilance is the price of democracy." A continuing concern for what goes on in the organization is the price of competence.

7. Thomas J. Peters and Robert H. Waterman *In Search of Excellence* (New York: Harper and Row, 1982). See in particular Chap. 12.

Recognition and Reward. An important contribution to productivity improvement deserves *both* recognition and reward. Of the two, recognition is always easier to provide and often the more important motivator.

There is always recognition before one's peers. Citations, letters, and certificates of appreciation are welcome, as are medals and similar awards. Special assignments can be made: membership in special purpose committees, new responsibilities, positions of honor, training assignments, support for activities in which the individual has an interest, and the like.⁸ A recent article in the prestigious *Wall Street Journal* told all in a headline: "Why Not Try Saying Thank You". To many, it will come as an interesting and novel idea.

Private companies have an advantage over most government agencies in that they can, if they wish, make cash or salary awards for exceptional performance, but an increasing number of governments now are able to do the same. Certainly, improved productivity can—and should—be taken into account in promotions. If the saving result in major advantage to the organization, it is only fair that those most responsible share in some way in them.

There can be no doubt of the importance of "positive reinforcement" as a means of inducing behavioral change. It can, as the above suggests, be used in a variety of ways. The manager should remember that all of those who are part of the organization joined it with the idea of contributing to it. They will not usually respond to efforts which point to better ways by which this can be done.

There is an added factor which often works to the advantage of the productivity-minded. Many tasks which individuals are already performing—high level as well as mundane ones—are demanding, unpleasant, superfluous, and unwarranted. Some of these can certainly be eliminated. With the assistance of his associates, many a manager has seized upon these as

the first area of attack. It is an idea well worth thinking about.

Ways to Improved Productivity

If one will now return to the productivity formula previously indicated, it will be immediately apparent how productivity can be improved. One, in fact, has only to improve upon *any one* of those factors above the line, while keeping others constant, to improve upon present performance. Or, assuming those above the line remain the same, one has only to reduce the inputs required.

Some approaches, of course, offer greater opportunities at less cost than others. One of those is in the area of effectiveness. Is what is currently being done what is needed or wanted? Are objectives being met by current methods? Has technology revealed new and better products, approaches, services, and methods than what we now have? Can others do what we are doing? Do our forecasts correctly report what our needs are? Have we done the right kind of planning? Are we prepared to meet contingencies?

New equipments are often available which will improve performance. The Japanese have shown the importance of robotics, and other nations—even those long committed to manpower-intensive undertakings—must meet their change.

It is important to reduce waste and redundancy wherever they occur. Some of our systems have for years been obsolete but for many reasons, chief among which is that they have not really been looked at, they have been permitted to continue. The solution lies in exploring what others are doing, or at the very least in examining what is occurring under one's own nose.

By increasing organizational size, we increase opportunities for waste and inefficiency. The common approach to re-organization is to add new units, new levels, and ultimately, new people. Parkinson's Law reminds us of some of the things we do. Have we thought of reducing levels? Have we seriously tried to hold size in check? Have we really explored ways of making organizations less complex? Increasing organizational size, we increase opportunities for waste and

8. For an assessment of non-economic incentives, see Gerald T. Gabris and William A. Giles, "Improving Productivity and Performance Appraisal through the Use of Non-Economic Incentives", *Public Productivity Review*, June 1983, pp. 173-189.

inefficiency. Can size be held in check? How can our organizations be made less complex?

Ways need to be found to improve individual performance. Increasing the work week, whether through overtime or in other ways, is not the answer. New blood needs to be added regularly even to the best-performing systems. People need more and better training. Poor morale usually burdens performance. Ways can be found, as the Japanese have found them, to reduce errors and defects. Maintenance can certainly be improved. So can safety. We can reduce absenteeism, one of the real dysfunctions of modern organisations, if we really try.

Much needs to be invested in most organizations in discovering new ways of doing things: new products, new methods, new clients, new systems of marketing, new ways of involving the client or customer, better use of space and facilities, and the like. As Drucker has pointed out: "There is little doubt in my mind that entrepreneurial innovation will be as important to management in the future as the managerial function itself is currently. Indeed, it may be more important in the years to come."⁹

The difficulty is not with devising ways and means of improving productivity. It is with getting them accepted and making them operational.

Among all of those in the nation's workforce, none is more important to both public and private sectors than the white collar workers; male and female. Their productivity can—and *must*—be improved. This is a message for all nations. Those failing to understand this will be failing their commitment to their people.

9. Peter Drucker, "Management's New Role", *Harvard Business Review*, Nov-Dec 1969.

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their own benefit, Particularly the Japanese have kept productivity increase a national goal—and can now cash in on reverse flows of Europeans and North Americans spending a whole week or even two in Japan to “learn the lessons of the continuing miracle”.

The march which Japan and the NICs have stolen on Europe has been the easier as European governments have continued during the '70s to use organisations, and particularly enterprises, as their “privileged levers of social policy”, thereby burdening them with constantly growing taxes. This has meant that levels of profit have declined and, with them, levels of investments. What investments there have been have concentrated on saving unskilled labour, a possibility facilitated by new technological developments which have increasingly impacted also on women-power in the tertiary sector.

It is in fact currently in service activities that a significant productivity push is becoming apparent, whether or not these activities are located within manufacturing companies. One reason for this is found in the estimates of investment figures, prone though they are to the illogicalities of accounting—a telephone has no value on a company's books: \$ 3000 for every office worker compared with \$ 45,000 for every factory worker. With the current numerical equality between corporate direct and indirect workers, coupled with the presumed advent of the office technological revolution, companies are paying increasing attention to white-blouse productivity.

Overall, however, there has been a slowdown worldwide in productivity growth, irrespective of whether it is measured by Gross Domestic Product per employed person or manufacturing output per hour or more elaborate multifactor methods.

Groups' responses

This “productivity crisis” has been recognised as a major issue by different groups.

Some companies have perceived the word's advertising potential, and a number have created their own productivity centres: in the USA, the Wastinghouse Productivity Center employs 350 people, being a part

of the company's effort for raising its productivity increase annually from 3.8% to 6.1% by 1985; in Europe, the IBM Productivity Centre employs 5 professionals, but has national productivity officers and work through ad hoc groups from its European headquarters in Paris. Elsewhere in Europe it has particularly been in large companies in “advanced traditional” industries which have been leading the productivity thrust. For the “geriatrics”, particularly steel and shipbuilding, have tended to place their future in government bailouts. Some chemical and engineering companies are seeking to combine “social innovation” and productivity: making more use of the intelligence of the labour force appears to be making considerable economic sense to Bekaert and Monsanto in Belgium, for instance.

Noting that the rate of growth of their corporate productivity is apparently closely correlated with that of the countries in which they are located, productivity-conscious companies are becoming involved in national initiatives. Inspiration has come from Scandinavia. Norway, for instance, ran a one year national campaign in 1982 with the involvement of all parties, political as well as of the labour market. Joint (employer-union, white as well as blue collared) activities in the Finnish Engineering Industry are referred to later in this article. And in November 1981, President Reagan created a National Productivity Advisory Council. A bi-partite body of “distinguished citizens”, the Committee shall “conduct a continuing review and assessment of national productivity ... and advise the President on the Federal Government's role in achieving higher levels of national productivity and economic growth ... and on the potential impact on national productivity of Federal laws and regulations.”

Less usual, but more encouraging, are some trade union attitudes: at the Trade Union Study Days organised by the French successor to the national productivity centre, its Working Life Agency (ANACT), the Spanish socialist (UGT) trade unionist emphasised and re-emphasised the need for his union to take the lead in enhancing national productivity in the absence of any significant national employer or management effort, past or present. UGT signed a frame-work agreement (AMT-80) with the Employers' Association

defining productivity as "effective work organisation, adequate technology and proper working conditions".

Not that trade unions elsewhere in Europe are opposed to participating in efforts to raise productivity, seen as the least uncertain way of maintaining employment at reasonable levels into the future. Yet, attitudes diverge. For instance, there is an on-going debate inside the German trade unions about the relationship between actions aimed at "work humanisation" and at "rationalisation". Similarly, some of the most productive companies—GE and Plessey to take two examples—are seriously trying to define their responsibility and possible stance in unloading their "released labour" on society. Productivity increases can often lead to redundancy, particularly where labour is virtually immobile because of the workings of the system, for instance, housing policy; but the unemployment consequences are much harder if productivity is forgotten, as says UGT, Spain's 1.6 million unemployed attest.

Measurement

Revitalised concept or buzz-word? Certainly "productivity" has undergone a broadening, perhaps even a humanisation of its meaning in the past few years.

Basically, it has always expressed a relationship between inputs and outputs. For understandable reasons, particularly of easy measurability, inputs have tended to be expressed in terms of labour. Indeed, productivity growth is usually understood as increased output per man hour. Hence in the eyes of organised labour in some countries, to increase productivity, can only be achieved by "working harder" which in turn needs to be compensated for by increased wages. A causality link is made and where the "fruits" are not "equitably" distributed, then labour trouble is brewing.

Productivity, however, does not equal labour productivity. The Finnish Engineering Industry report stresses "total productivity (which) includes the productivity of the work performed by all persons in the corporate hierarchy and the productivity of all the various capital and other inputs. Thus

$$\text{Productivity} = \frac{\text{MVP}}{\text{L} + \text{M} + \text{C} + \text{X}}$$

where MVP=total output i.e. the market value of production, L=input, M=material input, C=capital input, and X=miscellaneous." Although the measurement of total productivity is extremely complicated, several efforts are currently being undertaken to try to overcome methodological problems: for instance, at the US Bureau of Labor Statistics, the Mecca of productivity measurement, one of the projects to escape the Reagan administration's hatchet is the development of total factor indicators. The problems faced are such as how to estimate quality of labour other than through basic educational inputs? So far, recurrent education is, methodologically, not considered to improve the quality of labour, as strange an assumption as that government productivity increase is nil. Or again: How can capital estimates properly be made, particularly in public administration?

This attempt at total factor productivity measurement is not the sole—in France, the Centre d'Etude des Revenus et des Coûts has developed, starting with nationalised enterprises, an analytical approach to ascertaining the sources of productivity increase—which can often be located upstream to the enterprise—and how they should, as objectively as possible, be remunerated.

How to improve productivity

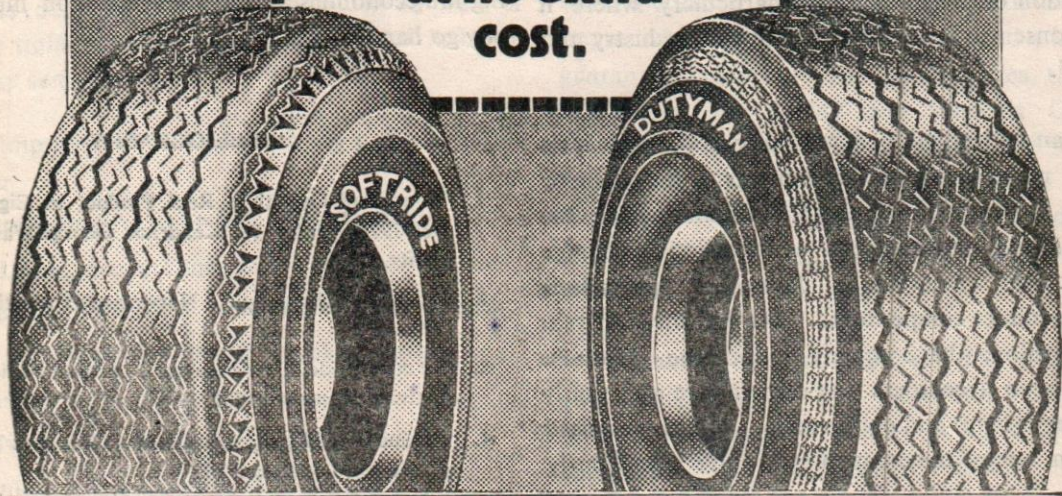
Measuring productivity can be a first step to improving it. The traditional approach is that of inter-firm comparisons. The essence of measurement is not exactitude but orders of magnitude and facility. All sorts of methodological shortcomings can be found with IFCs, but they are successful if they get companies to seriously examine where or how they can change. The Finnish approach stresses measurement, no matter how roughly, at all possible levels and units. Some measurement can be quite refined: that of IBM draws on the company's computerised "common staffing system" to ascertain possible opportunities within functions and countries and, perhaps most important of all, possibilities from taking global and iconoclastic stances.

Involvement of people to the greatest extent possible in the performance of their own work is generally emphasised, getting people to work smarter rather than harder. This is an obvious feature of action learning.

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Identifying Productivity Reserves In Industry

A. Z. SZENDROVITS

An Overview of Productivity

The importance of economic growth has become more evident than ever in the last decade. Improving the standard of living of the population is a central goal of every nation's economy and it is well argued by Frank¹ that a major source of this is labour productivity. Improving labour productivity affects positively real per capita income which ultimately translates to real economic growth. The recent slow-down of economic growth both puzzled and alerted economists, business executives, politicians and the population at large throughout the world. The shadow of the economic depression of the 1930's shifted from memory to reality. The problems and the search for remedies are discussed and analysed by Denison² regarding the U.S.A. and by Zohar³ with respect to Canada. Their studies are representative samples of the rich international literature on the topic.

The meaning of productivity is often misconceived and improperly conceptualized. It is frequently mistaken for the output from the production process; the result of which is either a tangible product or some service. In general economic terms, production converts some form of input to a different form of output. Production output could be increased by using proportionally more of the necessary input factors. However, such an increase does not represent productivity improvement. Productivity is a relative indicator, a ratio which compares a certain measure of output to a required input. Its primary purpose is to measure

Although time is an irretrievable resource, planning and controlling other resources takes precedence over managing time both in organisations and in the life of individuals. Improving productivity, a primary prerequisite for economic development, is a central objective for every level of industrial management. In meeting this challenge, the main task is to establish productivity measures which provide an appropriate basis for comparing performance and for identifying the potential for improvements. It is easier to determine the contribution to productivity of capital investments for new technologies than the contribution of the industrial labour force. This paper focuses on practical issues in establishing productivity measures and methods of analysing productivity reserves in industrial plants and is based on a study funded by National Sciences and Engineering Research Council of Canada.

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factured in a separate shop, the number of products per capita can be expressed for each shop. However, to compare the productivity of the shops or to measure the productivity of the plant, one must establish some equivalence among the products. Equivalence based on price or cost would be biased because one product may have more purchased components than the other. Also, a comparison based on the actual average work time for each product would be biased because one shop may use less time for comparable work than another. The problem is even more complicated when each shop contributes to each of the products. The standard time content of each product is a common denominator in establishing equivalence between the products. For this reason and, as will be seen later, for other reasons, time standards are an invaluable help in measuring labour productivity as presented in the following general form :

$$\text{Productivity} = \frac{\text{Standard Time}}{\text{Actual Time}}$$

Thus, productivity is the ratio of the standard time allotted to the actual time used for the completion of one work unit. The smaller the work unit, the more accurate the standards that can be expected. Usually, time standards are calculated for operations which are seen as the smallest independent parts of the production process. The overwhelming importance of time standards becomes evident when one wants to analyze the utilization of time in work situations.

Need for Time Management

Time is a unique resource. While it appears to be free, time is not retrievable. Thus, it is paradoxical that the planning and controlling of other resources takes precedence over managing time, both in organizations and in the life of individuals. A primary prerequisite for time management is to define the various components of the working hours of individuals or groups who are expected to perform certain tasks in an organization. Shift time, usually consisting of eight hours, represents a work day. The components of shift time in manufacturing industries as defined by Szendrovits¹¹ are illustrated in Figure 1.

It is recognized that absenteeism and sick-leave have negative effects on productivity. However, the degree

of their influence can be determined easily, provided that a productivity measure is established for the shift time. Thus, it is evident that we should focus our attention on shift time. Nevertheless, management must bear in mind that job satisfaction plays a fundamental role in motivating people to reduce absenteeism and even sick-leave.

Interruptions of work for predetermined time periods, usually regulated by collective agreement (e.g. lunch time, coffee break, pause of assembly lines), are necessary reductions in the shift time. However, it is expected that the remainder of the shift time will be utilized for work. On the other hand experience shows that certain portions of the work time are often wasted, due to the worker (e.g. lateness for work, unwarranted breaks) and due to technical causes (e.g. break down of machines, failure in energy supply) or organizational causes (e.g. material shortage) which are under the control of the company. Reducing wasted time is an "open reserve" for increasing utilized work time and thereby improving productivity.

Although setting standards is beyond the scope and purpose of our discussion, it is vitally important to understand the structure of the utilized work time which is embodied in time standards. First, we must distinguish between the unit standard time and the preparation time (e.g. setting-up a machine; studying a blueprint or work instruction) which occurs only once for several work units. Secondly, we must realize that the unit standard time includes the so-called allowances as well as the basic time. The basic time consists of main elements which influence directly the change of form or characteristics of the work unit (e.g. machining), and supplementary elements which contribute indirectly to this change (e.g. measuring). While the basic time is related to and needed for each work unit, allowances include those time which are work-related activities scattered throughout the whole shift and which are not used exclusively for a particular work unit.

Allowances for rest or fatigue, for personal delays and for servicing work during the shift are incorporated in the unit standard time a percentage of the basic time. Consequently, the utilization of time

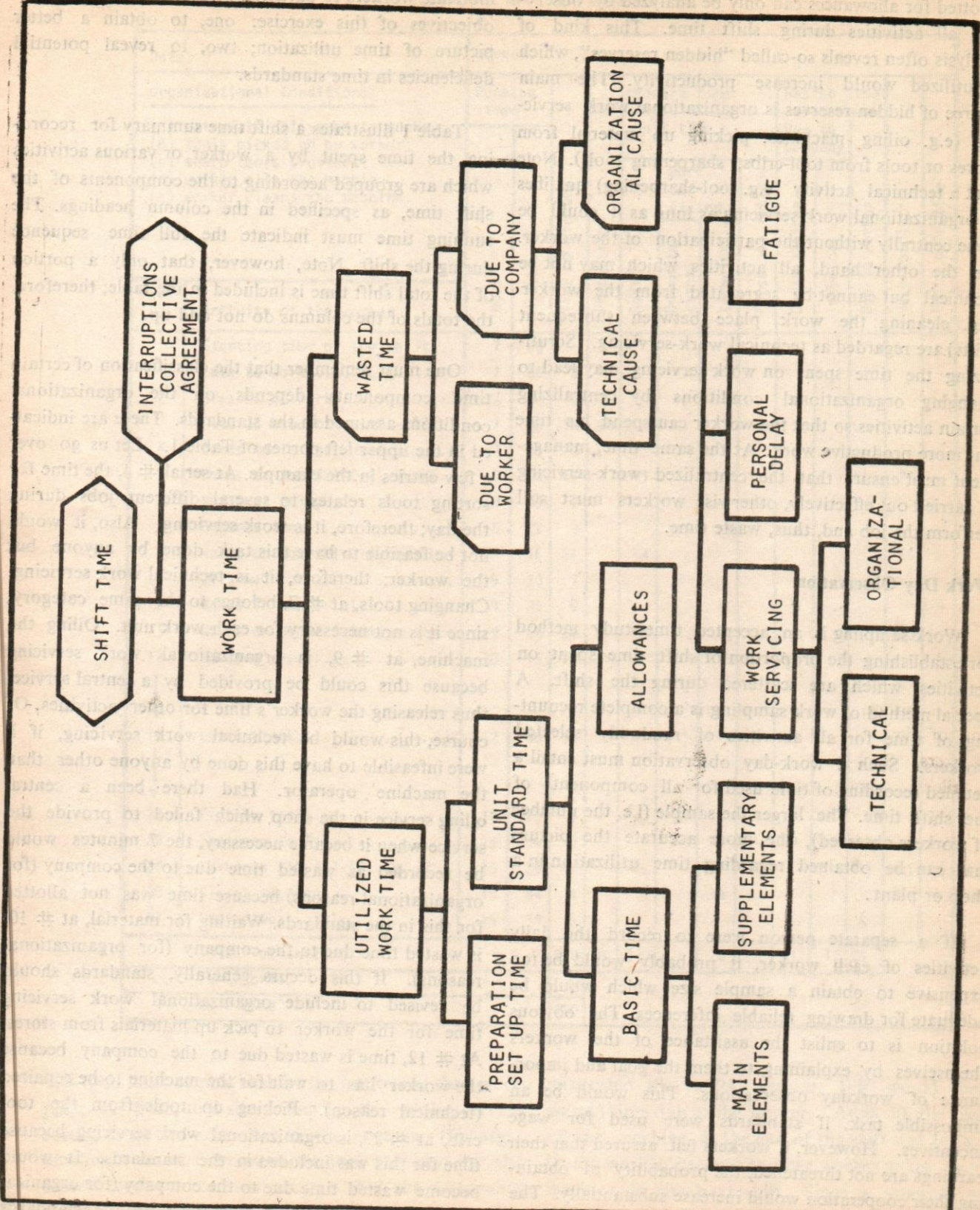


Fig. 1: Components of the Shift Time

gating the cleaning activity would be infeasible; therefore, it is technical work servicing. Had the company considered the possibility of assigning a cleaning staff to do this job, if there was sufficient time between shifts, this activity could be labelled organizational instead of technical work servicing.

Personal delay and fatigue are special categories. While the time allotted for these in the standards could be based on anthropometric data, personal delay and fatigue times are usually established by collective agreement as a percentage of the basic time. Although our example states the time used for personal delay and fatigue, it is difficult to distinguish between these and wasted time due to the worker. Therefore, all these times can be registered simply as wasted time due to the worker. When the data are analysed, the times for personal delay and fatigue could be accepted as stated in the standards and the rest could be counted as the net wasted time due to the worker.

The number of completed work units, designated by the job and operation number is also recorded in the shift time summary, along with the number of defective units. This may be done at a later stage, after quality control. From the relevant standards, the time allotted for the various components can be reconstructed for the number of units which were accepted by quality control. By comparing the standard and actual times, the degree of time utilization, as well as the validity and quality of the time standards, can be evaluated.

Identifying Productivity Reserves

The greater the number of workers and the more frequently they submit shifttime summaries, the more representative the sampling results that are obtained. A proper analysis of the data could lead to important and reliable generalizations concerning productivity and productivity reserves. Table 2 illustrates a typical shift time analysis focusing on utilization ratios of the shift time, productivity reserves and the attainable productivity level if the reserves were utilized.

Part A of the table is a comparison of standard and actual times by components. Actual times correspond to the total in the shift time summary in Table 1.

Standard times are derived from the number of units and the time standards for the relevant job and operation numbers. For the purposes of our analysis, it is assumed that the data in Table 1 are averages of several observations. Of course, in practice these data would be the pooled results from several shift time summaries. The productivity ratios for each component give valuable information as to which part of the job is done productively and at which component the workers did not meet the anticipated standards. The cause for any discrepancy between the standards and actual data may be that either the workers are not performing at the expected level, or that the standards are not realistic. The actual time distribution shows the percentage of the shift time spent on the various components.

In part B, the time utilization ratios indicate that 85% of the shift time was used for work, 10% was wasted due to the company and 5% due to workers.

The productivity ratios in part C show that the productivity of workers for the basic time is 135% which is quite high and reinforces the supposition that people perform best when they are working on a specific job. For the unit standard time the productivity is 125% which is lower because the workers do not meet the standards regarding allowances. A somewhat lower productivity of 123% occurs for utilized work time due to the excessive preparation time. It is noteworthy that the wasted time reduces considerably the productivity for the shift time to a mere 104%. Awareness of the various productivity ratios is very important for realistic production scheduling and capacity calculations. For instance, using the productivity ratio related to the utilized work time for work schedules will result in recurring delays in meeting production targets, unless wasted time is completely eliminated. Using the productivity ratio related to the basic time would result in even more dramatic discrepancies, unless the standards set for allowances and preparation time are also fully met.

Part D illustrates the calculation of productivity, reserves, in the form of ratios from which factors can be derived to establish the attainable productivity. There are three distinct productivity reserve ratios.

Table 2 : Shift Time Analysis

A. Comparison of Standard and Actual Time

| Times in minutes | Standard Time | Actual Time | Productivity | Actual Time Percentage |
|---------------------------------|---------------|-------------|--------------|------------------------|
| Basic time | 446 | 330 | 1.35 | 68.7 |
| Work servicing (technical) | 12 | 20 | 0.60 | 4.2 |
| Work servicing (organizational) | 10 | 13 | 0.76 | 2.7 |
| Personal delay and fatigue | 18 | 25 | 0.72 | 5.2 |
| Unit standard time | 486 | 388 | 1.25 | 80.8 |
| Preparation time | 14 | 20 | 0.70 | 4.2 |
| Utilized work time | 500 | 408 | 1.23 | 85.0 |
| Wasted time due to company | — | 48 | — | 10.0 |
| Wasted time due to worker | — | 24 | — | 5.0 |
| Work time | 500 | 480 | 1.04 | 100.0 |
| Lunch break | — | 30 | — | — |
| Shift time | 500 | 510 | — | — |

B. Time Utilisation Ratios

| | |
|----------------------------|-------|
| Utilized work time | 85.0% |
| Wasted time due to company | 10.0% |
| Wasted time due to worker | 5.0% |

C. Productivity Percentages

| | |
|------------------------|------|
| For basic time | 135% |
| For unit standard time | 125% |
| For utilized work time | 123% |
| For shift (work) time | 104% |

D. Productivity Reserves

$$\text{Open Reserve Ratio} = \frac{48+24}{408} = 0.176 \text{ or } 17.6\%$$

$$\text{Hidden Reserve Ratio} = \frac{(20-12)+(13-10)+(25-18)+(20-14)}{408-24} = \frac{24}{384} = 0.063 \text{ or } 6.3\%$$

$$\text{Total Reserve Ratio} = \frac{480}{408-24} = \frac{480}{384} = 1.25 \text{ or } 25.0\%$$

E. Attainable Shift Productivity for Work Time

$$\text{Maximum Attainable Productivity} = \frac{500}{408-24} = 1.30 \text{ or } 130\%$$

Separate Calculation for each reserve :

| Reserve | Shift Productivity | Reserve Factor | Attainable Productivity |
|----------------|--------------------|----------------|-------------------------|
| Open Reserve | 1.04 | 1.176 | 1.23 |
| Hidden Reserve | 1.04 | 1.063 | 1.10 |
| Total Reserve | 1.04 | 1.250 | 1.30 |

Open reserve is that which can be utilized by eliminating wasted time and is expressed as follows :

$$\text{Open reserve ratio} = \frac{\text{Actual wasted time}}{\text{Actual utilized work time}}$$

Hidden reserve is that which can be utilized if workers meet the standards for allowances, including the preparation time. The expression for this is :

Hidden reserve ratio

$$= \frac{\text{Allowance discrepancies (between actual and standards time)}}{\text{Actual utilized work time—Allowance discrepancies}}$$

The numerator includes the algebraic difference between the actual and standard time for each of the allowances and for the preparation time. This is an aggregate term, which means that if workers perform better than standard at a certain allowance, the difference occurs with a negative sign and thereby decreases the overall total. A negative ratio would indicate that there is no hidden reserve, the effect of which would be reflected in an increased productivity ratio for the utilized work time over that for the basic time.

Total reserve is that which includes both open and hidden reserve and is expressed as follows :

Total reserve ratio

$$= \frac{\text{Actual work time}}{\text{Actual utilized work time—Allowance discrepancies}}$$

Adding one to the reserve ratios shown in part D, corresponding reserve factors can be obtained :

| | Percentage | Ratio | Factor |
|----------------|------------|-------|--------|
| Open reserve | 17.6% | 0.176 | 1.176 |
| Hidden reserve | 6.3% | 0.063 | 1.063 |
| Total reserve | 25.0% | 0.250 | 1.250 |

Note that the total reserve factor can also be obtained from the product of the open and hidden reserve factors :

$$\text{Total reserve factor} = (1.176)(1.063) = 1.250$$

By multiplying the shift productivity ratio, 1.04, with

this reserve factor, the attainable productivity can be determined as shown in part E. The effect of fully utilizing total reserves can be expressed directly as follows :

Maximum attainable productivity

$$= \frac{\text{Standard time accomplished during work time}}{\text{Actual utilized work time—Allowance discrepancies}}$$

The meaning of the maximum attainable productivity, which is 130% in the example, is that the productivity during the basic time was maintained as it occurred, wasted time was fully eliminated and the allowances (including the preparation time) were used exactly at the level that they were assumed to be by the standards.

A word for caution is in order regarding the attainable productivity ratios. They express maximum possibilities. Most likely only a portion of the open and hidden reserves can be utilized. For instance, the standard for preparation time is not met in the example. It may not be prudent to insist that workers use less time preparing for the job properly, because this could backfire by causing more defective units. Each component of the reserves must be scrutinized separately. After a realistic reassessment of the reserves, the attainable productivity must be recalculated accordingly. Nevertheless, the maximum attainable productivity ratio can be a very useful tool for production managers in overcoming the pressure to accept unrealistic scheduling requests.

Conclusion

The purpose of this paper is to revive the formulation and application of work standards for their legitimate purpose, which is to improve labour productivity without alienating and possibly even motivating workers. Although many important aspects of productivity (e.g. satisfaction on the job, quality of life, management styles) were not discussed, it is hoped that this paper gives valuable insight into the analysis of activities during the time when production is expected to take place. No other method of time study gives a more complete picture of time utilization than the work day observation described. It offers an opportunity to workers for self-evaluation, for a critical view of the

quality of production standards, and for active participation in management. Work day observations can be used as a motivational device. Admittedly, some missionary work is needed for enlisting the majority of the work force to cooperate with management. The secret to success lies with the workers' confidence which can be gained if management is able to demonstrate that the results of this exercise are used just as much for the benefit of the work force as for the organization.

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tant errors; constant reduction of output; poor performance; excessive machine downtime; high labour turnover; poor attendance record at work, i.e. absenteeism, reporting for work late or leaving the office early; excessive overtime; drug addiction, etc.

Worker boredom is a global problem today. This generation of young people is less tolerant of work that is fractionated, boring and programmed in pace and method, than their parents were. Therefore, productivity is affected.

In the United States of America, there is a move towards a four-day work week, because four days on a dull job sounds more attractive than 5 days on a dull job. The rationale for this move is that it hopes to reduce absenteeism, while at the same time raises productivity.

Does Job Satisfaction Lead to Productivity Improvement?

With about 14 years experience on problems affecting productivity of light, medium and heavy industries in Malaysia, one can say that the satisfaction and productivity relationship seems to be modest. Occasionally, high satisfaction and low productivity seem to go together. Hence, innovative ideas are needed to improve job satisfaction and to maximise productivity.

How to Improve Job Satisfaction and Maximise Productivity?

There is no magic formula for the situation, but based on the facts of my study, humanisation of work and carefully structured education seem to hold the the solution to productivity problems. Before I begin to define what I mean by humanisation of work, it is fitting at this juncture to ask ourselves why do we need to work. The question could easily be answered in three sentences i.e. we have to work because we have : to meet our basic needs; to satisfy the need for meaningful activity; and for the production of goods and services as productivity gains resulting from work are credited with reduced costs for goods and services to customers, and concurrently, increasing rewards to people producing the goods and services.

Humanisation of Work

The term humanisation of work simply means making work more appropriate and fitting for an adult to perform. By this definition, therefore, humanised work should : not damage, degrade, humiliate, exhaust or bore the worker; be interesting and satisfying; utilise many of the valued skills the worker has, and provide him an opportunity to acquire other skills; enhance or at least leave unimpaired, the worker's ability to perform other life roles, such as being a spouse, parent, citizen and friend.

The need to humanise work has been acknowledged for generations. There has been too much talk about the subject. We must now test and evaluate on the assumptions. Since we are living in an experimental society, we must try to humanise work by replacing myths with facts through continued research.

How to Humanise Work

How can one humanise work without any loss in quality and quantity of product. Workers are happier when they have a say in constructing their jobs and these jobs are high in intrinsic job satisfaction. Take for instance, professors, research scientists and farmers who are free to work independently, and also the top executives and self-employed proprietors who have greater freedom of choice. One way of making a job more satisfying, therefore, is to give more freedom to workers, to have a say in the way they should do their jobs.

Work Design

Learning how to redesign work and then actually installing the new design requires hard, vigorous efforts. We have to demonstrate to employees that management is willing to alter work design to enhance job satisfaction. The logical approach in rearranging the work flow is to : analyse job description and categorise the job functionally; place the functions according to levels of importance; and withdraw boss's prerogative in the individual's job functions; introduce new functions from within the organisation.

By increasing the scope for initiative and involve-

ment in the job, we get more commitment from people on the job. The end result is that they may even find better ways of doing their jobs. This brings us to the subject of the Q.C. Circle.

Q.C. Circle

According to Peter Drucker, a Professor of Social Science at the Claremont Graduate School, the Quality Circle concept now being practised in American industry was brought to Japan in the fifties and sixties by three Americans—Edwar Deming and Joseph M. Juran, of New York University and A.V. Feigenbaum of General Electric.

A Quality Circle programme usually comprises about ten people who will meet to look regularly into the various manufacturing problems. The subjects discussed are centred around product quality, industrial safety, use of raw materials, capital, productivity, and all other areas affecting their work. The group elects its own leader and meets regularly to determine areas of improvement. Once a particular problem is determined and a solution offered, it is channelled to the foreman who will evaluate the proposal, and then submit it for consideration to the divisional manager. At this level, decision to implement the proposal is made, and once it is made, the Q.C. group goes all out to ensure that the implementation goes through. The divisional manager usually accepts most proposals even though the financial return may be marginal in some cases.

Competition for the best proposals by Q.C. groups are held at departmental, divisional and in-house levels.

The Q.C. Circle makes employees interested in the development of company. The benefits of a successful Q.C. Circle programme are: it contributes to the growth of the enterprise; it respects humanity and ensures a happy working relationship, and it encourages the development of a worker's potential.

Measurement of Humanised Work

In order to assess the effectiveness of a humanised work programme, we must: measure the extent to

which work situations are human; isolate the factors that make work satisfying; and determine whether the factors that make a job satisfying.

Satisfaction

It is very subjective and yields only soft data. It relies on the person's response, and one man's satisfaction may be another man's misery.

Person-Environment Fit

It can be measured by adopting the basic concept of goodness-of-fit between the characteristics of the person and the properties of his environment. These characteristics and properties can be measured as the person sees them (subjectively and objectively).

Objective Measure of Goodness-of-Fit: A typist and a copy-typing job. To keep up with the work requires a typing speed of 50 words a minute; this is an objective characteristic of the job. The typist, however, can type only 30 words a minute; this is an objective measure of her ability. The difference between the two objective scores is 50 minus 30, or 20 words per minute, and this is an objective measure of the Goodness-of-Fit between person and job.

Subjective Measure of Goodness-of-Fit: A typist may over estimate her ability, in the self-comforting way that persons often do; suppose she believes that she can type 40 words a minute. She may also underestimate the demands of the job, perhaps as a defence against feeling overloaded, and report that the job requires a typing speed of only 40 words a minute. Thus, the subjective goodness-of-fit (40 minus 40) would be perfect, but the objective goodness-of-fit (50 minus 30) would be poor.

Goodness-of-Fit

Has been measured along such dimensions as: independence, affiliation, achievement, responsibility, self-utilisation and self-development.

Examples of Goodness-of-Fit

A goodness-of-fit to student is related to self-esteem

he is properly trained in the work and knows what to do; the desired end results of whatever he is asked to do have been defined; guidelines or limits in terms of policy, expenditures, and time have been established; he is left alone to do the job; he knows he can go to his boss at any time for guidance or support when he reaches an impasse; he knows he would not be berated

tion of technology, capital investment and most important of all, people. Productivity, like love, is a many splendoured thing; it is an attitude of mind, defying constricted definitions, and its scope is unlimited.

The labour unions' participation in management may become an issue in this decade. Authorities of

of the student, the emotional state (depression, anxiety, resentment, etc) and to the student's reported probability of dropping out of school.

A goodness-of-fit to employees to Government department is related to such psychological factors as job satisfaction and such physiological outcome as cholesterol level

will create willingness on the part of the employees to accept the changes in technology and production processes. This conviction also makes employees believe that increasing productivity is good for everybody in the organisation.

The Q.C. Circle activities will never work unless there is psychological conviction. It is important also

management science have defined this decade as the 'Age of Uncertainty' or of discontinuity. The required qualities of management should be its determination to find and set its own course and a good heart to understand other people's problems, for, without it, no management plan, however sophisticated, will ever work.

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Appropriate Technology Action Project— A Case Study of Blue Potteries

C. S. RAO

Technology upgradation in the traditional industries sector is a deeply felt need, in the Indian context. Appropriate Technology unit of Department of Industrial Development, Govt. of India, with the assistance of National Productivity Council launched some pilot action projects. This article focusses on action project: Blue Art Potteries of Jaipur, the success of which has been laudable.

Mr C.S. Rao, Joint Director, Deptt. of Industrial Development, Ministry of Industry, New Delhi.

While reviewing the performance of the village and small industries sector in the preceding plan, it was stated in the Sixth Plan document that "low levels of technology resulting in poor productivity and inadequate returns have continued to characterise the traditional industries sector". Besides, some other problems of procuring raw materials, credit and marketing were stated to have deprived the artisans of a good part of the earnings which should have accrued to them. This situation, which has been continuing for over many years since the planned development has started, is certainly not desirable. The traditional industries, which are described, as decentralised/unorganised sector provide larger employment opportunities in rural and semi-urban areas next only to agriculture. The traditional industries which include, handlooms, khadi and village industries, handicrafts, coir and sericulture together account for a total employment of about 15 million persons including those working on part-time basis as against 22.6 million persons employed in the entire village and small industries sector. The total exports from this sector have been steadily growing. During the first three years of the Sixth Plan Period the value of foreign exchange earned by the export of these products, has gone up from Rs. 1,359 crores in 1980-81 to Rs. 1,736 crores in 1982-83. Production has also been registering an upward trend. The estimated value of production has gone up to Rs. 5,878 crores in 1982-83 from the base line value of Rs. 5,077 crores in

artisans by training and widely disseminate the same among the production units; and finally to apprise the buyers of the new product.

6. It was envisaged that these two projects would be completed by the end of March, 1983. However, while the blue potteries project could be implemented as per the schedule, the locksmithy project is still continuing. The major reason is that the lock making technology involves several problems of designing of tools and equipment and development of prototypes. The results achieved in the blue potteries project are striking and encouraging. At the same time, the experience has offered several useful lessons for devising a strategy for replication of similar projects in other traditional industries like leather, wood-working, wool processing and spinning, handloom weaving, grain processing, energy conservation etc.

Traditional Technology

7. The oriental designs, colour combinations and stony character of blue pottery products make it a distinguishable product, very much different from the glazed potteries of Khurja, Gwalior and Chunar in many ways. The process of manufacture is entirely manual and laborious and requires tremendous amount of patience and dexterity. Coarse and fine quartz, green glass and white glass, multani mitti etc. are ground by hand into fine powder and made into a thick paste out of which the body of the article is made either by hand or on the potter's wheel. Thereafter, the required design is drawn and colours painted on the surface and dried. The dried and painted body is dipped into lead oxide emulsion for glaze. The raw pots are baked in the indigenously built improvised kiln.

The Problems

8. In the traditional technology which is being employed for ever 600 years, a few defects like porocity, lead poisoning, iron defect, smoke effect and heavy breakage during firing, have been found to be persisting. Porocity in the body causes leakage of water when used as flower vases and spoils the place. The use of lead oxide (Sindhur) in the glaze mix makes it poisonous when it comes into contact with food articles. The European countries have, therefore, banned this item

for utilityware. Both these defects disqualify blue potteries for utilityware. Due to contamination of quartz powder with iron particles, black spots are left on the surface of the articles after firing. Apart from these defects caused due to improper inputs, there are other major problems which affected the growth of the craft. During the period of firing, smoke gets deposited on the surface of the bodies leaving black patches. Secondly, due to uncontrolled firing, about 50 per cent of the articles loaded in the furnace at one time get damaged. The traditional kiln is most unsuitable for firing such expensive artware.

9. Presently, oxide colours are used in the glaze. These are formulated by each individual production unit in their own way and obtained by laborious manual process. Besides, some of these colours are also very expensive and their availability is limited. Presently dry grass is used as packing material which increases the weight of the consignment. The present packaging is so poor as to cause breakage in transit.

New Process Technology

10. The main elements of new technology and organizational strategy, successfully tried and adopted are briefly described below :

11. *Porocity* : The problem of porocity has been solved by modification of the body composition in which a combination of a coarse and fine quartz instead of quartz of one mesh was used; green glass was replaced by white glass; Multani Mitti was substituted by china clay; and talc was introduced. The final picture that emerged is as follows :

| Body Composition | Existing | Ratio | New | % |
|----------------------|----------|--------------|-----------|--------------|
| Quartz | | | | |
| Coarse | 40 parts | 0.833 | 50 parts | 38.20 |
| Fine | | | | |
| Talc | Nil | 0.0 | 30 parts | 22.90 |
| White Glass | Nil | 0.0 | 25 parts | 19.00 |
| Green Glass | 5 parts | 0.104 | Nil | 0.00 |
| Gum Katire | 1 part | 0.02 | 2.5 parts | 1.90 |
| Sajji | 1 part | 0.02 | 1.5 parts | 1.10 |
| Ball clay/china clay | Nil | 0.00 | 2 parts | 1.53 |
| Multani Metti | 1 part | 0.02 | Nil | 0.00 |
| | | <u>0.997</u> | | <u>99.90</u> |

12. The combination of coarse and fine quartz may give resistance power and prevent cracks; and small quantity of talc will give falling, bending and smoothening effect. Ball-clay/china clay will help in filling up pores. White glass is cheaper than green glass and is also available in plenty. Pounding of mixture after mixing helps in giving compactness to the body; and reduces breakage rate. As a result of the changes introduced in the inputs and their proportion in the body composition, the problem of porosity has been completely controlled.

13. *Lead-poisoning*: Poisonous (Poisonous) lead oxide glaze has been replaced by borosilicate glaze in the following manner:

| Chemical Composition | Existing | New |
|----------------------|----------|----------|
| (a) Lead Oxide | 1 part | Nil |
| (b) Borax | 1 part | 40 parts |
| (c) Boric acid | Nil | 10 parts |
| (d) Feldspar | Nil | 10 parts |
| (e) Fine Quartz | Nil | 20 parts |
| (f) Glass Powder | 2 parts | 20 parts |

14. The advantages of borosilicate glaze are that it gives clear shining to the body and does not cause cracking. It may, however, be pointed out that it is somewhat opaque, and, therefore, further research is to be carried out to achieve satisfactory results.

15. *New Colour Stains*: As stated earlier, the present oxide colours are not only expensive, for instance, cobalt oxide sells at Rs. 1,500/- Kg., but also their availability is limited. Therefore, serious attempts were made to make available cheap colours which are readily available and also different shades in each colour. This has eliminated the drudgery and delay involved in the preparation of their (entrepreneurs) own colours.

16. *Firing Problems*: As stated earlier, due to defective heating systems there were twin-problems of smoke effect and heavy breakage which are inter-related as both of them occur during final firing only. These defects are caused because the artisans operate the kiln

without any measuring instruments and exercise little control over the firing rates. An analysis of the firing defects showed that the bigger pieces were prone to heavy damage. Some of the specific ideas to control these problems were identified as follows:

- (a) use of thermo-couple during the firing of the kiln,
- (b) uniform inspection of holes with proper fittings,
- (c) Peripheral opening between side wall and the hearth should be made uniform,
- (d) the fireman should try to maintain the fires at both the ends, and
- (e) The fire wood used for firing these kiln, varied in size and length. Sizes from 3" thickness to logs of 12" thickness were commonly used. This variation effects the firing rate. It is recommended to use firewood of 3-4" thickness as far as possible with the length of the wood at 1-2 feet. This also helps in controlling burning rate.

17. Based on these observations and assumptions, a new kiln was designed with double the capacity of the existing ones which can be fired with wood or coal and can be fabricated by the local masons at a cost ranging from Rs. 25,000/- to Rs. 30,000/-. Based on series of trials conducted at different temperatures it is found the heating rate in the region of 570°-650°C is the critical range. In order to regulate the heating system, a thermo-couple should be used to measure the temperature every half an hour and every 15 minutes in the critical range.

Achievements

18. As a result of sustained, determined and joint efforts of the experts of NPC, Regional Design and Technical Development Centre of All India Handicrafts Board etc. there has been a significant breakthrough in the technology upgradation of blue potteries craft, the most notable gain being a substantial reduction in the breakage rate from 50% to 5% of one furnace load of final product during firing. The other gains include reduction in the cost of raw materials by 10%, 25% reduction in the over-all cost one furnace load, 20%

increase in the incomes of artisans and finally profitability of the units had gone up by 50%. The reduction in the breakage rate and economy in the use of raw materials, rationalisation of processes has also resulted in 65% increase in the over-all production. A modified low-cost fuel-efficient new kiln with double the capacity of the existing one which can be fabricated at an estimated cost of Rs. 25,000/- can serve as a common facility to a group of production units, thereby further reducing the cost of production. The new kiln offers flexibility to fire with coal or wood depending upon their availability and its economics. Fuel consumption will be less. The controlled heating system can totally eliminate the problem of smoke effect.

Lessons of Experience

19. The Pilot Action Project for technology upgradation first of its kind to be initiated by the Appropriate Technology Unit, has many useful lessons to offer for future guidance.

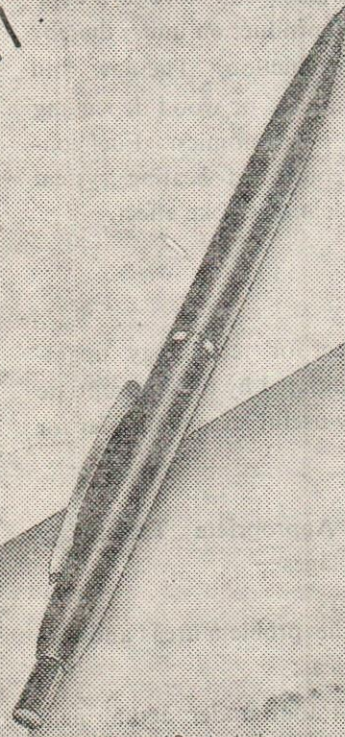
20. Broadly speaking, Appropriate Technology project involves three major stages—

- (i) Survey to identify the problem areas and formulation of project ideas;
- (ii) Pilot Project Administration under actual field conditions;
- (iii) Identification of delivery system for dissemination of appropriate proven technology which would include training, and appraisal of impro-

vements in the quality of the final product, and consequent increase in the profitability to the buyers.

21. Identification of the problem areas which are capable of being solved by appropriate methods including transfer of technology will be a pre-condition for success. The involvement of local promotional agencies and the entrepreneurs and workers would go a long way in carrying out demonstration in a real field situation which alone can create confidence among the concerned people in the new technology. When we are dealing with the traditional and conservative and semi-educated or uneducated rural artisans, it is all the more necessary that the demonstration should be fool-proof and results should be spectacular and substantial. Their minds cannot grasp unless there is a significant reduction in the drudgery of manual processes and/or substantial increase in the ultimate profitability of the new technology. In the ultimate analysis, nothing succeeds like success. The blue potteries project has proved successful because of careful planning, enlisting the support of local agencies including entrepreneurs and artisans and finally sustained and determined efforts put in by the NPC experts and others. The efforts of the Appropriate Technology Unit and the NPC will not come to an end unless the message of new technology is carried to the door-steps of each and every production unit and artisans. For this, the State and Central Promotional Agencies, such as, the Rajasthan Small Industries Corporation, the All India Handicrafts Board, the Handloom and Handicrafts Export Corporation etc. will have to play a major role.

Productivity:
a way of life in
BHEL



The Prime Minister declared 1982 as the Year of Productivity. BHEL's efforts at productivity have yielded results, which has drawn the attention of experts within the country and abroad.

Dr. A.N. Saxena, Director General, National Productivity Council, in a letter dated 8th April 1983 says "I am particularly struck by the motivational approach which has been made permissive and which has generated a psychology in favour of productivity in the entire BHEL system with specific productivity improvements in areas like energy and fuel, materials consumption, process improvement and other related fields."

An ILO expert, Mr. P.A. Neck, in a communication has invited BHEL to join an international network on productivity. In his letter of 11th March 1983 he says, "May I take this opportunity to congratulate you on the obvious success being achieved by BHEL in the field of productivity improvement."

Such observations have enthused BHEL to further gear up productivity efforts, and have opened vistas for extended cooperation within the nation and abroad.



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Productivity and Job Redesign

RAVINDER NANDA

Twenty-two groups of workers ($n=242$) in seven different industrial plants from the public and private sectors in India responded to items from the 'Job Diagnostic Survey'. The study covered job design, work environment, internal work motivation, growth-need strength and general satisfaction. The results suggest that job redesign is an important component in improving productivity and quality of work life.

Mr Ravinder Nanda, Director of Industrial Engineering Program and Co-Director of Operations Management Program, Polytechnic Institute of New York, 333 Jay Street, Brooklyn, New York 11201, USA.

Introduction

Job design is one of the keys to increased productivity. Productivity will not always be simply improved by monetary policy of more investment in research and development. Efforts will have to focus on organizing and managing people at work and building teams that work cooperatively and effectively with a long-range view.

Katzell and Yankelovich consider the strategy for improving the quality of work life to include: giving employees work that more completely utilizes their aptitude and skills, affording opportunities for upward and lateral mobility, giving workers a voice in decisions that affect them and creating an environment with which the worker can form a positive identification.

Two explicitly articulated theories exploring the relationship between jobs design and worker motivation are those of Herzberg and Hackman & Oldham. Herzberg's view is that jobs are motivation producing if they afford opportunities for greater responsibility, challenge, and self-fulfillment. Factors such as working conditions and pay do not create job satisfaction, but their absence may cause dissatisfaction. Hackman and Oldham postulate five "core job characteristics," which they believe must be present to motivate and satisfy workers: (1) skill variety, (2) task identity, (3) task significance, (4) autonomy, and (5) feedback from job.

There is a growing body of research suggesting a relationship between productivity and the quality of work life. Traditionally, work design emphasized only



the physical aspects of work; this was later enhanced by incorporating physiological (human) factors. Today, the bases for work design are being further enhanced by input of psychological factors. The conventional industrial engineer's approach was that of a cost reduction or a work measurement expert who sets standards to increase productivity. The employee was required to adapt to the job that had been designed for efficiency. Today there is a need to recognize that increased productivity comes from competent supervision and meaningful jobs. Modern job design combines technical requirements, organizational goals, and human motivation. The industrial engineer's role of an expert and decision maker is now shared by others, such that the industrial engineer serves as an advisor or consultant and the managers and workers become decision makers. The Japanese success with quality control circles is a case in point.

The study reported here explores the opportunities for work redesign in the Indian industrial environment. Dialog with top and middle managers and observations on the shop floor raised a series of general questions pertaining to worker motivation, satisfaction, and effectiveness. Through the use of the 'Job Diagnostic Survey' the relationship between job design and issues relevant to improving productivity were analyzed.

The Job Diagnostic Survey (JDS)

The JDS instrument is documented in great detail by its developers, Hackman and Oldham, in their book *Work Redesign*. For the purpose of this article, a brief summary is abstracted from it. The job characteristics model of JDS is shown in Figure 1. It proposes that positive personal and on-the-job outcomes are obtained when three "critical psychological states" are present for a given employee. These, in turn, are created by the presence of five "core job characteristics." A summary score reflecting the overall "motivating potential" of a job is computed as follows:

Motivating Potential Score (MPS)

$$= \left\{ \frac{\text{Skill Variety} + \text{Task Identity} + \text{Task Significance}}{3} \right\} \times (\text{Autonomy}) \times (\text{Feedback})$$

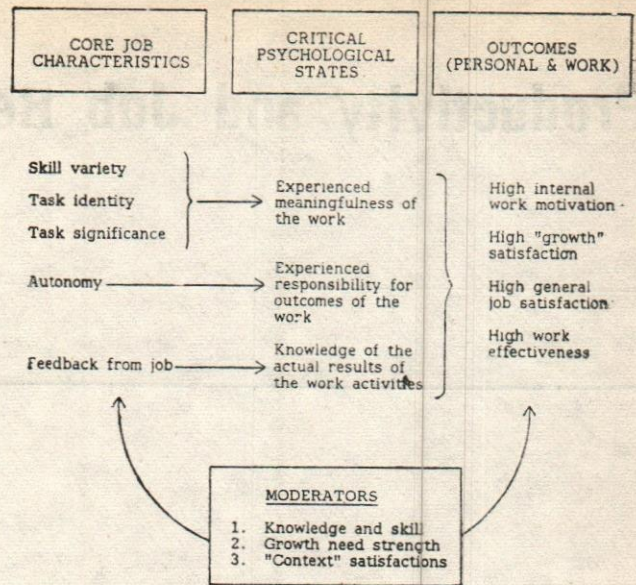


Fig. 1 : The Complete Job Characteristics Model

The JDS instrument uses a seven-point response scale (1=low, 7=high). The individual differences among people play an important role in how they respond to their work. Thus "moderators" are identified in the model, comprising of factors which explain relationships between job characteristics and outcomes.

The five core job characteristics, the three critical psychological states and the affective reactions to the job and other terms measured by the JDS instrument are defined as follows :

Core Job Characteristics

Skill Variety. The degree to which a job requires a variety of different activities in carrying out the work, involving the use of a number of different skills and talents of the person.

Task Identity. The degree to which a job requires completion of the "whole" and identifiable piece of work, that is, doing a job from beginning to end with a visible outcome.

Task Significance. The degree to which the job has a substantial impact on the lives of other people, whether those people are in the immediate organization or in the world at large.

Autonomy. The degree to which the job provides substantial freedom, independence, and discretion to the individual in scheduling the work and in determining the procedures to be used in carrying it out.

Feedback from Job. The degree to which carrying out the work activities required by the job provides the individual with direct and clear information about the effectiveness of his or her performance.

Critical Psychological States

Experienced Meaningfulness. The degree to which the employee experiences the job as one which is generally meaningful, valuable, and worthwhile.

Experienced Responsibility. The degree to which the employee feels personally accountable and responsible for the results of the work he or she does.

Knowledge of Results. The degree to which the employee knows and understands, on a continuous basis, how effectively he or she is performing the job.

Outcomes (Personal and Work)

General Satisfaction. An overall measure of the degree to which the employee is satisfied and happy with the job.

Internal Motivation. The degree to which the employee is self-motivated to perform effectively on the job—that is, the employee experience positive internal feelings when working effectively on the job, and negative internal feelings when doing poorly.

Growth Satisfaction. The degree to which the employee feels there are opportunities for personal learning and growth at work.

Moderators

Context Satisfaction. This includes satisfaction measures for responses to items of pay, security, social (co-workers), and supervision.

Growth Need Strength (GNS). Two separate measures are obtained. In the “would like” format, respon-

dents indicate directly how much they would like to have a number of specified conditions present in their jobs, some of which focus on growth-relevant aspects of the work. In the “job choice” format, the respondents indicate their relevant preferences for pairs of hypothetical jobs. In each item, a job with characteristics relevant to growth need satisfaction is paired with a job which has the potential for satisfying one of a variety of other needs. The total GNS is the average of the “would like” and “job choice” scores.

Additional Measures

JDS also scores two additional variables, which have been helpful in understanding jobs and employee reactions to jobs.

Feedback from Agents. The degree to which the employee receives clear information about his or her performance from supervisors or from co-workers. (This dimension is not, strictly speaking, a characteristic of the job itself. It is included to provide information to supplement that provided by the dimension “feedback from the job itself.”)

Dealing with Others. The degree to which the job requires the employee to work closely with other people in carrying out the work activities (including dealings with other organization members and with external organizational “clients”).

“Work Effective” outcomes, which include quality and quantity, absenteeism, and turnover, could be measured by a before-and after study of job redesign. The moderators, knowledge and skill of the individual, are obtained from the participants biographical data and from information gathered by the researcher about that job. The JDS questionnaire is divided into seven sections, requiring responses for some 83 questions. The 21 variables listed in Figure 1 are scored by consolidating responses to questions in different sections.

The JDS instrument was field tested by its developers in 56 organizations, consolidating some 876 job families from an employee sample of 6930. From this data, normative measures for each of the 21 variables were calculated in each job family to form a data base.

Other researchers have also used the JDS questionnaire in industrial and service environments. The JDS, which has been translated into six languages,¹ is thus being adapted to different international environments. A review of the task design literature by Pierce and Dunham revealed that JDS is the most commonly used instrument to assess perceived task design.

Sample

The JDS model was presented to the management of nine manufacturing organizations in Bangalore, India. Most of these organizations had multiple facilities. The manufacturing sites were in and around Bangalore, as well as in other parts of India. In most cases, a given location exclusively manufactured one specific product. In all organizations, the initial technical know-how had been a foreign collaborative effort. Today, these organizations have adapted the original product designs and operational procedures to suit indigenous needs. Thus the manufacturing organizations approached were mature in areas of technological and managerial competence.

After the preliminary discussions, seven organizations agreed to participate in this pilot study. The management selected the participant groups and location for conducting the survey. Wherever possible, the work groups from each organization which had either identical job titles or work responsibility were later pooled together to form job families for the purpose of data analysis. The summaries of participants from each organization are shown in Table I. Table II shows the same participants re-arranged in job families. Included in these tables are some related statistics gathered from their biographical data.

With a few exceptions, all participants had a high school education. A majority had a technical trade diploma or a degree. This advanced training is equivalent to a minimum of three to four years of education and work experience. In most instances, the participants had undergone technical training in schools run by the organizations themselves. Thus the participants had a fairly diversified competence and a high level of train-

ing in basic skills. The participants were mostly in their 20s (40%) and 30s (50%).

Data Collection

Initial presentations explaining the purpose of the study were repeated for middle managers, supervisors, and labor union representatives. All concerned were assured that their participation was voluntary, that the study was of an exploratory nature, and that no change in work rules of environment would automatically result as a consequence of their participation.

During the preliminary discussions copies of the questionnaire were made available to supervisors of participating groups. The primary purpose here was to pretest the questions for clarity and applicability to the organization. Secondly, it gave the supervisors an opportunity to gauge the level of English comprehension required and thus enabled them to identify and select the participants.

In one instance, the supervisor had the questionnaire translated in the local language. During its administration, this translation was available to those who wished to consult it for further clarification. In three cases, a research assistant fluent in the local language was present to help clarify any terms for the participants. There was little difficulty with the use of JDS in the English language.

The employees completed the questionnaire during their regular working hours in a separate room away from their workplace. No management personnel from the organization were present during the administration of the JDS. Each group was given a briefing on the response scales, before they began writing their answers.

Results

The average response for each of the 21 variables measured by JDS are summarized in Table III by organizations, and in Table IV by job family. The job families are arranged in the increasing values of their MPS scores.

1. Personal communication with Hackman.

Table I: Summary of Participants by Organization

| Sector | Public | | | | Public Sector Totals | Private | | | Private Sector Totals | Total of Study |
|---|--------------|----------|--------------|----------|----------------------|----------|----------|----------|-----------------------|----------------|
| | A | B | C | D | | E | F | G | | |
| Organization | A | B | C | D | 4 | E | F | G | 3 | 7 |
| Sample Size | 25 | 32 | 53 | 18 | 128 | 33 | 43 | 38 | 114 | 242 |
| Numbers of Groups in Each Organization† | 3 | 3 | 3 | 2 | 11 | 3 | 3 | 5 | 11 | 22 |
| Male/Female Ratio | 24/1 | 32/0 | 53/0 | 6/12 | 115/13 | 13/20 | 43/0 | 38/0 | 94/20 | 209/33 |
| Salary* Range (Rupees) | 950-1370 | 700-1800 | 800-1600 | 780-1150 | 700-1800 | 850-1750 | 900-2200 | 750-2100 | 750-2200 | 700-2200 |
| Average Salary* (Rupees) | 1155 | 1291 | 1185 | 911 | 1167 | 1144 | 1350 | 1065 | 1195 | 1180 |
| Average Years at Job** | 12.4 | 11 | 4.2 | 1.9 | 7.2 | 8.9 | 10.9 | 11.5 | 10.5 | 8.8 |
| Location | Urban (n=57) | | Rural (n=71) | | | Urban | | | | |

† Range 5 to 27

* Including all allowances

** Range 1-20 years

Table II: Summary of Participant by Job Family

| Job Family | Inspectors/ Quality Control | Coil Winders | Machinist | Clerical Workers | Calibrators/ Testers | Draftsmen | Machine Setters | Engineers | Total System Certifiers |
|---------------------------------|-----------------------------------|-----------------|-----------|---------------------|-------------------------|-----------|--------------------|-----------|-------------------------------|
| Sample Size | 32 | 10 | 71 | 20 | 31 | 25 | 16 | 31 | 6 |
| Numbers of Groups in Job Family | 3 | 1 | 4 | 2 | 3 | 3 | 2 | 3 | 1 |
| Male/Female Ratio | 22/10 | 10/0 | 71/0 | 19/1 | 12/19 | 25/0 | 16/0 | 31/0 | 3/3 |
| Salary Range (Rupees) | 825-2100 | 730-950 | 800-2200 | 950-1160 | 800-1375 | 700-1500 | 825-2100 | 950-2100 | 900-1150 |
| Average Salary (Rupees) | 1360 | 844 | 1172 | 1052 | 100 | 1125 | 1360 | 1473 | 1053 |
| Average Years at Job | 10.9 | 15 | 7.3 | 9.1 | 6.8 | 11.4 | 10.9 | 6.1 | 3 |

Job Design & Motivation

For all job families, the scores for the four variables under "context satisfaction" are higher than the scores for the remaining 17 variables measured by JDS. According to Maslow, there are five hierarchies of human needs to which people can be motivated. The first two (primary) needs of physiological (pay) and security seem to have been met for all job families. This in

part has been made possible in India as well as in most of the industrialized modern societies by the political environment and support of organized labor.

The next higher need of "affiliation" is also being satisfied for most job families as measured by the social satisfaction score. Thus, the environment exists to motivate the employees for their next higher need of "self esteem." From the responses of the participants,

this need has not been met satisfactorily at the workplace. The score for internal motivation for all job families is the lowest among all factors measured (2.8).

According to Herzberg, the variables under context satisfaction are "hygiene" factors and not motivators. Factors of responsibility, recognition, advancement, achievement, and work itself are sources of job satisfaction and motivation. Furthermore, his studies suggest that positive job attitudes are favorable to increased productivity. In the job families studied, the score for experienced responsibility (3.1) is the next to lowest score. Thus the employees who have several years of experience and training are working in an environment which does not enhance their full capabilities.

Research in the United States shows that experienced responsibility for outcomes of the work contributes most significantly to internal work motivation.² Data gathered here indicates very little autonomy in the task of the first five job families listed in Table IV. The work organization was characterized by measurement of work loads in terms of equipment and facilities to ensure a strict routinized sequential pattern.

Other high intercorrelations exist between feedback from job and knowledge of results.³ Both variables had low scores in this study. The outcome of general satisfaction has high intercorrelations with experienced meaningfulness and responsibility.⁴ The former significantly intercorrelates with skill variety.⁵ Feedback is an important step toward creating a climate receptive to participation by employees in job redesign and team building. Thus there is a strong indication that job redesign is an opportunity that could contribute to improving worker satisfaction and organizational productivity.

Growth Need and Development

All job families indicate a strong desire to have growth relevant conditions present in their jobs as indi-

cated by the GNS scores for "would like" choice (4.8). At present, there is not a clear career path defined by management in most job families. Furthermore, there are no organized programs of job design which build in motivators. Job promotion in most instances is based only on seniority to supervisory positions and at times acts as a demotivator.

The inspectors/quality control is a case in point. This job family has the lowest MPS score. Most of the employees in this position are promoted from the ranks of machinists and calibrator/testers, both of which have higher MPS scores. This job family offers individuals little skill variety and the task is low in autonomy and job feedback.

Another job family in which the participants do not experience job satisfaction and could benefit from career development is coil winders. This job family had the longest time on the job (average of 15 years). The job is highly mechanized, and requires a simple monitoring of the coil winding machine by the operator. From their biographical data only one out of the ten coil winders had any education beyond the high school equivalency. This job family had the lowest score for 9 of the 21 variables measured among the 9 job families in this study. This is a low skill job, high in autonomy, but poor in feedback, and lowest in task significance.

The growth need strength (GNS) scores of JDS can also be helpful in estimating whether people are likely to prosper on enriched jobs. Given the training, skill, and knowledge of the participants, if those aspects of the job that contain the motivating potential (for example, in our job families, skill variety and autonomy) are in fact changed, it is possible that workers will respond positively as discussed in the next section.

Job redesign is not the only answer to organizational problems, many of which are rooted in economic, social, political and cultural factors of the work environment. Although the general outcomes of work satisfaction indicated in this study are relatively low, the participants do feel a strong growth satisfaction and task significance in their jobs. Thus the participants see a challenge and opportunity in their work environ-

2. An intercorrelation coefficient of .59 (n=6930). Oldham, Hackman, and Stepina.

3. 49, *Ibid.*

4. 66 and 49, *Ibid.*

5. 45, *Ibid.*

ment, yet do not feel a strong internal work motivation. All of these variables diagnose the need to improve job design by building recognition, achievement, and responsibility into their tasks.

Job Design and Positive Outcomes

Positive outcomes of job satisfaction are reflected in the scores of job families with built-in motivators. Job families in which recognition and responsibility are designed as part of the task have higher MPS scores.

Total system certifiers have the highest scores for the four out of five core job characteristic and for all the critical psychological states. They also have the lowest average years of experience on the job. From personal observation and information gathered about this job family, the job design has many of the features desired in an ideal enriched job. This job family tests the total system through its burn-in period, and the system is shipped under each individual's signature of approval. This responsibility is reflected in the fact that this job family also has the highest score for "feedback from agents." Similar characteristics were also true for draftsmen, machine setters, and engineers, who also show the highest scores for growth need strength. All these job families are high on skill level, and the individuals experience a good deal of autonomy in their task assignments.

Another point of interest is to recognize that inspectors/quality control and machine setters (both of which need high skill levels) are two job families promoted from within the same job families (machinists and calibrators/testers). Both these groups have the same average years on the job (10.9 years, Table II). However, in case of machine setters, the built-in motivators of feedback from the job (and agents-machinist), skill variety, growth satisfaction, recognition (dealing with others) have resulted in positive outcomes for the individuals. Thus in the Indian industrial environment, the presence of critical psychological states did result in higher MPS scores and a positive identification with the job design.

Private and Public Sectors

The organizations were separated into the public

and the private sector (see Table III). A comparison of the weighted averages of the responses in each sector reveals that, generally the public sector scores are higher than those for private sector, except for pay and supervision satisfaction and knowledge of results. Although the overall MPS score for the public sector is somewhat higher than for private sector the general patterns of work organization in both cases followed the Tayloristic system, namely specialization of skills, minimization of skill requirement, and reduction of learning time. In both sectors, there were smaller select groups participating in experimental job redesign projects of group technology, job rotation, and quality control circles.

Urban vs. Rural Location

In the four organizations of the public sector, two were in rural locations and two were in urban locations. Generally the scores for rural locations are higher than for urban locations. The two rural locations have higher MPS scores than all urban locations in both sectors. In addition, the two rural locations share the highest scores for 10 to 21 variables measured among the seven organizations in this study. This limited data further indicate the high growth satisfaction and growth need strength of rural industrial manpower. This suggests that the public sector investment policy and the national guidelines of industrial development in rural areas offers a unique opportunity to align job design, human resource development and appropriate technology.

In summary, both Maslow's and Herzberg's theories appear relevant in the Indian environment. The workers generally do experience high context satisfaction in their work environment. The MPS scores correlate highly with knowledge and skill level of job families. In cases where good core job characteristics were present, the employees responded positively to enriched and challenging jobs. The lack of clearly defined growth opportunities coupled with job design appears to act as a demotivator. All participants exhibit a high motivation to advance themselves.

There is a critical need to align the ability requirement of the jobs with the abilities possessed by the employees in each job family. This is especially

Table III: JDS Measurement by Organisations

| KEY Range for Each Variable X.Y = lowest value X.Y = highest value | PUBLIC SECTOR | | | | Weighted Average Public Sector | PRIVATE SECTOR | | | Weighted Average Private Sector |
|---|---------------|------|------|------|---|----------------|------|------|--|
| | A | B | C | D | | E | F | G | |
| Skill Variety | 3.5 | 4.0 | 3.9 | 3.6 | 3.8 | 3.7 | 3.1 | 3.9 | 3.6 |
| Task Identity | 3.7 | 3.9 | 3.9 | 3.7 | 3.8 | 3.5 | 3.6 | 3.8 | 3.7 |
| Task Significance | 4.4 | 4.3 | 4.4 | 4.2 | 4.3 | 3.9 | 3.9 | 4.2 | 4.0 |
| Autonomy | 3.7 | 4.1 | 4.0 | 4.3 | 4.0 | 3.4 | 3.9 | 4.0 | 3.8 |
| Feedback from Job | 3.7 | 3.7 | 3.9 | 4.2 | 3.9 | 3.8 | 3.8 | 3.7 | 3.7 |
| MPS | 54.8 | 55.9 | 64.1 | 72.5 | 61.4 | 46.5 | 55.6 | 57.5 | 53.8 |
| Experienced Meaningfulness | 4.3 | 4.2 | 4.0 | 4.2 | 4.2 | 4.2 | 4.2 | 3.9 | 4.1 |
| Experienced Responsibility | 3.1 | 3.4 | 3.1 | 3.3 | 3.2 | 3.1 | 2.8 | 2.9 | 2.9 |
| Knowledge of Results | 3.8 | 3.3 | 3.5 | 3.9 | 3.6 | 3.8 | 3.8 | 3.5 | 3.6 |
| Internal Motivation | 2.6 | 3.3 | 2.7 | 3.2 | 2.8 | 2.7 | 2.7 | 2.6 | 2.7 |
| General Satisfaction | 3.7 | 3.7 | 3.7 | 3.7 | 3.7 | 3.4 | 3.5 | 3.6 | 3.5 |
| Growth Satisfaction | 4.8 | 4.8 | 5.2 | 5.0 | 4.9 | 5.0 | 4.8 | 5.1 | 5.0 |
| Pay | 5.0 | 4.4 | 5.3 | 4.8 | 4.9 | 5.4 | 5.4 | 4.9 | 5.3 |
| Security | 5.0 | 4.9 | 5.4 | 5.5 | 5.2 | 5.3 | 4.6 | 4.7 | 4.9 |
| Social | 5.4 | 4.8 | 5.1 | 5.3 | 5.1 | 4.5 | 4.6 | 5.1 | 4.8 |
| Supervision | 5.1 | 4.7 | 5.1 | 5.3 | 5.0 | 5.4 | 5.5 | 5.0 | 5.3 |
| GNS Would Like | 5.1 | 4.9 | 5.0 | 4.6 | 5.0 | 4.9 | 4.2 | 4.5 | 4.5 |
| GNS Job Choice | 4.4 | 4.4 | 4.5 | 4.2 | 4.4 | 4.0 | 4.1 | 4.7 | 4.1 |
| GNS Total | 4.8 | 4.7 | 4.7 | 4.4 | 4.7 | 4.4 | 4.2 | 4.6 | 4.3 |
| Feedback from Agents | 3.8 | 4.4 | 4.2 | 4.1 | 4.1 | 3.8 | 3.6 | 4.3 | 3.8 |
| Dealing with Others | 3.5 | 4.2 | 4.2 | 3.2 | 3.9 | 3.9 | 3.6 | 3.9 | 3.8 |

significant for core job characteristics of skill variety, autonomy, and feedback. This study indicates that the JDS questionnaire has a logical internal consistency for use in the Indian industrial environment. This conclusion was shared by the organizations and participants when they reviewed a preliminary feedback of the tabulated data.

Conclusions

The purpose of this study was to assess whether job redesign and related activities are an opportunity to improve worker satisfaction and motivation. The results presented above do indicate the need to develop programs and to align the design of jobs and the skills needed to perform them with the capabilities, potentials, and needs of employees.

The management of organizations in India should look upon job redesign as a challenging opportunity

toward enhancing democracy in the workplace. This participative style of management and its yield in higher productivity and a higher quality of work life is already a focus in many industrialized societies. Conclusions of earlier studies done in India⁶ as well as the research described here strongly suggest that there is a need to motivate workers by involving them more actively in decisions relating to the workplace.

Instruments such as JDS offers an opportunity to build a national data base for a cross section of job families in the manufacturing and service areas in India. Such a data base, indigenously developed, could become the standard against which individual organizations could diagnose the motivational properties of jobs prior to redesign. The normative scales of JDS developed elsewhere would be of little value for developing job design or redesign programs in the Indian environment.

6. Rice and Kanawaty & Thorsud

TABLE IV. JDS MEASURED BY JOB FAMILIES

| KEY Range for Each Variable X.Y = lowest value X.Y = highest value | TABLE IV. JDS MEASURED BY JOB FAMILIES | | | | | | | | | TOTAL AVERAGE |
|---|--|--------------|-----------|---------------------|--------------------------|-----------|-----------------|-----------|----------------------------|---------------|
| | Inspectors/ Quality Control | Coil Winders | Machinist | Clerical Workers | Callibrators/ Testers | Draftsmen | Machine Setters | Engineers | Total System Certifiers | |
| Skill Variety | 3.5 | 3.9 | 3.5 | 3.4 | 3.6 | 4.1 | 3.9 | 4.2 | 4.2 | 3.7 |
| Task Identity | 3.4 | 3.5 | 3.8 | 3.7 | 3.5 | 4.0 | 3.7 | 4.1 | 4.5 | 3.8 |
| Task Significance | 4.2 | 3.7 | 4.1 | 4.3 | 4.0 | 4.5 | 4.0 | 4.5 | 4.7 | 4.2 |
| Autonomy | 3.6 | 4.2 | 3.7 | 3.8 | 3.9 | 3.9 | 3.9 | 4.6 | 4.0 | 3.9 |
| Feedback from Job | 3.5 | 3.4 | 3.7 | 3.8 | 3.9 | 3.7 | 4.2 | 3.9 | 4.5 | 3.8 |
| MPS | 49.3 | 50.7 | 52.5 | 54.2 | 55.1 | 57.2 | 65.2 | 75.3 | 99.9 | 58.0 |
| Experienced Meaningfulness | 4.2 | 3.6 | 4.1 | 4.3 | 4.2 | 4.1 | 4.1 | 4.1 | 4.4 | 4.1 |
| Experienced Responsibility | 2.9 | 3.1 | 3.0 | 3.2 | 3.0 | 3.3 | 3.0 | 3.1 | 3.4 | 3.1 |
| Knowledge of Results | 3.9 | 3.3 | 3.5 | 3.5 | 3.7 | 3.5 | 3.7 | 3.6 | 4.1 | 3.6 |
| Internal Work Motivation | 2.8 | 2.8 | 2.5 | 3.2 | 2.9 | 2.7 | 2.7 | 2.8 | 3.1 | 2.8 |
| General Satisfaction | 3.5 | 3.4 | 3.6 | 3.9 | 3.7 | 3.5 | 3.4 | 3.7 | 3.8 | 3.6 |
| Growth Satisfaction | 4.9 | 5.3 | 5.0 | 4.0 | 5.1 | 5.0 | 5.2 | 5.1 | 4.7 | 4.0 |
| Pay | 4.9 | 5.8 | 5.4 | 4.9 | 5.0 | 4.9 | 5.5 | 4.8 | 5.2 | 5.1 |
| Security | 4.7 | 5.3 | 5.1 | 4.9 | 5.4 | 4.9 | 4.8 | 5.3 | 5.0 | 5.1 |
| Social | 4.8 | 4.8 | 4.7 | 4.8 | 4.9 | 4.9 | 5.4 | 5.5 | 5.1 | 4.9 |
| Supervision | 5.6 | 5.5 | 5.1 | 4.6 | 5.1 | 4.8 | 5.2 | 5.2 | 5.4 | 5.1 |
| GNS Would Like | 4.5 | 3.9 | 4.6 | 5.0 | 4.8 | 4.6 | 5.1 | 5.4 | 4.5 | 4.8 |
| GNS Job Choice | 4.3 | 4.2 | 4.1 | 4.4 | 4.2 | 4.5 | 4.3 | 4.5 | 3.9 | 4.2 |
| GNS Total | 4.5 | 4.0 | 4.4 | 4.7 | 4.5 | 4.5 | 4.7 | 5.0 | 4.2 | 4.5 |
| Feedback from Agents | 3.7 | 3.7 | 3.9 | 4.1 | 3.7 | 4.4 | 4.1 | 4.4 | 4.7 | 4.0 |
| Dealing with Others | 3.7 | 3.3 | 3.9 | 3.4 | 3.4 | 4.2 | 4.0 | 4.5 | 3.7 | 3.9 |

There is a growing body of research on job redesign suggesting ways to create an environment in which workers experience the five "core job characteristics."⁷ This calls for a long-range commitment by industrial organizations, and it has to be pursued with aggressive support of top management. Management has to be willing to be innovative, patient, and believers in the process of humanizing the workplace. Such programs must include diagnosis, subordinate involvement, job design, training, a performance appraisal system, and an external (unbiased) evaluation. In the competitive international market, there is a strong need to pursue ways of increasing industrial productivity. This study indicates that job diagnostic, leading to a national data base would be an essential first step in this change process.

7. Nanda and Browne

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Banking's Efficiency Paradox—An Insight in Global Perspective

BIMALENDU MUKHER

While Indian banking's achievements over the past couple of decades are spectacular in many dimensions and its discerned growth unprecedented anywhere in the world; in today's milieu of banking certainly not everything is eurhythmic. The stagnating operational efficiency, in fact, has been becoming a very trivial concern of all those connected with this vital sector in the economy. Undoubtedly, this is an important issue in the context of the banking sector's rapid expansion, swift transformation, and gradual entry into the volatile and complicated arena of international financial markets.

Mr Bimalendu Mukherji is an Associate Member of Institute of Bankers, London and Life Associate Member of Institute of Bankers, Bombay.

Global View

The criteria of efficiency in a service-oriented industry like banking can hardly be codified precisely. But whatever vexed the issue may appear to be, it can nevertheless be dealt with by some rough approximations of significant operating parameters in coherence with a global perspective and the relevant antecedents of importance to industry as a whole.

Important financial indicators of world's major banking institutions as on 31st December, 1981 are placed in Tables 1 & 2. Table 1 displays basic operating data of the largest bank of several countries, ranked in terms of assets-holding. The key efficiency indicators, viz., per employee assets, deposits, loans and income as well as stockholders' return on equity are shown in Table 2. The comparison data gives some fascinating exposures. Ranked in terms of assets per employee, Japan comes first (\$ 3942,000), closely followed by Sweden (\$ 3591,000) and Switzerland (\$ 3174,000); Brazil (\$ 663,000), Britain (\$ 708,000) and India (\$ 104,000) are relatively low scorers. While India is at the lowest ebb in all the respects, in terms of per employee deposits Japan's is the highest again, though Switzerland shows the highest out-turn in loans per employee. Brazil is the top income earner—both per employee and in relation to stockholders' equity, though its per employee assets, deposits and loans are

can we do this miracle with our existing resources, system and style?

A change in our approach towards the use of advanced technology is clearly indicated. Computerization and mechanisation in banking is, after all, a very sensitive issue. It remains a vexed question, as well, in the context of the country's massive unemployment problem. In the midst of conflicting needs, prudence demands, perhaps, a safer course. While a total switch on to computerisation is neither warranted nor practicable, a modest support of sophisticated aids to human endeavours at least in certain areas—such as, management of funds, flow of management information for decision-making, submission of data to statutory authorities, maintenance of personnel inventory skills and handling of house-keeping functions—may reasonably be propounded for ensuring the minimum standard of efficiency in the industry. The recent installation of a mini-computer in Bankers' Clearing House at Bombay and the Indian banks' urge to come under the fold of SWIFT network are positive indications that the computerization of our banking is in the offing. The real handicap in the process of introducing modern technology seems to be the industry's inability to reach mutual agreement with its work-force over the sensitive issue. The sooner this understanding gap is wiped out, the better for the industry's future appetite,³ needless to mention.

Managing Behaviour

The most formidable dimension of problems circumventing the course of our banking's efficient functioning would be conspicuous, however, in a vicious circle stemming out of the bathos in behaviour of employees and a declivity in the responsiveness of the higher echelons responsible for managing the subordinates. The problem of behaviour may be seen to find its origin through the coherence of a number of avoidable reasons, such as :

First, the slow process of grievance handling often stands as a direct cause of discontentment—the occurrences, in fact, are very frequent even in mundane matters at the branch level; the reasons being inadequate delegation of authority, or lack of information and/or poor perception.

Second is the absence of proper communication link in the organizational hierarchy. What happens quite often is that the employees at the grass-root levels are led to rely on their union leaders, who happen to maintain contact with the management for negotiations. Perceptions and understanding of employees tend easily to get concocted under such a design.

Third, historically and by background, the bankers had been to busy in harbouring around 'business'; but in the process, imposing excessive controls and directions to the utter dilution of human aspects of management; this drifted the management's net far apart from its basic resource—the employees, whose loyalty did tend to swing eventually in favour of unions.

Fourth, the banking industry adulates highly individualistic operations and dispels the virtues of the people working as a team—absence of team work 'Sans' group goals is a stumbling block to organisational vitality in that this condition stifles loyalty, degenerates involvement and causes frustration. Upheavals of employees' alienated attitudes find their ways as a natural corollary, causing finally to obstructive and/or destructive activities.

To imbibe the sense of responsibility and ensure involvement and better performance, a participatory style of management is often propounded in banking industry.⁴ In 1972, such a design was formally adopted in essence. Under this arrangement, participation of employees' representative was allowed at the Board Level of individual banks, aiming to foster the behavioural needs. The experiment, however, has not produced any discernible result. The obvious reason is that the work force at large did not sense the 'feel' of being involved through this constrictive participatory process.⁵

A facile climate micro-points for integration of people with the organisation should, on the contrary, produce better results. This suggests a participatory style of leadership at the branches. But, in the process, at least two hindrances may appear : first, the multiplicity of unions may not facilitate amicable solution to problems, particularly when cross-interests between the groups clash; and the second, the managers themselves

may hold thwarting attitude towards employees' participation for fear of dilution of managerial authority.

About the first one, a workable suggestion may be that the very common and simple issues which lead to the least of conflicts may be tried as a first step to inculcate the spirit of involvement, after which, attempts for resolving the delicate ones may be made in stages. Managers, however, often tend to complain of complications and impracticability inherent with participatory approach. But a little zeal and optimistic pragmatism would have proved that it is not 'a useless theory developed by some one looking for a new behavioural idea'.⁶

Contextually, reference may be made to a recent kind of Japanese experiments that resulted in excellent results. The approach is what has been dubbed as "A/T" or "Achievement Targets" programme which, basically, 'requires employees to set personal goals or targets within a specific time frame, make specific progress reports and announce the results when the time period is over.'⁷ This course of approach improved productivity so tremendously that its usage became very popular soon. A similar kind of development is taking place in some of the European countries with positive results.⁸

It is not, in fact, an Utopian dream that a manager who provides encouragements and gives due appreciation, discusses problems and seeks suggestion, offers counselling and renders help—shows invariably, in turn better rapport with employees, builds strong morale and, in the process, accelerates productivity—he succeeds in managing his affairs better and at the same time, produces better potential supervisors, the most valuable of all resources, a service organisation like banking can afford to usher in.⁹

Resource Development

There is nothing platitudinal in that 'the assets which towers above all others in business is not buildings, not land, but men'—and hence, the greatest stress needs to be given on the training of men and the giving of service. It has been observed that 'man to man

coaching on the job ... meets specific needs of an individual. It presents a nearly perfect learning situation, in as much as the understudy, who has a problem can talk it over with his supervisor and can put what he has learned into practice on a live problem of the moment.¹⁰ Reviewing the Indian position one observer finds that although, 'most of the banks agree in principle for job rotation at clerical and junior officer level and transfers to different departments/locations at higher levels of management is desirable both from an individual's and organisational point of view', the fact remains that 'for reasons of expediency, immediate gains and conveniences of certain persons, job rotation is not strictly followed.'¹¹ Evidently, this shows a vital leakage in the commitments for human resource development needs of banks.

In the other dimension, i.e. institutional training by colleges and centres, most banks have by now developed adequate infrastructural facilities to meet the needs of their existing manpower, but here again, the system has been found to suffer from several limitations as under.¹²

- (a) 'It is still rather isolated from other sub-systems of human resources development, e.g. transfer, promotion and such other aspects of career path planning'.
- (b) 'The line management does not feel involved—does not feel responsible to utilize the training given or to help a trainee learn further, and to guide or counsel him to improve his performance'.
- (c) 'The most important defect in the system is that'—there is a vague idea of what it is to be accomplished and the currently pressing problems decide the nature of immediate task. But it is dangerous to allow this state of affairs to continue, If it is allowed to continue the institutes will become soon moribund, in the sense that they will not die, but they will continue to exist remaining mortally sick. The signs of this sickness can be seen in the ritualistic nature of the training exercise'.

This suggests that pragmatism, zeal and determination are needed to make objective utilization of training

emphasizes on effectiveness and the achievement outputs. It integrates the individual with the organisation and recommends all the activity in an organisation to be objective-oriented through the effective utilisation of the resources such as materials, machines and manpower etc. It is essentially a performance oriented process.

In practising MBO, performance objectives are clearly quantified and made available for the use of the functional managers⁵. All the activities get co-ordinated, directed and monitored to achieve the performance objectives. The performances are measured and evaluated against the performance objectives. The authors have considered these important aspects of MBO technique and have taken into account the same in their methodology of productivity measurement, in the following respects⁶ :

- (a) MBO lays stress on the performance. In the terminology of productivity, performance is synonymous with output. MBO does start with quantification or measurement of inputs. It considers inputs as means to achieve performance. Outputs co-related to constraints of inputs become the desired objectives.

If applied to productivity measurement it amounts to first laying down the Performance Objectives. Obviously these have got to be in line with the goals of the Organisation. The Performance Objectives as related to input resources shall provide Objectivated Productivity (say).

- (b) MBO lays specific emphasis on quantification of objectives. This is also the requirement of the productivity measurement. All the outputs must be taken into account to represent the effectiveness or performance of all input resources.

3.2 Systems Approach

Plant Organisation is basically a system. It gets effected by the external environment and internal environment. Within the plant considered as system there are sub-systems which interact. No sub-system can be seen as a purely isolated sub-system with clearcut boundary. These sub-systems interact and effect

the productivity of each other. The resultant productivity of a system is therefore the sum total of productivities of its sub-systems suitably arrived at by assigning weightage factors depending upon the importance and priorities accorded to the sub-systems. The productivity so arrived has also to be corrected by a factor to account for the effect to external environment⁷.

4. Performance Objectives—Productivity (POP) Approach

The methodology suggested as under basically takes into account that Productivity Index to be arrived at should be related to the Performance Objectives. It differs essentially from the other known methods of productivity measurement in the following respects :

- (a) Emphasis is more on performance, outputs and achievements and comparing the same with the desired goals or Performance Objectives of the plant.
- (b) The use of units as measures of productivity are avoided. This does away with the cumbersome exercise of conversion of all inputs and outputs to a common base.
- (c) Weak areas, where improvements are required, are immediately identified for remedial actions.
- (d) The systems concept is utilised in identifying sub-systems and effectiveness areas. Emphasis is more on measuring effectiveness of functional areas considered as sub-systems. This is in line with the general Organisational pattern in industry where the work division or responsibilities are divided on functional lines rather than on the lines of inputs such as Labour, Capital, Materials etc.

5. Terminologies in the Proposed Approach

The following terminology has been used extensively in the proposed POP System.

(a) Performance Objectives

These are the objectives or results or the goals decided upon as required to be reached by the Plant. The analogy can also be extended down the line at

department or section level. These are arrived at in clearly defined terms and not left as vague.

(b) *Key Effectiveness Areas*

Within a sub-system, there shall be several areas where activities take place. Some of these areas may be performing well while others may need attention. As a part of the exercise of determining Performance Objectives such areas which require close monitoring of results shall be identified. These are referred to as Key Effectiveness Areas.

(c) *Objectivated Productivity*

This essentially is the productivity arrived at by considering output as the Performance Objectives and inputs as the inputs required to achieve the performance objectives. Or in other words :

$$\text{Objectivated Productivity} = \frac{\text{Performance Objectives}}{\text{Budgeted inputs}}$$

This also represents the upper bound of productivity achievable.

6. **Proposed Methodology**

The exercise of productivity measurement is to be restructured to incorporate the following salient features :

(a) *Identification of sub-systems*

There is no one best way to define a sub-system at plant level organisation. However, any definition to be adopted must consider that the sub-systems represent a major or a major group of activities which have a similarity. The sub-systems should contribute to the plant and together should form one congruent organic organisation.

No sub-system can be seen as a pure isolated sub-system with clear cut boundary. There will be overlaps and interactions. There will be interdependence on other sub-systems for its own survival and existence. Yet, for the sake of evaluation as well as systematic work, it would be necessary to create boundaries which make the sub-systems as independent as possible.

Fig. 1 depicts a classification of sub-systems. The

authors however, are of the opinion that for the type of exercise under study, that classification is not very meaningful and does not represent the objectives in mind.

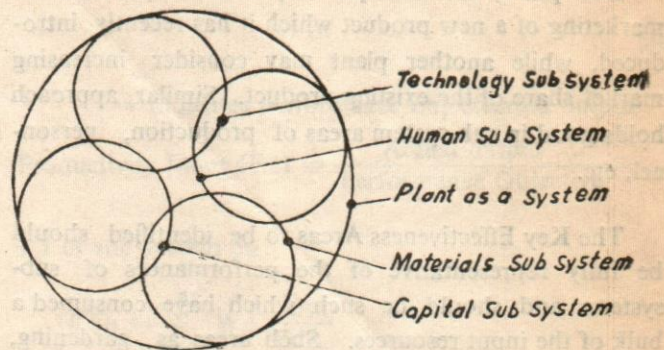


Fig. 1

An engineering plant, in general, working on the concept of profit center, has its activities organised on functional lines such as, Production, Marketing, Materials, Finance and Accounts, Personnel, etc.

These functional areas are more or less well defined. The authors suggest that these functional areas can be considered as sub-systems (Fig. 2). Additional sub-systems can be added depending upon the requirements of a particular plant. For example if a plant has "Erection and Commissioning" as a major activity, it could well consider it also as a sub-system.

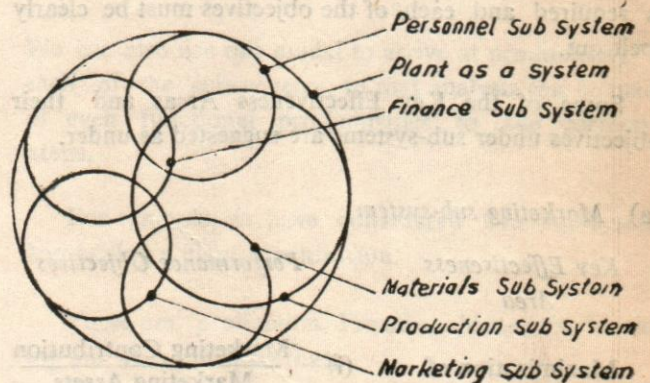


Fig. 2

(b) *Identification of Key Effectiveness Areas*

In line with MBO approach, it is first necessary to identify Key Effectiveness Areas against each of the identified sub-systems.

(P.I)_L = Productivity Index of Personnel sub-system

$$(P.I)_L = \sum_{j=1}^m W_{jL} \frac{O_{jst}}{O^*_{jst}}$$

The Key Effective Areas would vary from plant to plant depending upon the overall objectives of the organisation as well as long-term planning.

Accounts receivables (iv) $\frac{\text{Amount outstandings}}{\text{Total sales}}$

and as $(P.I)_T = \sum_{j=1}^n W_j (P.I)_j$

$$(P.I)_T = W_1 (P.I)_P + W_2 (P.I)_F +$$

$$W_3 (P.I)_M + W_4 (P.I)_K +$$

$$W_5 (P.I)_L$$

$$= W_1 \sum_{j=1}^m W_{j1} \frac{O_{j1t}}{O^*_{j1t}} + W_2 \sum_{j=1}^m$$

$$W_{j2} \frac{O_{j2t}}{O_{j2t}} + W_3 \sum_{j=1}^m W_{j3} \frac{O_{j3t}}{O_{j3t}} +$$

$$W_4 \sum_{j=1}^m W_{j4} \frac{O_{j4t}}{O_{j4t}} + W_5 \sum_{j=1}^m$$

$$W_{j5} \frac{O_{j5t}}{O_{j5t}}$$

8. Illustrative Example

We shall now take up Production sub-function to illustrate as to how POP can be applied to measure an

index of Productivity. The data used is only representative to emphasize the use of the methodology.

Production Sub-function Defined

Plants define the production function depending upon their needs and other organisational equations. Some of them have been seen to club together shop-floor activity, production planning, materials planning and procurement. However a large number of organisations have recognised the separate identity of materials management and have considered production function mainly comprising of various manufacturing shops with the manufacturing plant, machines, tools and similar other facilities alongwith direct and indirect labour. Together with the same are clubbed the production planning, maintenance and tool room activities. We shall adopt this demarcation in this example.

Key Effectiveness Area and Performance Objectives

The organisation under this example has considered the following Key Effectiveness Areas. The performance objectives are noted alongside :

| Key Effectiveness Areas | Performance Objectives |
|-------------------------|---|
| 1. Labour Utilisation | Labour Performance Index = $\frac{\text{Achieved Std. Hours}}{\text{Direct Attendance Hrs.}}$ |
| 2. Capacity Utilisation | Capacity Utilisation Index = $\frac{\text{Total Hrs. worked}}{\text{Total Hrs. available}}$ |
| 3. Indirect Expenditure | Index of Indirect Expenditure = $\frac{\text{Indirect cost per Std. hour produced}}{\text{Direct Cost per Std. hour produced}}$ |
| 4. Quality | Quality Index = $\frac{\text{Cost of Accepted Production}}{\text{Cost of Rejection (including rework)}}$ |

Weightage Factors

The organisation has decided the following weightage factors for the performance objectives :

| | | |
|-------------------------------|---|-----|
| Labour Performance Index | = | 0.4 |
| Capacity Utilization Index | = | 0.3 |
| Index of Indirect Expenditure | = | 0.1 |
| Quality Index | = | 0.2 |
| | | 1.0 |

| Data | Performance Objectives | Actual Output |
|-------------------------------|------------------------|---------------|
| Labour Performance Index | 109 | 90 |
| Plant Performance Index | 85 | 79 |
| Index of Indirect Expenditure | 0.38 | 0.35 |
| Quality Index | 20 | 19 |

Productivity Index of Production sub-system, therefore,

$$\begin{aligned}
 (P.I)_p &= \sum_{j=1}^m W_{jt} \frac{O_{jt}}{O_{jt}} \\
 &= 0.4 \times \frac{90}{109} + 0.3 \times \frac{79}{85} + 0.1 \times \frac{0.35}{0.38} + 0.2 \times \frac{19}{20} \\
 &= 0.4 \times 0.83 + 0.3 \times 0.93 + 0.1 \times 0.92 + 0.2 \times 0.95 \\
 &= 0.332 + 0.279 + 0.092 + 0.19 \\
 &= 0.893
 \end{aligned}$$

9. Conclusions

In this paper the methodology of Performance Objectives Productivity (POP) has been explained through an illustrative example as applicable to production sub-system. The methodology can be extended to cover measurement of plant productivity or departmental productivities.

The methodology proposed considers organisation as a system and therefore, does not propose to identify inputs in conventional forms of labour, materials, capital, etc. On the other hand, it considers functional areas as sub-system and therefore, proceeds to arrive at productivity indices of sub-systems and then for the whole organisation as a system.

POP system does away with the cumbersome pro-

cess of conversion of inputs and outputs to a common unit as this problem is eliminated through ratios.

POP lays stress, as in MBO, on the outputs and considers inputs as means to achieve outputs.

In these respects, the authors opine that the proposed POP system can be a better way of measuring productivity.

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Managing for Productivity in the Indian Context

M.V.V. RAMAN

The ultimate aim of all human endeavour is the welfare of the individual. The national plans drawn up for economic development and growth of the country have this as their objective. Productivity, as is well known, is the effective utilisation of resources. Productivity is not an end by itself, but a means for achieving higher standards of living for the people; it is the production of goods and services required by the community at large at prices it can afford and continue to do so in an effort to improve the standard of living continuously. How can we do this effectively?

Introduction

Government(s) can create conditions of favourable atmosphere in the economy which stimulate the efforts of employers and workers to raise productivity by well defined and balanced programmes of economic development, and other measures to tackle the challenges associated with increased productivity, namely, redundancy, shifts in employment and similar problems. Raising the level of productivity within a unit is the responsibility of management to be achieved with the cooperation of workers, ably supported by research, educational and training institutions. This visualisation of accumulation of economic activities emphasising micro approach to achieve results at macro level and the interdependencies of the economic system is to be appreciated in recognising the meaning and implication of productivity.

Productivity is defined in various ways, the most popular one being the ratio of output of goods and services to the input of factors responsible for it. Though the classical economists classified factors of production into land, labour and capital, it would be useful to recognize them as men, machines, materials, energy, work, technology, management and organisation; productivity could be defined in terms of one or more or all of them. While it is thus necessary to stress on the efficient use of all resources (or factors) to improve productivity, a tendency is noted to stress on

labour productivity alone, consciously or unconsciously, possibly due to the commonly used and easily measurable measures of productivity, namely, output per employee, manhours per unit of output, labour cost, etc., If any one factor is to be picked up for emphasising in the Indian context, it should be managerial productivity.

The European Productivity Agency (EPA) defined productivity in these terms ; "Above all else, productivity is an attitude of mind. It is mentality of progress, of the constant improvement of that which exists. It is the certainty of being able to do better today than yesterday and continuously. It is the continual effort to apply new techniques and new methods; it is the faith in human progress."

Studies have revealed that research and its application (technology) can bring about spectacular results in increasing productivity in terms of new and better products, outputs, quality and reduction in costs. To appreciate this, one has only to scan the improvements that have taken place in various fields—agricultural production, transportation, newer life-saving drugs, communications etc., over the last century. A definite correlation exists between expenditure on research and development and the per capita GNP. Countries with low levels of living standards (and hence lower per capita income) and countries with higher standards of living are at different levels of technology. While the benefit achieved at different levels of technology are different, effective utilisation of resources at any given level of technology is of great importance, bringing to the fore the need for management as a pace-setting factor. For eg. in transportation, from ox-cart to super-sonic transport, improvements achieved are significant.

Productivity concept helps in understanding effectiveness and efficiency by providing a basis for doing right things, setting objectives, measurement and control; the significance of technology and management in productivity improvements and role of individual managers, get clarified, leading to managerial effectiveness. In this sense, management gets a dimension encompassing activities in the total economic system, and managerial effectiveness, it's content.

Though managerial effectiveness is applied to

individual managers at various levels in organisations, it has to be viewed cumulatively as well, since managerial effectiveness may be meaningless without organisational effectiveness. In the economic system, an organisation is but an entity, and the effectiveness of all organisations leads to the needed impact at the national level.

The Indian Context

A brief review of the Indian scene with regard to some specific aspects and issues would be helpful in crystallising the thoughts on managing for productivity in the Indian context.

Economic and Industrial Development

When India attained freedom in 1947, the economy was characterised by weak infrastructure and elemental handicaps, without any base for progress in any sector of the economy. Considering that there was no technical know-how for industrialisation and there was lack of capital and entrepreneurship, it was obvious that only planned development could bring some sense amidst prevailing chaos to usher the country into economic development and progress.

The post-independence period is characterised by economic growth and development. This calls for a rapid social and economic transformation through democratic processes. The objectives of the plans call for initiative, imagination, enthusiasm and above all dynamism and leadership in all spheres of economic activity, which in turn require policy making, planning, decision-making, problem-solving and creation of an atmosphere where individuals can work harmoniously and contribute to the achievement of national goals. Productivity approaches discussed earlier have a major role to play in these processes.

Management Development

The earlier discussion has pointed out the close relationship between management and productivity improvements. If managers are not effective, implying inefficient utilisation of resources or water resources, it is the total economy that suffers. Society at large is benefitted if the managers are effective, this is parti-

cularly important in a planned economy where inter-relationships and dependencies of economic activities in both inter and Intra Sectors are very strong.

The managerial environment in India has its own peculiarities and problems. Indian managers have to face problems of shortages, prolonged deliveries, poor quality and similar problems as opposed to the efficient conditions under which western managers work characterised by easy availability of right quality of materials at right prices and on time, and technology. This calls for a new approach which should include consolidation of technology and modification of managerial practices and methods to suit Indian conditions, and developing our own, if necessary.

Management development implies an organised effort towards human resource development, as a part of improving organisational performance for constant upgradation in managerial effectiveness of individual managers achieving organisational effectiveness through synergism. While management development activities have increased over the last three decades, it may not be wrong to say that one does not see the desired impact in organisations. The reasons for this are many, including lack of faith and interest in training, lack of clarity in objectives, lack of evaluation of training effectiveness and the low status of training functions in most organisations. It may be observed here that training in most organisations is built around apprentice training schemes, which is not the choice of the concerned organisation, but implemented as a directive by the Government. This type of training is conceptually easy to implement and evaluate. It is now recognised that individual skills in themselves will not necessarily improve group and organisational performance, and the need therefore is towards developing interventions which work at organisational problems; the emphasis is on solving organisational problem as well as developing individual skills.

It is interesting to analyse the reactions of participants, to the various management training and development programmes. It is common to hear "It was alright, but cannot be applied in my place"; "there was nothing new"; "it is all theoretical"; "this should be told to our senior managers" and the like. It appears

that most participants expect "spoon feeding" in these programmes. In some cases people attend programmes (internal or external) because they are nominated. These are all symptoms of a much deeper malady, namely, that there is no practice of measuring or evaluating the performance of managerial personnel. This aspect requires a great deal of attention and if this could be done, which in many situations is possible to do, managerial effectiveness assumes significance and management development becomes meaningful.

Research and Development

Views have been expressed that Research and Development efforts in the direction of meaningful consolidation, absorption and improvement of imported technology have been inadequate in India. The Hindu dated 24th January 1981, in the absence of any other indicators, has taken the ratio of R & D expenditures to technical fee remittances, called Absorptive Effort (AE) as a measure and points out that the value of AE in Japan during 1950-1960 was consistently well above 4, and has been increasing steadily ever since, being about 14.0 in 1978. While comparison may not be proper as circumstances differ from country to country, it would be informative to know the value of AE in the Indian context, which has always been less than 1.0. It was even below 0.5 during early 1960s, but increased during the late 1960s, reaching 0.94 in 1969-70 and has fluctuated since then, but remaining below the value of 1.0.

Product Quality and Related Aspects

In the quest for improving productivity for achieving higher standards of living, product quality assumes great significance; product quality is also important for economic development, because of the need to export products, services and technologies of Indian origin. While the productivity movement in the country has gathered momentum during the last 25 years, the approaches and methods employed have emphasised on output aspects, taking for granted the quality aspect. In the long run quality products are always cheap in price. The loss to individuals in terms of money and inconvenience caused and to the industry and other sectors and to the community at large due to poor

quality, does not seem to have been focussed at all in the Indian context. The productivity movement must now turn its attention towards upgradation of the quality of Indian products and services.

As governmental policy, Indian products enjoy protection from competition from abroad. But the entrepreneurship in India has more often not taken this opportunity as an instrument to develop and improve the product and its quality, but has fallen prey to easy and quick profits and thus a state of 'stagnation' has been reached with reference to technology and quality in those cases.

Product development, production and distribution and after-sales service are all limited in character. Only those products which have been developed and used in industrially advanced countries and where technical know-how is obtainable, have been manufactured. No attempt at product development to suit the needs and pockets of the common people, most of whom live in villages has ever been made.

If customer is the king as it is generally said, the king has lost his crown in India—that is how a T. V. presentation at Madras said in a broadcast (1981). Product quality, service, and customer satisfaction are all far from satisfactory in the Indian context. Shortages, lack of competitive spirit and will to produce superior things, limited product development, lack of coordination and cooperation amongst business community, government and research organisations have all contributed to this sad state of affairs.

Analysis of the Indian scene in depth, reveals many inhibitions particularly amongst the senior management personnel regarding quality, quality control, quality-cost-productivity relationships. Further their belief is that all most all quality problems are operator oriented. However, world-wide experience suggests that 80 per cent quality variations and problems are traced to management deficiencies and the remaining to others including workers. If genuine attempts are made to identify and eliminate management oriented deficiencies, this would certainly improve the morale of the worker and help him concentrate on those errors attributable to him.

Quality control programme should be emphasised as a consolidator of technology, by a fuller development of specifications and better understanding of processes and products through effective documentation of internal experience by application of known quality control approaches, techniques and experience. The information system to be documented comes from the application of the programme in the areas of incoming Materials Control, Process Control and Product Control, through the coordination of information in various aspects like quality of design, of conformance and performance and by the choice of appropriate technologies in the fields of engineering, statistical and managerial including quality costs, quality motivation, organisational and internal and external coordination.

Labour-Management Relations

Productivity improvement on a continuing basis can take place only in an atmosphere of good labour-management relations. 'Management' is the skill with its own discipline and fields of knowledge' which achieve results working through people. A responsible union, is one that understands workings of organisations, role of workers and can negotiate with confidence on issues that affect workers as a group. Enlightened management and union, with mutual understanding of each others' role in an organisation, can create atmosphere conducive to increasing productivity. It is a pity that we are not in sight of such an atmosphere in most of the organisations and it is time that both realised the productivity implications not only in their own self interest, but also in the interest of society at large, where they themselves form a part of it.

The crux of the matter rests on sharing the gains of productivity equitably not only amongst labour and management, but also with society (consumers) at large; without this no material progress can take place.

Any discussion on the Indian context cannot be completed without reference to public sector and some of the current infrastructural problems which have hindered our attempts to improve productivity. The public sector is supplier of raw materials and products to other industries and services, and therefore their con-

tribution has a direct bearing on the output, quality, delivery and costs of the users. This is a structural aspect of the economy which places greater responsibilities on the managers in the public sector. At present the country is facing problems of infrastructure management which has to be given priority from the point of view of individual units as well as national productivity. Forces in Steel, Electricity, Transportation, Coal, Water etc.

Productivity at the Unit Level

At the unit level, stability and growth are vital for their own survival and contribution to the economic system. This implies continuous evaluation of organisations and making changes as needed. One should look at organisations both from short-range and long-range points of view. Stability refers to the short and possibly medium range point of view of consolidating its capabilities, by effective utilisation of resources and growth refers to the strategic planning and changes to move an organisation in new direction to keep it viable in the changing environment.

Enhancing productivity and quality should be the key to achieve stability and growth of organisations. One may ask are quality aspects not included in productivity considerations? Quality considerations require a different orientation, tools and techniques than hitherto applied in Indian industries and organisations for improving productivity. Further, quality control approaches, tools and techniques can be utilised to consolidate the technology in any organisation and pave way for its improvement; if planned properly it may help product development, indigenisation and import substitution efforts.

There is a need to examine the present systems of evaluation of organisational performance. The present indicators generally used, profits, costs, output, and some financial ratios will not yield information on productivity improvements which is vital for achieving stability and growth. What is required is a measure of the effective utilisation of resources, which in a sense measures managerial productivity as well. It has become necessary to devise techniques that measure total factor productivity change (i.e. change in labour,

materials, capital, and energy productivity) taken together (and or individually) on corresponding change in profitability. In this sense monitoring productivity performance, measuring how profits were affected by productivity growth or decline, is of value.

Keeping these in view, a summary, as a broad indication of the basis for a plan of action for managing for productivity at the unit level can be given as follows :

- (i) Deriving objectives of organisation and role of managers and workers in fulfilling these objectives with an understanding of productivity concepts.
- (ii) Recognising "growth" as an essential ingredient in the survival of organisations and to develop means of achieving growth in the working of organisations corporate planning.
- (iii) Recognising the role of Productivity techniques in determining the "capability" of organisations and pave the way towards achieving stability; leading to development of MIS including the use of computers.
- (iv) Understanding the means by which labour-management relations can be directed towards common goal, the role managements have to play in the years to come to put the labour-management relations on an even keel to achieve improvements in productivity on a continuing basis for mutual benefit Industrial Relations.
- (v) Recognising methods and approaches in measuring productivity from the point of view of over all Organisations Productivity Measurement.
- (vi) Understanding quality implications and efforts needed to consolidate the technology in organisations not only for improving quality but also to assisting in : new product development, indigenisation and cost reduction (Quality Control).
- (vii) Improving the attitude and analytical skills of managers both in management and technology continuously through education and training (Management Development).

of business—Republicans, professional managers, college graduates and the affluent—are increasingly disenchanted with the social conduct of corporations and have declined by over 50%. In 1979 alone, public interest groups have put before 112 corporations 130 shareholder resolutions. These resolutions address the major questions of social responsibility by corporations.

(viii) Developing a style of management based on goal setting and rewarding as a means of motivating managerial personnel (Managing for Results).

(ix) Recognising managerial productivity as a crux of achieving the desired goals of the organisation.

Working

They dealt with the old problems of nuclear power plants and weapons, labor relations and employee motivations, political contributions, equal employment opportunities, price fixing, military, and lobbying. New questions were also brought up like South Africa, television advertising directed at children, trading with repressive governments, redlining and community reinvestment, foreign payments and media policies.³ The American public is demanding that these issues be dealt with rather than put in a corner and forgotten.

The distrust the public has generated toward big business is the result of corporate price increases and inflation, unemployment and recession, the amount of pollution and deterioration of the environment caused by corporations, company practices when dealing with customers, and overall poor decision making on the part of management. The public knows all it needs to about inflation and how it affects them but it also knows how corporations are a major cause of inflation through their pricing policies. It is no wonder that the American public wants the Congress to set price ceilings when they know that corporate price increases are the major causes of inflation. To generate more public distrust towards corporations is the fact that the public is realizing that corporate profit on every dollar of sales is not 4 cents as business states but 28 cents. This is at a time when the public believes a fair profit on every dollar of sales should be 10 cents.⁴ Recent recessions have increased the rate of unemployment which is another fact generating public distrust. However, now even white collar workers who are not accustomed to this joblessness are finding themselves without jobs. Engineers, Ph.D's, executives, security analysts, brokers and advertisers have for the first time joined the blue collar workers on the unemployment lines and are blaming business and government who in turn blame business. The public particularly those who are without jobs believe that there are plenty of jobs if companies were not so into maximizing their profits by sacrificing social objectives.

Hostility towards corporations also arises from socialists, politicians and intellectuals. These groups direct their anti-corporate sentiment towards the entire role of business and free enterprise in our society. The intellectual class according to Robert Bork pro-

vides "the indispensable theoretical apparatus with which the institution of capitalism is attacked."⁵ Socialists and intellectuals are increasingly disenchanted with big business with respect to their social conduct. This trend is most likely to continue unless corporations take effective counter action. "There can be no doubt that increasingly during the future, business will be subjected to mounting pressures to abandon the single-minded pursuit of profit and to take on purposes linked with broad public responsibility."⁶

The criticism makes itself particularly more evident in an election year. Most political analysts agree that though Senator McGovern and Governor Wallace appeal to different groups of people, a common reason for their successes in the 1972 Democratic primaries and the following national election is their criticism of the attitudes and policies of big business and the power they have over other institutions. Big business very often face lifts itself during election years to encounter the criticism of politicians. If big business wants to put an end to political criticism of its policies, it should constantly improve its public image, not just during election years.⁷

What Should Business Do?

Business must respond to these critics by consistent better performance, effectively communicated. Most executives subscribe to the view that business values are closely intertwined with societal values. The concept of a corporation's social responsibilities has received much attention from management scholars in recent years; we can agree that an effective answer to the recent criticisms would be for business to discharge its social obligations and responsibilities. However this concept is still a fuzzy doctrine. McGuire defines it as a "crude blend of long-run profit making and altruism."⁸ What is meant by this statement is that if a company shows concern for the general well being of the public it will result in a positive effect on profit making in the long run. Further, even among many of these scholars, wide discrepancies of opinion exist as to the role of corporate leadership in social activities. "In the face of criticism and doubt concerning the ramifications of the social responsibility doctrine, some hesitancy and resistance to further applications of it appeared in business circles."⁹

The resistance to further applications of social responsibility in business circles has to do in part to confusion over the various models of corporate social responsibility. These models are the austere model, household model, vendor model, investment model, civic model, artistic model and eclectic model, which incorporates two or more of the above.¹⁰ Each of these models makes different groups a primary concern of the corporation, in terms of responsibility. For instance, in the austere model, stockholders are a major concern of the company, while in the household and vendor models, employees and customers are a primary concern. The same is true for the investment model where the life of the firm and its long term profits are a major concern while in the artistic and civic models business concern for the arts and community activities are important. For a business to carry out an effective program of social responsibility it must decide which group or groups will receive the most emphasis in the policy making.

According to Opinion Research Corporation Chairman Hugh C. Hoffman, "Whether business likes it or not the public is re-defining corporate responsibilities in general and telling the companies what their social responsibilities must be. One of the studies by the Opinion Research Corporation stated that one out of five people blamed corporations for not doing enough to hire and train Negroes, maintain full employment, help clean up the ghettos, provide rewarding and satisfying jobs, letting community services deteriorate, respond to the needs of the younger generation and provide day care centers for women employees with pre-school age children."¹¹ The important fact revealed by such studies is not that one of five people blame corporation but that the trend is increasing and unless something is done soon it will be one out of four blaming corporations.

Many experts of the Opinion Research Corporation¹² believe that there will be a re-shaping of the corporation around a system of social cost accounting. This will most likely happen if business can not put an end to public distrust and the possibility of government intervention. A tool of social cost accounting would be block voting of stock owned by colleges, funds and other groups. Such groups or organizations whose main

interest is in the social objectives of the company will pressure many companies into realizing that their constituency is no longer simply the consumer for their products, but the total public with which they interact in society.

This report takes the view that for a corporation to effectively discharge its social responsibilities and thus increase its long term profit, top management must initiate a system of "social audit" certified by independent accountants. The social audit is a series of mechanical steps under which the certified public accountant verifies through the appropriate forms that the company is maintaining its goodwill after which it is placed in the audit file for future reference. To substantiate this concept, six steps of the "social audit" have been developed.

1. *Executives Outlook* : Generating the support of corporate executives and middle managers in the drive to make corporations socially responsible is a major achievement for the advocates of the social audit. In a survey of corporate executives 90% feel that they operate in an ethical manner, however 80% of these same executives consider the generally accepted practices of their company as unethical. The major criticism brought forth by these executives is that companies are indifferent to consumers health and safety.¹³ Corporate executives are changing their allegiance as a result of the pressure they receive from friends and family. Many a time executives have been questioned by their children on why they let their company carry out policies that have negative effects on society. How is a businessman supposed to act around family and friends when he knows that they believe he would do anything possible for a buck? In a representative survey of 2,000 Americans over 50% said that a businessmen would do anything for a buck.¹⁴ While executives are standing up on the issue of social responsibility they are facing problems from people on both sides of the issue.

Businessmen who believe a company's policies are unethical have few options open.¹⁵ If they speak up the top level managers will label these men as lacking corporate loyalty and thus being untrustworthy. Such a label would result in a halt to any further movement up the corporate hierarchy. If these ethically minded

since what may be a practical policy in one case may be completely impractical in another.²³

Recent trends in business criticism indicate that the public has a tendency to view the corporate contributions to social welfare as a gimmick. A "Social Audit" widely publicized can go a long way in improving this image. "Today society is demanding a greater commitment by business to socio-economic tasks. There is growing and ever more vocal insistence that we in management should commit corporate resources, as well as our personal ones, to the battle against the social and environmental ills that plague us, many of which are alleged to be the inadvertent results of industrial success in the past."²⁴

Rodman C. Rockefeller,²⁵ President of International Basic Economy Corporation (IBEC) states that the success of an operation usually depends on a combination of four guidelines. In an operation the company must identify the human needs in the market and develop new, innovative ways to meet that need after the method of meeting the need is developed it should be analysed with the help of financial criteria to determine if it is economically feasible for the company and if the local managers are qualified to make it succeed. Finally it is important to determine that the policy does not violate the social, cultural and economic values of the people that it is intended to help. After all we are trying to solve problems, not create new ones.

McGuire²⁶ points out that the modern American views life as a game and a race; he frequently asks "who's ahead?" or "Who's winning?" The rewards of the game are not so important as the attitudes people have of the game which appears in everything we do. This is shown by the growing popularity of polls. When reading the newspaper we are more concerned about which politician is leading the poll than the issue he stands for. By widely publicizing this "social audit", a far-sighted businessman can take the lead over other companies in improving his image and dispel the notion of the public viewing the social responsibility doctrine as a gimmick.

Possible Governmental Controls and Actions

Americans believe that business should bring its

huge amounts of resources, skills and clout around to solve social ills. In order to make a broad attack on our social problems business must first change the ideology of the United States. It must come up with a new insight on the community and how it should operate. If this is not done any actions on the part of business to rectify social ills will lead to confusion, anarchy and ultimately failure.²⁷ According to Lodge²⁸ an important social responsibility of business and other institutions in American life is to assist in the developing of an adequate political structure and authority based on a clearer, more explicit and realistic ideology. This is basically a political task which business must pressure government into carrying out. It involves changing the authority and strength of government at all levels. Business policies that are meant to solve social ills but may very well cause social ills if business attempts to carry out such policies before government is ready.

Government, under pressure from the American public, is beginning to become more involved with business on social issues. One program that government has started—the New Commerce Program suggested by Secretary Juanita Kreps²⁹—shows the degree of government concern. This program is designed to provide guidance for corporate activities in the social policy sphere, equal employment, consumerism, resource conservation, environment, relations with host communities. The programs assist business by creating a number of categories that can serve as a management tool or model. The program also offers some limited assistance on how to measure a company's social responsibility policies, in a few spheres of activity. This is only one of many programs government has that concern business and there are more under development. It is up to business to work with government or these programs if they wish to hold back government from placing limitations on them through regulations.

"Social Audit" will effectively combat government action in this respect. It will show government and the public that business is concerned about the issues that affect society. If the company is working to solve social ills, the social audit will verify this. It is up to business to see that all companies have a social audit and work on social issues if they wish to prevent government intervention.

Due to the growing pressure for greater corporate accountability one can foresee the day when legislature may be passed requiring business to publish such an audit. Hugh C. Hoffman comments: "If, by word and deed, business does not dispel public mistrust further government intervention is certain."³⁰ It will not be long before price ceilings are instituted to place ceiling on corporate profit. Even stock-holders no longer feel that competition can keep prices at fair levels without government controls. The ability of corporations to govern their undertakings by standards of public rather than private interests is being increasingly questioned.

Business leaders must realize that they live and operate in an open society which is disenchanted with the way they operate. These business leaders must realize that all of their actions and policies can and will come under public scrutiny and the scrutiny of its institutions. "The disenchantment with business shows up not only in reluctance to buy some goods and services but also in a growing anti-business mood which encourages regulatory agencies to get in touch with business and Congressmen to support anti-business legislation."³¹ "Business will have to adopt social issues voluntarily or government always sensitive to the public mood will seize the initiative and force changes by regulation."³²

McGuire³³ points out that the public distrusts big business power because of its influence over other institutions which is a threat to the concept of a pluralistic society. If institutions are small and power centers are widely diffused we need not fear power. When power is diffused like this it can accomplish social goals and at the same time be limited by the organization of society. There are types of power McGuire says we should fear, they are, managerial power and business power. Managerial power refers to the control managers exercise over their subordinate while business power refers to the power which business has over its environment. Some of the proposals advanced by the former Democratic presidential candidate, Senator McGovern, are intended to curb the influence and power of big business. Though curbing the power of any institution is good for the democratic way of life, one should be wary of the fact that in an emotional climate, extreme remedies may be adopted. This is one of the biggest

dangers a businessman faces these days. "Corporate size brings political influence but also political vulnerability."³⁴ Sethi also points out that "in a society which is essentially characterized by large corporations, politics must of necessity be pressure groups politics."³⁵

Businessmen can face up to this challenge by making common cause with other reformers—whether in government or elsewhere—to prevent the unwise adoption of drastic and emotional remedies. In incorporating a "social audit" in their year-end figure, they can initiate necessary reforms to convince the legislatures that they are continuing to function as a constructive force in our society. The goal of businessmen should be "nothing less than the deliberate institutionalizing of social change so that violent revolution becomes superfluous."³⁶

Generating Employees Motivation

"Social Audit" can help in improving the morale of the company's employees, "A social audit of the current and potential social benefits and costs generated by the company for its employees can identify the steps that would maximize the company's attractiveness within any fixed level of budget. In social audits, this would be accomplished by the following sequence of actions:

1. Questionnaire survey of employees' perceptions of the relative worth of different current and political social benefits and the cost of different social disadvantages associated with company employment.
2. Follow-up interviews to clarify and ambiguities in responses to the survey.
3. Formulation of any employee benefits, preference inventory, with relative perceived worth associated with each item.
4. Inventory of current social benefits supplied by the company to employees.
5. Comparison of employee preference inventory with current programs inventory and identification of "low preference, high cost" components to be eliminated and "high preference", "pre-

- sently unavailable" or "under available" components for possible addition.
6. Re-design of company benefits program to respond maximally to employee preference within some budget and associated reallocation of sub-budgets.
 7. Review and analysis of additional, highly valued social benefits requiring additional budget to determine if potential return on additional investment is justified.
 8. Consistency check, using a survey of employee responses to the new benefits plan and determination whether significant improvement in perceived worth has been achieved without significant budget expansion.
 9. Communication of the resulting changes to employees and stockholders, demonstrating the improved benefits gained with no diminution of return on investment.

If such a social audit of employee benefits and costs is executed annually and followed up with the actions indicated, employee recruiting and retention should improve, with attendant reduction in personnel costs from undesired turnover.³⁷

According to Act³⁸ a company's social audit measures the company's social performance with respect to employees. Such an audit will provide by item, year and company comparison of the social benefits and costs created by the company for its employees. Comparisons of this type can then be used to allocate personnel resources more efficiently and in conformance with employee preferences and perceived valuations, as well as to make them effective with respect to corporate objectives.

The modern American society carries a built in guarantee to its citizens of the basic physiological and security needs. In view of this, more than in any other nation, an American employee looks for more than just economic incentives. A person would take a greater interest and pride in working for a socially responsible organization.

Some companies are giving their employees leave for public service programs. This enables the execu-

tive to take time off, usually with pay, to perform socially constructive tasks. IBM is one of the companies that has started this policy.³⁹ A program of this type gives concrete evidence in a "social audit", will generate a great amount of interest and enthusiasm among the employees. Further, the employees are more likely to talk about it with friends in their social circle, which is naturally beneficial to the organization.

Consumer Behavior

Social Audit is in consonance with the modern marketing concept which emphasizes consumer orientation. The new marketing concept "starts with the firm's existing and potential customers; it seeks profits through the creation of customer satisfaction; and it seeks to achieve this through an integrated corporate-wide marketing program."⁴⁰

"Product quality and advertising decisions can be made incorrectly if based on purely financial conditions. Partly unsafe or misleading advertising of products may maximize profits temporarily but the social costs of these policies will quickly be converted to financial costs by an angry public when awareness spreads of the consumer risks imposed without informed consent of consumers. Social audits can anticipate such social costs and provide a basis for a sounder social investment decision that will also yield better long term financial returns."⁴¹ In one survey, 21% of the public felt they were cheated in a recent purchase of a product or service especially on groceries, meats, autos and appliances. When a consumer purchases a good or service they expect to get what they pay for and if not will apply pressure until the companies deliver what they expect.

"One of the most volatile issues of the dynamic business environment is the issue of consumer welfare. Consumer welfare is the provision of quality products and comprehensive manner to reasonably assure the safety, well being and satisfaction of the customer."⁴² There are many characteristics of the market environment that will have an effect on the consumer. These include the relationship between buyers and sellers, the size of the companies, legal rights of the buyers and sellers, rising affluence, consumer sophistication and technological innovations.

When a customer buys a product or service, he looks for some symbolic satisfaction also in addition to the functional use. This is especially true in a country like the U.S.A., where for the vast majority of products the competitive brands are physically undifferentiated. In such a competitive environment, the symbolic value of products can be enhanced by giving wide publicity to the "social audit" figures. In effect, the argument is that "social audit" improves the institutional image and this would lead to greater sales, one of the parameters by which the success of an organization is judged. A company should be able to answer two questions for the social audit on consumer relations. These questions are, "Has the company a thorough consumer policy?"⁴³ and "Has any appraisal been made of the growing power of Consumerism?"⁴⁴

Social Goals

"Social Audit" helps in reaching the corporate objectives of long term profit, viability, increased growth, increased share of the market and increased sales. It does this by improving the company image in the eyes of the public. The American public appreciates a company that is concerned about the environment and its inhabitants and shows so in its purchase of consumer goods.

This hypothesis is a natural consequence of the argument advanced in favor of the previous hypothesis. As McGuire states, "one goal of the corporation far submerged during prosperous periods is viability—survival of the firm. McGuire also feels that the importance of viability or any of the other corporate objectives has a lot to do with the company's leadership and the nature of the particular situation. The leadership of a company very often determines the personality of that company in how it conducts business.

A goal value that McGuire⁴⁶ says has some significance in our modern business system is that of integrity. This means that the enterprise—and in particular the large corporation—behaves in accordance with the laws and ethical precepts of a society. More than this, however, integrity also means that the corporation "does right" by the claimants who seek its assistance. "This is not so easy since very often the claimant groups are also the opposition."

Though a system of "social audit" may mean an acceptance of lesser profits in the short-run, it would definitely be beneficial to the long-term growth of private enterprise. "Scarcely a handful of businesses take advantage of the 5% deduction allowed for contributions. This potentially staggering sum of money could supply more than enough funds to resolve social problems. Such contributions would have to be made with the seriousness, analysis and careful attention which the same management regularly gives to their annual capital budgets. But if that were to happen, these expenditures would clearly turn out to have been profitable ones, for they would all tend to reduce present problems and enhance the log and purchasing power of many individuals."⁴⁷ Miller advocates businessmen to take the vanguard in the "war" against our domestic ills.

The long-term perspective demands that the top management pay heed to the circumstances that bring about the current criticism and take effective action to answer critics whose arguments have validity.

The Opposition to Social Audit

"Everybody is talking about social audit, but scarcely anyone agrees with anyone else as to exactly what it is, and no two organizations are doing it quite the same way."⁴⁸ There are numerous problems that are incurred with the use of social audits. First, the social problem for which social audits are adopted are usually short run problems and do not require such a far reaching solution. Second, it is impossible to determine an exact measurement. Third, the goals of a social audit and the information it requires are unrealistic and of no use to society. Fourth, the company's financial statements are capable of providing the information society needs without a separate social audit. Finally, there are many administrative problems that will arise with social audits. A better understanding of each of these criticisms will enable us to understand the pros and cons of social audits.

Very often managers do not know what is expected of them since the relative importance of a particular social issue is continually changing. There is a transition period under which the importance of different

issues change causing management to re-adjust its policies. One observer called this transition period a "zone of discretion" or a time span for every social issue before it becomes a matter of social concern and the time when the acceptance of such issues is so wide spread that adherence is an unquestioned part of doing business.⁴⁹ The same observer describes the period between the two points as a "period of uncertainty as to the strength and durability of public support for the issue, standards of socially acceptable behavior, timing of desired conformity, and the technologies of resources available for complying."⁵⁰ What is being pointed out here is that what public opinion considers to be a major social issue is always changing.

A social audit is supposed to evaluate the total impact of a corporation's social policies. "A company's total social impact is far from being understood and is notoriously elusive to define because virtually every decision made by a corporate manager has some social consequences that may not conveniently agree with the company's "impact area" however carefully it may be conceived."⁵¹ This is a problem of measurement, in that it is impossible to determine the effects of a profit oriented or socially oriented decision would have on the environment in the long run.

There are two reasons why the goals of the social audit are unrealistic. "The first reason is that there seems to be an erroneous definition of the users of a social report, and the information that should be required."⁵² If a social audit is for the public, then the audit should be formulated as a cost benefit analysis since the public does not care how a company promotes its social goals. What the public is concerned about is what activities business uses to promote social goals. "The second reason that the social audit is unrealistic is because it uses the format of financial statements to show how a company pursues social goals. The problem is that financial statements are not set up in a manner to determine how a company is achieving its goals, even if they are financial goals."⁵³

Regular financial statements are better than a social audit for three reasons. The simplest reason is cost. It is cheaper to use a financial statement to find the social responsiveness of a company than to produce a separate

social audit. Second is that the credibility of financial statements is as good, if not better than a social audit since they are done by certified public accountants. Finally financial statements can provide its user information on the organizations responsiveness and acceptance of social issues, if they are trained on their use.

Finally a system of social audit, like any other new organizational method will pose administrative problems. The question of assigning priorities can be a major problem. Should the company spend more on pollution control or on training minorities? Should it contribute to a cleaner environment at the cost of higher prices to consumers? The demand from various institutions in our society do and will conflict. How can the businessman satisfy all these demands?

There can be no simple answer to these questions. However, one of the primary tasks of top management to come up with an optimum solution in the face of a variety of problems.

The priority to be assigned to each of the social tasks will have to be flexible. It will change from year to year and also depend on the particular industry the company is a part of.

There are many advocates of the idea that the management is primarily responsible to stockholders and that their objective should be profit maximization. However, the objective should be profit optimization not maximization.⁵⁴

How exactly is the social audit to be conducted? The association of CPA's is already working on social accounting methods and they can be called upon to devise a suitable method.

Conclusion

The concept of social responsibilities of an organization has been much discussed in recent years. Most business-men accept this idea. However, good results are much more valuable than good intentions. "To reverse the disaffection the public has for business will take a lot more than public relation campaigns. It will take management willing to talk candidly about the bad as well as the good. It will take management showing

as much concern for quality of the company's goods and services as it does for the enterprise's profits."⁵⁵

Most management authorities agree that this concept has not been sufficiently translated into action. "In 1970 it has become obvious that the performance of U.S. corporations in the area of social responsibility has generally been trivial, considering the scope of their operations."⁵⁶

The main difficulties seem to be in getting corporations to change their policies and then translating policy into practice. Every important advance in business ethics was achieved through a long and painful process. The process begins, according to Carr⁵⁷ when members of society point out the problems with a particular company practice. The problems continue until economic conditions and technological advances make the practice even more undesirable thus resulting in more criticism. Businessmen who profit from practice defend it generating a long period of public controversy until laws are adopted to forbid the practice. Once the social goal is set, it is natural to look for appropriate yardsticks to measure the extent of corporate aid for social purposes. It is suggested that "social audit" will enable the executives to pursue a carefully marked out program to reach their social objectives by providing such a yardstick.

The social audit should be conducted by a team of people who understand the workings of the company and industry. "The social audit should be made by a team of persons who are (1) oriented toward the social point of view, (2) conversant with business practices and problems and (3) technically trained in fields such as law, economics, sociology, psychology, personnel: government, engineering, philosophy and theology." A team of this type would benefit both the corporation as well as the public by giving a true and accurate report.

The social audit would have several advantages: (1) it would provide a recognized method of bringing the social point of view to the attention of management; (2) the appraisal of individual corporations would be made by persons outside the company who would have a more disinterested and detached view of

its activities than company employees; (3) the creation of a specialized groups of social auditors would give an impetus to the consideration and development of recognized social standards for corporate practice; (4) the fact that the report on the audit would be made to the company and not to the public would make possible complete frankness and at the same time would make the scheme more acceptable to businessmen."⁵⁸

Another compelling reason for the introduction of this audit is that it is quite likely that before long government will pass laws to make it mandatory. For this reason having a social audit conducted by outsiders will slow down government action and at the same time generate public support.

Admittedly this system will pose new problems. But it is the management's primary responsibility to solve problems. Perhaps, it would be appropriate to conclude this report with a quotation from Henry Ford II, taken from a speech he delivered before the Yale Political Union at Yale University:

"To translate any set of intentions into results programs have to be developed and built into the structure of the organization and its operating procedures. We need to make changes in our organization, to allocate responsibility and authority, to determine priorities, establish targets, time tables and reporting procedures, make up budgets, provide incentives and do all the numerous things a big organization needs to do to reach any goal."⁵⁹

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Tiecicon House,
Haines Road, Mahalaxmi,
Bombay-400 011.
3. *Calcutta :*
P.B. No. 9234
7-B, Middleton Street,
Calcutta-700 071.
4. *New Delhi :*
P.B. No. 633,
Bank of Baroda Building, (Fifth Floor),
16, Parliament Street,
New Delhi-110 001.

Project Division :

P.B. No. 3876,
Bangalore-560 038.

Export Division :

P.B. No. 3876,
Bangalore-560 038.

Sales Offices at :

- (a) *Ahmedabad :*
P.B. No. 71,
Metro Commercial Centre,
High Court Marg, Navrangpura,
Ahmedabad-380 009.
- (b) *Jabalpur :*
314, Napier Town,
Kabir Marg,
Jabalpur-482 001.
- (c) *Kanpur :*
P.B. No. 23,
B-10, Sarvodaya Nagar,
Kanpur-208 005.
- (d) *Madras :*
P.B. No. 762
Fagun Mansion,
19, Commander-in-Chief Road,
Madras-600 008.
- (e) *Secunderabad :*
P.B. No. 1648,
Chandralok Complex,
111, Sarojini Devi Road,
Secunderabad-500 003.
- (f) *Vishakapatnam :*
No. 10-50-37, Waltair Main Road,
Ramnagar,
Vishakapatnam-530 003.

Increasing Productivity in Banks

KISHORE C. PADHY

Increasing productivity of banks in India is a recurring theme in the late '70s. A bank is 95% men and 5% money. So labour productivity is the essence of productivity of banks.

Bank employees have to develop marketing skills to retain the present business and to expand it without adding to costs and affecting bank's image at the same time. Job enlargement/enrichment encompassing skill variety, task identity, task significance and autonomy is suggested to transform employees into Managers of services. SBA approach to training (Change the situation—Behaviour changes—Attitude changes) may be adopted. The style of management recommended is a mix of Y theory (self-control and self-direction) and Z theory (compromise and corporate team work.)

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Increasing productivity of banks in India is a recurring theme in the late '70s. Productivity is the relationship to output of each of the three major categories of inputs—namely, men, money, and machine—in a given period. A bank is 95% men and 5% money. So, the measurement of productivity becomes admittedly an intricate problem in a labour intensive service organisation.

Measurement of Productivity—Banks

The yardsticks of measurement usually adopted are :

- Deposits/credit per employee;
- Growth in deposits/credit per employee;
- Total assets per employee;
- Total assets growth per employee;
- Net operating income per employee;
- Net operating income growth per employee;
- Operating profit per employee;
- Operating profit growth per employee;

Average assets per employee and revenue per employee in American Banks is as high as \$1.8 million and \$2 lakhs respectively, yet American Productivity Centre has singled out banking as a poor productivity performer. Considering the stage of the country's economic development, business potentials and state of technology of the banks' operations, performance of Indian banks measured by anyone of these eight yardsticks cannot be compared with their American or European counterparts.

If the output in banking is seen primarily as deposits and credit, deposits per employee and credits for employee have risen over the last five years for the banking system in India as a whole. But the figures cannot be related directly only to staff effort in a given year as a number of factors such as inflation, deficit financing, branch expansion and credit policy of the Government are relevant in this context. On the other hand, if income, expenses and profitability are used as indices of efficiency, the per employee profit in our public sector banks is Rs. 0.01 lakh only whereas the per employee staff expenses is as high as Rs. 0.12 lakhs. Moreover, the spread of interest has gradually reduced over years and the spread of expenses has perceptibly risen for the public sector banks. However, these indices do not necessarily indicate low productivity because interest rates and cost of living index linked wage structures—the major determinants of income and expenses—are beyond the pale of the banking system. Further, 'area prosperity' and 'people prosperity' approaches reflected in opening of new branches in rural centres and earmarking a portion of lending to the priority sectors also have a considerable impact on profits. To go by the profit criterion, in the present state of Indian economy where social costs and benefits are becoming more important is to live in a make-believe world. To be in tune with the social forces of the time, it is necessary to evaluate the bank's productivity from a social rather than purely quantitative point of view.

Moreover, quantitative estimates do not present a realistic picture in a cost push inflationary situation as ever increasing product price covers up operational inefficiency to a large extent. As such, the bank productivity is to be measured in qualitative terms, namely, (a) the state of maintenance of books and accounts and security of assets like cash and investment, (b) quality of lending, and (c) customer service. Fraud, forgery and bank robbery have become daily occurrences. Without production of statistical evidence, it suffices to say, on the basis of empirical studies that the quality of lending and services to customers leave much to be desired. Thus, on the basis of qualitative, besides quantitative, determinants of efficiency, the conclusion is inescapable that there is substantial scope for improvement of productivity in banks.

Factors effecting productivity

Facilitators

- (i) Awareness of social obligations
- (ii) Emergence of managerial philosophy
- (iii) Young and enterprising middle management
- (iv) Well paid and highly educated staff
- (v) Accelerated training activities
- (vi) Changing outlook of union
- (vii) Emphasis on excellent customer service.

Restraining factors

- (i) Industrial relations
- (ii) Absenteeism
- (iii) Work norm
- (iv) System and procedure
- (v) State of technology
- (vi) Marketing skills and techniques
- (vii) Death of a job.

The restraining factors may be examined at length as policy prescriptions for improving productivity are to be based on such a systematic analysis.

Industrial relations

Industrial relations in banking industry is at a low ebb :

- (i) Supervisors nurture a feeling of being let down, do not trust management intentions and rely on pressure and direct action than on peaceable representation. The middle level officers aptly described as 'forgotten men' in the industry forge unity to form association. The management feels that the supervisors being part of the management should be disciplined, should behave in a responsible way and should have trust in management goodwill. As their images of each other known only to themselves, remain unrecognised by each other, there is needless exchange of correspondence, conflict and confrontation.

(ii) A survey among the public sector bank employees indicated that the climate of employer-employee relation is not good. The employees' rating of different factors/facilities is given as under :

| | |
|------------------------|---------|
| Monetary benefits | |
| Training | High |
| Recognition | |
| Employee welfare | |
| Working condition | |
| Promotion | |
| Communications | Average |
| Grievances handling | |
| Style of Management | |
| Participation | Low |
| Discipline and control | |

To quote Federick Herzberg, "The absence of such factors as good supervisor and employee relations and liberal fringe benefits can make a worker unhappy but their presence will not make him to work harder."

(iii) The employees are also highly unionised. Unions share nominally the management objectives of productivity, profitability and growth. They are suspicious of the basic principle that good work should be rewarded. In bank like nature, there are neither reward nor punishments. There are consequences not for the doer alone but for all others.

(iv) The employees for various historical and other reasons consider their rights or convenience more important than work. They are less inclined to accept managerial authority on transfer, job rotation and a host of other related issues. The first line supervisor does not and is not allowed to work as a captain of the team.

(v) There is no procedure to handle problem employees.

Absenteeism

Absenteeism results in loss of productivity, increased

cost to the industry, loss in stability of work performance and loss of workers in skill and efficiency.

To apply Kurt Lewin's field theory $B=(P, E)$, the behaviour of absence is a function of personal and environment factors. The causes of absenteeism on macro level are rural origin of employees—behavioural pattern affected by social, cultural and economic background and lack of commitment to the job. At the microlevel, the following organisational, personal and external factors are responsible for absenteeism :

- (i) Work environment—Monotony, lack of team work and co-operation in work group, work milieu influenced by lenient policy granting leave and condoning/regularising unauthorised leave.
- (ii) External—Climatic conditions, lack of adequate accommodation, insufficient transport, lack of recreational facilities, etc.

Incidence of absenteeism is higher with younger employees enjoying new income, female employees and employees who are relatively aged, saddled with growing family responsibilities. Large banks and large branches of the banks have higher absence rate. It increases as the number of employees reporting to one supervising official increases. It also increases as overtime increases. Frequency of absence is more in places with poor physical working conditions and in less easily accessible or metropolitan areas where the employees have to cover longer distance to join the work situation. The period of absence coincides with days before or after holidays and week-ends.

Work norm

(i) There is no prescribed work norm. Total job of the employee is not fully delineated. Work is neither defined nor described in detail and yet both the management and workmen blame each other for not doing the work. Time motion study of Taylorism is in its infancy. There is no management by measurement.

(ii) Standardisation is not an accepted norm. So the nature and quantum of work is different from one employee to another.

(iii) Obedience to superiors is not taken as a virtue. The bank employee does not develop ties with his superiors and subordinates on the basis of the vertical principle of work.

(iv) Employee appraisal is subjective. Reporting official does not maintain diary noting significant achievement of the employees. There are no opportunities for the employee's self-rating and rating by his peers. Counselling is not a part of the appraisal system.

System and procedure

The systems and procedures determine effectiveness, efficiency and economy of operations which have a bearing on customer service and productivity. Banking routine operations consist of: registration in forms, vouchers, etc., maintenance of registers and ledgers, classification of transactions into definite categories, doing simple arithmetic and controlling activities through a report return system. The traditional systems and procedure suffer from:

- (i) Repetitiveness of work steps;
- (ii) Backtracking in work flow;
- (iii) Duplication of work to ensure accuracy;
- (iv) Checking at multiple points by different persons;
- (v) Improper sequence of work steps resulting in increased work flow;
- (vi) Proliferation of forms and returns which do not inform.

State of technology

In our country, we witness a paradox of technological progressiveness and banking primitivism. The banking world is on the threshold of cashless and chequeless society. Our banks are engaged in mass banking with a manual system of technology. Collection, processing, storage and retrieval of data are done manually and inefficiently with great inconveniences for both the customers and the bank. In effect we are doing banking for today and tomorrow with yesterday's tools.

Marketing skills and technique

Customer loyalty is a thing of the past. The typical problems are:

- (i) how to satisfy the high saver who cares for rate than the safety of funds;
- (ii) how to deal with small ones without adding to cost and burning bridges at the same time;
- (iii) how to become a nice bank and avoid reputation for being a pushover.

Bank employees are to sharpen their marketing skills and technique to retain the existing business and to expand it.

Death of a job

Our banks face the risk of death of job. The reasons are: job fragmentation, minute specification, excessive monitoring for perfect practice, removal of fund and excitement and deskilling by monotonous repetition of work steps. Death of a job is a demotivating factor sharply reducing work productivity.

Low productivity tackling continuum

The steps taken/to be taken for tackling low productivity are presented as under:

| % | Stage I | Stage II | Stage III | Stage IV |
|---------------------|---------------------------------|---------------------------------------|---|--|
| | Uncertainty | Awakening | Enlightenment | Certainty |
| Management attitude | No comprehension | Aware but resigned despair | Better awareness Determination | Commitment to tackle positive attitude |
| Problem handling | No understanding and resolution | Problem is tackled as and where basis | Problem identified and resolved in an orderly fashion | Determined efforts made to foresee problems and prevent them |

Increasing productivity*Industrial relations*

(i) Unionism—Perhaps the productivity would have been higher if unions are non-existent but unions, intended to preclude exploitation, have come to stay and should not be allowed, in turn, to exploit the management. The principle of participating management is accepted in principle but the bank management negotiating with the unions of clerical staff and first line and middle level supervisors should delineate the zone of indifference whereby subordinates should be indifferent about questioning some aspects of the superior's orders, e.g. transfer from one place to another and from one department to another. They, on their part, should use the law of reversal to get results.

(ii) Fourth P's—Banks should give incentives financial and non-financial to enable some employees to rise little higher than the average. Well-defined good performance rather than age, experience, or seniority in service should be given weightage for promotion. Increments and other benefits should not be given as a matter of routine. 'Peak performance for peak profits—four p's of productivity should be the motto.

(iii) Problem employees—Problem employees have emotional immaturity and/or poor health and suffer from lack of skill in the job, misplacement, inadequate supervision and incompatibility with the supervisor. Bank' recruitment should have clear cut employment specifications and use tests to find out skills and personal characteristics suitable for banking. Those who become problems after joining the institutions are to be appraised where they stand, may be shifted to job where they are suitable and in extreme cases, may have to be disciplined.

(iv) Employee relation programme—Employee relation programme should be organised to streamline grievance procedure and to reduce employees' complaints without intervention of the unions.

(v) Unproductive work force—Banks should minimise proliferation of such categories of workers as messengers, peons, and watchmen by rationalising work

and negotiating with the unions for deployment of existing staff to perform more productive work.

Absenteeism

(i) Attendance and leave rules—Banks have to formulate an employee attendance policy and enforce progressive discipline. The following measures introduced during the period of internal emergency e.g. enforcement of punctuality in attendance, introduction of lunch recess/movement register, maintenance of diaries of daily work, regulation of overtime, enforcement of leave rules, allotment of full days' work to union office bearers, etc., may be reinforced with seriousness of purpose and direction.

(ii) Flexi time—Division of time into discretionary time (6 a.m. to 9 a.m. and 3 p.m. to 7 p.m.) and core time (9 a.m. to 3 p.m.) may be made to make employee's presence during the latter period obligatory while allowing him to retain his option to be present during the discretionary time. Flexi time improves employee's handling of fluctuating workload, suits his bodyclock to optimise performance and improves customer service. But the typical problems are: getting the employees when you really want them, appointment of part time employees (with known opposition of the unions) and difficulties of its implementation in certain inter-dependent tasks.

(iii) *Incentives punishment*—Absenteeism can be discouraged by taking a firm stand on discipline and by using incentives such as bonus and recognition for attendance.

(iv) *Counselling*—Intensive counselling is to be done for habitual absentee to identify the reasons for his withdrawal from the system and to help him to take charge of himself.

Work norm

(i) *Reorganisation of work*—It is high time, banks fix work norms or performance standard in branches classified population groupwise. Branch activity analysis which analyses activities and charts and times various steps could be usefully employed to settle work norm. The basic issues are security, responsibility and

accuracy. The banks are to take calculated risk commensurate with their resource position to extent share of self-supervision by the clerks and to reallocate the present task between the clerks and officers to ensure greater flow of work.

(ii) *Work philosophy*—'Zero defect service' should be work philosophy of banks signifying Confucian virtue of perfection in one's work. The employee who competes with others or himself to excel should be suitably rewarded. An average employee must also be subject to doctrine of completed staff work. Management at all levels must set examples to personify the work philosophy.

(iii) *Appraisal*—Appraisal of employees (officer and clerk) has to be made on objective considerations, allowing for the employee's self-rating and rating by his peers.

Systems and Procedures

(i) *Routine operations*: Banks have to design functional vouchers and two or three comprehensive returns which are to be periodically updated. They have to implement more 'one step banking' devices to usher in a procedure revolution.

(ii) *Kiss rule*: Banks have to implement Kiss (keep it simple, stupid) rule. New procedures must be simple and easy to learn, implement and monitor.

(iii) *Job enlargement*: Appropriate changes in systems and procedures have to be initiated for facilitating job enlargement/enrichment.

State of technology

(i) *Mechanisation*: Mechanisation is a systematic response to problems of mass banking. It rationalises work procedure, facilitates speedier performance of tasks, reduces cost of operations and improves the employee's productivity. We are in the threshold of cashless and chequeless society with introduction of Electronic Fund Transfer System (EFT) for making payments. Automatic clearing House and Automatic Payroll Deposit developed as alternatives to cheques have ushered in 'Banking without paper'. Automatic

Teller Machine has made such concepts as office hours, employee's skill and motivation redundant for limited purpose of accepting deposits/effecting payments/providing balance information. Electronic Mail has assaulted the bastion of manual processing—the office. It distributes message fast and cheap, reduces paper work and increases the productivity of the office staff. With an entirely different factor endowments, the extent of mechanisation and sophistication in our banks will have to be different depending on employee's skill and orientation, volume of transactions and security. For example, Adding/Listing Machines/Calculators may be introduced for listing/totalling transactions, balancing and interest application, Accounting Machines for recording descriptive particulars and Cash Register for effecting cash receipts/payments.

(ii) *Computerisation*: Computerisation is necessary for streamlining information system and for processing and storage of data. It can be used at different points of time for different purposes e.g. personnel skill inventory, micro-filming of records and storage for future retrieval, payroll/term deposits management etc. The rising cost and stagnating productivity of the employees makes it necessary. Computer advances and sharp reduction in cost of computerisation makes it attractive. It is not possible in the circumstances of our country to introduce OMAHA i.e. banking by cable TV to give the customers TV access to all accounts carried on in banks customer information file. Banks should have computerisation to the extent necessary to achieve customer-oriented productivity.

Marketing and customer service

(i) *Incomplete service revolution*: Banks have gone a long way from the days when their motto was 'Never do something for the first time'. Yet, the service revolution is incomplete in terms of (a) services offered, (b) customer groups covered. They are yet to offer intensely customer satisfying services i.e. Personnel Advisory Service, Investment Service, Hire Purchase Service, etc. Though they have adopted market segmentation, they have not been serious about an important sub-group of personal segment i.e. women. Poor people, below the povertyline, who constitute more than 50 per cent of our population get a small portion

of the total bank assistance. Bank marketing recognisedly is no substitute for income and employment policy. Nevertheless, there is no real mass banking unless these unprivileged millions are brought into the fold of the banking system.

(ii) *Customer Service* : Mass banking has made the customer a sovereign in theory but it cannot be said with certainty that he is one in practice. It is often presumed that competition among twenty-one public sector banks ensures the quality of customer service. It is not understood that when banks are free to do as they please them, they imitate one another. It is not known whether a bank retains its present business or acquires much of new business through its competitors vices rather than its own virtues. By aiming at zero defect service, implementing doctrine of completed staff work and developing 5'C's of communication skill among the employees—coordination, cooperation, correlation and correction—banks must render excellent customer service.

(iii) *Complaints* : Complaints can help the banks to compete and to increase per employee productivity. People do not complain because it is not worth it. They do not know how and where to complain. They also do not believe that bank will do anything. Dissatisfying customer tells on an average about 10 other people whereas satisfied one tells only half as many. What banks do not know can hurt them. It is as fatal as it is cowardly to blink at facts because they are not to our taste. It is necessary for banks to seek out complaint rather than to wait for it to come and to settle it without delay.

(iv) *Customer oriented productivity* : The traditional view of productivity in terms of cost reduction and operational efficiency is irrelevant at present. Banks are to promote customer-oriented productivity, In fact, the customers doing something for themselves, more pleasantly and efficiently (e.g. handling mechanical aids) may add to the bank's productivity.

(v) *Public relations* : Marketing is part public relations, part services. Public relations need not be the 'art of making the whole lies out of half truth'. It has to be the 'art of arranging so that people like you'.

There are four essential ingredients in effective public relations, namely, 'attention, interest, desire and action'. The basic rule in public relations is that there are no rules. Direct marketing organised through public relations is a 'what' medium not a 'why' medium. It can show what the results are in terms of business and productivity gains.

Creativity

(i) *Job enlargement/enrichment* : Jobs are to be redesigned in banks to make them challenging. It should start at the bottom than at the top and should be implemented with active participation of all employees and consent of unions. It must also be accepted that the core jobs cannot be redesigned. Individuals with complementary specialisations may be associated in mutually supportive and responsible teams and the job should be redesigned to meet as many needs of the employees as possible. It must encompass (i) skill variety, (ii) task identity, (iii) task significance, (iv) autonomy. Variety is the spice of life and harnesses employee's latent talents and abilities. Task identity gives him the whole job so that the employee becomes not merely a clerk or officer but manager of services. Tasks' significance establishes client relationship between the employees and the end users of his service i.e. customers. Autonomy heightens the sense of job ownership. Thus, job enlargement/enrichment promotes productivity of bank employees.

(ii) *Autonomous work team* : Autonomous work teams formed to look after group of customers has worked well in French banks where every member learns to do every job. It is observed that as little as 15 basic skills are required to make every staff know the whole process. The employees are fitted on the basis of work and mutual likes and dislikes and the supervision is conspicuous by its absence. The problems of working it out were : hostility of the unions and executives who perceived it as deprivation of their power and pay differentials based on age and length of services, not on skills and quality of work. With resolution of these basic problems, autonomous work teams can make employees self-supervised entities, which reduces cost of banking operations and improves their productivity.

to be pooled to bring back the needed rhythm in operation. Though the position has considerably improved, the industry is still passing through anxious moments on account of power shortage in parts of the country. Our men and machines are in a position to attain higher productivity levels, if the major inputs are available un-interruptedly in the required quantity and quality.

Key Areas

The key areas directly affecting the achievements of our output plans and lying within the control of the industry are keeping the equipment in good condition, healthy management practices in industrial relations and adequate motivation of managers and workers. Although the availability of major raw materials and power has to come largely from external agencies, our efforts are to minimise the effects of the shortages in supply by optimising production of the major inputs, wherever possible, from our captive sources.

Equipment Condition and Availability

As the health of the equipment has necessarily to be maintained in good condition, implementation of the Preventive Maintenance Schedules as well as Planned Capital Repairs have been receiving a major thrust for the last three years. Carrying out of major capital repairs and preventive maintenance jobs have resulted in the availability of equipment for operation at a high level.

Other measures in this direction include drive for strict adherence to technical regimes and improving the quality of repairs, ensuring timely supply of all critical spare parts and maximising the production of all the engineering shops and foundries.

For ensuring increased productivity from the available facilities, we have planned the following steps to be taken :

- (i) Adherence to casting schedules in the blast furnaces;
- (ii) To attain the specified average heat size and

duration in the steel melting shops through proper charging and technological control;

- (iii) To minimise the track time of heats in order to reduce the heat delays in Blooming/Slabbing Mills;
- (iv) To have optimum rolling programmes in the Rolling Mills consistent with market demand; and
- (v) To make determined efforts to improve the technological and human discipline.

Captive Power Generation

As we all know, the industry has been facing even now intermittent restrictions in the supply of power from Public Utilities. The captive generation units at the Steel Plants are provided to only supplement the external availability in order to prevent damage to equipment in times of crises. Besides, the captive generation is dependent upon the steam availability for the power units after meeting the primary requirements of processed steam in the plant.

Another measure taken in this area is to plan for economising electrical energy in terms of consumption per tonne of saleable steel.

Techno-economic Norms

Norms have been fixed in respect of vital techno-economic indices having direct impact on productivity and profitability. These norms are being monitored meticulously at the plant level as well as at the Corporate level.

Substantial reduction has been planned in "coke rate" by improved burden preparation, higher use of sinter, and improved blast temperature and other technological parameters of Blast Furnace.

Key result areas for effecting energy savings both on short term and long term basis are being worked out by SAIL's R & D Centre. The objective is to draw an Energy Conservation Programme for 5 years for the steel industry.

Savings in Petro-fuel Consumption

Even with the higher levels of output planned generally, economising on the consumption of furnace oil/naphtha at the main steel plants is being emphasised.

Norms of Productivity

A committee has been constituted at the Corporate Office for monitoring the fulfilment of Production and Productivity norms through regular feed back from the steel plants. The Committee has already been functioning with full vigour. In addition to overall Productivity Norms for the plants, shopwise norms are also being worked out in order to motivate the employee in each shop to attain higher levels of production and productivity. Efforts are also on to eliminate wasteful and restrictive practices to the extent possible. These areas include the technological regimes as also the human aspects, each of which is coalescing on the other.

Personnel

We propose to contain the manpower at almost the present level for the existing activities. With increased output, this will help in attaining higher labour productivity.

A close watch is being kept on the IR developments in the Plants. Measures have also been taken to improve the grievance machinery for expediting the redressal of the grievances and a drive initiated to reduce the pending grievances of the employees by quicker disposal to avoid frustration to the employees otherwise. Other measures include strengthening employee communication, developing better understanding, stepping up decision-making at all levels and intensifying manpower planning and training schemes.

Long Term Measures to Improve Productivity and Profitability

Some of the measures taken for improving productivity and profitability on a long term basis include removing obsolescence, upgrading technologies, diversifying with high value products etc. These measures

may involve changes in the equipment, modifications in the structures, provision of balancing facilities, revamping, peripheral expansion and the like. While the R & D Centre takes care of the technological areas and development of new products and processes, a Centre for Engineering and Technology has been recently organised to step up the designing and project work in SAIL Plants. This new organisation will play a significant role in the development of steel industry in the public sectors. Similarly, a Centre for Raw Materials and Mining is also being set up to develop strategies for exploration and exploitation of our non-replenishable raw materials in a scientific and efficient manner. As a long term measure to minimise the severity of the effect of power shortage from Public Utilities, the captive power generation capacity at the steel plants at Bokaro, Durgapur, Rourkela and Bhilai is being augmented by installing new units.

Concept of Productivity & its Measurement

Having outlined the various measures and strategies taken, or being initiated, for improving productivity in its various facets on short and long term basis, the questions are : What is the yard-stick which measures the total productivity of integrated steel plants like ours? Shall it be (i) the working results; or (ii) the ratio of profits (gross or net) to capital employed; or (iii) sales turnover to capital employed; or (iv) value added to capital employed; or (v) contribution to the national economy; or (vi) simply the capacity utilisation; or (vii) equipment utilisation; or (viii) output of crude steel per employee (only works or total employment in the Company)? How do we make interplant comparison of even labour productivity taking into account the degree of sophistication and further finishing in the form of cold rolling, coating, fabricating into tubes/pipes, and also produce saleable pig iron, fertilisers and coal chemicals and other by-products and finally the age of technology adopted in each plant?

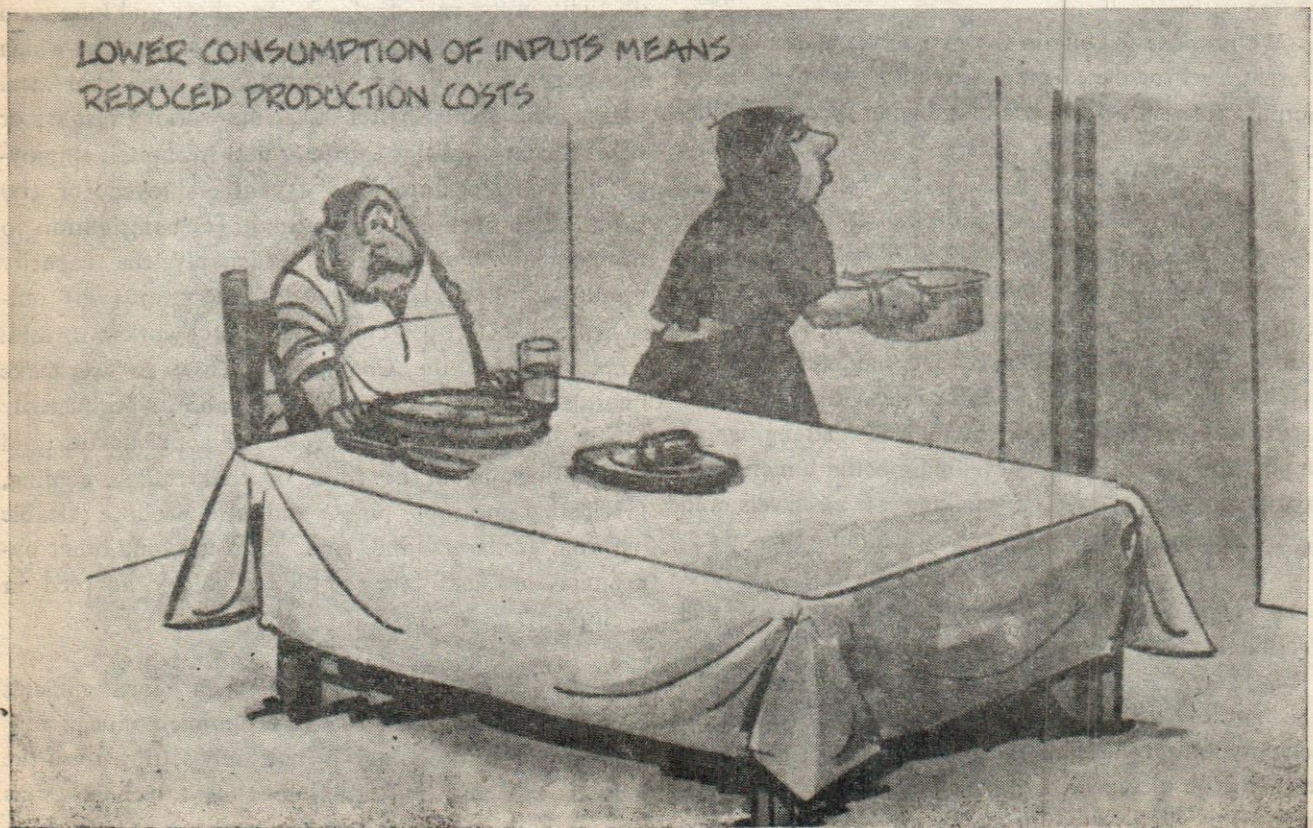
International comparison is much more difficult because of the peculiar socio-economic political compulsions in our country is not only setting up of the industry but also in capital investment, technology as well as the social benefits and amenities such as town-

ship, education etc., captive raw material and other input sources forming the assembly cost, captive design engineering, construction and maintenance organisations, and finally the size of total employment in each steel plant.

In the late sixties, a study was undertaken by the U.N. Economic Commission for Europe to study the various measures of labour productivity in the steel industries in thirteen different countries with the sole objective of standardising the definition of "Total Labour Productivity in the Steel Industry" enabling international comparisons really meaningful. The study report suggested an index of labour productivity in which the output took into account the various factors mentioned above and particularly the degree of sophistication and finishing of the steel products as well as the various coal chemicals, fertilisers, by-products, pig iron, slag and the like.

SAIL, had been following the conventional method of measurement of Labour Productivity for a number

of years. As per this method, the labour productivity was measured in terms of Ingot Tonnes per man-year (including 25% credit for Saleable Pig Iron Production). In view of the shortcomings of this method listed in above paras, the matter had been engaging our attention for quite some time. Consequently, SAIL have been able to evolve an alternative method of productivity measurement for Inter-Plant Comparison of Labour Productivity. As per this method, which is quite similar to the method suggested in the study report of the U.N. Economic Commission for Europe, weightages are assigned to various products, viz., Coke, By-Products, Sinter, Hot Metal, Intermediate & Finished Products of Rolling Mills etc. for their conversion into equivalent Ingot Steel Tonnes. Labour Productivity is then computed in terms of equivalent Ingot Steel Tonnes per man-year. These weightages (equivalent factors) are common for various Steel Plants of SAIL (including IISCO). This method is being followed on experimental basis by us at present in addition to the conventional method of measurement of Labour Productivity.



Total Productivity Measurement for Manufacturing Organisations with A Constantly Changing Product Mix¹

MARVIN E. MUNDEL

An attempt is made to work out a model for measuring total productivity in manufacturing organisations with a constantly changing product mix as a partial measure in these circumstances will be delusive. The model takes care to aggregate outputs in a way that reflects their contribution to the effectiveness of the organisation.

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Assumptions

1. To "improve" productivity we must first measure it so as to have a datum from which to measure change.
2. With a constantly changing mix of output a partial measure may be delusive; steel output measured in tons may show false labor productivity readings reflecting the average size of steel sections, or show increased labor productivity from slower rolling speeds, and so forth. A total measure of all costs and values is needed.

Purpose of this Paper

1. In this paper, the discussion will center on an algorithm for computing and manipulating :
 - a. Sum AO=Aggregated outputs (any period)
 - b. Sum RI=Resource inputs (any period)
2. Care will be taken to "aggregate outputs in a way that reflects their contribution to the effectiveness of the organization." (*Improving Productivity and Effectiveness*, M.E. Mundel, Prentice-Hall and APO, 1983, p. 16).

¹ This paper is adapted from a 1982 working paper of the "Firm Level Productivity Project" of the Asian Productivity Organization.

NOTE : Base period output values and measured period output values should be only of product of acceptable quality.

3. Notes The method requires the establishment of :

- Fixed hourly rates for all units of facility.
- Standard times for all steps in processing all products.
- Base year hourly energy cost for operating each facility, where energy is an important and *alterable* component, as in iron and steel; to some extent in machining; probably not in pharmaceuticals. (If tool costs are important as energy, then may be handled as energy will be handled later).

4. Computing APO (AO partial) : (Management and other non-direct costs will be added later; see 5).

Let m = measured period; b = base year

Q = Quantity of each product, 1 thru i

$$(a) AOP_m = Q_{1m} [ST_{11}(\$_{1L} + \$_{1EB}) + ST_{21}(\$_{2L} + \$_{2EB}) \dots + ST_{N1}(\$_{NL} + \$_{NEB})] \dots + Q_{im} [ST_{1i}(\$_{1L} + \$_{EB}) \dots + ST_{Ni}(\$_{NL} + \$_{NEB})]$$

(b) AOP_b = Same as AOP_m , except $Q_1 \dots Q_i$ are base period values and are counts of only acceptable quality products.

5. Computing RIP (RI partial) : (Management and other non-direct costs will be added later; see 6.)

(a) Let X_1 be the hours available on facility 1 for the measured or base period; X_2 the hours available on facility 2, etc. It is presumed that, in most cases, all values of X will be equal except for those pieces of equipment with unusual maintenance cycles, or those added during the measured period.

(b) Further, let :

$\$_{Eb}$ = Total energy cost and tooling, base period

$\$_{Em}$ = Total energy cost and tooling, measured period, computed from energy and tool quantities and base year \$ rates for energy and tools to avoid dependence on external inflation or deflation rates.

H_b = Base year labor hours

H_m = Measured year labor hours

$\$_{Lb}$ = Base year labour cost in dollars

(c) Computations :

$$(1) RIP (RI partial)_{common} = X_1 \$_1 + X_2 \$_2 \dots X_N \$_N$$

$$(2) RIP_m = RIP_{common} + \frac{(\text{adjustment for any new equipment})}{+ \$_{Em} + \$_{Lb} \times \frac{H_m}{H_b}}$$

(Note: Last term in (2) avoids labor rate adjustments.)

$$(3) RIP_b = RIP_{common} + \$_{Eb} + \$_{Lb}$$

Note : If plant utilization decreased in the measured year productivity will decrease; if utilization increases (without other offsetting costs) productivity will increase. I believe this is correct.

6. Adding management and other overhead costs (e.g. material handling, maintenance, etc.) :

(a) Compute total for base period as a money value; designate as $\$_{ob}$.

(b) Sum $RI_b = RIP_b + \$_{ob}$

(c) Determine, to compute RI_m :

(1) HR_{MB} = Average hourly rate, management, base year (M)

(2) HR_{SB} = Same as (1), supervisors (S)

(3) HR_{RB} = Same as (1), maintenance (R)

(4) HR_{HB} = Same as (1), material-handlers
• (H)

(5) HR_{CB} = Same as (1), clericals (C)

(6) HR_{OB} = Same as (1), all other (O)

(d) Let HA = Actual hours worked; each group of c supra, groups, using subscripts of 6c, for measured period.

(e) Computation of Sum RI_m appears in f, following :

(f) Compute Sum RI_m as :

$$\text{Sum RI}_m = \text{RIP}_m \text{ (see 5c)} + HA_{Mm} \times HR_{MB} \\ + HA_{Rm} \times HR_{RB} \dots + HA_{Om} \times \\ HR_{OB}$$

(Note : This equation avoids the assumption that all wages change equally.)

(g) Compute Sum AO_b as :

$$\text{Sum AO}_b = \text{AOP}_b \text{ (see 5c)} + \$_{ob} \text{ (see 6a)}$$

(h) Compute Sum AO_m as :

$$\text{Sum AO}_m = \text{AOP}_m \text{ (see 5c)} + \frac{\text{AOP}_m}{\text{AOP}_b} \$_{ob}$$

7. Computing productivity :

$$\text{(a) Productivity} = \frac{\frac{\text{Sum AO}_m}{\text{Sum RI}_m}}{\frac{\text{Sum AO}_b}{\text{Sum RI}_b}}$$

(b) For detailed computations of terms, see previous sections.

(c) Correcting for quality :

Compute AO_{md} where :

AO_{md} = Value of defective product computed per equation 4c but using Q values for defects.

$$\text{Corrected} = \frac{\frac{\text{Sum AO}_m}{\text{Sum RI}_m}}{\frac{\text{Sum AO}_b}{\text{Sum RI}_b}} \times \frac{\text{AO}_m - \text{AO}_{md}}{\text{AO}_m}$$

Summary to this point :

1. Data needed :

(a) Unit facility hourly rates (in monetary terms

including labor) and without labor on each piece of facility.

(b) Standard time for each product on each piece of facility used.

(c) Quantity of each product, base measured year or period.

(d) Time per period (base or measured) available on each piece of facility.

(e) Management, materials handling, maintenance and other non-direct costs, base period.

(f) Energy and tool costs, base year, per piece of facility, per hour.

(g) Energy cost total plant, base year.

(h) Energy cost total plant, measured year or period, using measured year (or period) quantities but base year prices.

(i) Average hourly pay rate, management and overhead labor, base year, or period for :

(1) Managers

(2) Supervisors

(3) Maintenance workers

(4) Material handlers

(5) Clericals

(6) All others

2. Effects of various changes as reflected by this productivity equation :

(a) If management (and other overhead) costs increase faster than the value of the outputs, after correcting for inflation-deflation, productivity will appear to fall.

(b) If new equipment is installed, the return (increment to partial AO) should exceed the cost (increment to partial RI), unless it was a bad investment.

(c) Selling price changes will not be reflected in the productivity equation. This is correct in that selling price affects "effectiveness", not productivity.

(d) The method will reflect actual productivity,

compensating for differences in the mix of outputs.

2. Modifications

(e) Deflation or inflation of costs is not tied to a price index; all costs do not alter in a similar manner; fixed equipment has similar fixed costs for considerable periods of time.

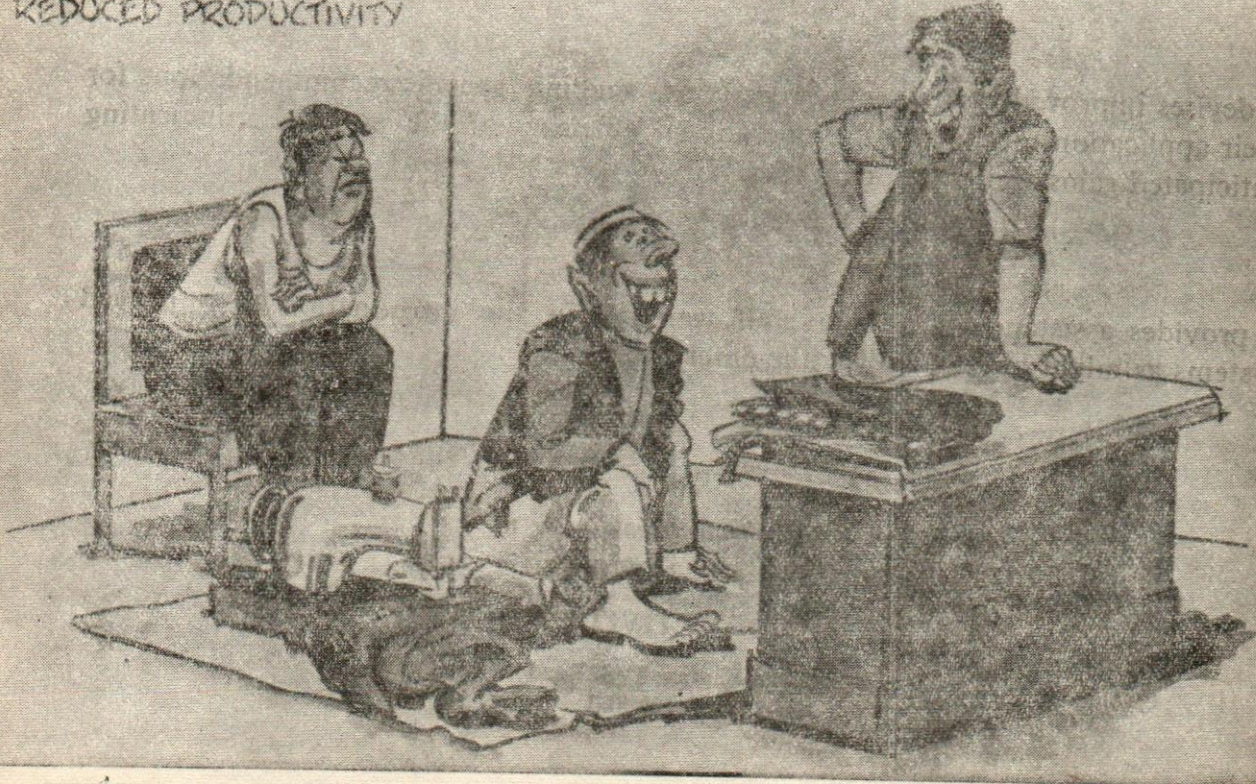
(a) Machining and pharmaceutical manufacturing may find the energy related terms to be minor and not use them.

Notes :

1. General : It is expected that this general method may be applied to machining, pharmaceutical manufacturing and iron and steel, etc., with minor modifications.

(b) Machining may find a new item, tool costs, to be important, and treat these in a manner similar to the method used, in this paper, for energy, and add this factor to the productivity equation.

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Productivity Trends of Key Industries in the Public Sector

C. VENKATARAMAN

The productivity levels of basic industries influence the productivity levels of other industries. The performance of the enterprises in the basic industries, is, therefore, a matter of great importance to the national economy. The already huge investment of about Rs. 15,000 crores in these industry groups, is likely to increase further progressively. In this paper, productive efficiencies in terms of capacity utilisation and profitability ratios are focussed and broad conclusions drawn.

Mr C. Venkataraman, Special Secretary to Government of India & Director General, Bureau of Public Enterprises.

Introduction

Basis industries which include steel, non-ferrous metals such as aluminium, copper and zinc, coal, petroleum and fertilizers provide the sinews for economic growth. The share of public sector in these basic raw material category of industries is almost 100% in coal & lignite, copper, lead and petroleum, 78% in steel, 81% in zinc and 52% in fertilizers in relation to the country's total production in each of these industries. An analysis of the total investment, which is of the order of Rs. 25,000 crores in the Central Private Sector, would show that the above groups of activities account for almost 60% of the total investment. By their very nature, these products provide linkages to a host of other industries both in the public and private sector. The productivity levels of basic industries influence the productivity levels of other industries. The performance of the enterprises in the basic industries, is, therefore, a matter of great importance to the national economy. The already huge investment of about Rs. 15,000 crores in these industry groups, is likely to increase further progressively. In this paper, productive efficiencies in terms of capacity utilisation and profitability ratios are focussed and broad conclusions drawn.

Productivity Trends

Steel: Steel industry in the public sector as a group shows phenomenal growth in terms of investment. Over two decades ago, the investment in this sector was

Rs. 724 crores which rose to Rs. 3120 crores in 1972-73 and Rs. 4908 crores at the end of 1981-82. About 20% of the total investment today in the public sector is in the steel sector.

A good indicator of performance level of any industry which manufactures/produces goods is the level of capacity utilisation. Steel industry, in terms of production of steel ingot shows capacity utilisation of —

71% in 1982-83

71% in 1981-82

58% in 1980-81

65% in 1979-80

67% in 1978-79

The performance trends indicate an upward movement in terms of utilisation of the installed capacities over the five year period; though there is still considerable gap between the potential and actual levels.

Another useful indicator of efficiency of the invested resources is the ratio of gross profit to capital employed. Here, the steel group shows a declining trend. The table below indicates the position for 5 years.

1982-83 — 2.2%

1981-82 — 4.5%

1980-81 — 4.0%

1979-80 — 3.5%

1978-79 — 6.2%

Minerals & Metals : Capacity utilisation picture under the broad homogeneous group of Minerals & Metals presents a mixed pattern. Aluminium, copper, zinc and lead are important metalliferous industries in this group. In a table below, the extent of capacity utilisation of these industries over the last 5 years is shown.

| | 1982-83 | 1981-82 | 1980-81 | 1979-80 | 1978-79 |
|-----------|---------|---------|---------|---------|---------|
| Aluminium | 44% | 36% | 59% | 60% | 67% |
| Copper | 73% | 58% | 53% | 47% | 46% |
| Zinc | 58% | 62% | 59% | 59% | 68% |
| Lead | 82% | 80% | 83% | 63% | 58% |

The performance over the years presents a mixed pattern. Capacity utilisation of copper shows upward trend. High levels of capacity utilisation are noticed in respect of lead production (above 75%); other groups operated at low levels.

Two other important groups under the cognate classification of Minerals & Metals are coal & lignite. One has to exercise caution in trying to interpret capacity utilisation of this extractive industry; as the problem of determining capacity and interpreting the production with reference to installed plant and equipment is acute. First, the resources are of depleting nature. As the old mines get exhausted, development of new mines takes place. Second, at the time of nationalisation of coking coal mines in May 1972 and non-coking coal mines in May 1973, with a good number in the unorganised sector, determination of the capacities of those mines was found to be difficult. Nevertheless, broad indication is available to show that the extent of utilisation ranges from 60% to over 75% in a span of 5 years.

The profitability ratio of minerals & metals as a group shows a declining trend over the last 5 years.

1982-83 — Negative

1981-82 — Negative

1980-81 — 3.4%

1979-80 — 4.7%

1978-79 — 5.1%

The performance of coal also shows a declining trend. The profitability picture which was negative in 1978-79 & 79-80, registered 10.3% in 1980-81, 7.27% in 1981-82 and 5.7% in 1982-83. In other words, the profitability position of coal as a sub-group, shows deterioration.

Petroleum : In the petroleum industry, there are three types of activities—(a) extracting crude, (b) refining crude, and (c) marketing petroleum products. There has been phenomenal growth in the production of crude in the country over the years. In the activity of extraction of crude, the concept of capacity is not applicable. One could, however, gauge the high order

of growth in the matter of extraction of crude from the following table.

| | | | |
|---------|---|-------|----------------|
| 1982-83 | — | 18.2 | million tonnes |
| 1981-82 | — | 13.18 | „ |
| 1980-81 | — | 9.2 | „ |
| 1979-80 | — | 9.5 | „ |
| 1978-79 | — | 8.9 | „ |

There was more than 100% improvement in the production of crude within the country in a time span of 5 years. One more enterprise (Oil India Ltd.), which is now fully owned by the Government, contributes another about 3 million tonnes per annum.

Petroleum refining is an activity presently carried entirely in the public sector. The refining capacity during 1982-83, in respect of 11 refineries in the public sector was 37.8 million tonnes per annum during 1982-83. Capacity utilisation of petroleum refineries as a group indicates a very high level of utilisation above 90% over the years.

The activities of petroleum group, viz., extraction, refining, and marketing display high levels of capital/output efficiencies. The profitability ratio over the last 5 years is presented in the table below.

| | | |
|---------|---|-------|
| 1982-83 | — | 48.6% |
| 1981-82 | — | 38.1% |
| 1980-81 | — | 14.3% |
| 1979-80 | — | 20.5% |
| 1978-79 | — | 21.8% |

There was steep increase in the profits of petroleum group in 1981-82, when price revisions of petroleum crude was made on the basis of international prices. Nevertheless, one has to recognise that the production, both in terms of crude and refined products, has also registered considerable improvement in the year 1981-82 and 1982-83. This, coupled with the fact that refineries as a group operate at a very high level of capacity utilisation, account for the profitability buoyancy.

Fertilizer: The capacity utilisation in the public sector in terms of Nitrogen and 'P₂O₅' generally shows

a low level over the years. The extent of utilisation in the last 5 years is shown in a table below.

| | N ₂ | P ₂ O ₅ |
|---------|----------------|-------------------------------|
| 1982-83 | 53 | 44 |
| 1981-82 | 56 | 45 |
| 1980-81 | 39 | 45 |
| 1979-80 | 44 | 40 |
| 1978-79 | 55 | 35 |

It would however be appropriate to record that 2 out of 6 enterprises in the public sector usually operate at very high levels, above 80%.

The profitability picture shows that while among the fertilizer companies 2 present a negative picture in terms of profitability in all the 5 years, 2 other companies show a range from negative point to 16% and the remaining 2 display a range of 6% to 30% over the span of 5 years. The point that merits attention is that only two enterprises in this group operate their plants at high levels of capacity utilisation as reflected in the positive results with regard to their profitability. Chemicals, as a group which includes fertilizers as major segment of activity shows low profitability ratio of 6% in 82-83, 5% in 1981-82 and less than 1% in 1980-81 & 1979-80 and 3% in 1978-79. The group operates at below average level.

Conclusions

While in all other groups a certain correlation could be discerned between capacity utilisation and profitability, our steel industry does not seem to lend one to draw this inference. Two conclusions which may follow are (i) whatever may have been produced may not have been sold. In other words, a heavy finished goods inventory would adversely affect the profitability; (ii) if the product-mix does not reflect production of high value items sustainable by market demand, the realisable income drops low, adversely affecting the profitability. These observations could be empirically tested and proved.

The productivity trend analysis in terms of capacity utilisation establishes, by and large, a direct correlation to profitability in our industries covered in this survey—

petroleum sector with high profitability and others of a varying pattern. It is commonly held that the optimum utilisation of productive assets, leads to generation of surpluses. Conversely, one could also hold it as an axiom that if there is under utilisation of productive assets, this would lead to lower production and, as a logical extension, lesser profit or no profit at all. The lower the levels of production, the higher would be the operating cost leading to lower profits or higher losses. In this scenario, it is the assumption that there is a ready market for the products.

The process of economic development envelops several sectors. The enterprises in basic industries largely operate in a demand oriented situation whether it is steel, coal, fertilizer, non-ferrous metal or petroleum products. Some pockets of low demand are, however, seen, more as a result of fluctuating demand pattern rather than as a long standing problem. In a planned economy when demand projections are made in a perspective of inter-linkages, some imbalances do arise giving rise to recession at certain points of time. This has to be interpreted as a passing phenomenon in a dynamic environment. In such a situation, reorientation of marketing strategies, with emphasis on product-mix of high saleability could be an answer.

The very success of public sector operations greatly hinges on the operation of enterprises in the basic industry groups which account for lumpy investment. The recognition that the extent of capacity utilisation is not to the desirable level and also the profitability position is not appreciable, has stirred the public sector management and Government to take a number of

steps with the objective of upgrading the performance of identified low performers and revamping of marketing strategy.

The measures contemplated or in the state of implementation also include drawing up of corporate recovery plans for improving physical and financial performance, evolving strategies in terms of short and long term plans for rehabilitation of the companies with the objective of improving the returns on investment and also identification of potentialities for improving the earning in a long range perspective.

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Participative Management For Higher Productivity

DR. SUBRATESH GHOSH

This paper studies the lessons drawn from the experiments in participative management for improving productivity in different countries including India and suggests measures for its success in India.

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The significance of proper human resources management in improving the productivity in an economic organisation needs no special emphasis. The total productivity of an organisation in general depends greatly on motivation to work. The precise role of human resources management in this context lies in improving the motivation and in maintaining it at that higher level to develop and utilise the potentials of the human factor in the best possible manner. This may be attempted through various approaches of management which have been tried out in the past in different organisations in different countries under different contexts. Participative management, which by itself represents a distinct style of management with its own philosophy and goals, has been considered in recent years as a highly effective instrument for motivating the workers to contribute the improvement of productivity of the organisation and in particular that of its human resources. Apart from its role in improving the motivation to work, the participative schemes can also smoothen the path of technological innovations and switch over to more effective technology for raising the level of productivity.

In this paper an attempt is made to study the lessons drawn from the experiments in participative management for improving productivity in different countries including India. In the light of these experiments, the problem areas would be identified and the role of the participative management in the productivity improvement would be assessed.

Participative Schemes in Productivity Management Abroad

In the advanced countries, participative schemes for improvement of labour productivity relied on different approaches and assumed different forms. In France, West Germany, U.K. and U.S.A., workers' participation in various forms have been sought in bringing about technological changes proposed or initiated by management. Such participation at times was in the form of collective bargaining¹—both conventional and that of the productivity bargaining type. At times, the workers participated in a more direct way in planning and deciding the details of such technological changes through joint consultative forums of different types. On the other hand, in recent years, in some countries notably in Japan, the U.S.A. and also in some of the Scandinavian countries, different types of autonomous work groups formed by workers participated in interesting ways in redesigning work, improving quality of the working life, raising the quality of output and production processes.

West Germany

In West Germany, co-determination system, as well as the rationalisation agreements emerging out of collective bargaining have played a significant role in bringing about technological changes without workers' resistance and that, in turn, resulted in higher productivity. Co-determination has provided for smooth industrial changes.² Numerous technological innovations had been introduced in coal and steel industries and the improvement in production was significant.³ In fact, the elected representatives of workers have been given right to be consulted in all management proposals for technical changes. The rationalisation agreements which followed intense collective bargaining in West Germany and helped to introduce significant technological changes accompanied by mutually agreed safeguards for workers, were first initiated in the textile industry in the mid-sixties. Thereafter it quickly spread to several other industries.⁴ In most of these cases, the initiative for the rationalisation agreements were taken by the Unions, but in the course of actual bargaining, the management and the Unions significantly participated in joint-decision making in respect of the nature of

the rationalisation to be introduced, mode of implementation and also in providing adequate compensation to the workers adversely affected by the technological changes. They also provided for retaining of the redundant workers and, in effect, attempted to create some sort of small-scale employment policy for each enterprise.⁵

France

In France, the elected staff representatives in the Works Councils have been given the right of consultation under the law of the country.⁶ But apart from joint consultation the workers have also participated in the decision making regarding the technological changes in industry through collective agreements. There had been several industry wide collective agreements (particularly in the textiles and metal industries) providing compensations for workers rendered redundant for technological change, allowances for workers transferred for the same reason and retraining of the workforce affected. Usually such agreements provide for detailed information to be supplied by the employers in respect of the technological changes resulting in redundancies and notices to be given by them.⁷

United Kingdom

In U.K., a different type of collective bargaining, styled "productivity bargaining" developed on account of the urge of the organised labour in participating in the decision-making regarding the technological change. Unlike the rationalisation agreements in West Germany or Collective agreements signed in India on account of trade union resistance to rationalisation or automation, the initiative in productivity bargaining in U.K. mostly came from the management side. In fact under this type of collective bargaining, management and labour confront each other with their "demands". Management seek the smooth and conflict-less introduction of technological changes or new work-processes for improvement of productivity and the unions seek to ensure that labour is not adversely affected (or the adverse effect is minimised) due to such changes and at the same time the gains of productivity improvement are shared by the workers. This approach to bargaining first attracted notice in U.K. in the sixties with the

signing of a collective agreement in Fawley unit of ESSO Ltd. (U.K.) following intense bargaining between the management and the Union. It then rapidly spread throughout the country, partly because of its novelty and partly due to its consistency with the policy of productivity—based wage change advocated by the Labour Government in power at that time. With the subsequent political changes in the seventies, the initial popularity of productivity bargaining has substantially declined in U.K., but it has come to stay as an approach different from the conventional approach to collective bargaining. In most of the agreements signed under productivity bargaining approach in U.K., as well as in other countries, the agreements gave joint sanction to changes in work practices which were needed for productivity or other technological reasons. In recent years due to the intensification of the technological change mainly under the impact of new technology based on accelerated use of micro-processors in the industry and various services and with the increased technological rationalisation and automated control of industrial production, clerical work and administrative processes, the management and the organised labour in U.K. are trying to affect the nature of the changes to save their own interests through accelerated bargaining on technological changes. The Trade Union Congress developed a set of uniform policy guidelines based on 3 principles, viz., (i) new technology should not be introduced without the full support of the employees and their union, (ii) there should be no overall fall in employment due to the change in technology and (iii) the new technology should not be used simply as a labour saving strategy and should be able to improve and extend public services in the public sector and, in the case of the private sector, should mean trade union involvement in planning improved productivity and new products. It is interesting to note in this connection the distinct emphasis on the trade union involvement with the introduction of new technology as a precondition for its introduction both in the private sector and the public sector.

However, on the basis of case-studies of some recent technology agreements signed in U.K. and the rationalisation and modernisation of machinery introduced in textiles industry in the West Yorkshire region, T Woodhouse reported that despite the issue of com-

prehensive guidelines on the union participation in introduction of new technology supported by the issue of model collective agreements to be followed by the trade union side, the extension of labour control over the new technology has not been significant and remained quite uneven.⁸ In fact, it has been noted that in the recent technology agreements the unions demanded in general, better pay and conditions of service as a consequence of new technology, but they did not propose a permanent extension of union/employee influence in the strategic management decisions, except for the transitory phase when new technology was being monitored.⁹ Woodhouse explained this trend, which ran contrary to a definite guideline issued by the Trade Union Congress, to the general recessionary climate in the country in the early eighties, which appeared to have reduced the trade union movement's power to claim wider influence on decision-making in the field of technological changes.

Apart from collective bargaining, the workers in Britain also have some opportunity to participate in decision-making in the field of productivity management through the consultative committees operating at various levels, both in the public sector and the private sector. However, the role of joint consultation in the field, although not a dismal failure, has not been very encouraging. On the success side, examples of introduction of new equipment or production methods in the private industry and the handling of the staff problems arising out of the conversion of the remaining trams to oil buses in the fifties could be cited.¹⁰ In the nationalised electricity industry the productivity tended to increase and that could be partly ascribed to the reasonably good performance of the consultative committees in the industry. On the other hand, Hugh Clegg strongly maintained that successes at joint consultation in improving productivity or industrial peace were not impressive in comparison to the large claims made on its behalf by its supporters.¹¹

United States

In the United States, apart from collective bargaining on incentive wage schemes and protective measures for labour following technological changes, the Scanlon Plan played an important role in the years following the

Second World War in promoting labour participation in decision-making for cost-saving and efficiency raising measures and sharing the gains resulting therefrom.¹² This plan was first recommended by J. Scanlon, a steel worker who later on became a leader and executive in the United Steel Workers. It is based on (a) extension of labour-management cooperation through joint production committees, and (b) sharing the gains of cost reduction on the basis of union management agreement. In recent years, an important thrust of the participative management has been in the form of autonomous workgroups, mainly the Quality Circles. Success of the Quality Circles in Japan in the early '70s led to their import into the U.S. industry.¹³ They are spreading very rapidly in the U.S. industry in view of the high rate of success achieved in the industries which first experimented with them. In 1979, there were about 150 organisations having Quality Circles (Q.C.), while by August 1981, there were over 1000 organisations having Q.C., which appear to be "Catching on like wildfire in American industry".¹⁴

These Quality Circles are autonomous workgroups, consisting of 5 to 15 workers, which meet voluntarily on a regular basis usually on company time. They identify and analyse workplace problems including problems of quality of output. An interesting feature of the Quality Circles movement in the U.S. is that, unlike many of their Japanese counterparts, the American Q.C.'s often reward the workers directly in the form of wage increases or production bonuses.¹⁵ A leading example of the combined Q.C.-cum-wage incentive programme is found in General Motors Corporation. The Employee Participation Groups (EPG) of this organisation are modelled on the Quality Circles of Japan. Each EPG consists of 8-12 employees who meet voluntarily on the company time and discuss the work-related problems. It has been reported that EPG's in General Motors contributed to cost savings, improved quality, reduced absenteeism and following the introduction of these Groups, there has been reduction in workers' complaints.

The U.S. industry in recent years also experimented with participative programmes for improvement of the "Quality of Working Life" (QWL). The QWL programmes in the U.S. involve employees at every level

of the organisation in decisions about their work and workplaces. They deal with improvements in working conditions and environment, job design and other work-practices and also with general culture of the workplace. The QWL programmes in U.S. usually involve all levels of management as well as the union leadership. The issues dealt with under steering committees and work groups in QWL do not cover the collective bargaining issues, although the dividing line between the two is sometimes blurred.¹⁶ Wages are kept outside QWL discussions. But some of the matters connected with working conditions at times are also negotiated as bargaining issues between the Union and the management. In U.S.A., QWL programmes often successfully deal with reorganisation or redesigning job with a view to job enrichment and other organisational innovations, the areas which do not often come under the collective bargaining process. In many cases such efforts result in significant increase in productivity at the workplace level. In fact, although many work redesign or other job enrichment programmes do not explicitly mention improvement in productivity as an objective, they are necessarily linked to improvement in productivity. Herzberg believes that there can be no organisational innovation which is not tied to productivity. Orthodox job enrichment restructures individual jobs by emphasising client relationship and worker productivity.¹⁷

The Scandinavian Countries

In the Scandinavian countries the collective agreements on technological changes and the participative programmes for "Enrichment of the Quality of Work-life" have been the main contributions of Workers' participation in the improvement of productivity. In Norway, several successful experiments have been made in improving the quality of worklife in manufacturing organisations, ships and banks. In M/s. Balao, a general purpose carrier ship of Torvald Klaveness Shipping Company a participative work planning and training project was launched in 1973. In the course of the project, in planning which the officers and representatives of crew participated, temporary workgroups were created around particular types of tasks which changed from week to week. Duties and job-assignments were rearranged along new lines as a result of

which qualified members of the crew covered a variety of duties crossing the traditional functional or status divisions (e.g. deck crew and machine crew, or officers and crew). It was reported that as a result of the project, the level of maintenance and operational efficiency improved, the maintenance costs came down and the days lost for repairs were brought down below the average.¹⁸ In one of the branch-offices of Kredit Kassen, a large Norwegian bank, the principle of multi-skill operations through job-rotations had been practiced under a participative work planning arrangement. It is reported that as a result of this, the employees were better integrated and the branch office developed a remarkable capacity to cope with variations in workloads and task-requirements, which often created problems in banking operations.¹⁹ In Sweden also cases have been reported about the success of the participative job enrichment programmes in improving the productivity and work efficiency.

In Denmark, the technological changes for improving productivity have been brought mainly through technology agreements reached under collective bargaining. It is reported that the unions in Denmark seem to have very little faith in the existing forms of industrial democracy like joint consultations, cooperation councils, labour representation boards etc.²⁰

In the recent decades, the rate of growth of productivity in Japan has surpassed all other countries, although in terms of absolute level, her level, might be still lower than some other advanced countries, notably U.S.²¹ Much of this productivity growth has been achieved through technological changes and workers' motivated performance brought through different forms of participative management (e.g. collective bargaining, joint consultation, autonomous workgroups), and the built-in mechanisms of personnel management and labour relations, e.g. qualifications system based on performance, "life-time employment system" with its implications for promotion and job security, job-rotations, career development. etc.

Japan

In Japan, which is accepted as a leader in the field of industrial robots and which has successfully utilised all modern forms of technological innovations, including

the latest of micro-electronic technology, the introduction of new technology was brought through collective agreements, the details having been worked out through joint consultations.

As regards the labour participation in the decisions leading to the introduction of new technology, although the Japanese unions generally do not oppose the introduction of new technology, the unions often try to check any adverse effects of the new technology on jobs security and humanisation of the work process. Such checking by unions is achieved through joint consultation and collective bargaining.²² In this connection, a group of Japanese trade unions, including Zenkindomei (National Federation of Metal Industry Trade Unions), Jidoshasoren (Confederation of Japan Automobile Workers' Unions), and Denkiroren (All Japan Federation of Electric Machine Workers' Unions), issued "Guidelines for Agreements on Technological Innovations". The document insists on (i) joint consultation as a precondition for the introduction of new technology, (ii) guarantee and improvement of employment opportunities and working conditions of the affected employees, (iii) fair sharing of fruits of increased productivity with employees and (iv) promotion of international cooperation.²³

Collective bargaining and the resulting collective agreements in Japan are very much interconnected with the joint consultation at the enterprise level. In fact, collective bargaining system in Japan is not independent of the joint consultation system.²⁴ Joint consultation, in effect, works at two levels: viz., at the company level between the top management and top representatives of the unions, and (ii) at the workshop level, in which it is usually referred to as the production committee. At the company level, the boundary of the joint consultation often gets blurred in relation to collective bargaining. Usually here it deals with personnel policy matters like retirement, promotion policy, technological innovations and general management matters, like overseas investment, diversification of company's activities, change in management organisation etc.²⁵ Matters like wages, bonus, discharge, lay-off and other conflict-oriented issues are dealt through collective bargaining between the union and management. At the production committee level, the decisions relating to

production schedule, work-schedules, manning, working hours etc. are discussed.

In addition, there are autonomous work-groups like Quality Circles, Zero-Defect (ZD) groups etc. which discuss in the company time matters relating to quality of output, productivity matters, reduction of costs, working methods etc. These autonomous group activities have spread tremendously in the course of last 15 years. According to a recent report of the Ministry of Labour of Japan, about one-third of all Japanese firms have small autonomous groups and the proportion of large corporation having such groups is 69 p.c. In a survey conducted among 60 large enterprises in the Keihin industrial belt, in 90% of the units having autonomous groups, the employees' morale improved following the commencement of autonomous group activities.²⁶ According to the data published by Japanese union of Scientists and Engineers and quoted in a publication of Japan Institute of Labour, in 1980, there were 1,15,254 Q.C. circles registered with J.U.S.E. The same report mentioned that Q.C. circle produced favourable effects such as improvements in workers' morale, quality control and safety measure.²⁷ It was estimated that the economic benefits of the Q.C. circles 42.4 times their financial costs.²⁸ T. Inagami, Professor of Hosei University and Research Officer of Japan Institute of Labour, emphatically maintained that these circles "Contributed enormously to productivity and product quality and helped to reduce company costs."²⁹ In general, the Quality circles positively absorbed and utilised the ideas and creativity of employees in the workshop and promoted a sense of identity with the company among the employees. In this way, they contributed to the humanisation of the work process. However, it is interesting to note that apart from improving the quality of working life, their success may be partly ascribed to the financial and other rewards granted for the effectiveness of voluntary group activities. It has been reported that 68.7 p.c. of the Quality Circles subsidized Participants in one way or another and 92.7 p.c. of the companies indicated that they had a recommendation program to reward employees for outstanding service through these autonomous group activities.³⁰

Productivity and Participative Management in India

The joint consultation and other forms of participa-

tive management that have been introduced in India, had from the very beginning the improvement of productivity as one of the major objectives. Although the Works Committees introduced under the Industrial Disputes Act, 1947, did not explicitly mention rise in productivity as an objective and in general had the duty "to promote measures for securing and preserving amity and good relations between the employer and the workmen, and, to that end, to comment upon matters of their common interest or concern,"³¹ many of the matters which were usually dealt in the Works Committees (e.g., safety measures, improvement of conditions of work etc.) had direct impact on the productivity at the shop-floor or the plant level. The matter was made more explicit in the Second Five Year Plan, which categorically recommended increased association of labour with management and "promoting increased productivity" was mentioned as one of the major objectives of this measure.³² The Joint Management Council scheme which was formulated during the Second Five Year Plan to give effect to this policy and also to implement the joint decision of the tripartite Indian Labour Conference (1957) clearly included improvement of productivity as one of the objectives of the J.M.C. The Draft Model Agreement circulated in this connection provided that the management would consult the Joint Management Council, among other things, in the matter of introduction of new methods of production and manufacture involving re-employment of men and the Council would have responsibility in respect of supervision of safety measures and operation of vocational training, both of which have significance for improvement of productivity. The Scheme for Workers' Participation in Industry at Shop and Plant level circulated by the Government of India in October, 1975, which was more or less followed in another schemes circulated by the Government in 1977, had been more specific and included the improvement of production, productivity and efficiency, as a function at the Shop Council or Unit Council level and matters relating to "optimum production, efficiency and fixation of productivity norms for men and machines" in the list of functions of the Joint Council.³³ However, in actual practice the extent of success achieved by the forums for workers' participation of management in India at different times has been practically negligible. In a very large number of undertakings which required to set up

Works Committees under the I.D. Act, 1947, the Committees were not established. In 1980, out of 1114 undertakings in the Central sphere which required to form Works Committees under the I.D. Act, 1947, only 588 such committees were in existence.³⁴ In reality however many such works committees only existed in paper and hardly functioned with any effectiveness. The Joint Management Council Scheme was also practically a non-starter. Although introduced with much fanfare in 1958, there were only 80 Joint Management Councils in existence in India in 1967. However, a Report on Working of the Joint Management Council issued by the Ministry of Labour, Government of India, claimed that in majority of the cases where JMC had been established the production and productivity had improved.³⁴ Although it might indicate the potentiality of the participative management in improving productivity, due to very little spread of the scheme in the organised industrial sector in India, its overall impact on the productivity in the country appears to be insignificant. The same may be stated in respect of the later scheme of the Workers' participation in the form of the two tier joint-council and shop council. The two-tier scheme, although appears to be somewhat more successful in terms of its numerical spread, hardly appears to have much impact on raising the productivity and meeting other objectives. Drawing on the deliberations of several seminars and workshops in which important managers and trade unionists had participated and also on the basis of the opinion-surveys conducted among the leaders of trade unions and important executives in Indian organisations, the International Centre for Public Enterprises in Developing Countries in its National Report on the Workers' Self-Management and Participation in India, noted that the schemes for workers' participation of the country was not, in general, successful partly because of the antagonism or indifference to the concept of workers' participation and partly due to other factors like inter-union rivalry, lack of requisite political will on the part of the state to make the scheme a success and jurisdictional confusion in respect of different consultative forums etc.³⁶

Although the officially blessed participative schemes like Works Committee, Joint Management Council, or the two-tier machinery of the Joint Council and Shop Council did not make much headway in improving pro-

ductivity, with the exception of some undertaking, the success stories of the participative approach in productivity management are not unknown in India. It is interesting to note that most of these cases were results of collective bargaining followed by collective agreements, which set up regular machinery for consultation in matters of productivity (including the Joint Productivity Committees, and in some cases, Joint Management Councils or Joint Councils and Shop Councils). One of the earliest of such cases was the "Agreement for Closer Association of Employees with Management" signed on August 4, 1956, by Tata Iron and Steel Company Ltd. and Tata Workers' Union, Jamshedpur. The Agreement established a three-tier machinery consisting of a Joint Consultative Council of Management at the top, the Joint Works Council and the Joint Departmental Councils. Along with other objectives and functions, the matters concerning production, operational results and the production problems, rationalisation of production and improvement of productivity were given special emphasis at all levels of operation of the three-tier consultative machinery created under the Agreement.³⁷ For more than two decades, the scheme worked well in general and helped a lot in improvement of efficiency, prevention of wastes of materials power and equipment and introduced important safety and productivity raising measures.³⁸ Similar cases of more or less successful operation of the consultative committees set up under collective agreements in the field of productivity improvement have been reported from some other units in the iron and steel industry, engineering industry, chemical industry and also in some ordinance factories under the Ministry of Defence of the Government of India. Apart from the consultative committees set up under collective agreements, which showed favourable results in creating workers' involvement in productivity management or in improvement of productivity, these have been a few cases of participative autonomous groups functioning in India, which showed positive impact on productivity. In Bharat Heavy Electricals Ltd., Hardwar, and also in New Delhi Divisional office of Life Insurance Corporation of India, workers' autonomous groups were formed with the support of management mainly for redesign of work-processes in selected sections. The groups worked successfully and improvements in productivity and also in quality of working life were reported in both the

cases.³⁹ However, on the basis of later enquiries made by the author of this paper, it was learnt from some responsible executive of B.H.E.L. Hardwar, that after the initial success for about two years, the scheme failed to maintain the gains achieved and the groups died down within three to four years after their inception mainly due to the lack of financial rewards for the participating workers and antipathy of some trade unions, which did not favour the scheme. Very recently, another unit of Bharat Heavy Electricals Ltd. (Hyderabad) has seen interesting beginning of Quality Circle activities and it has been reported that they achieved good results, including improvement of productivity.⁴⁰ In Rourkela Steel Plant also small autonomous work-groups entitled "Shop Improvement Groups" have been formed in the early part of 1983.

There have been also cases of collective agreements in India, which although directly did not improve productivity, but contributed to the same indirectly, by removing workers' fear and resistance in the context of management's measures for introduction of technological changes, on the basis of agreed decisions incorporated about the job-security, workers' training and other matters to protect their interests in connection with such changes.

Problems and Prospects

Experience of participative management's role in the improvement of productivity and management of technological change for that purpose in the advanced countries as well as in India clearly indicates that, in spite of major limitations and problems, the approach has definite possibilities in removing workers' resistance to technological changes and also in raising productivity. Workers' positive motivation to work being an indispensable condition for improvement of productivity and technological changes being at times essential for this improvement, the positive results experienced in this matter are definitely indicative of the merits and possibility of this approach. The Japanese, Norwegian and the U.S. experiments clearly have shown the extent to which workers' participation may help in cost reduction, improvement of quality of output, better work-design and the overall increases in workers' performance and motivation. The British and the West German

cases indicated the role of the participative systems including collective bargaining in removing workers' resistance to technological change and in minimising or removing its adverse effects from the workers' points of view. In spite of somewhat unencouraging record of the schemes of workers participation in management in India as a whole, individual cases of success of this approach in raising the productivity clearly show that even in the developing countries, the experiment may be worthwhile provided it is conducted under favourable conditions.

However, when we accept the potentials and prospects of participative decision-making the level of productivity through technological change or without it, we should not forget the problems and limitations of workers' participation in this process.

Great problems appear to emerge from attitudinal barriers. The experience in India and also in other developing countries often indicate the hidden antagonism or reluctance of the management to seriously involve labour in decision-making affecting change of technology or to give them effective say in this respect. A group of trade unionists from private and public sector undertakings complained in a Seminar on Workers' Participation in Management that in respect of matters connected with production and productivity, the management only "put forward plans for acceptance by workers' representatives without associating them in the process of planning.... In view of the said conditions, the Shop Councils and Plant Councils have become forums for dissemination of information only."⁴¹ An Officer of the Union Ministry of Labour was quoted to have said that the main problem is that of attitudes and prejudices of employers.⁴² In South Korea, where the consultative Labour-Management Councils have been given a major responsibility by law, among other things, to function as an organ to promote increased productivity, it has been observed that "the attitude of the management towards the labour-management council system has been extremely passive and even negative."⁴³ But if the management does not intend to involve the workers in any real sense in decision-making, or in planning the change in productivity and adopts a negative or apathetic stand in respect of this matter, it is unlikely that the workers

would ever feel enthusiastic about the schemes of workers' participation in raising productivity.

The attitudinal problem poses difficulty from the trade union side as well. Although in advanced countries like Japan or West Germany, trade unions without ever being formally associated with certain participative schemes for productivity management (e.g., autonomous workgroups in Japan or works councils in West Germany) never interfered with their operations and permitted their representatives or union-members to effectively participate in these schemes, in India and in other developing countries, there are many instances where individual trade unions either refused to cooperate or director opposed the schemes evolved through joint-consultation committees or autonomous work groups. In fact, one of the leading trade unionists and an important office bearer of a leftist All-India Trade Union Organisation categorically maintained that in view of the class conflict, workers' participation in a capitalist country in effect "turns out to be exploiting the workers more", i.e., make him produce more in the name of participation.⁴⁴ Recognising that in the public sector undertakings it could have worked to some extent, there also he expressed his doubt about its success in view of what he termed as the influence of the big business on the public sector management.⁴⁵ An office-bearer of another important All-India Trade Union Organisation was, in principle, in favour of the concept of workers' participation in management, but he underlined the need of attitudinal change of both management and labour in this respect. He predicted that the scheme would definitely fail if the employer thought the worker as a servant and did not recognise him as a partner in the work.

To some extent the problem of an agreed solution regarding the sharing of gains of productivity with the workers is very much connected with the attitude of the management. If the latter wants the workers' cooperation only for the improvement of productivity, without being ready to permit the workers to share its gains, an attitude which is often found in some private sector undertakings (but not only there), it is unlikely that the workers would be permanently motivated to cooperate for the improvement. For a while, other considerations may encourage them to participate in the scheme, but

in a developing economy like India, where the workers' physiological and security needs are still largely unsatisfied, the scheme is not likely to show lasting results. The initial success and the ultimate failure of the participative work-redesign scheme in selected sections of Bharat Heavy Electricals Ltd., Hardwar, as mentioned above, amply justify this point. The fact that even in Japan the significant majority of the organisations having Quality Circles reward employees for outstanding service clearly indicates the importance of the financial rewards and other tangible benefits as motivating factors for higher productivity. In U.S., the success of the Scanlon plan, which made wide use of labour-management consultation and mutual agreements both for cost reduction and sharing the gains resulting therefrom, also is a pointer to the importance of satisfactory gain-sharing agreements for labour's effective involvement in raising productivity. Unfortunately in India, this is often not adequately recognised and that might have stood on the way of the success of the officially formulated schemes for workers' participation in management in achieving productivity improvement, as they explicitly separated the interest bearing issues like financial rewards etc. from the issues coming under the purview of the consultative forums. Possibly the Japanese approach of working out the details of the proposed productivity-improvement measures or technological changes through joint consultation at different levels, followed by union-management agreements to work out the labour-safeguards and the gain-sharing arrangements resulting from the anticipated improvements, might offer a satisfactory solution to this problem. However, although the forums for discussion may be separate, the change should follow the completion of both the processes of joint-consultation and collective bargaining. This may be a distinct departure from the existing schemes for participation and may help in removing the labour's suspicion about the participative forum being used for the purpose of exploitation of the worker.

The approach suggested above may also partly meet the problem noted by Thomas Woodhouse in the context of the British technology agreements in which it was found that in the face of the compulsions of the technological change and under the shadow of the recession, the unions might show interest mainly in the

sharing of the gains of higher productivity, without trying to extend their influence over the decision-making process for the technological change. If the workers' participation in this context is kept confined only to collective bargaining and the resulting collective agreement, the trade union due to its greater involvement with the conflict-oriented issue over the whole industry, or the whole undertaking, may neglect or lose sight of the details of the productivity-raising measures or technological changes, which are matters of direct interest for the shop floor level workers and others directly affected by the new changes. But if the matters are settled both through the consultative forums at different levels and the bargaining mechanism, this problem may be more successfully tackled.

Conclusion

In the light of the achievements reported and problems encountered in respect of the participative management's role in improvement of labour productivity in different countries, it would be quite fair to be hopeful about its scope and possibilities for raising the productivity. Although the problems and limitations are quite formidable and the success story is not uniformly encouraging, the extent of success achieved in some advanced countries, and also in certain individual undertakings even in the developing countries, clearly indicates that participative management may be an effective approach for raising the level of productivity, provided certain preconditions are fulfilled and the problems are sought to be encountered seriously. For that, of course, the scheme should be meaningful and significant in coverage, so as to make the workers interested in participation and the management also must be ready in spirit (not only in letters) to involve the workers in the process of decision-making and implementation of the schemes for improving labour productivity. There should be elaborate provisions for joint consultation at different levels on the details of the proposed measures which may create sufficient ground for union-management bargaining followed by collective agreements on matters of conflict-oriented issues like gain-sharing and job-security for workers in the context of higher productivity. As indicated above, some of the suspicions and attitudinal problems from the labour side may be eased out through this approach

and also through an effective and mutually acceptable plan for sharing the gains of the higher productivity. For changing the attitude of management, training programmes on different forums of workers' participation may be quite useful. There should be joint as well as separate programmes for trade union activists at the plant as well as the shop-floor level in the techniques of joint consultation and joint decision-making in matters connected with productivity. In spite of the seriousness of the obstacles, the participative management must be given a sincere trial for improving labour productivity in the developing countries, which have hardly any prospect of achieving self-sustained growth without continuous increase in productivity and better utilisation of the human resources. A beginning might have been made in India in this respect, but this is by no means enough and much more is to be done.

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Planning for Domestic Tourism

ABHAY EKBOTE

In today's economic and political environment, one industry more truly a segment of the economy that moves to the forefront as the greatest single opportunity for economic, social and political exchange is tourism. Tourism to flourish needs planning which inter-alia involves upgradation of environment and maintenance of ecological balance.

Mr Abhay Ekbote, Management Consultant, Institute of Public Enterprise, Hyderabad.

Tourism in its broadest sense can do more to understanding among people, provide employment, create foreign exchange and raise living standards than any other economic force known. It is not dependent on a diminishing resource.

Tourism is not only the biggest business but also the world's fastest growing industry. It ranks next only to oil as the biggest organised industry in the world. Tourism denotes the temporary, short term movement of the people to destination outside the places where they normally live and work, and their activities during the stay at these destinations.

By its very nature tourism is a conspicuous phenomenon. The incidence of mobile population visiting places outside their normal domicile is an expression of the living standards and of the quality of life. It is one of the visible pressures, which modern civilisations exert on the environments. Tourism is a highly complex phenomenon. It involves the activities of not only large transport organisations and of various tourist services at the destination but also of Central and Local Government. Tourism today has become an important factor in the world trade and a major element in the balance of payments of many countries. It generates wealth and employment, it is a major source of income and employment for individuals in many places deficient in natural resources other than climate and scenery.

Light Industry—No Capital

It makes use of resources which may not be used other-wise, in particular of unemployed labour in developing countries and regions with few or no alternative sources of employment as in India. With all these inherent advantages Tourism is rightly defined as the light industry requiring no capital. There is no other industry on which so little capital (excluding investment on infrastructure) would have to be expanded which in turn would yield foreign exchange in a short time.

Tourism in a broad sense, includes both foreign and domestic tourists. About 75 to 80% of the World's tourist expenditure is made by visitors within their own countries. This equally holds good in India where Domestic Tourism is virtually a separate entity. The characteristics of the existing internal or domestic tourists, the nature of their demands, the kind of facilities that they seek and the pattern of their movement (itineraries) are substantially different from those of the foreigners.

The Government of India has successfully marketed 'India' as a tourist region abroad through Indian Tourism Development Corporation. The Market Research Division of the Department of Tourism, Government of India at Delhi has done appreciable work in identifying the profile of the foreign tourist, their demands and tastes and their travel pattern to foster the development of Foreign tourism. Their efforts have been adequately supported by the hotel industry which catered to the accommodation needs of the Foreign tourists by constructing state Hotels in the various tourist places, all over India. Not lagging behind, in its effort to help the foreign tourist go from one spot to the other, the Indian Airlines provided the tourists a network well connected to all the important tourist spots of India.

The table no. 1 reveals the trend in the arrivals of the foreign tourists in India from 1975 to 1980.

Foreign Exchange Earner

It is seen that the average increase in the arrivals of the Foreign tourists till 1979 was well around 15%.

Table No. 1

Trend in the Arrivals of Tourist in India

| Year | No. of foreign tourist arrivals | % Increase |
|------|---------------------------------|------------|
| 1975 | 4,65,275 | — |
| 1976 | 5,33,951 | 14.8 |
| 1977 | 6,40,422 | 19.9 |
| 1978 | 7,47,995 | 16.8 |
| 1979 | 7,64,781 | 2.2 |
| 1980 | 8,00,150 | 4.6 |
| 1981 | 8,53,200* estimated | — |
| 1982 | 10,98,000* estimated | — |

It is the country's fourth largest foreign exchange earners. In the sixth plan outlay for civil aviation and tourism of Rs. 965 crores, an amazingly small sum of just Rs. 30 crores has been earmarked for promotion of tourism. This amounts to a meagre sum of Rs. 6 crores per annum.

In its endeavour to promote foreign tourism the needs of a major segment of the tourist industry i.e. Domestic tourist was overlooked by the Government. There has been very little effort in the past by the government to let alone promote, but even identify the domestic tourists market. In all the five year plans, emphasis was placed on the demands of the Foreign tourist, very little mention, if so any has been made of the domestic tourist.

The sheer oversight of the department of Tourism is evinced from the fact that the market research division of the department of Tourism only attempted to compile and analyze the data on foreign tourists and completely left out huge number of the domestic tourists. Further it is monitoring continuously the arrival of foreign tourist and the travelling pattern, nature of demand, origin etc. While information on these variables for the domestic tourist, wherever available is scanty and not sufficient for any useful analysis. It is very much surprising to note that the planning for tourist industry was done on information on expenditure, data profile, travel pattern etc., obtained on foreign tourists only (while expenditure incurred by

domestic tourist which constituted approximately 80 to 85% of the total tourist expenditure) does not seem to have been taken into consideration at the time of planning or formulating of policies by the government.

The centre however, recently became aware of the importance of the problem of planning in the absence of sufficient data and information about tourist activity, and invited the four participating southern states (In the southern states, Tourism conference). Andhra Pradesh, Karnataka, Kerala and Tamil Nadu to draw up perspective plans for the next ten years so that the micro and macro level plans indicated their requirements regarding the number and category of hotels at the tourists spots, the tourist spots to be developed and the quantum of assistance needed from centre. This was a positive step taken in the right direction by the government in approaching to tackle the problem of promoting Domestic tourism and deserves a word of applause. However, this one time attempt does not itself serve as the solution to the problem.

Gearing for Promotion of Domestic Tourism

While a perspective plan may be the right step in planning for the development of Domestic Tourism this by itself will not help to achieve the objectives of the plans. In the absence of adequate data on the number, characteristics, nature of demand and the kind of facilities needed by the domestic tourist, it becomes increasingly difficult to draw up definite plans for the promotion of domestic tourism. The problem is further made complicated by the fact that the domestic market comprises of a heterogenous mix of individuals with different needs and tastes.

In order to build up the necessary data base for helping in formulating the plans and policies for the promotion of domestic tourism, the example of the European countries can be followed with the necessary changes to suit the Indian conditions. In order to promote domestic tourism, an understanding of the characteristic of the domestic tourism, the kinds of facilities they need, the nature of their demand, travel pattern etc., have to be identified in each state by the State Tourism Development Corporation. The infor-

mation can be obtained periodically by conducting household survey with a primary objective to assess the travel pattern of the households. This may be termed as the National Holiday/Summer holiday survey and the short holiday survey depending upon the objectives of the survey. If the survey depending upon the objectives of the survey intends to obtain information on the travel habits of individuals for short duration trips (trips made for not more than 4 days) it would fall in the second category of survey while if the duration of stay outside the residence is long then it would fall, under the National Holiday/holiday survey. Generally the short duration trips would last not more than four days out of the residence of the traveller.

These surveys would provide information or data on the characteristics of the holiday market. The volume and value of holiday traffic to particular destination, its source of origin, socio-economic characteristics. average length of stay, expenditure under various heads such as hotel, transport etc. This information could be supplemented by data obtained from various hotels on their room strength, occupancy rates, and from the State Road Transport Corporation, and private tour operators on the total number of travellers from and to the various tourist spots. This would provide the tourism development and plans for developing domestic tourism. For example when at the state level a profile of halts, duration of each halt etc. are obtained, this would help the Department in planning for the total fleet of buses to operate in the direction(s) where the public is observed to be heavy. Further, it would also throw light upon the requirement of not only the type of hotel rooms required by each type. Apart from this the other daily requirements of the travelling public can also be estimated and accordingly plans could be formulated for the purpose of providing the necessary infrastructure facilities on the identified routes and direction.

Estimating Demand

Net Travel Propensity : The proportion of the total population or of a particular group in a population who have made at least one trip away from home in the period under investigation (normally 12 months), i.e. one or more trips as defined for the purpose of

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Management of Industrial Sickness

DR. S. S. SRIVASTAVA

The data of over 200 projects has been analysed for their main weaknesses as these projects could not successfully be completed in time. 44% of these projects have failed because of lack of good management and poor implementation. A model has been developed to predict incipient sickness in badly managed projects in different industrial areas. The model makes use of the financial ratios, operational ratios and technical ratios using multiple discriminant analysis. Discriminant equations for a few selected industries have been developed. Forewarning parameters have been derived which make it possible to sense the study of incipient sickness in industries. A close monitoring of some or all of these parameters can give an advance warning of the state of health of the industrial units.

The sickness in Indian industry is spreading at an alarming rate according to the Reserve Bank of India Report 1980. The total of units reported as sick was 24,550 which locked up an amount of bank money of Rs. 1808.66 crores. The sickness is spread in small scale, medium and large units. The small scale sick units are 23,149 in number locking up an amount of Rs. 305.77 crores. In the medium scale industries with bank credit limit of Rs. 1 crore, there are 992 sick units locking up a capital of Rs. 178.42 crores. There are 409 large units enjoying a credit of more than Rs. 1 crore locking up an amount of Rs. 1324.47 crores. If, however, the rescheduling of payment is also considered, the total locked up capital in all sick industries would easily exceed Rs. 7000 crores. The financial assistance of sick units from all sources has already crossed Rs. 3000 crores by the end of 1981. In 1982 more of sick units have been added to all the three groups. The assistance provided to sick units and the number of industrial undertakings whose management has been taken over by Government under the Industries Act, 1951 has been steadily increasing every year.

There are several causes of increasing industrial sickness and the one that has been identified in all the three groups of industries is the miss management of industrial units. There are a few additional causes like non-availability of raw material, power shortage, increased cost and obsolescence of plant and equipment and out-dated technology. Poor industrial relations and unhealthy trade unionism has also affected some units.

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if it will raise itself to a high level of true industrial statesmanship. To illustrate the positive impact of this type of statesmanship, a few such examples from other industries also will be discussed briefly.

There is one lesson which, throughout the many decades of the union movement, its leadership has been lax in learning and in teaching to its membership: in the last analysis, management and labor are in the same boat in an often stormy economy and had better row together lest they sink together. While it is understandable that labor thinks in terms of maximizing its share of industry's income, equal and even greater attention should be given—as a matter of labor's self-interest—to maximizing that income. Union leaders, consequently, should echo management's concern over such hindrances to employees' productivity as obsolete and outdated work rules.

The "same boat" concept should induce union leadership to be the peak of its statesmanship at the collective bargaining table, where work rules which impede or improve employees' productivity are established. The issue is not a matter of making employees work harder. Harder is not necessarily better. Frederick Winslow Taylor, the "father" of time-and-motion study, amazed both management and labor by demonstrating that a man who loaded heavy iron ingots into a freight car could double his production by cutting his worktime in half; alternately working fifteen minutes and resting fifteen minutes. The function of work rules should be to enable employees to work more safely and more productively.

Manpower Work Rules in the Railroad Industry

The railroad industry, which is in a desperate plight (due to a very substantial degree to years of oppressive government regulation), provides an informative example of the deleterious effect on employees' productivity of work rules imposed on management by labor at the collective bargaining table. Labor imposed work rules for the short-run purpose of creating more jobs, but with inadequate attention to the long-run need for employees to have a healthy industry in which to enjoy lifelong jobs.

A classic example was the labor contract of 1959 which provided that coal-shoveling firemen, with no more steam engines on which to work, could ride until their retirement dates on the new diesel-electric locomotives—which appreciably reduced the industry's productivity statistics and financial health. No proof was demonstrated at the time that this arrangement was the only, or best, solution to the firemen's pending unemployment.

The cause of the firemen's predicament was technological change, which increasingly makes trades and skills obsolete. Statesmanlike cooperation is required between union and management officials to plan means for mitigating the impact of technological change on displaced employees, partly to avoid reduction in productivity when unneeded employees are retained, and partly to avoid the lowered self-esteem of employees who are forced into a position of receiving a good day's pay without a good day's work. An obvious solution, often practiced, is retraining, and the need for it should be anticipated.

In 1959, the railroad industry faced another situation, one which was less critical at the time but, in the end, more cataclysmic. That year, the industry announced that it desired to void the decades-old tradition—written into its bargaining agreements—of work requiring two, and sometimes three, brakemen on a train and two on a yard crew. The industry claimed that in most situations one brakeman was sufficient. Productivity statistics certainly were involved, but the industry was not thinking then in terms of productivity, the concern was its poor financial status.

This was an opportunity for union statesmanship to rally to the support of a sick industry by working with management toward the solution of a manpower problem. The brakemen's union—or, rather, its dynamic president—was adamant in its opposition, however. The proposal was unthinkable for the president, and for thirteen years he fought the industry, and won.

The railroad "crew size" dispute is particularly interesting because what the industry basically wanted was something in the area of economic philosophy: the "management right" in a free enter-

prise environment to determine the number of employees in a work force, a principle generally not challenged by unions in any industry. The common union argument in these cases is safety and work burden particularly the former.

In the case of the brakemen, the union claimed that safety and work burden made the subject of the number of brakemen in a crew properly one to be resolved across the collective bargaining table. Yet such disputed questions in labor-management relations should be, and easily can be, settled by arbitration initiated by an individual employee who believes that his job is hazardous or too difficult without an additional employee working with him.

The "crew size dispute" was in constant stalemate at the bargaining table from 1959 to 1972. President Kennedy sought to break the impasse by appointing a Railroad Commission in 1961 to investigate the matter. But its findings were inconclusive; management's claim to a "management right" should not be considered "at this time," it stated, and told the parties to return to their table and bargain some more. In 1963 the President acted again, appointing Emergency Board No. 154. Side-stepping the "management rights" issue, the Board stated that safety and work burden were issues that should be settled locally on individual railroads and not by industrywide negotiations and added its belief that "no force reductions should be made (on crews) except by natural attrition." At the level of economic philosophy, that recommendation infers that once an employee has been hired his employer owes him, as a matter of the employee's rights, a lifetime job. If the courts were to adopt that philosophy, it would be the end of industrial productivity statistics.

In 1964, the congressionally established Arbitration Board No. 282 rendered its decision, which ignored "management rights" and told the industry to bargain some more. Either party in a stalemate on any particular railroad was allowed the right to invoke arbitration. Management from several railroads called in arbitrators—the only time during the dispute that anyone left the bargaining table in a serious effort to obtain the facts regarding safety and work burden—and the arbi-

trators granted management reduced crews (one brakeman per crew) for most of those arbitrated.

As matter of mutual self-defense, throughout the dispute the railroads attempted to deal with the union on an industry-wise basis, as is the industry's practice regarding wages and fringe benefits. In 1968, however, the Supreme Court ruled that the "crew size dispute" be handled individually on each rail-road—whereupon the union used its strike power at one railroad after another until by 1972 it had won back all the brakemen's jobs which the arbitrators had abolished in 1964. There were, however, some extremely interesting exceptions.

The significance of the exceptions lies in the statesman like manner in which certain union officials, associated with individual railroads in particularly bad financial situations, listened to management's plea for relief from unnecessary brakemen and cooperated at the bargaining table to rewrite the applicable work rules and pay scales. Several case studies follow.

Providence & Worcester Railroad: This fifty-mile-long railroad began operation in 1973 after the Penn Central sought to abandon the trackage as a \$ 3 million loser. In its first year, it grossed nearly \$ 5 million, earning \$ 2.2 million in net revenue and almost \$ 800,000 in net income, made possible by the union's cooperation. Each crew had only one brakeman, and job titles (requiring the cooperation of other unions) were abolished so that employees could do whatever work they saw should be done instead of being limited to individual trades. The 100-mile rule, under which an extra day's pay was granted for travel beyond 100 miles per day, was abolished, although schedules called for considerable overtime. In return for these union concessions, this sixty-employee railroad placed a brakeman on the board of directors, provided a guaranteed annual wage of \$ 16,640, and established a profit-sharing plan which could be as much as \$ 3,500 or more annually, payable at management's option in cash or stock.

Florida East Coast Railway: In the mid-1960s, the operating unions on this financially troubled railroad disbanded themselves. The work rules were

simplified and the railroad began operating through freight trains from Jacksonville to Miami with only an engineer and a conductor (no brakeman), and the oddity of no caboose.

Chicago & North Western Railroad: The employees saved this railroad by buying up its stock and controlling its management, and in 1973 the brakemen's union agreed to one-brakeman crews with increased pay for the single brakeman and a provision that surplus brakemen would be eliminated only by attrition.

Reading Railroad: This railroad recovered from the brink of bankruptcy in the mid-1960s because the unions permitted a relaxation of restrictive work rules and because management and labor, working as a team and facing severe competition from other railroads serving the same area, decided on the unique idea, for the railroad industry, of getting more business by taking it away from the truckers. The idea was to offer large-tonnage shippers what the truckers were providing: Same-day delivery instead of the three days which the restrictive work rules necessitated for the sixty-mile run between Philadelphia and Reading.

The Reading Railroad is an encouraging example of what labor-management cooperation can accomplish in improving labor productivity. Under the old work rules, one or more freight cars at a shipper's dock would be moved by a train crew to the nearest terminal, where a yard crew would assemble them with other cars into a train. The next day, a train crew would move the assembled train to another terminal. On the third day, a Reading yard crew would give the cars under discussion to a train crew for hauling to the consignee's dock. When both time and labour cost are considered, it is no wonder that the truckers took the short-haul business away from the railroads decades ago.

The Reading Railroad's management approached the unions with a proposal to eliminate all the work rules. The unions accepted the proposal and Reading's progressive "Bee Line" service was inaugurated.

Other Industries

Before mentioning other industries, an important

historical development should be mentioned. During a century of negotiations between management and organized labor in all industries, the practice has been for labor to seek something and for management to give it. In other words, the traditional bargaining table has been mostly a one-way street. The reasons why that was a necessity in the early days are well known, but the substantial concessions that labor has extracted from management make it reasonable to argue that situations are now to be expected where management seeks something and labor gives it, employee productivity being in that category. Four case studies will illustrate situations where management did the seeking and where labor, acting in a statesman like manner, did the giving.²

Kaiser Steel: The first case involves the disastrous 116-day steel strike in 1959. Kaiser Steel and its employees avoided that strike by breaking away from the national situation and solving their mutual problems inside the company by means of their well-named "Fruits" Committee (Committee to Develop a Long-Range Plan for the Equitable Sharing of the Fruits of Economic Progress).

West Coast Longshoremen: The West Coast longshoremen, under the leadership of Harry Bridges, solved a serious employee productivity problem by signing with the dock companies the 1960 Mechanization and Modernization Agreement, which eliminated contractual "make-work" rules, permitted the companies to reduce their labor costs by mechanizing the loading and unloading of ships, reduced the expense incurred by the time ships being tied up at docks, and guaranteed the existing work force against loss of jobs while giving it a portion of the net savings from mechanization, preserving its safety rules, and ensuring it of no "speedup" acts by management.

The City of Jamestown: The third case is unique because the impetus for labor management cooperation developed not within the ranks of labor and management but in the civic community in which they worked, the economically decaying city of Jamestown, New York. The community's civic leaders induced labor and management in four dying industries located in the city to establish the 1971 Labor-Management

Committee of Jamestown, which after a slow and painful start began reversing eighteen years of declining industrial activity. Employee productivity was selected as the primary objective: waste and absenteeism were to be reduced, job losses resulting from the committee's activities were to be avoided, and the community's reputation as a source of productive labor in a good labour-management relations environment was to be developed. The committee saved the city; within a year strikes had been eliminated, and one company negotiated a contract which tied wages to productivity increase.

Jamestown's economic momentum increased in 1973, assisted by federal grants to set up labor-management committees.

For the first time in fifty years several plants were saved from liquidation, partly as a result of the committee's efforts and partly by the improved labor-management relations climate. Two companies announced major expansion programs, and a large new company entered the area. The community's unemployment rate dropped, and the number of manufacturing employees increased.

The Steel Industry: The fourth and final case is the steel industry (apart from the Kaiser Steel case already mentioned), which in 1971 took a hard look at the situation created by foreign competition. Japan, for example, was underselling Kaiser Steel in galvanized pipe even though it was using California iron ore. The industry approached the steelworkers' union on the subject of productivity, and some 250 labor-management committees among ten basic steel companies were formed. The committees were titled Employment Security and Productivity Committee, a psychological device to indicate that benefits would not accrue solely to management. From the beginning it was recognized that constructive results would be proportional to how well the committee worked with employees, alleviating their fear of "speedup" and firing, and enhancing their morale and their motivation to cooperate with committee projects. The committees improved productivity by such means as avoidance of bad quality, better identification of warehoused steel, more efficient handling of scrap, energy conservation, more efficient

phasing out of old equipment, and better care of new equipment. The union's leader, I.W. Abel, credited the committee with laying the foundation on which labor and management built the historic 1973 Experimental Negotiation Agreement, used for the first time in the 1974 negotiations. This agreement established a stable peace in the industry by providing that, in the event of deadlocked negotiations, the result would be arbitration instead of a strike.

These cases are success stories. Unfortunately, however, they are exceptions and not the rule in labor-management relations.

Union Statesmanship

One of the glories of the American way is its devotion to progress in human affairs in the "the pursuit of happiness." Selfish management and selfish unions—and there is much of each—are not conducive to that goal. Statesmanship not only at the governmental level but also in the ranks of industrial and union leaders is required if this nation is to realize the dream of its founding fathers.

Labor productivity is one of the elements in the program for an ever improving economy, not only for the United States sake but also as an example for the underdeveloped nations. Over the last decade, the news media have dramatized the fact that, according to the government's appraisal, there is 10 per cent poverty in this country, implying that the dream of the founding fathers has failed. The positive view must be emphasized: The United States has reached 90 per cent of its objective, and should roll up its sleeves—with government, management, and labor working cooperatively—to go the last 10 per cent of the way.

It is to be hoped that union statesmanship will see its opportunity and do its part by leading organized labor, working productively, into a prosperous economy.

Job security is a positive concept. As such, it is something that can be hoped for and worked toward. Human nature being what it is, however, the negative side of job security is more often emphasized: fear of unemployment. That fear, although its reality must

Even with the often perceived macro-level necessity of productivity as the means of expediting economic growth—a key for early eradication of poverty, one finds relatively very little in terms of an organised effort for translating it into action. Similar to what other societies have experienced in our country too, it is not uncommon to see a vast majority of people still considering productivity as someone else's concern. This paper focusses on the need for building a deliberate well-organised effort for management of productivity in the entire organised sector and otherwise.

Our respected Prime Minister's call to observe the Year 1982 as Productivity Year came to us at a time when BHEL operations were facing growing pressure of increasing cost of inputs. Material costs had gone up substantially in the preceding 3-4 years, interest on borrowings had more than doubled and enhancement in personnel payments was due to be taken up at the ensuing wage agreement. On the other hand was BHEL's determination to match the international enterprises in the competitive market environment, at a time when power equipment manufacturing capacity in developed countries was grossly under-utilised. The call to observe 1982-83 as the Productivity Year thus provided the right impetus for introducing the productivity dimension. Following are some of the essential features of the BHEL experience.

A. Intensive Group Interaction: Intensive group activity generated at the senior management levels was subsequently spread down the line through a chain of productivity coordinators who were identified in each work area.

B. On the Job Productivity Problem Solving: Groups—small and large, were encouraged to locate productivity improvement projects. As many as 1053 projects were identified and were taken up for investigation by different groups on a planned basis. This in turn created a large on-the-job environment and a favourable psychology for experiment based learning opportunity.

C. Class-Room Education: The Divisional training centres and the Corporate Management Development Institute reoriented their programmes laying greater stress on productivity improvement.

D. Intensive Workers' Training: In this direction one of the Division took the lead by developing a crash productivity course to train 2600 artisans. A comprehensive 2-day package "Greater Prosperity Through Higher Productivity" was introduced for batches of 30 artisans. In all 12,800 employees were trained during the Productivity Year. Teaching aids like close circuit television, a slide projector, overhead projector, films and charts made the training highly effective.

To bring about core-impact, communication with the employees through their mother tongue became the policy. The awareness that productivity improvement and poverty eradication and increasing employment opportunities brought greater involvement on the part of employees.

E. Feedback Survey—Training Impact: In a subsequent feedback survey the workers showed a more positive response in their respective areas of work. Other than their involvement in reduction of wastage etc., their responses to supervisors and relationships with their own colleagues improved.

F. Future Training Needs Reinforcement: The success achieved has encouraged us to extent the train-

ing programme to the entire population of the company including supervisors and all levels of Executives. These are currently under execution.

III. Enriching Motivational Processes

Conflicts in the managers' minds about the choice of motivators poses a formidable problem. Some consider financial reward as the only real motivator whereas others view it just one of the many motivators. In operating BHEL's Productivity Movement emphasis has been mainly on the non-financial motivators. Some of the more prominent motivators utilised in the process included:

A. Communication: Intensified communication established through seminars, workshops, conferences, and a case reporting journal developed during the year under the caption 'Productivity Movement in BHEL' helped the spread and snow-balling of the movement and also in reinforcing the competitive processes.

B. Recognition & Rewards: Company level and Divisional level awards were instituted to provide recognition to the best performing groups. To enable retaining of focus on achieving a better culture of work, and not mere physical ratios, emphasis on the following functional elements was considered in evaluating the best performer.

1. Commitment and intensity of effort in planning for productivity including long range and annual budgeting.
2. Identifying and allocating of organisation for accelerated on-going productivity effort.
3. Monitoring and control at group, divisional and corporate level—frequency and regularity of review.
4. Training of artisans, supervisors and executives.
5. Promotional efforts.
6. Number of employees, involved in the effort through any mode like volunteering or nominated individuals/groups including Quality Circles or the Productivity Enhancement Groups.

7. Cultivation of involvement and participation culture towards teamed-up working, where employees including executives, supervisors and workers jointly participate in the effort in all stages commencing from planning.
8. Achievement through productivity projects both qualitative and quantitative vis-a-vis the 1982-83 plan.
9. Effectiveness of coordination and facilitating/organisation.
10. Identifying critical areas for improvement, seeking expert staff help (internal and external) and implementation of recommendations.

C. Perpetuating Learning : Moving up the experience sharing process through conduct of workshops/seminars at the divisional level, the inter-divisional level on to the inter public sector enterprises became a great source of inspiration and encouragement to those involved in the effort. The latter was organised as a sequel to a decision of Heavy Engineering Sectoral Group of which I happen to be the Chairman. A workshop thus conducted under the joint auspices of BPE and BHEL not only provided a healthy outlet for the work conducted in the organisation but brought in the organisation's fold considerable experience from other public sector undertakings. Their recommendations lead to the formulation of a model organisation for productivity management.

With our eyes set on sustenance of a new work culture in the long run we experienced the inherent motivational features which provide perpetuating learning. Similarly spreading the new culture to sister organisations revealed the generation of mutually supporting forces which developed in the process. Keeping this philosophy in view BHEL welcomed the request for a major participation in the AIMA's annual convention. The Convention theme was "Productivity—The Current Managerial Challenge".

D. Data/Information Generation: It is common knowledge that specific target setting, precise time-based planning and clearcut laying out of responsibility with reference to measurement oriented datum lines, creates a much favourable climate for achievers as

compared to general lose situations. In the latter case instructions from the top are usually perceived in their worst form as exhortations. It is human nature to respond to the latter only in a coercive work environment. On the contrary the available organisational ethos in the country today is becoming more and more democratic with time. In such a situation information dissemination and creating a logical response act as a much greater motivational force.

IV. Participation Synthesised

Any number of studies and researches are available from the developed countries which indicate a direct relation between the participative style of management and productivity.

In practice, however, managers, though recognising its relevance, find it very hard to put it in action. BHEL has been more fortunate in this respect, as a variety of methodologies leading to participation have been already experimented by various divisions from time to time like Work Redesign, Team Building, Organisation Development, Communication and lately Quality Circles. Our organised thrust during the Productivity Year provided the right environment for their synthesis and integrated well with the effort. Two focal areas emerged :

A. Workers' Involvement Through Quality Circles : The planned intensification of the Quality Circles movement was extended from one division where it was started to other divisions of the Company. The number of circles multiplied to 268 and became an excellent example of workers' involvement in the productivity process.

B. Employee Productivity Enhancement Groups : In addition to the Quality Circles some divisions felt the need for constituting special groups covering such areas of study which require specialist/managerial inputs. Accordingly, productivity Enhancement Groups were constituted to tackle areas requiring intensive technical inputs or specialist methodologies like Industrial Engineering, Computers, Organisation Research. These groups included executives, supervisors specialists and workers. In this case the group development

became part of an organised management effort bringing out participation in a planned manner.

V. The Movement

Phase I-Planning & Productivity Improvement Projects Identification : This phase initiated a planning process wherein the Divisions split into convenient Responsibility Centres (mostly at the departmental levels yet others going to the levels below). These centres identified areas for productivity improvement with stress on possible improvement from within. This emphasis is essential to bring forth the concept of 'looking within' to impact change, a feature often lost in the generalised approach to productivity improvement. At this juncture it may be worth referring to John Steward of US Consultants from Mckenzie & Co., "Although it is Hard to Find a Manager Who Would Not Agree That Productivity is a Problem But It is Harder To Find one Who Agrees That It is His Problem".

It has indeed been a heartening experience to see, particularly Manufacturing Divisions, taking the lead to establish the planning process. The planning activity subsequently spread all over the organisation and in the first run 1053 projects got located for investigation.

Phase 2-Monitoring & Review : Once the plans got crystalised, Divisions set for themselves monitoring mechanisms most suited to each. Various methods of monitoring and progressing the projects got developed. A reporting link with the Corporate Productivity Management Desk has been established.

Phase 3-Sustenance : To enable sustaining of the movement the organisation is currently engaged in linking the effort with the following :—

1. Making Productivity Reporting a part of Corporate MIS
2. Inclusion of Productivity Improvement as a Part of Annual Budgeting Exercise
3. Recognition System : A process of public recognition in terms of an annual Divisional Award for the best group has been launched.

VI. Achievements

The joint conscious effort in the Productivity Year had its rewards. The assessment conducted by teams which evaluated each productivity project added upto Rs. 5.41 crores during the year.

In addition to the financial gains the Company also registered qualitative improvement in many areas like :

- Improvement in working conditions.
- Reduced down time of machine.
- Reduction in rework/rejection.
- Reduction in manufacturing cycle time.
- Increased safety.
- Improved cash inflow.
- Quicker flow of information through computerisation.
- Reduction in inventories.
- Reduction in work load of critical machines by offloading them to non-critical machines through process of improvements.
- Reduced operator factigue due to process improvements.

VII. The National Award

The combined productivity efforts brought to BHEL the national acclaim of "Best Productivity Performance Award" for the Productivity Year of the Heavy Engineering Group. Such national recognition has given our employees a tremendous satisfaction and reinforced their enthusiasm for continuing with this effort. Needless to say that this is yet another exmple of how a non-financial motivator enriches the motivational process far beyond the immediate money gains.

VIII. Productivity, an Ongoing Programme

Generation of new work cultures, if attempted through an organised effort, have an in-built snowballing feature. Given the right quantities of boost at appropriate times the processes involved in the effort lead to a continuing enrichment of the group effort.

A. 1983-84 and Beyond: BHEL has already developed its 1983-84 productivity improvement programme incorporating 1332 projects to cover area like energy, innovating technology, resource utilisation, human resources, and systems including computers. An expected saving exclusively on account of productivity projects is more than Rs. 20 crores during this year in addition to many intangible benefits.

B. Enriching the Managerial Dynamics: To maintain continuous support to the programme beyond the Productivity Year conscious efforts are being made by the various levels of the hierarchy in the following areas to enrich the processes further :

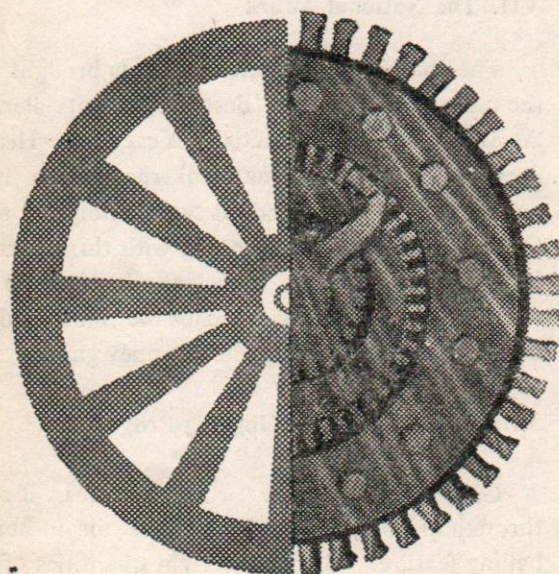
- Productivity planning and monitoring effort.
- Building model productivity Coordination Centres.

- Intensified training, to expand the movement through programmes designed for a multiplier effect. Through this managers/executives will not only learn but also teach productivity methodology.
- Reinforcing cost/statistical analysis for bringing promptness and control.

Lessons for Future

Looking in retrospect, the detailed components which a large organisation like BHEL has experimented with the launch of the productivity movement has taught us many a lessons. On the features supporting the success one could list three focal points i.e. total commitment of the top and senior management; utilising the positive features of the organisation's agility; and infusion of the thought process by an institutionalised catalyst group.

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Productivity and Industrial Relations: The Role of International Labour Standards



PAUL BANGASSER

At the enterprise level as well as at the national level, the experience shows that, what benefits the over all group will not necessarily benefit the individual members. The asymmetry of costs and benefits leads to varying degrees of resistance to productivity improvement measures. It is here, then climate of Industrial relations becomes a critical variable. The author discusses the role of International Labour Standards in this context.

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Productivity can be somewhat like the proverbial elephant examined by the seven blind sages. Each specialist tends to side the productivity question in terms of his/her own specialisation. A vocational trainer, for instance, thinks in terms of workers' skills and abilities; an industrial engineer in terms of machinery and plant layout; and so forth. As in the case of the sages, each of these analysis is partially right... and therefore partially wrong. Productivity, and its improvement, depends on many variables: the skills and experience of the workers, the effectiveness of managements, the quality of raw materials, the appropriateness and reliability of plant and equipment, etc... All of these factors will need to be examined and improved *jointly* in any serious effort to improve a specific enterprise's productivity.

But in addition to these questions of *how* to improve productivity, there is also the question "why?" It is often easy to show that improved productivity is beneficial to the immediate enterprise and also to the society as a whole. But it is not always evident that this improvement will benefit the person expected to produce it. Indeed, it is not difficult to imagine circumstances in which he might even suffer, because measures to enhance productivity mean changes: new machinery or tools, different product designs, different raw materials, shifts in plant layout, etc. And any change involves a risk. Normally, the bigger the change (not

just "big" in money terms but also in organisational/social/psychological terms), the more likely the final results will be different from what was planned; and not all of these results will necessarily be desirable.

Even if things do work out as expected, there is still the problem of who will bear the costs (again, not just financial costs but also organisational/social/psychological costs) vis-a-vis who will reap the benefits. At the enterprise level as well as at the national level, it does not necessarily follow that what benefits the overall group will also benefit (and be perceived as benefiting) its individual members or sub-groups. One can perhaps go further and predict it is quite unlikely, in absence of some explicit mechanism for this purpose, that these benefits will be equally distributed. The same will also hold true for the social and psychological costs of productivity improvements. Some individuals or sub-groups will almost certainly have to make greater adjustments and/or bear more risks than others. The distribution of these costs unfortunately is rarely the symmetrical mirror-image of the distribution of benefits. Given this asymmetry of costs and benefits, it should not be surprising to find varying degrees of resistance to specific productivity improvement measures notwithstanding a wide and genuine agreement that a rising productivity trend is to everyone's long-term benefit.

This "fear" of productivity changes exists in industrialised as well as developing societies. Dr. Markley Roberts, Research Economist for the American Federation of Labour and Congress of Industrial Organisation stated recently while on a lecture tour of India that :

"We (the AFL-CIO) believe that raising productivity and technological progress are essential to raise the standards of living. But we also see dangers to workers and their families.... There are possible adverse effects like displacement from jobs and lowered earnings."¹

Similar apprehensions have been expressed by many trade unionists from both developed and developing countries. Labour is not opposed in principle to productivity changes; but it is decidedly cautious about specific managerial initiatives towards productivity

enhancement and the actual or potential problems these might create for individual workers. It is also known that no productivity measure can achieve its hoped-for impact without at least the passive acceptance (but preferably the active cooperation) of the workers directly involved.

Clearly then, the climate of industrial relations has a critical influence on productivity improvement campaigns. If the relationship between workers and employers is characterised by a spirit of genuine partnership and *joint* endeavour, then the individual worker will be less apprehensive about changes in his/her immediate work package. If management makes a regular and systematic practice of seeking out and incorporating the views of workers and their representatives before making important decisions, then trade unions would become less suspicious about employers' "hidden motives". If workers representatives, when dealing with management at the enterprise level, limit their attention to the legitimate interests of the workers directly involved and if they genuinely accept the need for a healthy enterprise as a paramount criterion, then management would feel confident in incorporating workers' representatives' views in its decisions.

India's Union Minister for Labour and Rehabilitation, the Honourable Shri Veerendra Patil has recently put the problem as follows :

"...the nature of the relationship between employer and employee has changed from that of master/servant to that of a functional relationship where management and labour work as equal partners in a joint enterprise performing different functions; the workers have as much interest in the working of an enterprise as the management ... Correspondingly, the workers should have a say in the decision-making process of the undertakings. In other words, the workers should be fully involved in any measures designed to achieve prosperity through productivity and appropriate institutional arrangements should be made for the purpose."²

These principles are widely accepted at least in the abstract. Why, then, are they not more widely followed in practice in India? There is no simple answer to

this question; but there seem to be two broad factors militating against them. First is a sort of vicious circle of attitudes. The absence of a feeling of personal involvement and vested interest in the enterprise on the part of the worker and his representatives tends to call forth an authoritarian style on the part of management, with little or no consultation and involvement of workers in decision making. And vice versa! When management isolates itself from the views and opinions of those directly involved and simply hands down its decisions from "on high", this undercuts and frustrates any spontaneous initiatives by workers to get involved and take an active role in their workplace. Both these attitudes (or either of them) foster a pattern of labour-management relations in which each side views the other with suspicion and mistrust, which in turn encourages the worker and his representative(s) to resist any change in the status quo which doesn't offer him immediate and tangible benefits. Each of these attitudes feeds upon, and is reinforced by, the other in a more or less self-sustaining vicious circle of hostility and suspicion.³

The second factor is that, while focussing attention on the long-term harmony of interests between employers and employees, we may tend to overlook the fact that at least some of their respective interests do not coincide. While there is no doubt of the mutual long-term benefits deriving from a healthy productive enterprise, a specific proposal may affect them very differently over the short-run. Furthermore, management and labour may have decidedly different priorities from each other, both in the short and long-run. For example, management may want to increase productivity through greater utilisation of machinery and therefore calls on workers to put in more overtime. The trade union, on the other hand, may see this as a means of avoiding hiring additional employees (and incidentally, potential union members). Similarly, many productivity improvement measures focus on more efficient use of raw materials, less wastage, etc. which will call for tighter quality control, more precise workmanship, and greater industrial self-discipline on the part of the worker. It is hardly surprising that the worker would feel compelled to make most of the immediate sacrifices while being expected to content himself with a rather ethereal and distant rewards.

Likewise, labour and management may have quite different views on what they respectively consider as "fair" or "adequate" return on investment. Experience suggests that these divergences of priorities and interests exist in varying degree regardless of whether the enterprise is in the private or the public sector.

Given such a vicious circle of attitudes and this basic divergence of priorities, how then can the industrial relations "foundation" for productivity growth be developed? Much has been written on the subject of productivity, and a number of specific "tools" are available. One such "tools", however, has received relatively little attention. This is the use of international labour standards as a means of setting disputes and minimizing labour-management frictions at the level of the enterprise.

Industrial relations issues can generally be classified into two broad categories. "Interest" issues are the bread and butter of the collective bargaining process. They focus primarily on how the fruits of labour will be distributed. As such, they tend to be issues concerning groups of workers. "Rights" issues, on the other hand, relate to the respective duties and privileges which pertain to the employment relationship. They are often centered on procedural questions such as how a decision (e.g. retrenchment) is implemented. They tend to be more individualised than "interest" issues. Available statistics indicate that "interest" issues relating to wages and allowances and bonuses account for about 40% of the total man-days of work lost through industrial disputes in India.⁴ What is of interest here is that a very substantial portion (indeed the majority) of industrial disputes and lost production are not related to demands for more money. The stem from "rights" issues such as personnel and retrenchment, leave and hours of work, discipline and violence, and other such matters.

How can international labour standards help resolve these disputes and thereby "recoup" this lost output? International labour standards are not in themselves solutions to industrial disputes. Rather, they constitute a coherent collection of guidelines and guiding principles by which the parties themselves can reach mutually agreeable solutions. A meter stick by itself

is incapable of measuring a length of cloth. Someone must physically take it up and compare the item to be measured against this pre-established standard. Similarly, in an industrial relations issue, someone must take the known facts and compare them against some sort of norm or standard. But for virtually every such issue, there will be at least two sides, often several sides; and each side will be comparing and weighing these facts against what it considers to be "normal". If each side is judging the facts against a different norm, then the chances of reaching a mutually agreed conclusion are slim indeed, and the issue will most likely be settled on the basis of raw power. In other words, the vicious circle of attitudes is perpetuated and the seeds of further disputes are planted. On the other hand, if the facts are jointly compared against a neutral and mutually accepted standard, then the chances of resolving the issue amicably are significantly improved and the prospects of future industrial harmony are strengthened.

International labour standards play precisely such a role. They are promulgated only after thorough tripartite examination of their contents. Thus, both workers and employers can be confident they respect their respective legitimate interests. They are formulated collectively by individuals from every political system and cultural background. Hence the resulting standards are politically and culturally "neutral". They are, in short, ideally suited to play the role of neutral, objective, outside standard to which both sides of an industrial dispute can turn for guidance.

There are several different types of international labour standards, with differing degrees of rigour and applicability.⁵ International labour *Conventions* and *Recommendations* are the most rigorous and widely applicable. These are formally adopted by the tripartite delegations at the International Labour Conference after an extensive process which includes a detailed analysis of relevant national laws and practices, independent tripartite examination at the national, international and sometimes regional levels plus extensive debate and discussion during at least two regular sessions of the International Labour Conference. All member states of the ILO are obliged to bring each Convention and Recommendation to the attention of

the competent authorities (normally the Parliament) "for the enactment legislations or other action" suitable to national conditions.

Through the application mechanisms for these Conventions and Recommendations, and in particular through the adjudication of formal complaints and representations by the committees of experts on freedom of association and application of standards, there has also developed a substantial body of *international labour jurisprudence*—a continuous collection of reasoned opinions, decisions and definitions relating to labour matters and to the detailed implementation of international labour Conventions and Recommendations. These individual case-by-case interpretations give concrete practical "flesh" to the framework of the Conventions and Recommendations.

The annual International Labour Conference also passes from time to time technical resolutions, such as the resolution concerning "conditions and equality of treatment of migrant workers" or "labour and social implications of automation and other technological developments". These resolutions are not subject to as thorough a process of examination and discussion as are Conventions and Recommendations. Nevertheless, they represent a sort of "sounding of the house" on that specific subject and thus constitute a good indicator of the current tripartite international consensus on that particular issue.

In addition to the various deliberations of the International Labour Conference, the ILO maintains a series of standing tripartite "Industrial Committees" (inland transport, iron and steel, metal trades, etc.), each of which meets every three to four years to review the situation in that industry. As in the case of conference resolutions, the pronouncements of these meetings do not reflect the same degree of analysis and discussion as Conventions and Recommendations. They do, however, reflect accurately the current tripartite international consensus on particular issues for that industry. They also have the advantage of being somewhat more "focussed" than the more universal pronouncements of the International Labour Conference.

It is worth noting that many of the topics which

end up as international Conventions and/or Recommendations actually start out as resolutions of a regional conference of industrial committee meeting. Thus, there is considerable complementarity and reinforcement among the different types of international labour standards. It is also worth noting that, whereas all of these documents are formally voted upon, the actual results of the votes are normally overwhelmingly "for", with at most "abstentions" but rarely many "against" votes. This stems from the principle that the basic moral force behind all international labour standards depends upon how accurately the document reflects the genuine consensus of independent representatives of employers and workers and governments coming from a wide variety of political systems and cultural backgrounds. Consequently if there are major reservations regarding a particular item on the part of a substantial portion of ILO constituents, then even if the final instrument manages to garner a majority of the votes it would still lack the moral force and persuasiveness necessary to be effective as an international labour standard. Therefore, the practice is followed of continuing to debate, to amend and to adjust the text until a genuine consensus is reached.

How can these documents adopted by high-level international meetings be of relevance to the "factory level" relations between labour and management in India? Let us consider a practical example. The Indian Labour Journal reports that in June 1983 "major"⁶ ongoing industrial disputes related to retrenchment or layoff of workers had, so far, generated a total of nearly one million mandays of lost production.⁷ In 1982, after two years of extensive study and debate, the International Labour Conference adopted a convention (No. 158) and a complementary recommendation (No. 166) on "termination of employment at initiative of the employer."⁸ These instruments spell out (a) what does and does not constitute justification for termination, (b) procedures to be followed prior to or at the time of termination and procedures for appeal, (c) period of notice and severance allowance and other income protection, and (d) a number of supplementary provisions for termination of employment for economic, technological, structural or similar reasons. It is doubtful whether these two international labour standards could have prevented these termina-

tions from taking place. Nor is it obvious that reference to these standards would have prevented all these industrial disputes from arising. But it is very probable that, had these standards been used by management in implementing the terminations and then by the workers' representations and government officials in examining and reviewing these management decisions, much of the argument over who was "right" and who was "wrong" could have been eliminated. The resulting power confrontations and the subsequent strikes/lock-outs with their accompanying lost productivity could thus have been avoided or at least substantially reduced.

Let us take another example. Much productivity is lost through industrial accidents. The Government of India reported 312,444 injuries in factories in 1981 (to say nothing of accidents in other areas such as mines or plantations).⁹ Occupational safety and health has been a major subject area for international labour standards since the very beginnings of the ILO. There are now fourteen formal conventions dealing exclusively with different aspects of occupational safety and health, plus twenty formal recommendations. Occupational safety and health clauses also appear in a number of other conventions and recommendations. There are, in addition, a number of conference resolutions plus recommendations from the various industrial committees. Moreover, the ILO publishes a wide range of model codes of practice, such as "safety and health in shipbuilding and ship repairing" or "safe design and use of chain saws."¹⁰ Perhaps the most comprehensive single standard on occupational safety and health is the convention (No. 155) and its complementary recommendation (No. 164) which were adopted in 1981. These two documents taken together set out in extensive detail (a) the basic tenants of national policy, (b) eighteen separate technical factors (lighting, use of electricity, maintenance, first aids etc.), which affect the safety and health of the workplace, and (c) actions to be taken at national level and the level of the undertakings. All these documents taken together provide a comprehensive and detailed set of international labour standards and guiding principle for occupational safety and health.

Industrial accidents hurt more than just the workers

involved. In addition to the personal suffering and anguish to the worker and his family, there are very considerable costs inflicted on the enterprise and the society: reduced productivity due to lost production time of the injured worker, lost time by other workers who assist the injured (or who stop their own work out of sympathy or even simple curiosity), lost executive and supervisory time and energy spent on investigating the cause of the accident and implementing corrective action, destroyed or damaged plant and machinery and raw materials, etc. But these accidents don't just happen. They result from a combination of unsafe working conditions and unsafe working habits. They can be prevented through the systematic, rigorous and determined application of the relevant international labour standards. Accident prevention is the responsibility of all three social partners of the work-place; employers and managers, workers and their representative, and concerned government officials such as factory inspectors. International labour standards are an important tool at their disposal.

Similar examples could be cited for other areas of joint labour management concern at the workplace. There are separate international labour instruments dealing with: voluntary conciliation, arbitration and cooperation at the level of the enterprise, workers representatives within and at the level of the enterprise, workers' participation, hours of work and weekly rest, night work, maternity protection, etc. There are also standards dealing with the special problems of certain categories of workers such as young persons, migrant workers or indigenous and tribal populations. There is, in addition, an extensive body of "international labour case law" consisting of nearly a thousand individual decisions handed down by the committees of experts on freedom of association and the application of conventions and recommendations. All this collective wisdom is available to both labour and management to help them make their industrial relations more harmonious and mutually beneficial and their enterprise (in which they *both* have a personal stake) more productive.

In conclusion, international labour standards can be an important component of any productivity campaign. Their active and constructive application at the "shop

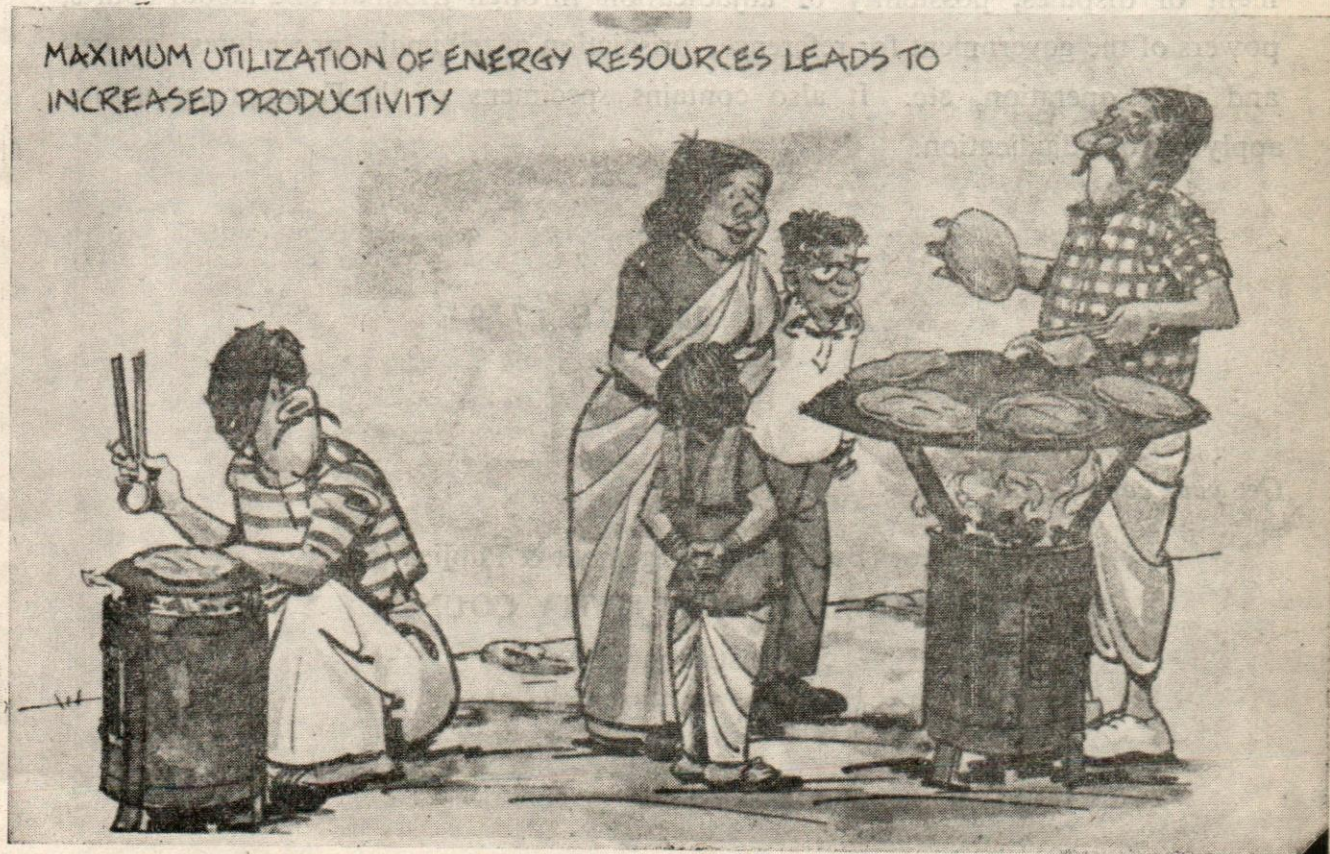
floor" can prevent genuine differences between labour and management from developing into confrontations. They help generate the kind of positive attitudes and sense of harmony of interests which are the industrial relations prerequisites for any long-term sustained increases in productivity. Similarly, they can provide technical and policy guidance so that accidents as well as disputes can be prevented *before* they happen. But, like any tool, they are only effective when the craftsmen take them out and put them to use on the jobs at hand. International labour standards can only improve productivity when managers, workers and government officials take them off the bookshelves and bring them to bear on the day-to-day problems and decisions they face.

REFERENCES

1. "U.S. Labour Faces Challenges"; *Span*; June 1983; p-46.
2. Speech delivered to the Convention on "Prosperity Through Productivity" organised by the Bata Chowk Industrial Area, Faridabad, 9 April 1983.
3. It may be worth noting here that the national structural changes in industrial relations which have been proposed (e.g. restricting registration of trade unions to those whose membership includes a minimum of 10% of the workers, the designation of a single bargaining agent) will undoubtedly greatly affect the *mechanics* of labour management relations. But these changes will not of themselves cut through this vicious circle of attitudes.
4. To be precise; 37.2% for 1976, 46.4% for 1977, 38.6% for 1978 and 40.7% for 1979. Source—Pocket Book of Labour Statistics, 1981 published by the Ministry of Labour, Government of India.
5. The following description of the differing types of international labour standards is necessarily very brief. There are a number of ILO publications which provide greater detail on how they are established and applied. These publications and the actual texts of the Conventions, Recommendations, resolutions, etc. can be obtained through the ILO Area Office, New Delhi.
6. "All disputes involving a time-loss of 50,000 or more mandays."
7. Indian Labour Journal; Bureau, Ministry of Labour & Rehabilitation, Government of India, Vol. 24 No. 9; September 1983, pp. 1364ct. seq.
8. The full texts of the convention and recommendation appear in the ILO's Official Bulletin, Vol. LXV, 1982. Series A No. 2.

- 9. "Pocket Book of Labour Statistics—1983"—Labour Bureau, Ministry of Labour, Government of India; Table 8.1 p. 203.
- 10. These model codes of practice are not international labour standards in the strict sense, since they are actually drafted by the International Labour Office and are not formally

adopted by independent tripartite bodies after due deliberation and discussion. However, these codes draw heavily from other international labour standards and many of them grow out of the deliberations of meetings such as industrial committees or special ad hoc meetings of experts. In any case, they are extremely practical and useful international guidelines.



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Enterprise Level Productivity

PROMOD K. BATRA

This paper presents briefly, the principles. Concepts and approach that EDDAL follow for increasing productivity in their enterprise.

Shri Promod K. Batra is with Escorts Dealers Development Association Limited (EDDAL).

About EDDAL

- * Escorts Dealers Development Association Limited is a unique association, not only in India, but in the world! It is a Mutual Benefit Association of Escorts Limited and its dealers—for Tractors (Escort & Ford) and Motorcycles (Rajdoot & Yamaha).
- * The idea was conceived in 1970 and it was started as a Dealer Development Fund. In 1977 it was formed into a limited company.
- * The objectives of the Association are to increase the effectiveness and efficiency of the 600 plus member dealers spread all over India. Profit is not a dirty word at EDDAL!
- * Ideas towards these objectives are conveyed through a quarterly house journal "Profitably Yours" and monthly news bulletins.
- * The financial resources of the Association are in the form of contributions by the dealers and Escorts Ltd. The human resources consist of men who have been exposed to dealerships over the years and are capable of assisting each dealer member in his different areas of operation.

The Principles We Follow

- (a) *Think...there must be better way!*
- * An increase in productivity, efficiency and effectiveness will come out as and when you believe in this principle. Think of any situation and this principle

will apply there. I have never come across a situation where the ultimate could not be improved upon.



- * Once you genuinely believe this to be a fact i.e. there is a better way, you can and will, with the assistance of the following principles and concepts, find better ways.
- * Another important thing to remember is that "THINKING" can be done by your subordinates too! You have to encourage them to do so—I have been doing it for years and it works very well. As a matter of fact, many thought starters emerge when this is encouraged in an organisation. It is important to keep ones eyes and ears open for the "better ways".

(b) *Do it now*



- * After you have done the "THINKING" it's time for action. DO IT NOW! As simple as that. If the decision you made was good you will soon find out. If it was wrong you will find out sooner and think of a still better way. I am assuming that you will be using your better judgement—and apply this principle to the "potato" type of decisions. Of course, the "earth shaking" ones can wait for consideration and thought. Often, so much time is wasted on sorting "potato" type of decisions, that very little time is left for the real big decisions—those we get paid for.
- * Think about those situations which are bothering you now. How many of them really warrant the time you are spending on them. Often you find that identifying small problems and delegating to subordinates will leave you time to handle bigger

and more complex problems. Experience will make you better and better.

- * Do not postpone what you can do now. Very often a dealer (our member) is happier to get our reply on his own letter because it takes less time. We reply many of our letters in this way, the very same moment they are received. We attach the following to the returned letter :

- * If Americans do it, why not EDDAL ?
- * We want to reply you the same day i.e. today—and vice versa.
- * We believe you would prefer efficiency as compared to the formalities of a nicely typed letter.
- * We can send you
 - * gold embossed replies—after 30-45 days—at your cost.
 - * individually dictated and typed letters—after 15 days.
 - * routine reply—in 7 days.
 - * returning your letter with our comments—same day.
- * You can also give your reply on this and return."
- * This reminds me of an article which I read some-time back. I am giving relevant excerpt :
 - * "Abraham Lincoln, in the midst of a raging war, found time to write the now-famous letter to Mrs. Bixby. "Dear Madam", he wrote "I have been shown in the files of the War Department a statement of the Adjutant—General of Massachusetts that you are the mother of five sons who have died gloriously on the field of battle. I feel how weak and fruitless must be any word of mine which should attempt to beguile you from the grief of a loss so overwhelming. But I cannot refrain from tendering you the consolation that may be found in the thanks of the republic they died to save. I pray that our Heavenly Father may assuage the anguish of your bereavement and leave you only the cherished memory of the loved and lost and solemn

pride that must be yours to have laid so costly a sacrifice upon the altar of freedom.”

- * If President Lincoln could write this letter when he had a thousand preoccupations, I strongly feel that you and I should also find time to attend to the minute details of our day-to-day life.

(c) *Ask for it!*



- * Once you have a conviction and you are not “begging” for your own benefit entirely, go ahead and ‘ASK FOR IT’. Do your home work as if you are having a “love affair”. Write it down, only the 6th draft can be good enough to send in, then hope for the best. This works 90% of the time.

- * This principle will help you further to increase your productivity. It has been wisely said, “Ask dumb questions—and you will not make dumb mistakes”! How true! More questions means you have been thinking (supposedly!). It will also rule out what should not be done.

- * Let me illustrate. In the French army, the caps were being changed from one design to another. The General asked his ADC what the status was. The ADC took this to be a very serious assignment and worked on it for the next six days. When he gave the general a compiled report the General put it in File No. 13 (waste paper basket). The ADC was shocked at first, but then he realised that he should have asked the General “How accurate do you want the information to be?” May be he could have answered from experience and that was probably what the General wanted.

- * I ask questions whenever there is something even remotely connected with my work—and on several occasions clues have come my way on which one can build. This is how most of my ideas have been generated. We, at EDDAL, never feel shy of asking questions; we do not care if others laugh at us.

The Concepts We Follow

(a) *Do not make best the enemy of better*

- * Many times it so happens that we forget “better” in our quest for the best. Experience has taught me that if we implement “better” in nine out of ten cases it would lead us to “still better” and hopefully to the “best” eventually.

- * Any situation is normally a compromise. You are not the best person for the job, your company is not the best and so on. We can either complain about it or do something about it.

- * Four years ago, we at EDDAL wanted to develop a suitable desk diary for our dealers. We came across a diary from the New York Retailers Association; that was where the idea was born and we developed an appropriate dealers’ diary quickly enough. Now, every year we improve upon it. Similarly for our booklet on schemes (for our members) we consolidated various circulars into a folder and made a booklet. This is now in its 3rd edition. Had we waited for the best one, we might have still been correcting the first manuscript.

(b) *“If you have a rupee and I have another, And we swap, we have only one rupee each. If you have a Better Idea and I have another, And we swap, we have two Better Ideas each.”*

- * Needs no explanation! And I can vouch that it works beautifully. No idea should be kept confidential because those who want it will get it anyhow! Why not give it on your own and nine out of ten chances are that the other person will share an idea with you too.

- * You get many thought starters when you visit counterparts in other companies. Have you done it? No! Then please ‘DO IT NOW’! You will be surprised that if nothing else you will atleast find out that you are smarter than the other. Reward enough!

(c) *“Stick Your Neck out”*

- * “Ships are safer in harbour but they are not meant for that purpose.” Doing your job or running your business should be a pleasure. And if

"sickness" is un-avoidable, relax and enjoy it. You may learn the hard way, but working smarter is better than working harder. **DO IT NOW AND THINK, THANK AND SMILE.**

- * A tortoise makes progress only when it sticks its neck out. I am sharing my knowledge with you, hoping that you will share your knowledge with me. Please do so!

(d) "Six Most Important Things to do"

- * The first ever employees to make a million dollars a year were Walter Chrysler and Schwab in U.S.A. And Schwab once asked a consultant to suggest him how to get more done in a day. The consultant after spending a week with him suggested the following.

"Every morning write down what are the six most important you want to do today. And start doing the first one first. And then the second and third. And if by then the day is gone next day add three more. Do it for one month and if it works send me your payment."

- * Schwab sent him \$ 25,000.

The Approach We Follow : (The "MISER" Way)

- * The MISER way to productivity is a step towards finding better ways.
- * "MISER"—Where M stands for Merging Operations
I stands for Improving Activities
S stands for Simplifying things
E stands for Eliminating Jobs
R stands for Reducing Operations
- * Take any activity—in your office or in your home—and apply this approach; you will be surprised with the results.
- * Let me illustrate the MISER way with a few examples :
 - * Bank Drafts : At EDDAL, we send and receive only Bank Demand Drafts to and from our members. Earlier, when we were using

cheques, one of our members complained that cheque of Rs. 30,000 was credited to him after 45 days. The Demand Drafts have brought goodwill all around and a lot of paper work has been reduced.

TIT FOR TAT POLICY !

EDDAL

- We give DD only and
- We would like to have from you DD only.

The Sticker we use

- * When EDDAL recovers a loan in instalments, the amount of each instalment is equal and



AH !



without paisas. It falls due on the 1st of the quarter.

* In the areas of records management, our old records looks like a "Library". We follow the Binding and Destruction concepts.

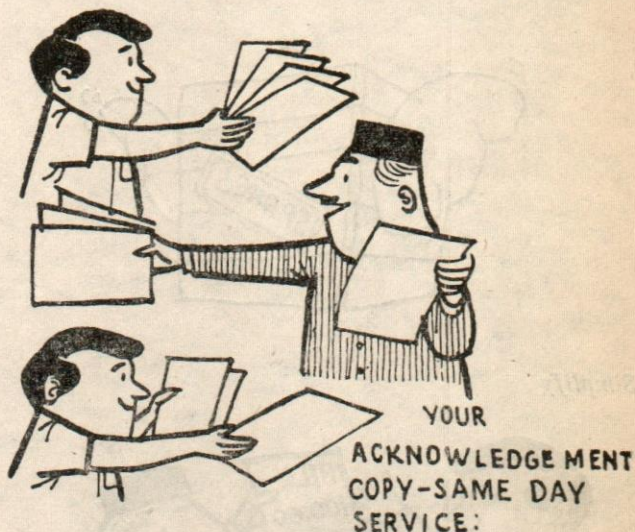
* To expedite replies—both ways—we encourage our members to return original communication with their comments. There was a little resentment to start with, but none now.

* Pre-Punching of papers is a simple but effective concept. We get it done at the printing stage itself.

* The "MISER" way has to keep in mind, no matter what you do. Try it for 6 days! It really helps.

one document. Thus, bill is ready automatically when the goods are despatched.

* Order form and its acknowledgement have been merged into one document. This has resulted in the acknowledgement of an order the moment it is received.



* Bill pertaining to DGSD have the required certificates printed on reverse to save extra enclosures and paper work. These have standard information pertaining to the company preprinted on them.

Improve

* Pre-punching of forms at the printing stage.



* Use pre-addressed envelopes. We use Bradma and cyclostyled lists, depending upon the volume of mailing to be done.

The Illustrations of the "MISER" Way

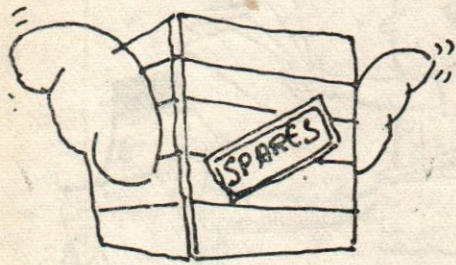
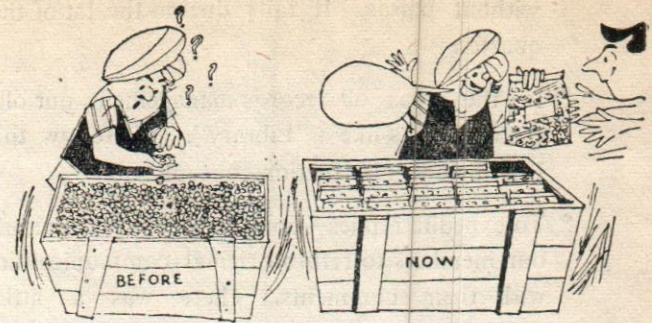
Merge



* Registered Letters Journal—The register in which outgoing registered letters are recorded was merged into the Journal which is issued by the post office.

* Despatch Advice and Bill have been merged into

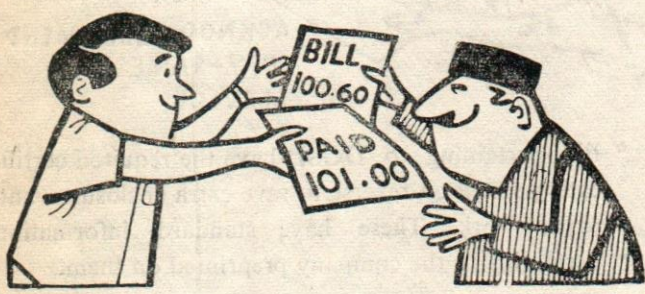
- * Instead of separate pay-in-slips of bank for depositing the drafts, company's pay-in-slip having provision for depositing 10 drafts is used. Address and Account particulars are pre-printed. Bank acknowledges on its copy which becomes voucher.
- * Big spare parts kept pre-packed in cases so that they are ready to go the moment an order is received.



- * Signing of each bill not done by the manager or supervisor but by the pricing section incharge.



Simplify



- * Depending upon value, bills rounded off to nearest Rs. 10 or Rs. 100 to facilitate cash handling.
- * Routing of correspondence—the mail goes directly to the person concerned and he can process it.

- * Debit note sent in duplicate. Concerned party returns copy with demand draft.

Eliminate

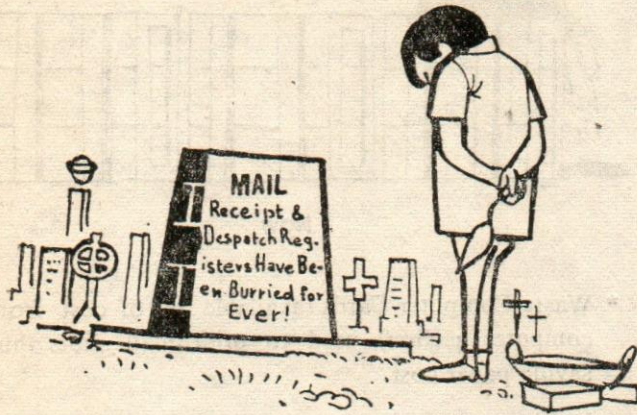


NO!
NOT ANY MORE !!



- * Packing charges not based on packing case size but charged as a percentage of value of goods.

- * We have eliminated mail receipt and despatch registers. The franking machine becomes a record of monies spent on mailing.



RECEIPT OF PAYMENT!

- Thank you for your A/c Payee DD.
- Please consider this as our Official Receipt.



The Sticker we use

- * Separate material receipt reports eliminated because party's inward challan can be converted into receipt report itself.
- * Separate packing slip has been eliminated. A carbon copy of Despatch Advice serves the purpose.



- * Bills are not sent with covering letters as the letter is not required. No more paise in our accounts. Simplifies cash handling.

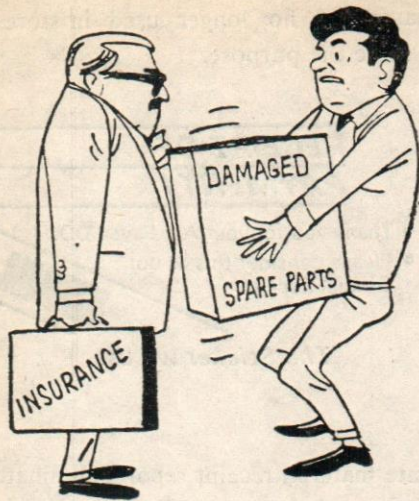


The Sticker we use



- * No official receipt issued by Accounts department for payments received through demand draft. Party's inward letter returned with a sticker to serve as receipt.

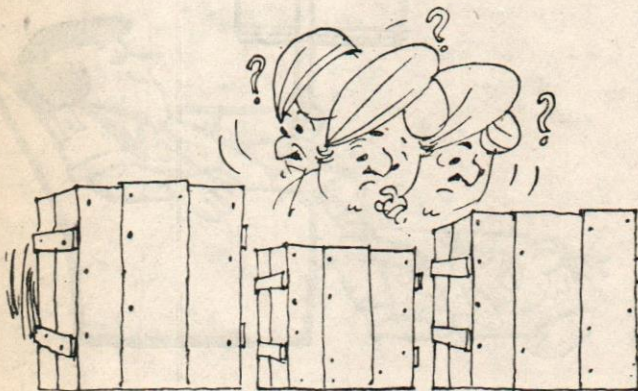
- * Insurance claims not raised for items valued below a certain amount because raising the claims and follow-up costlier than the value of items.



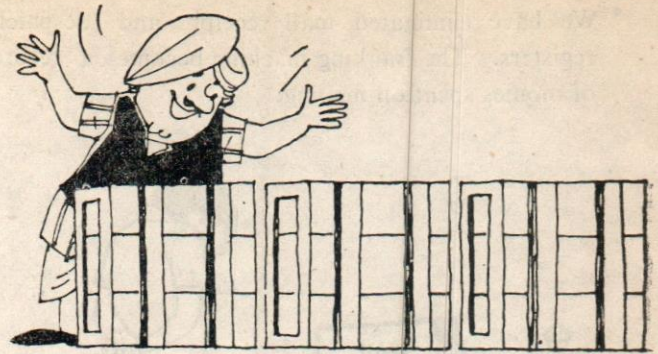
Reduce



- * Reduction of typing strokes—side address consists of name and station only.
- * Rs. 25,000/- only written as Rs. 25,000 and so on.
- * Small parts supplied in pre-packed units of 10 and 100s to reduce counting at our end. Results in faster payment to suppliers.



Before



Now

- * Waste Computer Cards (available free of cost from computer section) used to print mail shots thus saving paper cost.

The Cautions

- * There is a business axiom "attitude of suspended conclusion." An idea may be good for us but may not necessarily be good for you. If you are doing a thing in a particular way, continue doing so till you have seen the new idea from every angle. Start slowly and the take off will be smooth.
- * In an association, for example, we have been thinking of Mini Computers. When we started thinking, the cost was about Rs. 6 lacs. Now it is under a lac. The important thing to consider is not the "price" but "the better way." We can improve our systems and achieve the desired results while working manually as well. So inspite of our state of "suspended conclusion", we have not lost sight of the eventuality of installing a computer. It is just a matter of adopting the "better way".
- * Germination takes place when the earth is loose enough and there is moisture and the right temperature. An idea is like a seed. Once you have prepared your field and the seed is planted, you are on the track to increased productivity. This write-up is to help prepare the "field"! Good Luck!!

EXECUTIVE READINGS

Role Stress Scales Manual and Organisational Role Pics Manual by Uday Pareek

Published by Navin Publications, Ahmedabad, 1983

Rs. 50/- Role Stress Manual pp. 36

Rs. 75/- Role Pics Manual pp. 48

Reviewed by :

Dr. J.P. Singh

Director, Behavioural Science,

National Productivity Council, New Delhi

Until recently, Managerial Stress has not received much attention in India. The training programmes and seminars organised by professional institutions in the country have met with a limited success and often the discussions in these programmes have centred around the question of the extent of stress in Indian organisations. In the absence of a valid measuring instrument, management trainers have occasionally found it difficult to help managers develop appropriate skills for coping with organisational stress. At last, we have two indigenous

psycho-metric instruments which can assess organisational stress faced by a manager as also identify an individual's coping styles. It is in this context that the development of Role Stress Scales Manual and Role Pics Manual are welcome publications.

The Conceptual Contribution

The contribution of the author to the field of organisational behaviour, however, goes much beyond a mere development of the instrument and real contribution is in terms of refining the concept of organisational stress. Until recently the organisational stress has been seen in three dimensions, as originally developed by Kahn viz. the role conflict, role ambiguity and role overload.

Sifting through the literature and basing upon his own researches, Pareek gives the concept a new dimension and proposes two concepts of role systems; the role space and the role set. He has further identified five types of stress and conflict in each of these role sets. In doing so Pareek has thus added a new dimension to research in this

area. And this conceptual analysis over and above his contribution to management development through measuring techniques is the real contribution of the author.

The Psychometric Criteria

The Role Stress Scales Manual describes development of the organisational Role Stress Scale and gives psychometric information about the reliability, validity, and the norms, and gives instructions about its administration and scoring. The test-retest correlations for various variables in the scale vary between .37 and .73 and all but one are significant at .001 level. Even the lowest correlation is significant at .003 level. A measure of self-consistency of the scale is provided by the fact that the values correlation for the items-total scores for all but two are significant at .001 level.

The construct validity of the instrument was tested with factor analysis and testifies to the independence of various variables and strengthens the author's conceptual formulation of organisational Role Stress. The only limitation of the

instrument is the Norms which are somewhat restricted at present. However, this limitation will automatically vanish with the future use of the instrument and in no way affects the value of the instrument.

The scale can be used for several purposes including research, OD interventions and development of individual skills in coping with stress. Consultants in organisational Behaviour, Management Trainers and Psychologists in general, will find this as a useful instrument in their tool box.

Organisational Role Pics Manual

Role Pics is a semi-projective technique aimed at eliciting information about stress coping styles of an individual. Once again, the author has broken new ground by identifying eight styles of coping with stress. As in case of the organisational Role Stress Scale, adequate standardisation data of reliability, Validity and Norms is provided and testifies to the robustness of the instrument. Being a semi-objective technique, its administration and scoring can be more tricky. Although adequate information for scoring, along with a large sample of scoring examples, is provided, a user must achieve an acceptable level of scoring reliability before he can use the scale for an intervention strategy.

By developing and publishing these two manuals, the author has made a significant contribution to the twin fields of research in organisational behaviour and management training. Its use should help the O.B. specialists in tackling organisational and managerial problems.

Indian Spices : Problems and Prospects

Dr. Badar A. Iqbal

Aligarh Muslim University Press,
Aligarh.

Price : Rs. 20.00
pp. : 54

Reviewed by :
Shri T.P. Ojha,
Central Institute of Agricultural Engineering,
Shri Guru Teg Bhadur Complex,
T.T. Nagar, Bhopal—462 003

The author has tried to give large number of statistics about the production, export etc. of different spices produced in India.

He has highlighted the exploitation of farmers by middlemen in exporting the spices to different countries.

The author has suggested that State Governments, particularly, Karnataka, Kerala and Andhra Pradesh should take special care to give inputs to the farmers, so that the yield of these spices may be increased. In his own opinion, the Indian product has higher fibre content and not so good appearance. He has also indicated that adulteration of the spices by the Indian suppliers has resulted into poor acceptability of the Indian products in the foreign markets.

In his opinion, standardization of processing technology and quality control must be enforced by State and Central Governments.

The most important issue the author has not focussed is about the

post harvest losses and poor quality of the spices due to improper drying and storage technology followed by the producers. If adequate processing controls are made by the Government or a separate Board is created for this purpose, most of the problems raised by the author can be avoided.

How to Diagnose Prevent and Cure Industrial Sickness—A Practical Guide

Dr. V.S. Kaveri

Sultan Chand & Sons Publishers
23, Daryaganj, New Delhi-110 002
Price Rs. 75.00
pp. 182

Reviewed by :
Shri Ram Dev
Officer, Andhra Bank,
Chandni Chowk, Delhi

The Officers in a bank, at the branch level, have limited experience with regard to industrial sickness. Although they are exposed to some theoretical knowledge in this regard, their practical experience in this regard tends to be very minimal. Put against this back drop, the present book is handy.

The present book in a systematic manner, gives a history of industrial development in the country, directed by the Five Year Plans; followed by a discussion on what is industrial sickness and what are its dimensions in the Indian context.

Dr. Kaveri then goes on to discuss the causes of sickness, signals of sickness and sources of such sickness. As preventive measures, how financial statements and balance sheet can be analysed is discussed along with utility of Inter-firm comparison.

With regard to actions to be taken to cure sickness, the role of Government, Reserve Bank of India, IRCI, IDBI, ICICI & IFCI is delineated, followed by a presentation of guidelines for nursing a sick unit. What the Bank can do to recover its loan, at various levels is also presented. Chapter 10, gives a summary of a few studies on industrial sickness in small and medium industries, conducted by the author. This makes an interesting reading. The Book is a must for all the bank officers. The quality of the paper used and the getup of the book are good.

Accounting Principles

Donald F. Istvan & Clarence G. Avery

Harcourt Brace Jovanovich Inc.

New York

A. H. Wheeler, Bombay

Reviewed by :

Shri P. Chattopadhyay,
P240 Lake Road,
Calcutta-700 029

This is an introductory textbook on accounting addressed to students for the purpose of imparting a more-than-nodding acquaintance with what accounting is, the guiding principles and standard accounting procedure and practices, how they take shape in different types of organizations and how the softspots are sought to be accommodated in the accounting formats. In fact, the authors are singularly placed on the basis of their long teaching experience to take different levels of students in their strides from the beginning to end over the entire territory that accounting covers. Thus, beginning

at the beginning, the basic nature of accounting is explained with reference to different elements of the accounting style starting from the initial recording of the commercial transactions, ledgers, trial balance, balance sheet and the various ways of interpreting the data that accounting throws up. All this is done with an aplomb that comes with one's long experience and exposure to the ways that students find most convenient to assimilate. The plethora of theories, concepts and principles is explained with proper illustrations, contrasting and comparing the alternatives that are there with their respective weights of plus and minus points. Thus one finds a fairly competent exposition of actual accounting typicalities as against those of cash accounting, the rationale of each and the conditions in which each may be found appropriate. Similarly, the interpretation of financial statements highlights each individual component of these statements and its behaviour and impact. The sidelights are financial accounting standards in the United States which have in that country a history longer than in any other country. The work of the FASB and the Guidelines issued by the SEC have had far-reaching impact on the accounting practices of other countries as well. In the context of accounting for managerial control of operations and business decisions the authors discuss departmental and branch accounting, direct costing as against absorption costing, standard costing and budgetary control, contribution and differential analysis, impact of taxes on accounting and social and human resources accounting. In all these, the current state

of the debate on various controversial issues has been clearly indicated with good pointers as to their directions. Though the treatment of this part is not quite complete the discussion of individual topics is competent throughout. Study assignments, illustrations and problems at the end of each chapter have enhanced the value of the book not only to the university and professional student but also to the practical manager at the helm of different activities in the organization.

Structure of Rajasthan's Economy

B. C. Mehta

Published by :

Anuj Printers, Park Lane,
Jaipur

Price : Rs. 100/-

PP : 194

Reviewed by :

Shri D.P.S. Verma
Deptt. of Commerce,
Delhi School of Economics,
University of Delhi,
Delhi

Resource allocation forms an important element of the planning process. The key sector/industry identification based on the backward and forward linkages, derived from the input-output framework, may be considered as an important criterion of resource allocation. However, the construction of an input-output table calls for the collection of comprehensive data pertaining to the different inflows and outflows, some of which are not easily available. There has been difficulty in measuring inter-State transfers of 'income earned and the expenditure

Service Cooperative Society (FSCS), Pilot Intensive Rural Employment Project (PIREP) and the like have also been critically examined by Prof. Desai. Considerable amount of time has already been invested in knowing the malaise of rural poverty and ways and means of curing the same are also known. The implementation of developmental plans should be, as far as possible, decentralised at the district/block level. The fear psychosis created by politicians and the bureaucrats should be done away with. Only then, one can seriously think of uprooting rural poverty.

Prof. Desai has done a good job to pinpoint the need for Area Planning (Monograph on Area Planning:

Precepts and Practices by Sambrani & Pichholiya) which has not been widely applied in the country.

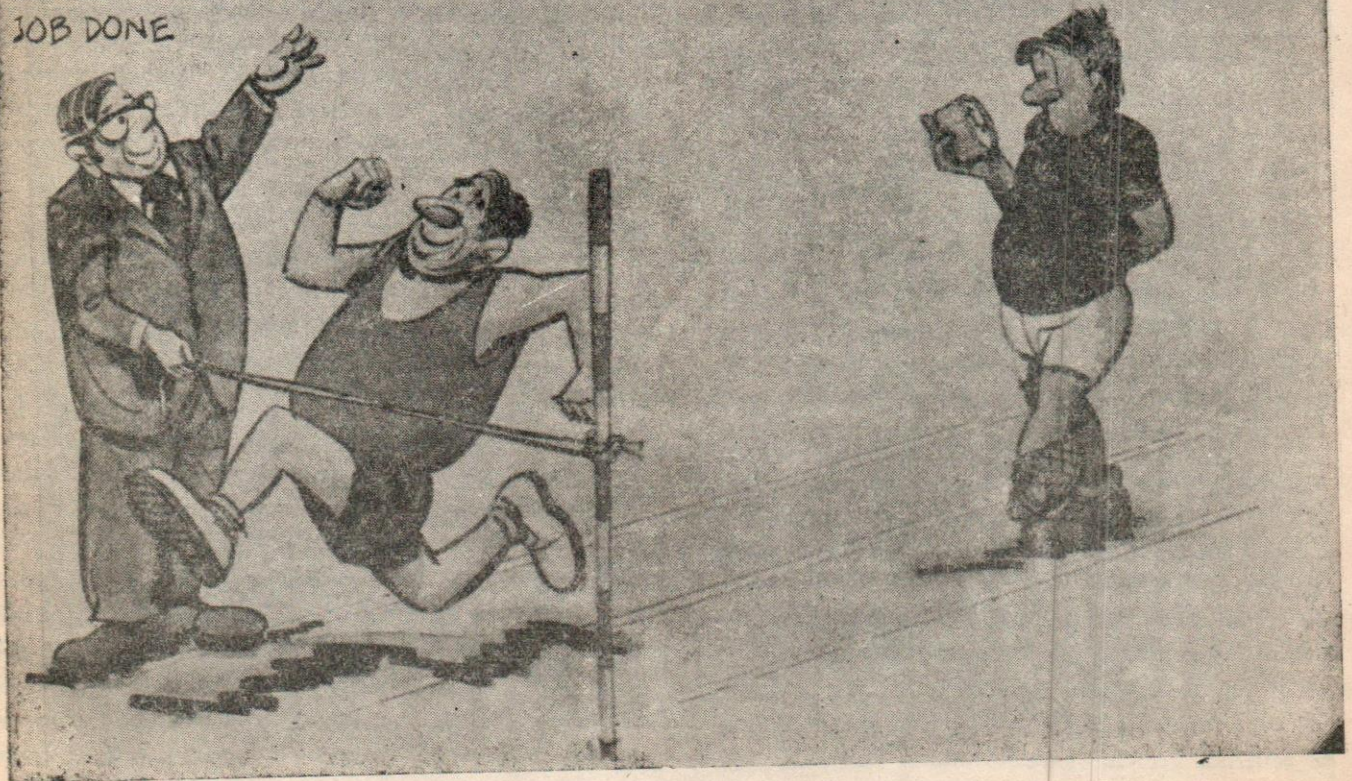
One important dimension which Prof. Desai has projected in his observations is that the emphasis should be on need-based activities. Once the need for economic activities are felt by the rural poor, they will either pay for them to improve their life style or exert pressure on their political godfathers. Most of the earlier programmes were either to provide subsidy, seeds, fertiliser, loans on easy terms or monetary help to be self employed where the need was not felt by villages, they could not bring about, the impact on the rural poor. Moreover, more than half the funds were utilised for

setting up of local offices and other overheads.

The FSCS was created with a view to enable the local farmers to develop leadership within the village and help others in decision making. But in this case also, the bureaucrats from banks and other organisations took the reins in their hands. This defeated the very purpose of setting up of FSCS.

This book should be of immense use to decision makers as it throws ample light on the failures of most of the schemes as enunciated by the government and the reasons thereof. The workable solutions, suggested by the author can be considered and implemented by those interested in eradicating rural poverty.

LONGER HOURS ARE NO SUBSTITUTE FOR SPEED FOR GETTING THE JOB DONE



A Select Bibliography: Japanese Management

Y. SUMATHI & P. R. K. MURTHY

Japan has achieved spectacular economic recovery after the II World War and continues to register substantial economic growth till now. Since 60's Japan's GNP has been increasing by nearly 9 per cent and it has become one of the world's most leading industrial nations.

Management specialists attribute this phenomenal success of Japan to their cultural heritage. They use such phrases as 'paternalistic management—labour relations', 'life long employment', 'group productivity', 'quality circles' etc. However, these factors together, and not one or two factors individually, could have contributed to such great achievements of Japan.

Culturally, India and Japan have much affinity and therefore Indian managers will be much benefited by a study of Japanese management systems, principles and success factors. This bibliography is to aid that purpose.

Y. Sumathi & P. R. K. Murthy, Administrative Staff College of India, Bella Vista, Hyderabad-500049.

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PRODUCTIVITY



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PRODUCTIVITY the principal organ of the National Productivity Council of India, is a quarterly journal for policy makers and professional managers. It disseminates knowledge on techniques and methods for improving productivity and enhancing economic growth through effective management in all sectors of the economy. In agriculture the preference is for issues dealing with post-harvest operation. Management is considered to include subject matter generally taught in a typical management institute as well as work in other fields that is applicable to management functions and practices. Thus contributions from a number of disciplines are accepted for publication. Manuscripts that present the results of original research and analysis are given priority. We also invite papers on business surveys, reviews, evaluations, and applications of new or revised business techniques or systems and those outlining management thought and philosophy.

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LETTER FROM THE EDITOR-IN-CHIEF

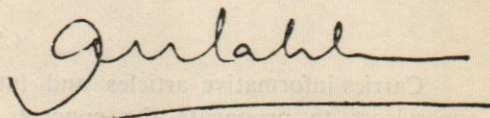
Nature has created environment conducive for all living beings—plants, birds, animals and human species. There is enough in the world for every one's need but not enough for every one's greed. All the resources in our environment need careful management and suitable policies to prevent environmental damage before it occurs. Socio-economic development is to be carried out with minimal ecological harm.

Increasing environmental degradation and ecological disruption has generated deep concern for the conservation and proper care of the biosphere in which we live and from which we draw sustenance. The use of resources is increasing exponentially not only because we are too many, but also because so few of us are demanding too much from the fragile biosphere. There is now a deep anxiety about the rapid diminishment of what have become essentials to our way of living.

The important World Conservation Strategy document released in 1980 very aptly pointed out 'Ultimately the behaviour of entire societies towards the biosphere must be transformed if the achievement of conservation objectives is to be assured. A new ethic, embracing plants and animals as well as people is required for human societies to live in harmony with the natural world on which they depend for survival and well being. The long term task of environmental education is to foster or reinforce attitudes and behaviour compatible with this new ethic.'

Significant work has been done with regard to environmental protection. The Stockholm Conference has also pointed out the need for change in attitudes and atmosphere for environmental presentation. As a result the developed nations have already taken several measures to mitigate the damage they have caused by indiscriminate exploitation of the natural resources. The developing nations like ours have also started working with an awareness that environmental protection is a pre-requisite for sustained development.

The Government of India's commitment to environment protection and education has been total. Our Prime Minister has used national and international forums including the recent non-aligned conference held in New Delhi to give a proper perspective and orientation to environmental debates and action in the context of developing countries like India. We are confident that we will move along the path of least environmental damage in our destination to a happy and comfortable life. The present issue is a humble contribution in that direction.



(DR. A.N. SAXENA)
DIRECTOR GENERAL

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