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ABSTRACT

The Industrial Democracy Programme (IDP) of Norway seeks to create conditions for a self-supporting change process in industry, rather than implementing a ready-made model, believing that it is more valuable for employees to learn to change their organization than for the specific solution to be found. The central problems, therefore, have been to build up involvement, commitment, and competence in the work-force, so that the responsibility or "ownership" of the project is taken over by those affected by the changes. The strategy has been to work through the existing (management and union) power structure, to set up a limited (in time and space) experiment or demonstration in a shielded area, and let the "force of the example" be the dynamic factor in the diffusion process in the whole plant. To make the first step toward experimenting with new forms of work organization and job design, establishing autonomous work groups has been quite effective. (Before dealing with implications, the speaker describes fairly concretely two cases from projects in which IDP has been involved.) The autonomous work group system has to be combined with training and supported by a system of resource persons or departments able to contribute in joint problem solving. (Author/AJ)

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INTRODUCTION: THE HISTORICAL BACKGROUND

The Industrial Democracy Programme (IDP) in Norway departed from the political debate around the issue of participation/ democratization in industry which was taken up again around 1960. The two central labour market organizations: The Confederation of Trade Unions (LO) and the Confederation of Employers (NAF) set up a high powered joint committee to sponsor research in the area, and contact with a group of researchers was established. The first phase of the programme consisted of a study of national and foreign experience with formal representation of employees at the board level in enterprises. The report (Thorsrud & Emery 1964, 1969 a) from this study was generally negative to the effects of this quasi-parliamentary approach to the problems. As an alternative to this form of indirect participation, the researchers suggested starting a series of experiments with improved conditions for direct participation in the daily work situation in industry. This approach - the second phase of the IDP, would have the advantage of building on the existing strong trade union/shop steward system, it would be a continuation of the developing joint information/consultation systems in companies and in the long run better possibilities for learning and decision-making in the work at lower levels could create conditions for a representative system to function and mean something new in the organization.

These arguments were accepted by the leaders of LO and NAF. For the trade unions the prospect of a project that would involve a majority of the members rather than a small group of elected representatives was of course important. Holter's study (1965) also indicated that employees were interested and thought they could contribute in decisions relating to their immediate work situation. (The same results, incidentally, are found among British employees in a recent study (Lischeron 1973)). For the employers improving the quality of working life of employees was expected to contribute to positive attitudes towards the companies and the British experience

upon which the IDP builds (Tavistock Institute) indicates that this can be done also in modern technology without reducing productivity.

The LO/NAF joint committee made a list of companies expected to offer favourable conditions for experimentation. Some of these were approached, and given the strong institutional support for the Project, most agreed to take part. (The criteria used for selection: The company should have a good industrial relations record, a well organized union and personnel policy and be typical in terms of technology for a substantial part of Norwegian industry.)

The first experiment took place in a wire drawing mill in a steel works in Oslo, the second in the chemical pulp department of a paper and pulp mill near Kristiansand, the third in an electric heater production department of a light engineering company in Trondheim, and the fourth, (which is rather a series of projects than an experiment) in a chemical process company in Porsgrunn.

In 1969 the report from the first four "experiments" was published (Thorsrud & Emery, 1969 b), and the joint committee decided upon sponsoring a controlled diffusion in Norwegian industry and service organizations, which is now taking place. A third phase of the programme involving changes in the school system according to the same basic ideas and values was started around 1970. Also in this case, the research has its base in the Work Research Institutes in Oslo.

Around 1970 the political debate around industrial democracy arose again, and a law giving employees representation on the management boards (if more than 50 employees) and on a new supervisory board (if more than 200 employees) was passed. This is one of the reasons why progress in the IDP generally has been slow since 1970. The organizations' energy and interest naturally concentrated on the implementation of the new law. Therefore diffusion to new enterprises has been going very

slowly, with an estimated number of 30- 40 actively taking part in the Programme to-day. Of the original 4 projects which were designed to act as demonstrations for the rest of industry, there still is consistent development in 2 or 3. However, interest has been rising quickly in service organizations, and projects have been launched in a bank, an oil company, in the Norwegian merchant marine, and a wholesale company.

In the concluding parts of the paper we shall deal somewhat more in detail with what has been happening with the IDP at the national level. But first we shall give a brief presentation of the theories and principles behind the concrete changes that have been made.

SOME THEORETICAL AND NORMATIVE POINTS OF DEPARTURE

There are two central elements forming the theoretical basis for the IDP, - the organizational theory, which is Tavistock's presumably well-known open socio-technical systems, (see e.g. Emery and Trist 1960) and the theory about social change, which also draws heavily upon Tavistock experience and theories.

We shall not here try to give any comprehensive presentaiton of theories, and I will refer those interested to publications from the Tavistock group (e.g. Emery & Trist 1972), but I shall make a few central points and try to deal somewhat more in detail with the practical solutions found when trying to implement these theories.

As far as the design of work organization and jobs are concerned, socio-technical theory departs from a critique of the so far dominant principles, i.e. Taylor's "Scientific Management". This critique is very much the same as that of the "Human Relations" theoreticians like McGregor; Pointing to the negative social and psychological effects of task fragmentation, specialization in work, standardization of jobs, external control, centralization etc. But the Human Relations researchers have failed in pointing to any realistic alternatives, so Taylor's principles have been accepted as necessary means to maintain a high level of productivity. The socio-technical idea was that current practices needlessly reduced the workers' possibilities for using and developing their human capabilities or resources. So alternative ways of designing jobs and work organizations were spelled out based on the observation that human beings would be more effective if performing tasks using their human capabilities rahter than doing work e.g. as an appendix to a machine. Taylor's principles were effective as a means to get a large number of unskilled, unexperienced workers into industry in an early phase of the industrialization. To-day higher level of education, new technology and more technological options, the generally increasing rate of change and rising political aspirations, make Taylor's principles obsolete. But still the

process towards more specialization and centralization is going and being aggravated by the growing size of organizations.

The first step towards developing new principles for job design is to draw a list of criteria against which to evaluate the outcomes. For the technological subsystem, technical and economic measures suffice and can usually easily be modified if necessary. To measure the goodness of the social subsystem a list of social and psychological criteria had to be drawn, i.e.; jobs should be designed so that they give possibilities for

- <u>variation</u> in work, i.e. have a content other than sheer endurance
- <u>learning</u> in work and to go on learning
- <u>decision-making</u>, at least within an area in connection with own job
- <u>social support and recognition</u> in the work place
- <u>meaningfully</u> to relate own work to what are society's needs
- seeing that the job leads towards a <u>desireable future</u>

These "psychological criteria" should not be seen as static. Both because individuals differ in aspirations, preferences and abilities, and because people change as a function of time and experience, the objectives must be 1) to have as good fit as possible between these requirements and the individual's situation, and 2) to provide for continuous changes in jobs so that they can allow for personal development.

The next step is to find practical solutions. Ideally these criteria should be used when designing plants. In practice so far, we have had to work with existing plants and modify the technology and work organization. This has usually meant that new <u>work roles</u> have had to be constructed through combinations of <u>existing jobs</u> or parts of jobs. <u>Autonomous work groups</u> has been the central concept that has spread as well as being an im-

portant tool to start a process towards changing work roles.

In manufacturing industries the production tasks usually are highly interdependent. According to Taylor jobs would still be designed so that one man holds one job, and coordination/ handling of variance along the work flow is taken care of at higher levels. The autonomous work group alternative has been to allocate a number of interrelated tasks to a group whose members jointly hold the responsibility for all internal tasks, like producing, planning, distribution of jobs etc. This means that variance to a much larger extent is handled at the shop floor level, rather than through a hierarchy. This also gives autonomy to the individual to some extent. The "job enrichment" alternative seems to fail in this because increasing the level of discretion for individuals who work along a technologically intergrated production line usually is quite impossible.

In the IDP the central objective has been to create conditions for a self-supporting change process in industry, rather than implementing a ready-made model like e.g. autonomous work groups. This point frequently has been misunderstood and needs some elaboration, which brings us into a discussion of our strategy for change. This, however, we shall ~~limit to the~~ plant level disregarding the national aspects which may be somewhat too specificly related to Norwegian conditions.

The IDP is concerned with industrial democracy, the idea being that it is valuable for employees to increase their influence over their work situation. This means that learning to change their organization is important, and more important than the specific solution found and which is only of temporary validity anyway. The central problems for the researchers therefore have been to build up involvement, commitment and competence in the work-force, so that the responsibility or "ownership" of the project is taken over by those affected by the changes.

In principle our strategy has been to work through the existing (management and union) power structure, to set up a limited (in time and space) experiment or demonstration in a shielded

area and let the "force of the example" be the dynamic factor in the diffusion process in the whole plant. The reasons for this procedure are the following:

- Commitment to this type of change (i.e. moving towards wider, more responsible jobs) cannot be expected from any majority of workers or any other group of employees on the basis of written and oral information only. Commitment will have to be built up gradually through personal experience from working under changed conditions.

- Among leaders, however, you will usually find sufficient support to make a limited experiment, if the risk following it can be minimized through guarantees (e.g. against loss of payment, redundancies and partial, uncontrolled diffusion) and the support from respected persons also from outside the organization, like central trade unionists, researchers or managers in other companies with experience can be evaluated and if results found positive and interest has been built up, the next step may be taken.

- One central function of the "quasi-experimental" approach is to demonstrate that it is possible with a fairly limited use of extra resources to make changes of central importance for the individual's work situation without impeding the productivity. Once realistic alternatives have been demonstrated more commitment to establishing conditions for larger and more widespread changes may be expected to arise.

To make the first step towards experimenting with new forms of work organization and job design, establishing autonomous work groups has been quite effective in a large variety of industrial settings and also in the service sector. It should immediately be noted, though, that these groups differ widely both in terms of internal structure, type of tasks and decisions they handle and level of social integration. (See Gulowsen 1972). In all cases they change as a function of time and experience. Still the group concept is very important as

an early stage in a project, because it is fairly easy to grasp and it concerns central variables in the individual's work situation.

SOME EXPERIENCES WITH NEW FORMS OF WORK ORGANIZATION

Before dealing with implications for personnel policy etc. we shall briefly describe fairly concretely two cases from projects in which we have been involved. First we shall describe what the two cases have in common: Both projects came fairly late in the series of experiments, and initiative was taken by management who approached the central organizations and the Institute after discussions with the local union. After preliminary agreement a working party composed by line managers and shop stewards travelled around visiting the companies involved in the IDP. Then information about the project in general was given to all workers and employees in the areas in question by the working party, researchers and central LO and NAF representatives. Then a period of bargaining followed after which an agreement between local union and management was drawn stating the formal conditions for an experiment. At this stage there was agreement as to which criteria for evaluation to use after an experiment, and a suitable area for the first changes selected in cooperation with those working there. Then preparations for changes followed, like multi-job training, developing information systems to be used by the autonomous work groups, minor technical changes and more information given to those to become involved. Shop stewards play central roles here, keeping direct contact between the working party and the group members. Then the experiment with one or more groups starts, after a period of 9-12 months the results are evaluated, and a decision to continue was made in both cases. Technology, environmental and social conditions, however, gave quite different types of groups and different patterns of development.

1. THE CHEMICAL PLANT.

Here the need for change was very manifest. Labour turnover was very high (50%+), productivity low, costs and level of conflict high and working conditions quite bad with heavy work, heat, gas, noise and continuous shifts. A few hundred workers were employed in the sections in question producing a single product which enjoyed a steady and growing demand. Management found the traditional approach of tightening up control, mainly through adding more supervisors and staff specialists, could not solve the plant's problems, but created hostility in the workers. Shop stewards were worried about working conditions, the high turnover which created problems for the union too and tendencies to the formation of fractions within the membership because of the specialized work organization with groups of "specialist-workers" performing one single function on the ca. 200 identical production units in the plant. As several process operations as well a maintenance had to be performed on each shift, a large number of groups of workeres were moving around coordinated by a similar number of foremen and supervisors. These groups tended to develop "special interests" and conflicts between them. As preparation for a change towards autonomous work groups (each with 4-7 members covering all production tasks in a part of the plant) the payment system was changed so that they all started at the same high basis and got personal additions for acquired competence plus a group bonus for production performance. A training scheme of 100 hours practical-theoretical training was carried out, daily production meetings between line management and workers held, seminars for key persons held, and at intervals mass meetings for all working in the area including the top manager. On the daily production meetings ca. 1000 suggestions were put forth during the first four months, leading to hundreds of minor changes. Together with the training this contributed strongly to building up trust to management in the work force. After ca. 8 months of this type of preparations, one group was made autonomous with the right to handle internal tasks without the interference of the supervisor. The group immediately suggested moving one job and one man to daywork, as this was possible for technical

reasons and desireable for social reasons. This was done with good results, and a few weeks lager the rest of the workers in the area started with similar experimenting.

The progress, however, was very slow. What was important was that consensus as to the reasons for this developed in the workers and management. The production process was out of control and the problems could not be handled solely by the groups. Thus there were serious technological constraints on their autonomy. Labour turnover was still high, meaning that competence in the workforce was only slowly building up. Therefore the working party decided to put emphasis on process development and information handling systems and to develop better equipment so that heavy tasks could be mechanized. Together with a better recruitment and introduction system this should hopefully contribute to a more stable work force. Special project teams where also the workers were represented, were established in order to deal with these problems. This gave better solutions than those specialists might find alone, and the "resistance-to-change-problem" became non-existant. Staff specialists, managers and workers have gradually learnt to work togheter and solve problems, and this was according to the production manager the most important achievement during the first few years. Thus the project can be described as a stepwise establishing of conditions for groups to function autonomously. Ideally, most of these conditions should have been established before launching the group system. However, there was no general commitment to do this before the group system had been tried and the people had learnt together what this implied.

After 4 years labour turnover was reduced to an almost acceptable level (15-20%), production yield was very much higher and working conditions improved. Each of the five shifts consists of 3-5 groups, each with its own special internal arrangements. The supervisors are better trained and move towards a "boundary control" role. Diffusion to other production and maintenance departments has taken place, and there is still, after 6 years full support to the project

from the involved parties, although the term "project" has been dropped, - it is a permanent way of working.

2. THE WAREHOUSE.

This is a state monopoly for the distribution of pharmaceuticals in Norway. Initiative was taken by the personnel manager who feared growing turnover and size of the organization could - if nothing was done to avoid it - in the long run create problems with recruiting good people to handle the drugs. At this stage, the company had a very stable work force in the warehouse built around a nucleus of very experienced responsible people who had earlier worked in smaller, private pharmaceutical distribution companies. Growing size would mean more specialization of tasks. Combined with rising level of education in the community, the company had reason to fear loosing out on the Oslo labour market. The employees reacted favourably to a proposal to join the IDP, and after a year of preparations, two autonomous groups in one warehouse department were established. These groups pack individual orders from pharmacies. The central changes initially involved transferring a number of planning, co-ordinating and personnel administration tasks from the supervisors to the groups. Internally the groups had some job rotation for training purposes and when need arose for production reasons, but the single job was basically unaltered and consists of packing individual orders still. The changes were felt as very important - a strong feeling of having the responsibility for the operation of the department arose. After a year diffusion to two other warehousing departments took place, so that ca. 80 of the 300 employees were directly affected. The changes revealed a large need for training, and a special program for this was developed. As the role of the supervisors necessarily had to change from the start, their co-operation had to be secured immediately.

During some months they worked themselves out of their old roles by training group members to take over. Then they

moved into other tasks at higher levels. As the project coincided with the planning, building and moving into new premises, a large need for extra planning capacity was there, and is partly covered by the former supervisors. Productivity and satisfaction with the new system is generally high, and new ideas for futher changes are generated systematically. In principle most changes have come in the form of delegation of tasks to lower levels. The physical jobs are the same, but a number of coordinating problems have to be solved jointly by the group members which contributes to (the slow) development of consensus and shared values. One of the strongest sides of the groups has been their ability to deal constructively with social problems.

To sum up the cases: Both projects departed from manifest or expected future problems with the companies' relationship to the labour market. The political debate around industrial democracy and the rising prssure for participation contributed to leading the companies towards starting with participation in changing the work organization. But working from this point of departure lead in quite different directions. In the Chemical Plant changes in technology and control systems were of crucial necessity, while the Warehouse organization required first changes in supervisory roles and then more generally in personnel policy. In both cases, though, it has been necessary to build a strong organizations to support the shop floor development and arrange for changes in other areas once need arises.

IMPLICATIONS FOR PERSONNEL POLICY - THE ROLES OF SPECIALISTS

In each single project line management and the local union have had the main responsibility for the development, but using staff specialists and departments as resources to be drawn in when needed. The Personnel Department usually have been quite heavily involved in a number of different ways which cannot easily be described unless in connection with fairly extensive case presentation. New training systems, recruitment and introduction procedures, new payment systems and career patterns have had to be developed and then frequently changed again, which naturally affects also the personnel departments. The general experience is that a number of tasks have to be decentralized, - including several traditionally placed within the Personnel Department. In the Chemical Plant several functions were decentralized and taken care of by a secretary especially employed by the plant and working closely with line management and shop stewards. Thus selection of new workers, training of them before entering the job and introduction to the work group could be done very much better than before. In the Warehouse new career patterns immediately came up as a need; when the supervisors "disappeared", new roles for them had to be found, - in the long run further education may be necessary. For the group members alternatives to the traditional advancement to supervisors had to be foud.

In general, though, the consequences for the Personnel Department are not very different from those of other specialist departments. The autonomous work group system has to be supported by a system of resource persons or departments able to contribute in joint problem solving. This means that we move away from the traditional conceptions of the hierarchy, chain of command etc. Information and control systems may just as well be horizontal as vertical. Matrix organizations (Herbst 1974, Kingdon 1973) will take over and mean new combinations of traditional and new modules and systems are possible and feasible (Thorsrud 1974). To give some examples: In the Chemical Plant the training scheme was designed by a work

group composed by process operators, production engineers, a supervisor and a professional teacher from the company's training centre. A new payment system was designed by a similar group in which a former rationalization expert did most of the statistical work to create a basis for the bonus. In another case a direct communication link between the Sales Department and autonomous work groups gave very effective co-ordination between customers' demands and the groups' production.

TRAINING:

A growing number of companies are seeing training of employees, including their unskilled workers as a necessary condition for survival in the long run. To be able to take new technolocy efficiently in use and to keep its best employees, training and improved job design seem inevitable. In our field projects training always play an important role, and the largest investments in time and money have been in this area. Here we shall concentrate on ecperience with training of unskilled workers. The general respons from workers when offered training is very positive if:

- the training is seen as immediately relevant for their work. This is particularly important for the first sessions
- the training is a part of a larger scheme involving job design, a career, and usually also increased payment
- the training is not arranged as "school sessions"

It seems to be very little interest for training for its own sake, and even if there is an economic incentive this is not a sufficient condition to create participation from any majority. We have found that the best procedure is to start with theoretical and practical aspects of the concrete work, - and move "backwards" into more pure theory. Using the plant's own managers and engineers as "teachers" is usually best, also because this gives them training in acting as resource persons

for the workers. In e.g. the Chemical Plant it was possible to get almost 100% participation in a two week basic course although a fair proportion of the workers were more than 50 years of age. Teaching and discussions were partly held in the plant, partly in the training centre whose own staff provided the necessary equipment. Special books for the courses were written by the plant's engineers. Later, the training centre staff has taken over more of the teaching to reduce the workload on the plant's staff.

Whether exams should be held or not, has been a recurrent issue. Professional teachers seem to insist on exams in order to get feedback from their teaching. In the Chemical Plant workers strongly resented being "tested" which was too much like "school". A compromise was reached by arranging group exams at which groups of workers jointly solve problems which they find interesting and helpful and satisfies the teachers' need for feed-back.

At a later stage in this particular company the union - management agreement was revised so that the right to learn in work and management's obligation to give training opportunities were included. The payment system, which earlier had been on a job evaluation basis, was generally changed so that competence became the decisive factor. Through five steps of practical and theoretical training process operators get the status and payment of skilled workers. Parallel with this development conditions of employment (working hours, security of employment, pension and sickness benefits) have been harmonized to remove distinctions between workers and other employees.

In all cases changes in job design towards wider, less structured jobs have had training of workers and supervisors as a precondition. In addition, we invariably have experienced that once the changes are made or attempted, a need for more and different types of training arise. Learning in work and learning through special courses or improvised in-plant sessions have to be mutually supporting parts of the change process and the concrete form and contents of these have to

be adapted to the special circumstances in the particular company. In the longer run, however, learning on the work place will have to be interlinked with external educational and funding institutions so that having career patterns beyond the limits of the single company becomes realistic alternatives also for white and blue collar workers.

SOME CONCLUDING REMARKS

At the national level interest for the IDP now seems to be picking up again. The central organizations have decided to increase their efforts in promoting changes, and the National Basic Agreement has been strengthened to give a better formal basis for the Programme. Even more important is possibly the general situation in industry which now in many ways is more "ripe" for this type of changes. The labour market is harder pressed than ever and industry seems to be the losing part in the competition for workers and professional people. The Swedish development, which was triggered off in 1969 by the Norwegian experiments, also sets a powerful example demonstrating possibilities for substantial improvements in a large variety of technologies. Further, the training of managers and shop stewards which has been given by NAF and LO systematically through the last 7-8 years has prepared the ground somewhat. One important effect of this has been that engaging in the type of development at which the IDP aims, is not any longer seen as so difficult and demanding as during the first years of experimentation. Extensive help from researchers, a thorough socio-technical analysis, the use of large resources in a concentrated way, which were parts of the first experiments, are not required in a general diffusion phase. In the first experiments it was necessary to prove quite quickly to a sceptical world that it was possible and that changes in job design had implication beyond the shop floor. Once this has been "proved" or at least accepted as possible and desireable, another, less intensive

approach is more feasible. It is a general experience that progress has to be slow. Even if the socio-technical system can be altered rather quickly, the people operating it need time to learn and to develop.

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