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ABSTRACT

This document contains a series of papers on the topic of continuing training for technological change in business and industry. The papers focus on examples of training for technological change in several countries of Western Europe. The five papers included in the report are "Training for Continuing Training and Education" (A. Behrens); "Developing Managers and Trainers in New Plant' Situations: The Learning Implications of Technology Transfer" (F. W. Greig); "The Evolution of Employment and Training in the Automobile Sector--Peugeot Group-- Which Training for Which Employees'" (A. Beretti); "Technological Change in a Food Manufacturing Company and a Retail Distribution Group" (A. Rajan); and "Training for Technological Change in a Large Banking Group" (J. M. Fricker). (KC)

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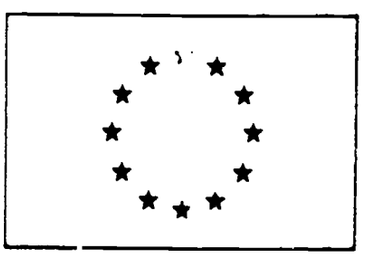
Continuing training in enterprises for technological change

European Centre for the Development of Vocational Training



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Continuing training in enterprises for technological change

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INTRODUCTION

The subject of technological change has performed a first-class service to education and vocational training, focussing attention not so much on minor inadequacies or perceived mis-matches, but in forcing policy-makers and education and training people to put these two functions under the microscope, to reconsider the approach to education and training as a more thoughtfully and effectively planned investment in people as an on-going process which fits in more closely with employment opportunities available, or likely to become available in the near future.

Governments have made great progress in developing training opportunities for young people leaving school, especially offering some introduction to the so-called new technologies with which many of them will be increasingly involved in their careers.

For adults who have been in employment for some years, the picture is fairly confused when it comes to training for technological change in the enterprises. The English expression "the luck of the draw" seems to apply in many cases, with some firms having well-planned, on-going training programmes for all employees at all levels and, one suspects, a vast array of firms of all sizes where training for technological change is a kind of "fire-fighting exercise" where the minimum investment in training is made, often at very short notice, in the minimum number of people sufficient to get the machines working. In other words, an ad hoc approach to technological change in instalments.

The foregoing comments are not meant as unjustified criticism; indeed, for large numbers of firms, the type of investment in time, money and training personnel is beyond their resources, even if they possessed the high technology expertise to carry out well-planned, on-going

training. This situation makes external training facilities such as group training schemes, local technical colleges and universities a vital element in continuing training for technological change at all levels of employment; responding to local needs for skills and contributing directly to the economic well-being of the district.

Investment in continuing training for technological change is no longer a luxury that some firms can do without. Short-term savings might only delay a larger bill that the firm cannot pay when they realize that they must invest in advanced machinery, or go out of business because their products or manufacturing processes are "antiquated" by the standards of their main competitors.

Technological change, of course, is not like a volcano suddenly bursting spectacularly on an unsuspecting world, covering everything in its path, but is an incremental process. There are very few examples of new factories incorporating "state of the art" technology on "green field" sites, but this situation is now changing. For the bulk of the labour force, it is the pace of the incremental change, increasingly rapid, that presents the challenge to their skills and employability, with the poorly educated and trained people more and more at risk of being marginalized from a labour market demanding higher levels of qualification.

Just how vulnerable the semi-skilled and unskilled workers are is shown in the table below, published by the Department of Employment Gazette, London, in July 1986. Only the clothing and leather goods sector showed a marked increase in the employment of semi-skilled and unskilled workers, whilst public services showed an increase in employment of semi-skilled employees and the hotels and catering sector showed an increase of 17%

in unskilled employee employment between 1980 and 1984. Engineering showed heavy decline in the numbers of semi-skilled and unskilled workers, and there is little reason to think that this trend will not continue. Upgrading of skill and qualification levels is a must if larger numbers of people are to remain in employment, able to cope with technological change.

Table 1 Net percentages of firms in which employment in different grades had increased and declined, 1980–84

Sectors	Management/ Professional	Technical	Sales	Clerical	Skilled	Apprentices	Semi-skilled	Unskilled
Engineering	+3	+19	+7	−39	−22	−23	34	−36
Food and chemicals	−10	+3	−7	−26	−16	−13	−29	−16
Clothing and leather goods	0	+9	0	+4	+9	+27	+10	+22
Construction	0	−4	−8	+8	−36	−28	−16	−24
Distribution	−9	−9	0	−15	+3	−3	−12	−12
Transport	0	−9	−5	+19	−38	−24	−43	−24
Financial and business services	+32	+12	+24	+56	−4	−8	−8	0
Public services	+36	+16	0	+16	0	0	+16	0
Hotels and catering	+18	0	+13	−8	+8	+5	−8	+17
Sport and recreation	−10	+10	+5	−5	−5	−15	−10	−5
Garages	−16	−33	+8	−34	−25	−8	−17	−8
Hairdressing	0	0	0	0	+6	−6	0	0
New technology	+53	+53	+41	+17	+18	−6	−6	0
Total	+6	+6	+5	−6	−9	−9	−14	−10

Some firms, suddenly faced with the urgent need to introduce new technology, decide that it is much easier to dismiss everyone over the age of 50, considering it not worth spending money on retraining them. This may seem a suitable short-term expedient for the company: but what are the consequences for the person concerned, for the company, which loses valuable company-specific experience, and the social cost to the nation?

Until investment in the human resources is seen of as equal, if not more, importance to investment in machinery, there will be constant problems in the mis-match of qualification to job opportunities.

Behind all the concern of the European countries with regard to the development and use of new technologies lies the question of future competitiveness, the key to competitiveness is flexibility in terms of manufacturing and administrative processes but, much more importantly, the flexibility of the labour force is crucial. This flexibility places new demands on training and qualification procedures which, despite all the efforts by public and private organizations, are still felt to be short of actual needs.

The increasing future demand for flexibility of the labour force, and their qualification also has significant implications for the education and training systems at all levels which themselves will have to become increasingly flexible. Training of managers who will be faced with managing change and innovation too often takes place within a fairly rigid curriculum structure based on traditional content and teaching methods. To overcome such problems, the increasing trend towards closer cooperation between industry and commerce on the one hand, and teaching establishments on the other hand, must be strengthened.

Training to take advantage of technology transfer arrangements will assume ever-greater importance, since a lack of appropriate skills at all levels in potential recipient companies will merely serve to hamper technology transfer policies, with undesirable economic and social consequences for those organizations or countries unable to accept and exploit the full potential of the latest technological developments.

The subject of continuing training in enterprises for technological chan... is, however, a vast one and this short report can only give indications of some developments within this broad subject area.

W.G. McDerment
Project Coordinator

CONTINUING TRAINING IN ENTERPRISES FOR TECHNOLOGICAL CHANGE

TRAINING FOR CONTINUING TRAINING AND EDUCATION

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CEDEFOP
BERLIN
1987

BASED ON A PRESENTATION AT
A FRAUNHOFER WORKSHOP
"INNOVATION AND QUALIFICATION" BONN 1986

Results of the workshop on "Training for Continuing Training and Education: Trainers - Management - Specialists in Continuing Education and Training"[1]

Axel Behrens,

Fraunhofer-Institut für Arbeitswirtschaft und Organisation

The aim of this workshop was to obtain as realistic a picture as possible of the needs for continuing training and intervention at virtually all levels of hierarchies and disciplines. This was not easy to achieve in a single workshop, but important results and information on practical approaches and solutions to problems were obtained as the following detailed questions on the subject were answered. The main questions were as follows:

- What new skills are required of those responsible for initial and continuing training as a result of the increasing use of the new technologies, that is, in general of managements with decision-making competence for several fields?

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[1] "Qualifikation für Weiterbildung: Ausbilder - Vorgesetzte - Weiterbildende"

- What skills are required of technical management staff, i.e. supervisors, when new technologies are introduced and applied?

- To what extent does the relationship between teaching and technical/specialized competence of the trainers differ according to the target group of a training scheme, e.g. management, project teams, staff and service departments, shop floor management or workers directly involved in production?

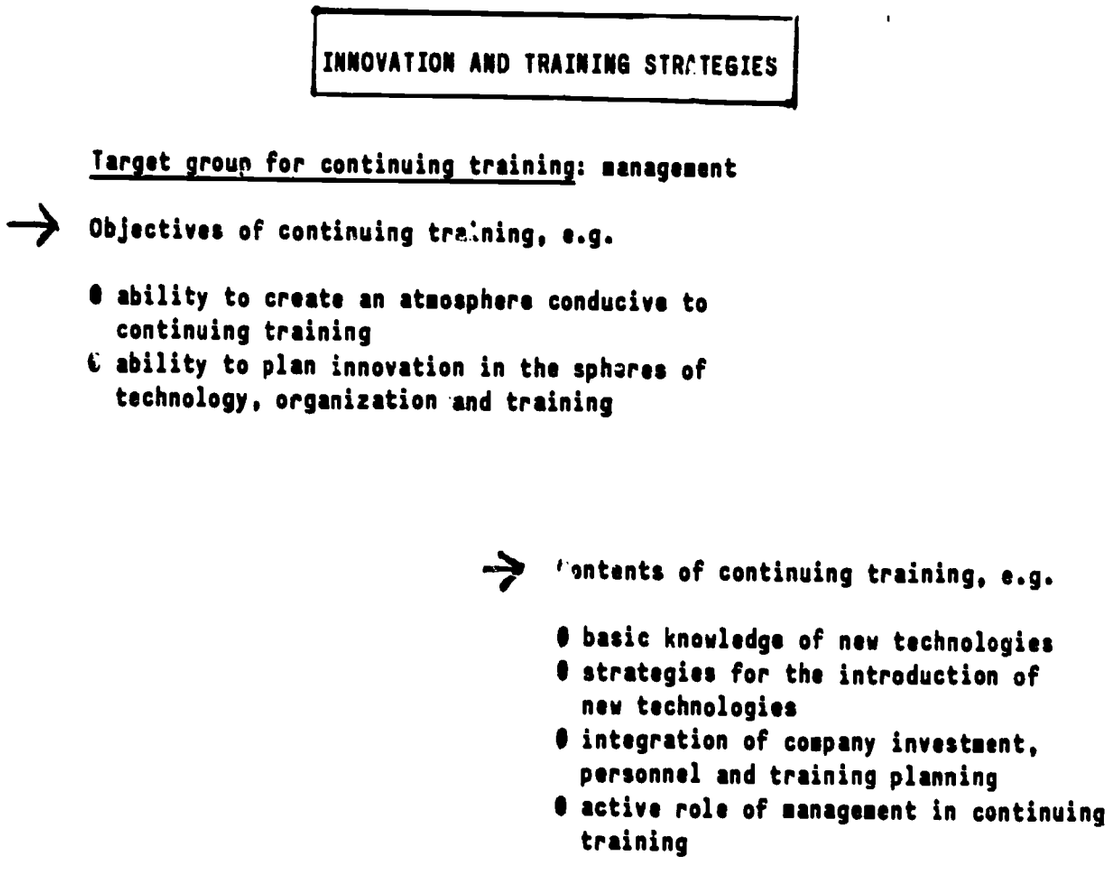
- What training methods are known which meet the requirements of both the specialized field and the target population?

- What does continuing training do at present, and what will it have to do in the future, to keep trainers in continuing vocational training up to date with the new requirements?

These questions were to a large extent answered by the views and information exchanged at the workshop, which I shall now briefly render in the form of proposition-type results for the three levels of action or target groups mentioned above.

Target Group 1

As shown in the figure below managements must develop innovation and training strategies within their complex contexts.



Target group for continuing training: management

The following basic objectives should therefore be met in the contining training of this target group:

(1) Ability to create a climate conducive to continuous training

Following on from the remark made by Prof. Bullinger that "the Management, that is, the decision-makers, and the works managements are not prepared or willing to invest time, money or capacity in continuous training", managements must be able to expressly define and fix the basic operational conditions at a high level for continuous training to take place at all.

(2) Item "Planning"

It is also necessary for managements to be fully aware that innovation in technology, organization and training must have equal priority in planning. In innovation strategy these planning activities should be inter-woven both temporally and with regard to content.

In order to achieve this <u>continuing training should include</u> the following:

- From the point of view of content managements require a basic grounding in new technology. Company-independent continuous training institutions reported at this workshop, as also at previous ones, that company management staff (in some cases even "secretly") took introductory courses in technical subjects at non-firm institutes for continuous training. This may be seen

as indicative of the fact that there is a certain awareness of deficits in specialized skills (with respect to new technologies).

- The strategies suitable for introducing new technologies in an individual firm or enterprise must be determined and employed. This refers to the ability to employ complex inter-connected communications and automation techniques which go beyond the immediate process as efficiently as possible over several years in offices and production units without loss of stability, and consistently taking into account the respective basic conditions.

- The fundamental requirement at present is the integration of investment, personnel and training planning. Overall this results in a call for the integration of these complex issues in the continuing training of managements.

- We also considered the active role of the managment in continuous training. This is on the whole problematic and controversial, but it does exist, for instance, in management training itself. The question as to whether in the course of the innovation process "managers" should not play a role as continuous trainers of the specialized/technical personnel was briefly discussed. On the other hand there was also the question as to who would then be responsible for the training of these managers. Unlike the first question, which was not finally answered, in this case it was agreed that owing

to qualification requirements a substantial amount of training will have to be provided by experts of an operative level (e.g. the specialized/technical staff of a firm). There is in fact a considerable deficit in this sphere.

On this basis the continuous training of the management can be defined according to four corner-stones:

o Competence in project management
This refers to the ability to plan, carry out, protect the integrity of and follow through this process, which must run a clear course for several years from a defined start to a defined finish.

o Structuring competence
This refers to the ability to grasp the complexities of the present employment situation - at least in the aggregate condition - and to anticipate changes which may occur in the course of the application of a technology. While this is is a very highly developed skill it can still be expected of managements. The decision-makers must remain constantly aware of the fact that both as a whole and in its component parts the development is to a considerable extent freely definable. Technology on its own is meaningless. Only when it is applied and set up in the production process does it have an effect. This is a central issue in planning and decision-making.

o Technological competence

It is necessary to be able to make realistic estimates of the potential of a technology. However, here it must be taken into account that, as has in fact variously been pointed out today, there are some highly unrealistic ideas about the practical applications of technologies. Carefully planned training courses are therefore needed, particularly in view of the innumerable courses already available in this problematic field, which are not always very transparent.

o Competence in mediation

This fourth corner-stone is the ability to carry out the innovation process, which is by no means always possible without conflict, in a socially acceptable manner and taking care to preserve and respect existing personnel arrangements.

Target Group 2

In a second level we grouped together supervisors, technical departments, the project teams sometimes employed for complex processes, staff and service departments which are charged with preparatory and supportive functions, and the works councils.

ABILITIES AND INSTRUMENTS FOR PERMANENT AND DEMAND-ORIENTED TRAINING

Target group: supervisors, technical/specialized departments, project teams, staff and service departments, works councils

→ Objectives of continuing training, e.g.

- suitability as part-time trainer
- ability to plan training responsibly and competently
- ability to support permanent continuing training of personnel

→ Contents, e.g.

- instruments and methods in the planning of training courses and activities
- determination of training requirements
- control of efficacy of training
- qualitative personnel planning

Target group for continuing training: supervisors, technical/specialized departments, project teams, staff and service departments, works councils

The following objectives of continuous training can be given by way of example:

(1) Suitability as part-time trainer

It is obvious and also emerged from the discussion that not every employee in a technical department is suited to the job of part-time trainer. However,

depending on the specific conditions in individual firms organized training by technical supervisors is a conceivable alternative.

(2) The ability to plan training responsibly and competently

Supervisors must be able not only to communicate with but also to co-operate with company training departments. At present neither is necessarily the case. Company departments for continuing training or training overall are dependent upon a constant flow of information on the current developments on the job. Supervisors must therefore be provided with the wherewithall to recognize training needs for what they are. This means that departments for training and continuing training must first see that the supervisors have suitable instruments. There is a definite awareness of the need for them in the technical departments, and also evidence of a correspcnding willingness to employ them. However, this target group also wants to know how they as (as a rule) technicians can define skills or communicate the definitions in an organized manner to a different department, which must then in its turn transform this training requirement into suitable instruction. The technician is mainly concerned with work requirements, but work requirements and training requirements are by no means one and the same thing. This difference is often very difficult for "non-teachers" to grasp. However, an acute need for

continuing training is evident not only in the technical departments but also in the service departments for training themselves.

(3) Ability to provid[illegible]ermanent support for the continuing training of em[illegible]loyees

This demand for permanent continuing training is not self-evident, and before it can be fulfilled a change in attitudes must take place among the qualified staff of a company. Operating supervisors must be trained to be open to the idea of providing support for the continuing training requirements of their staff. Furthermore, to prevent the development of unfulfillable expectations right from the start the basic conditions, for instance, the permanent pressure of production, the organizatorial duties of the supervisor or the demands placed on his department, such as the planned output, must also be taken into consideration in the continuing training process. Organizational development and the creation of company organization and operations structures cannot be separated "from what is trainable and what should be trained".

What kind of continuing training meets this demand? Several instruments and methods can be used to determine training requirements. However, some of them are too complicated to be easily practicable in day-to-day operations. Nonetheless there are some methods, some of which are very simple, which can be

used to express the training requirements on the job and in communication with training departments. Some guarantee for the success of training activities must also be a priority in the case of such training activities which cannot be quantified in purely financial terms. This is a virtually insoluble problem - we need only call to mind the discussion on employee flexibility. Even at our institute I know of only one project for which it was possible to prove financial success. However, it is not absolutely necessary to rely on quantifiable criteria for determining the success of training. Other instruments are no doubt also conceivable. However, planners must then be correspondingly trained and be provided with the right instruments and the right aids if this is to become practicable.

Target Group 3

Specialists in adult education, teachers, lecturers and trainers, or whatever they may be called, are directly responsible for conducting continuing training. In doing so this target group must fulfil a large number of differing requirements which cannot be discussed in detail in this short report. However, the complex requirements can be briefly summed up as follows: the goal of continuing training for this group must be the ability to plan, carry out and monitor training activities.

IMPLEMENTATION OF EFFICIENT CONTINUING TRAINING

Target group for continuing training: trainers, specialists in continuing education and training, teachers, lecturers

→ Objectives of continuing training, e.g.:

- ability to plan, conduct and monitor training courses and activities

→ Contents of continuing training, e.g.

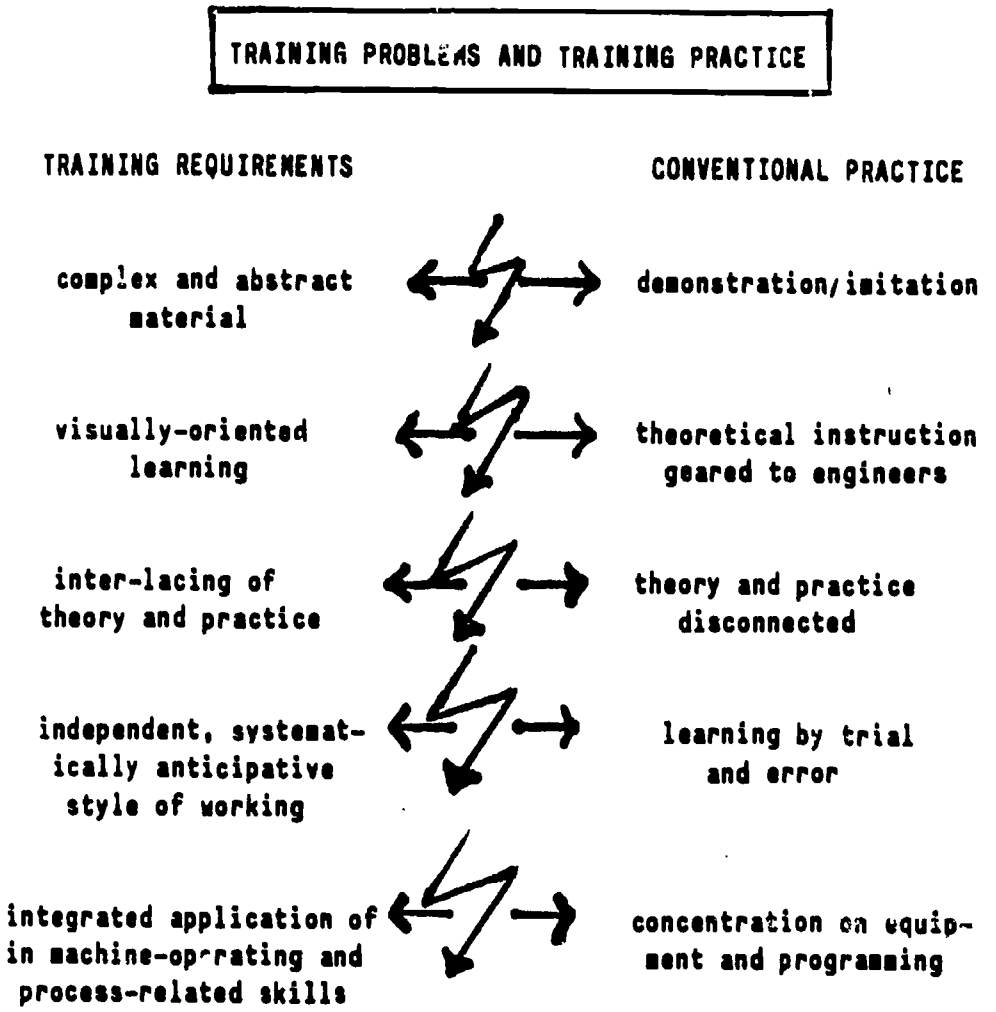
- subject-specific continuing training by full-time lecturers
- course structure
- methodology
- use of media

Target gropup for continuing training: trainers, specialists in continuing education and training, teachers, lecturers

In only too many incidences planning shortfalls are already evident, for example in cases in which provision for training has been made too late. However, planning should as a rule take place before dangers and risks become evident which may later no longer be controllable. The success of a training scheme is dependent on systematic planning.

Another important problem discussed was the continuing technical and subject-specific training of the full-time teaching staff, since those who conduct continuing training full-time often have considerable difficulty in keeping up with the latest developments in technology and work organization. However, it is no doubt unnecessary to be familiar with the latest, most modern method of process control or to go as far as to employ it in training. Nevertheless, staff who are no longer directly involved in production or who do not come into immediate contact with the technology must usually be familiar with not only the latest technical innovations but also with the developments in work organization. Problems requiring urgent solution and which may not arise until a training activity is already in progress (for example, course content, choice of didactic approach or the media to be employed) can often only be successfully solved if the trainers are able to achieve this.

What training problems actually occur at this level and how are they solved in practice? The following figure shows the skills required and how the requirements are normally fulfilled in practice at present.



Training problems and the practice of training

Present-day training courses must impart complex, abstract material. The new technologies can no longer be illustrated and learnt on a mechanical level since they take place somewhere in an electronic domain which is no longer visible. The conventional method of demonstration and imitation is therefore no longer adequate. While ways of imparting the new material have been developed they are as yet unfortunately not widely enough used.

Material which has to be imparted visually to practicians places special demands on training. However, it is still often the case that on the contrary theory and practical demonstrations geared to the engineer are offered, without sufficiently taking into account that the average industrial operative gains his experience on a visual basis.

An independent, systematically anticipative work style must also be learned. Work operations conducted by programmable or "programmed" plant cannot usually be influenced by continuous correction as is possible in the conventional processes which are carried out "by hand". The task must be fully and correctly programmed in advance in such a way that the automatic machine can carry it out from start to finish. In this context the workers' knowledge of processing in their own field and process engineering must also not only be refreshed but also consciously understood in terms of the new system or be connected to the new knowledge about the machines themselves so that the "stupid" robot or automatic office system can from the start be given clear, unequivocal instructions. The conventional "trial and error" method no longer suffices.

Work with the new technology also necessitates integration of skills in machine-operating and process engineering. This runs contrary to the usual concentration on the equipment and programming and often the links to the process and engineering background are learned at different machines.

The organization of in-firm continuing training

In addition to the teaching problems mentioned above new teaching strategies and a large number of new methods of organizing learning are required. What is needed are, for example, continuing training courses which take management timetables sufficiently into account, also co-operation on continuing training between small and medium enterprises and external institutions teaching skills for complex technologies. Small and medium enterprises are strongly dependent on external sources of training for thorough continuing training for their employees. However, sufficient use has not been made of the alternative of co-operating on continuing training, which tends to be demand-oriented. Training institutions and firms are still having enormous difficulty in providing the basic teaching methods required, that is, the "infrastructure" in terms of staff and material.

Deficits have also become evident in another area. Unfortunately communication problems are arising between people who are involved with pedagogics, didactics and methodology, without their being specifically related to a concrete technology, and people who have to teach specific material, that is, how a specific technology is to be employed in a specific instance, and are therefore subject to considerable performance and yield control.

In this area of tension didactics for new technologies would be useful. However, this is by no means sufficiently available and there is therefore still much to be

done. The main problem is to avoid imparting abstract knowledge on communication and co-operation, but rather the educational aspect of the theory. The technical staff, who are themselves involved in teaching, must develop at a practical level the social competence that they require to be able to communicate and co-operate with each other about specific tasks. If continuing training problems are to be solved practically they must be solved co-operatively. Continuing training for imparting skills for continuing training must therefore concentrate on the practical conditions in which continuing training is carried out.

CONTINUING TRAINING
IN ENTERPRISES FOR
TECHNOLOGICAL CHANGE

DEVELOPING MANAGERS AND TRAINERS IN "NEW PLANT" SITUATIONS: THE LEARNING IMPLICATIONS OF TECHNOLOGY TRANSFER

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CEDEFOP
BERLIN
1987

1. INTRODUCTION

The author of this paper was a senior staff member of the Industrial Training Service, an international training development consultancy based in the United Kingdom, from 1961 to 1987. Since his recent retirement from the post of Overseas Director with ITS he has set up his own international manpower development service, specialising in manpower analysis, trainer training and the evaluation of training effectiveness.

The ideas which are summarised in the paper have their origins in the practical work experience of the author and his colleagues during the above period. This introduction identifies some of the main sources of these ideas and indicates why the author thinks they are important.

(a) Training for new plants in "green field" situations

At frequent intervals since the early 1960s the ITS has been retained by clients in the United Kingdom to help deal with the problems of manpower and training which arise in the course of establishing a new plant in a rural area, where the plant technology is relatively sophisticated and there is no well established local tradition of industrial employment (eg in parts of Northern Ireland, Wales and Western Scotland). In the course of this type of assignment it has proved necessary to evolve appropriate strategies for dealing concurrently with complex technical training tasks and the creation of new management structures to deal with them. Projects of this kind throw into sharp relief the skills and knowledge which individual managers and trainers need to make the new structures work effectively in practice.

This general experience, reinforced by observations of similar case examples overseas has provided valuable insights into the nature of the learning problems which arise in organisatons where new technology is being introduced across cultural boundaries. It has been chronicled in considerable detail in papers presented by the author and his colleagues at international training conferences in Dublin in 1981 (1) and Amsterdam 1983 (2).

(b) Training for technology transfer "at the sharp end"

Although much of the experience described in the two conference papers quoted above is about the general management of large scale new technology projects, in the course of these and other assignments, it was also necessary to deal with many different kinds of individual learning problems at the workshop floor level. An early example of this in the case of the ITS was the development of a new approach to the training of knitwear mechanics by using a modified form of discovery learning. This was a response to the revolution in knitting technology which took place in Italy during the 1960s.

The author and his ITS colleagues have also gained much in their understanding of the learning needs associated with technology transfer from the field experience of the Industrial Training Research Unit (ITRU) another United Kingdom-based company with which ITS has close managerial and professional links. A number of highly relevant case examples from the ITRU record were referred to in a paper presented by the author at a European Forum on "Technological Change, Employment and Training" in

Milan, May 1986. The cases quoted included local government, plastics processing and cigarette manufacture (3).

(c) The role of the trainer in technology transfer

A mainstream activity of ITS for most of the period of the author's employment has been trainer training both through public courses and through field consultancy projects. It has proved increasingly necessary in the development of this work to stress the trainer's role in technology transfer situations, and to develop teaching materials for this purpose based on real life case examples. A central theme in all this has been the progressive switch of emphasis in trainer training from instructional technology and training administration to organisational analysis and consulting skills. An important example of the responses which have been made to the persistent demand from trainers for help and advice in this subject area is the work done by Dr Alun Jones, one of the author's ITS colleagues, on the subject of training intervention strategies. This work has been summarised in two important articles by Dr Jones published in 1982 and 1985 (4) and (5). Although, like the work on the management of new plants described above, the skills involved in making more effective training interventions in organisations are capable of many different applications, they are of crucial importance to the trainer who is dealing with the learning problems associated with technology transfer.

(d) Multiplying the use of new trainer skills : the training development process

An important part of the experience of trainer training described above has been the work done by the author and some of his colleagues in connection with the training development process at industry or national level, which has involved the training of training development staff employed by industry bodies or national training authorities, both in the United Kingdom, the rest of Europe and in many Third World countries.

One of the key roles of these organisations, particularly in Third World countries, is to ensure that the application of new skills and insights developed in individual technology transfer situations is multiplied on the widest possible scale so that local enterprises do not devote scarce financial and human resources to "inventing the wheel" all over again. The analytical approach used and the case examples referred to in this paper are essential ingredients in the author's own recipe for the basic training of the training development officer.

(e) Barriers to communication in technology transfer

In the literature dealing with technical exchanges between countries at different levels of economic development much emphasis is placed on the constraints imposed on the learning process by culture differences (eg between the United States of America and Western Europe on the one hand and Third World countries on the other). There is already a large amount of published material on this subject (cf an interesting article on "Cross-cultural training for results" by Robert Nolan and Hiroki Kato which appeared in Training and Development, the journal of the United Kingdom Institute of Training and Development in April 1987). It must however be recognised that other equally, if not more, important barriers to understanding exist within any new plant situation. Of these two the most important are the external barrier to the communication of new concepts in learning and organisational development between social scientists and

industry (two radically different "cultures") and, internally, the problems of communication experienced by HRD practitioners in interpreting these new ideas to their line management colleagues.

It is a matter of observation, in the author's experience, that communication between a European engineer and an African engineer is likely to be much better than between the same European engineer and a European social scientist, in discussing the same kind of problem. The first pair, we say, speak the same language. Differences and problems of the kind referred to here must be taken into account in planning the training of managers who are likely to be involved in new plant situations.

It is contended in this paper that the experience described very sketchily above provides the basis for an approach to meeting the learning needs associated with technology transfer which overcomes the communication difficulties referred to in 1(e) above, and which is capable of being applied in a wide variety of cultural and technical settings. The remainder of the paper sets out to describe what this approach might be, with particular reference to the training of managers and their training advisers.

2. The manpower and training problems of new plants - what makes them different

The general experience of the author's colleagues in ITS who have worked with new firms setting up plants in development areas of the United Kingdom is that the whole area of the management of human resources is qualitatively different compared with the situation found in established firms. This difference is even more evident in the case of new plants being established in the developing regions of the world outside Europe. The needs and problems which arise in this kind of situation, and the strategies for coping with them, are of great interest and importance to personnel and training specialists as well as to students of the ways in which organisations function, and how they change and develop. The subject matter of this experience and of this paper is no less important for the general management of organisations which have to establish new plants of the type which are referred to, and to regional development agencies, including national governments themselves, which are concerned with the successful promotion of new industry and investment in rural areas of their countries. Although this paper will focus mainly on the experience described here as a practical aid to management in the solving of the development problems of new plants, it will also be suggested that it provides insights into the management learning process which have implications far outside the new plant situation, for management training generally.

The two main ways in which the new plant situation differs from that which exists within an established plant are the centrality and comprehensiveness of the personnel and training function and its level of operation in the case of the new organisation.

(a) The centrality and comprehensiveness of the personnel and training function

The established firm, after it has been operating in a given location for a number of years, acquires a complex internal social system which affects all levels and areas of its work. To this is added a range of connections and relationships with the local community which give it a recognisable identity. Most of all, it builds up a reservoir of skills, knowledge and

experience at all levels of its work. The latter represent its most important resource.

The combination of attitudes, relationships and expertise found in an established working team of people whose work is geared to a specific type of product outcome is intangible and, therefore, often taken for granted by management. This is particularly so because so many of the team's processes have come about organically rather than through formal management processes.

This creates a twofold problem when the organisation seeks to replicate this system in a different location. In the first place there is a lack of appropriate knowhow and experience at all levels and in all areas of employment, including supervision and management; in particular the internal and external social systems are undeveloped. The problem which this presents is compounded if management has failed to appreciate the nature and importance of the human resource which it has left behind. In these circumstances, the action needed to re-create the social system in the new location will not have been taken.

To avoid the situation described in the preceding paragraph, the following conditions must be met:-

(i) Management must be warned of the risks they are running for the success of the new enterprise, if they do not give at least as much attention to social planning as to the choice and introduction of technical hardware and software.

(ii) It is essential for management to recognise that existing personnel and training practices, which are geared to the occasional introduction of small numbers of new employees into a large and experienced workforce and an established social system, are not appropriate in the new plant situation. New personnel strategies are required which ensure that comprehensive provisions for recruitment, selection and training are made in ways which are much more explicit, comprehensive and systematic than in the case of the established plant.

(iii) The personnel and training function itself must be accorded a priority and importance well above that which is often the case with the established enterprise. It also follows that the staff of the personnel function must be highly qualified in the key areas of this kind of work, which means that individuals whose performance may be adequate in the established plant may not be at all suited to the new one, even with further training.

(b) The level of operation of the personnel function in the new plant - some key areas of application

In addition to its importance and centrality, the personnel function in a new plant needs to operate much more strongly at the higher levels of management and in policy making than is often found in established plants, and to some extent in different but key areas of work. This is because of the extent to which personnel work in new plants is of an innovative nature, rather than being concerned, as in many established plants, with "maintenance activities". For a slightly more detailed treatment of this

distinction, readers are referred to an earlier article by the author in July 1969. (6).

Examples of key work activities of a higher level kind are:

Design, working through and implementation of management and organisation structures.

Comprehensive manpower planning.

Creating and advising team building and problem solving groups of all kinds - at all levels of management.

Developing industrial relations policies, systems and procedures.

Developing high quality relationships between the plant and the local community.

Role clarification for managers and supervisors, many of them new, so that they may relate and work together effectively.

In concluding this section of the paper, it is hardly necessary to add that, although all major new plant projects have the general features described above, they differ in a great many other ways, of which the level of the new technology being introduced and the size of the culture "Gap" are only two. For all of these reasons, the manpower strategy for any new plant must be based on a comprehensive assessment of all the factors which are likely to impinge on the process of creating the new organisation and making it work well in practice. This problem-centred approach to organisational planning is the primary determinant of the key skills and knowledge which managers and trainers need because they have to be applied at the planning stage.

3. The priority needs for individual managers and trainers in the new plant situation: what they have to be able to do

It is not claimed that the following list of key skills and knowledge needed by managers and trainers in the new plant situation is comprehensive but it is thought that all the really important items have been included. Although the terms "skill" and "knowledge" have both been used, the needs are summarised by the use of verbs rather than nouns, to put the emphasis on what people have to be able to do well, rather than on what they need to know.

(a) Analysing the organisation

The manager at departmental level must be able to analyse and explain the structure of that bit of the total organisation for which he/she is responsible and its relationships to adjoining bits. More senior managers and most trainers are likely to need to exercise this analytical skill in respect of the organisation as a whole.

(b) Role clarification

Managers at all levels and all trainers must be able to communicate freely with each other on the subject of their respective roles and the interactions between them, and deal with the emotional tensions which the process of role clarification inevitably creates from time to time. This particular skill

area is of quite crucial importance in the case of role clarification as between expatriate specialists and their local counterparts.

(c) Job analysis

At the planning and early development stages of a new plant operation, managers need to become good at basic job analysis, right down to semi-skilled work level - this is much much more important than in an established plant because of the proportion of totally new or changed jobs which are involved. This is a specially important skill area for middle managers and supervisors. It goes without saying that the trainer must be able to serve as a resource to management in job areas of special priority (the author remembers still very clearly what was involved, physically, in carrying out detailed skills analysis on a complex new piece of machinery in the paper-making industry over twenty years ago).

(d) Team building and group work

In order to be able to make their full contribution to the building of harmonious and cohesive teams of people capable of working well together under conditions of great pressure, managers must be generally more skilful in the whole area of group relations than is normally considered necessary in the established location where much of this can be taken for granted.

(e) Training

It is of supreme importance in the new plant situation that, in addition to a well qualified personnel and training function, each manager and supervisor should have the design and coaching skills needed if they are to make their full contribution to the training of their own staff. This task is, in a new location, much too large and too important to be left to the full-time trainer, to the educational institution or, worse still, to chance.

(f) Consulting

Consulting is normally thought of as an activity external to the managing process, carried out in the case of manpower problems by the organisation's own personnel specialists or by external consultants. During the planning, start-up and early implementation stages of a new plant operation, consulting and problem-solving activities are an essential part of everybody's job, not least the line manager. If the latter is taught some essential consulting skills for himself, these will be both directly useful in the performance of his own role and will help him to work more effectively with the specialist.

(g) Measurement

In the new plant situation, the line manager needs to be much more aware of the importance of measuring performance - both his own and that of other people but also of the whole part of the organisation for which he is responsible. Targets and timetables are such an essential part of a new plant operation that it provides a valuable opportunity for each manager and his team to make performance measurement an integral part of their way of life in the organisation. An obvious area where the manager and

trainer can learn about measuring together is in the evaluation of training effectiveness at every stage of the project.

All the activities listed above are important for both the line manager and the trainer. The one activity in the new plant situation which is of outstanding importance in the case of the trainer is skill in consulting. This is not always required to the same extent of the trainer working in an established organisation, although that may be in part a reflection of the lowly status of the trainer in many enterprises in countries like the United Kingdom. In the new plant it is vital that both status and skills are raised, if the personnel staff are to make the contribution likely to be required of them.

4. Developing the managing and training skills needed for effective technology transfer - what organisations need to do

The skill requirements for managers and trainers set out in the preceding section seem, from the evidence, to be equally valid if we are considering major new public sector projects such as building a new port or installing a new water supply, or private sector investments to build factories to manufacture television sets or other consumer goods. The nature and level of the technology transfer will vary from case to case as will the constraints imposed by cultural differences, but the underlying manpower problems are unlikely to vary significantly from case to case; it is these which are the key constraints.

It is, for this reason, the author's contention that, in any new plant situation, if these underlying problems are successfully addressed, the complexity of the technology involved or the culture "gap" encountered will prove much easier to deal with. Because of the frequency with which the opposite is assumed, readers of this paper are referred to the general argument on this subject which appears in the Amsterdam conference paper presented jointly by the author and J B Senior of ITS in 1983 and referred to in Section 1 of this paper. (2). In this section of the present paper notes will be added where appropriate on the special problems which may arise where the technology gap is abnormally large or cultural differences present exceptional difficulty. (NOTE : The former of these two situations is distinctly the easier to deal with, in so far as the simplest way to deal with an unduly wide technology gap is to recognise that some more appropriate technology should probably have been chosen in the first place.)

The emphasis throughout this paper, and particularly in this section, is placed on the actions which organisations can themselves take, internally, to deal with their basic problems in training and development. Educational institutions in the country providing the technology and those in the country receiving it may have a useful but peripheral role to play, but the central tasks which require to be done cannot and must not be sub-contracted to external bodies. This particular "buck" stops fairly and squarely on the desk of company management.

Finally, it will be suggested that the acquiring of skills and knowledge which trainers and managers need in the new plant situation can and should be an integral part of the process of planning and managing the project. The simple philosophy underlying the approach being advocated is that of self-help, as opposed to dependence on others, and the learning strategy employed involves the

use of real work and real problems throughout as the basis of personal and team development - ie action learning.

(a) Creating a learning climate

If, as suggested in the introduction to this section, the organisation in technology transfer situations must take full responsibility for managing its own learning, this must be provided for at the earliest stage of all, when the project is being planned and the organisational structure and climate is being formed. Although there is no set formula for doing this, case examples studied in a wide variety of settings suggest what are the approaches most likely to promote at one and the same time a learning atmosphere and successful results:-

(i) The first team to take shape in any new plant project is the top management group. In the case of a new plant being established by a European company in a Third World country this will be initially mainly or wholly an expatriate group. It is within this group that the first important kinds of learning take place, so that as the project continues the shared approaches and values which are evolved and articulated within this group become the basis for influencing the behaviour of the plant construction team (probably a wholly expatriate group with a particularly strong technical ie engineering bias) and the counterpart management team of indigenous staff which will in due course take on all the roles of the first group.

(ii) If the managers appointed to the top team are not familiar with the approach being described here, it is quite essential that they should use the services of a small manpower development team (who may be either internal or external consultants) to help the group with its own development problems by giving it feedback on its progress and also to help the group prepare a plan for the development and training of their subordinates as indiviuals and teams. The use of high calibre trainers in this consulting role is one of the key characteristics of the approach which is being advocated.

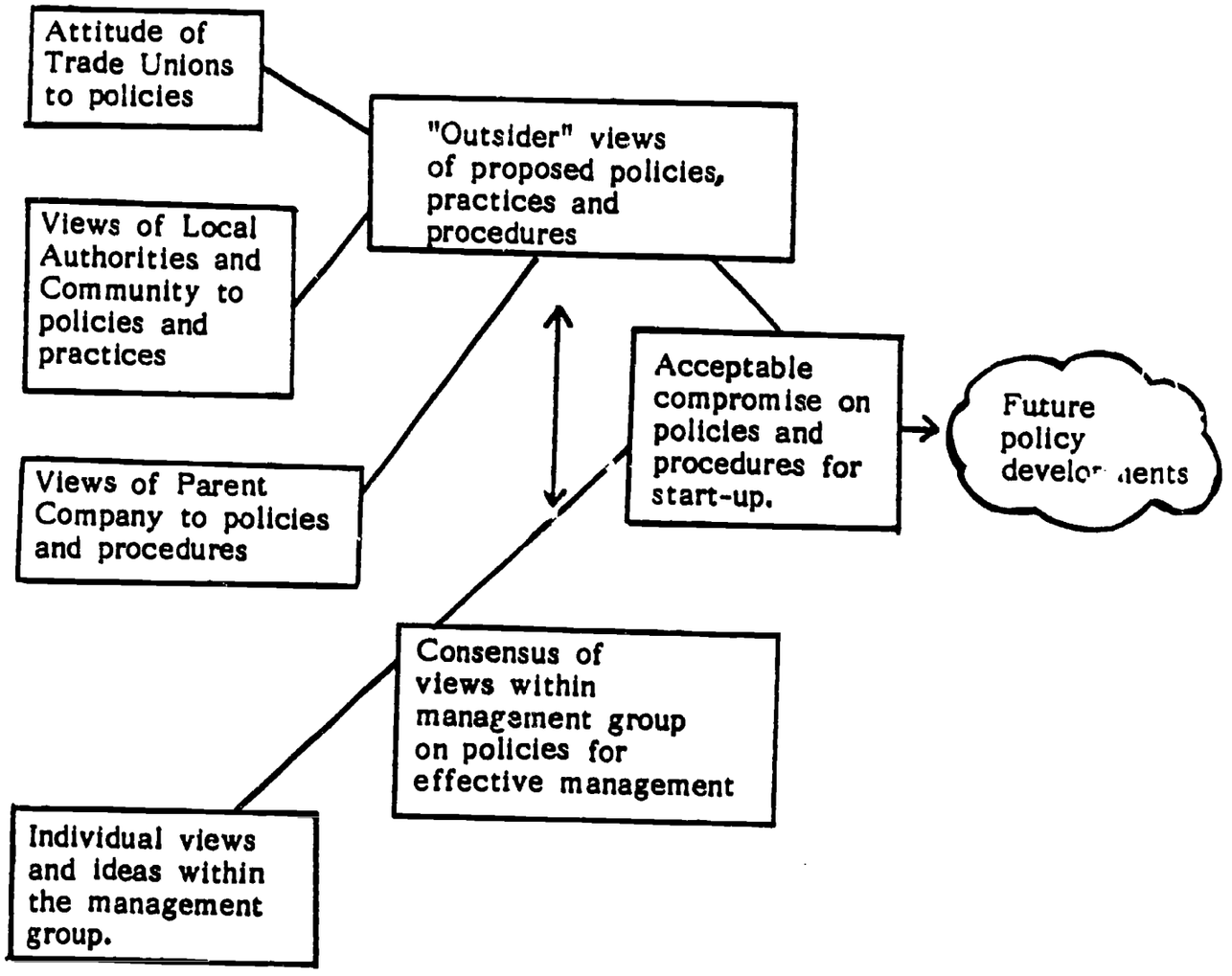
(iii) In an actual case of this type, starting a full year before the proposed commissioning date for the plant, such a top management group of seven met in an avowedly learning environment one day each week to review and share their understanding of the development needs of the new organisation. Policies in such diverse areas as manpower planning, safety, quality control, production control, accounting and engineering mainenance were discussed on these "learning days" with the deliberate intent that the team members should learn more about the processes of the group and thus become a better team through better understanding of how they were achieving their targets. In addition to formal training sessions and regular feedback on group process from the trainer/observers co-opted to the team, smaller groups subsequently worked up detailed practical applications of ideas discussed by the whole team, team visits were arranged to outside organisations (in the United Kingdom and overseas), and individuals attended selected short courses from time to time to experience new ideas.

(iv) In all these ways the team developed a very close and highly effective set of working relationships based on a common philosophy and managing style. (NOTE : it is interesting to note from a number

of case examples where this approach has been used from the very beginning that new management recruits (and particularly counterparts in a cross-cultural technology transfer situation) experience great difficulty in breaking into the management team, an experience sometimes referred to as the "late arrival" syndrome.)

(v) The discussion, thinking and planning described above was based on an on-going negotiation of the following model:-

Model for Development of Policies,
Practices and Procedures in the
Pre-Commissioning Period of a New Plant



This model was used in the case described and, with modifications in others by a number of ITS consultants working in the United Kingdom. It was included by Jim Haig, now Managing Director of ITS in his part of the joint presentation at IFTDO Dublin 1981, referred to in Section 1 above (1). All the stages involved in the process of policy formulation for a new plant can be covered, and mostly are, without the use of a model of this kind, which is simple enough in all conscience. What is truly significant of the approach described above is the use of the model and the training processes associated with it to make explicit to its members what was happening within the group as a means of increasing its effectiveness as a team in the future.

The work of the top management group, at the pre-commissioning stage, to turn itself into a cohesive and effective team which has consciously and deliberately taken responsibility for the management of its own learning is, of course, only the first, but certainly the most crucial, stage, in creating a "learning climate" within the new organisation. The same processes must be followed in integrating new members into the group, whether expatriate or local, and a similar set of processes must take place at the middle and lower levels of management and supervision as the plant reaches the start-up point and production is under way.

(b) Data collection - with particular reference to manpower planning

During the planning, commissioning and pilot production stages of the establishment of a new plant, managers and specialists within the management team must undertake a wide range of data collection tasks, the successful performance of which is vital to the effective running of the unit when fully operational. All these tasks provide valuable scope for managers to acquire skills in the handling and interpretation of information which will not only help them to run a more efficient plant but will have wide general application in all their future work as managers.

Whereas the plant when full operational will have a fully trained labour force which only requires occasional and marginal changes in the number and quality of its employees to reflect wastage, expansion or changes in materials or methods, the planning phase of the plant when it is still on the drawing board provides a major "one-off" opportunity for both managers and trainers to acquire skill in manpower analysis and planning which may occur on only rare occasions during their careers. As with team building activities of the kind described in sub-section 4(a) above, manpower planning and the overall assessment of plant training needs provide a threefold "pay-off" if the learning implications of the situation are fully exploited ie the basic tasks themselves are done well, the individual managers and trainers involved acquire skill and knowledge with long-term benefits both to them and the organisation, and the joint achievement of goals in this area of activities is a particularly valuable way of strengthening the teamwork process.

Although the lead in the case of manpower analysis may be taken by personnel or training specialists who will have the professional responsibility for designing the approach to be used in constructing the manpower plan and for monitoring its implementation in practice, the work involved can readily be divided into a series of tasks and sub-tasks some of which are better performed by manpower specialists, others by line managers and

others again by technical specialists. In many cases small multi-disciplinary teams provide even better mechanisms for collecting manpower data and reviewing its usefulness, apart from the fact that they also provide more scope for learning and teambuilding.

The data needed can be grouped under at least eight headings, although the activities under each are inter-connected in various ways. These headings are:-

(i) The size and shape of the organisation

How big a plant will it eventually be (total numbers, output etc) - at what rate will it approach that size - what kind of organisational structure will it require - initially - eventually - what will be the likely size of the management and supervisory teams in the various main departments and technical services?

(ii) Plant technology

What technical systems of work will be employed - machines, materials, methods, level of information technology, range of products. Local maintenance facilities - key skill areas.

(iii) Commercial services

Legal framework of plant (nature of parent company link) - commercial tasks involved (local marketing operation or not) - range of commercial services needed, with particular reference to the role of the computer.

(iv) Other support services

Plant facilities which will require staffing over and above production, commercial and engineering maintenance of catering, security, transport, staff welfare including housing.

(v) Local labour market

Supply situation for all key entry grades of plant employment - local sources of information - degree of competition for skilled labour - local facilities in basic technical education and vocational training - likely need for plant to make major provisions of its own in latter areas.

(vi) Parent organisation

Current and expected situation in relation to the provision of technical data, staff on loan, support services with particular reference to access to company training facilities.

(vii) Home country of parent organisation

In the case of technology transfer between Europe and the Third World it is essential to develop at the earliest possible stage a realistic assessment of the likely need for attachment and training

facilities in the country where the technology originates - and the expected timing of demand for these services.

(viii) The Personnel and Training organisation needed

It is essential to make an early judgement about the size and calibre of the personnel organisation needed for the plant - at the planning stage, during build-up and after complete handover to a local team. To some extent (ie at the planning stage) this decision must anticipate the facts.

Some of the more important issues listed above will be dealt with, in outline at least, by the top management team at the pre-commissioning stage described in sub-section 4(a) above, but others will be the responsibility of the personnel and training team working in cooperation with line management at middle and senior levels of the new plant organisation as it develops. The three main sources of relevant data, ie existing records of all kinds, people and organisations in both countries involved, and the parent organisation itself, can be explored in a variety of ways by individuals or small groups using carefully designed projects as a means of learning from their experience. The key role of the personnel professionals in the process is to propose the goals and objectives for each project, to provide technical advice and coaching in the skills of manpower analysis and training needs assessment, to give feedback on progress as requested and, generally, to monitor the whole data collection activity.

The outputs which management will get from this programme of work and learning will take the form of comprehensive plant manpower forecasts and training plans, to which all the managers who have been involved in their formulation will be fully committed. The skills and knowledge which managers and trainers will gain from their experience will be in data collection methods such as questionnaire design and interviewing, in the assembly and analysis of a wide range of technical, economic and social facts, in interpreting this information, in presenting their conclusions to colleagues and, where differences of opinion arise, in selling their ideas to their peers and superiors. The learning opportunities for managers in all of this are quite enormous.

(c) The use of simple models in organisational analysis and planning

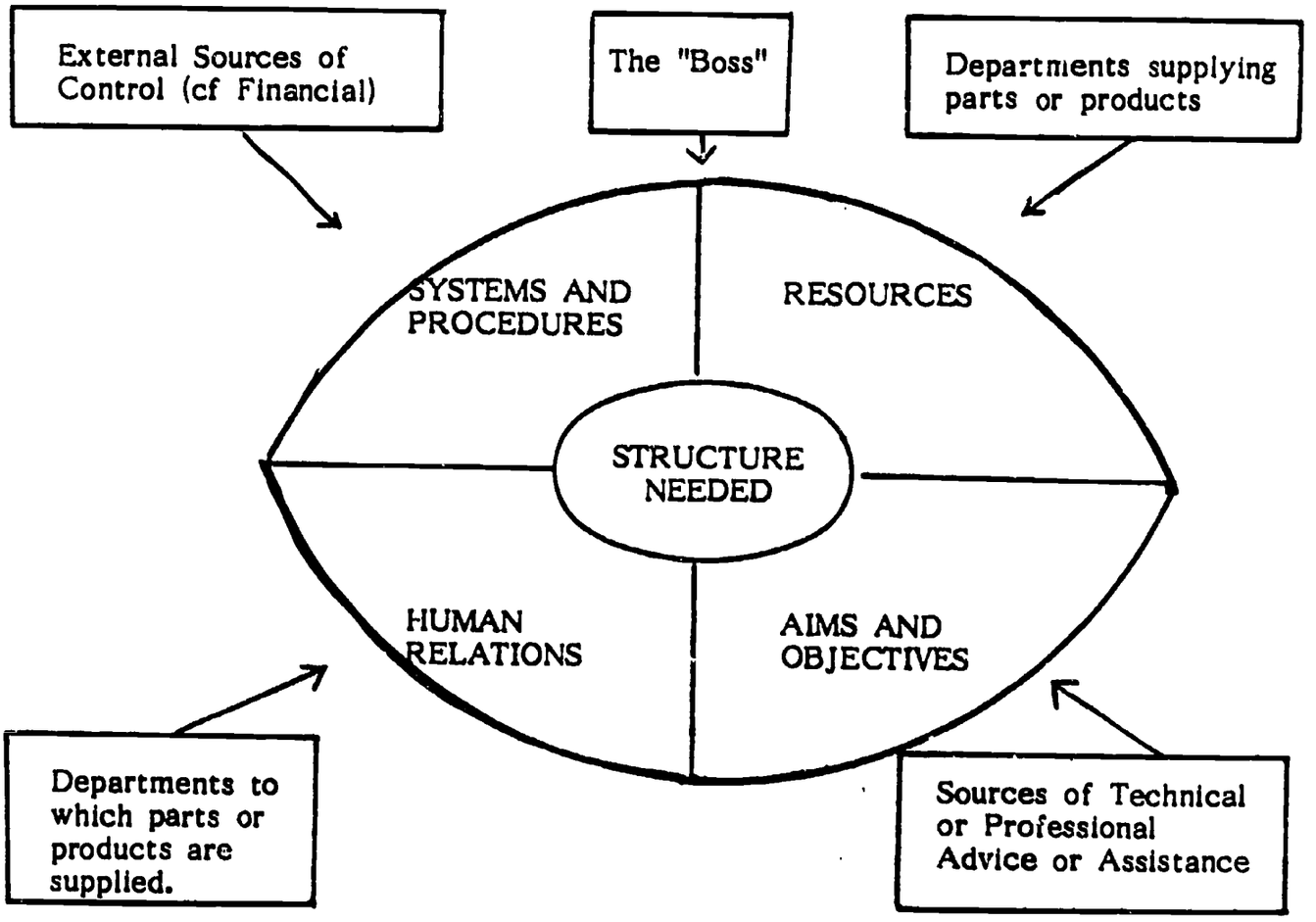
The degree to which departmental organisation structures and relationships are planned and prescribed centrally for any new plant will, of course, vary from case to case according to the aims and values of the top management team. In all new plants there is, however, considerable scope for departmental management teams to develop and propose structures and relationships which are congenial to them and to negotiate with other teams on relationships at the interface between departments. This will be a particularly important activity in the early stages of plant operation, but if the skills and knowledge required to carry it out are firmly established, they will be of great value to the individual managers concerned and to the organisation itself when it has to adapt to future change.

In organisational planning and development, the manager needs a model, preferably a simple model, to guide him in the selection of the data to be analysed and in ascribing priority to the problems and needs which the data reveals. In the course of its early work in individual companies and public sector organisations, ITS developed a simple diagram for categorising all the

kinds of data which needed to be assembled in the course of the analysis. These were summarised under four headings:

RESOURCES
SYSTEMS AND PROCEDURES
HUMAN RELATIONS
AIMS AND OBJECTIVES

The model, initially used as an aid to identifying company training needs, has for convenience been depicted as a wheel, where the rim represents the interface between the organisation and its environment and the hub represents the training needs of the people employed in the organisation. The same wheel can be used to summarise all the factors which impinge on the performance of a single department and therefore provide insights for management into the kinds of structure which are needed, and on the key issues which are likely to arise for the department in dealing with its environment, which is the rest of the plant.



If managers are taught to use a simple model of this kind, it provides the individual manager with a tool which helps him to interpret the data he needs on problems of structure and relationships, and a language which he can use in communicating with his colleagues and his boss on this subject.

Linked to some basic understanding of the concept of role and skills in the task of role clarification when working with individual colleagues and subordinates, the wheel model is an extremely versatile device which helps

the manager to manage his environment and manage his learning more effectively. Role analysis is dealt with in sub-section 4(d) below.

(d) Role Clarification

The process of organisational planning referred to in the preceding sub-section creates the structure of the organisation, which groups tasks into jobs and jobs into departments, units and sections and links them all together through processes and systems of communications and decision-making. Managers at all levels within a new plant find themselves getting involved in this activity to a much greater extent than in most established organisations.

Within any organisation, managers also have to come to terms with the fact that they may each occupy only one job, but that they have to play a number of different "roles". The process of role clarification, whereby each manager becomes quite clear, through negotiations with his colleagues, what his different roles are and how best to play them, has to be carried out more rapidly and under conditions of greater pressure in the new plant situation. It is for this reason that the managers and supervisors concerned should learn how to recognise the roles required of them and be able to perform them correctly.

(i) The roles which managers perform

One of the difficulties of carrying out any managerial job arises because of the number of different roles which have to be played, eg planner, doer, subject expert, counsellor, evaluator, coach etc. In addition, the manager has considerable scope for choosing what role to adopt in a given type of situation. Because managers tend to choose the roles they are most comfortable with, apparently similar management jobs may be done in vastly different ways, depending on the roles chosen by the job-holder.

(ii) Role Ambiguity

Where managers are frequently unclear about their own role or about what behaviour to expect from a colleague, relationships can be adversely affected. Many so-called personality clashes are really caused by role ambiguities, which are both common and damaging in the case of the relationships between expatriate managers and local counterparts.

(iii) Role Conflict

Serious conflicts can arise and persist if roles are allowed to evolve in a totally unplanned way Examples of this are where the role requires long hours of work which conflict with domestic pressures, where there is a clash of job priorities, or where differences arise between bosses and subordinates as to the amount of authority which needs to be delegated.

(iv) Role Overload or Underload

Overload occurs where too much is asked of an individual in terms of the work output expected or the variety of roles expected of him.

This may be contrasted with role underload, eg where a technologist is expected to carry out tests which he perceives as routine.

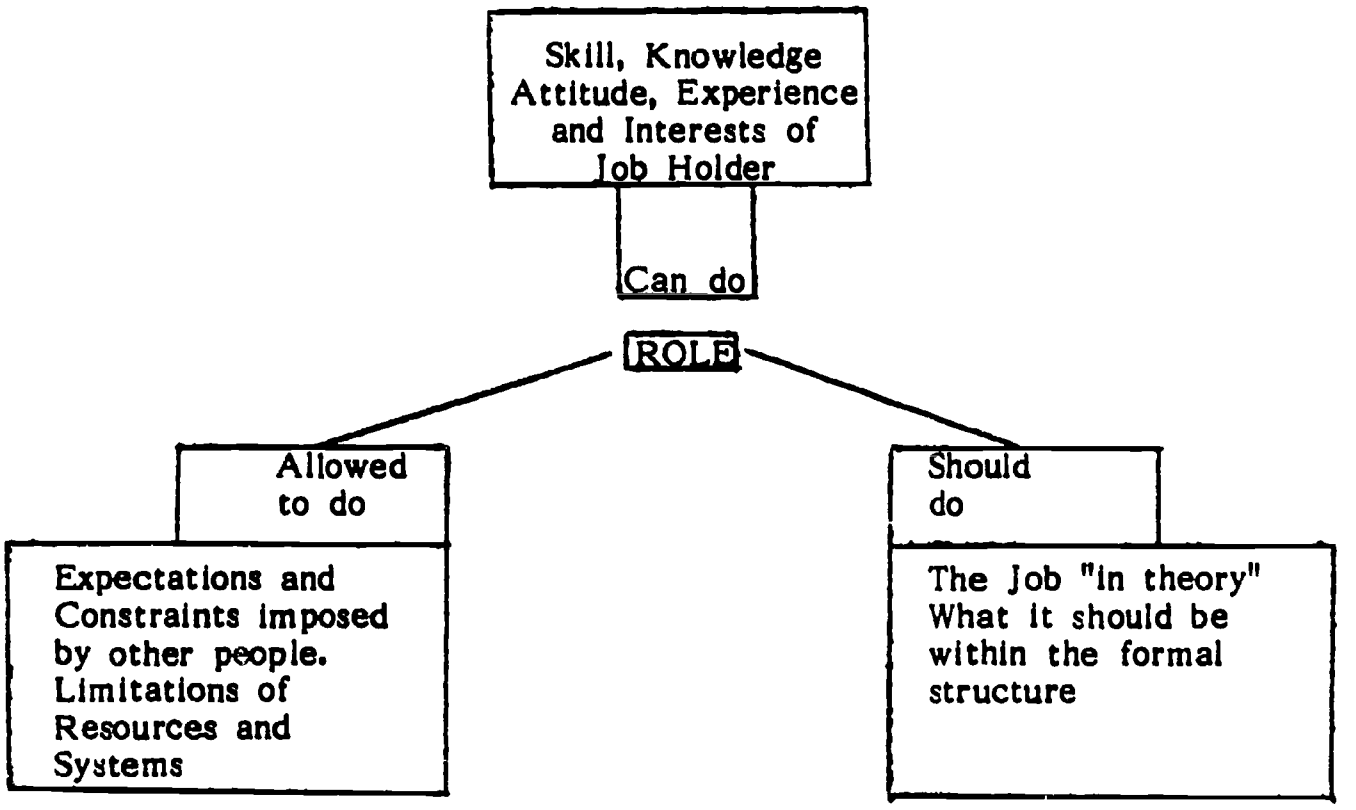
(v) The purpose of role clarification

The purpose of role clarification is to help individual managers understand what the organisation requires of them, so that they can learn to fill the appropriate roles. It seeks to help each job holder to recognise more clearly the factors which influence his job behaviour and to understand what is involved in achieving the most appropriate balance in responding to those influences. Some of the most important influences are the view the job holder has of the role required of him, the expectations about his behaviour on the part of his boss, his subordinates and his peers, the tasks prescribed for him in the formal organisation, his abilities and interests - and so on.

(vi) Role pressures

Although many different factors affect the behaviour of a manager in a role, three of the main pressures on behaviour which often pull in different directions are the purpose of the role within the formal structure, the constraints imposed by the expectations and perceptions of other managers, and finally the way in which the role is personalised as a result of the abilities, interests and choices of the role holder.

This is illustrated in the following diagram:-



(vii) Using role clarification in the new plant situation

Almost all the symptoms of a critical need for role clarification to be carried out tend to show in the earliest stages of new plant development. Typical examples of these are confusion about lines of authority, confusion about priorities in allocating time, tasks either

not being done at all or being duplicated, key decisions being postponed etc.

A role clarification programme for the plant as a whole can, if introduced at a sufficiently early stage, serve to anticipate and therefore avoid the most serious forms of role conflict. Although the programme may be planned and steered by a team of personnel professionals, it can only succeed if all the key job holders are involved in and committed to it. A typical example of a training aid in role clarification is the role set exercise, in which individual managers are asked to draw a "map" of their role showing which relations are regarded as most important for effective job performance and placing individuals on the map closer to or further away from the central role according to the frequency of contact with them. Finally the exercise involves selecting three individuals or groups with whom the manager has most difficulty (eg in terms of role expectations). Within the learning group pairs of managers are then asked to discuss the maps they have drawn and the issues which they illustrate.

As with the "wheel" approach to training needs assessment and organisational planning, a systematic approach to role clarification throughout the management system of a new plant produces a number of benefits: it reduces role conflict within the organisation, it helps managers to acquire insights into their own behaviour and that of their colleagues which will be valuable to them in dealing with future problems of a similar kind, and it provides them with a common language for communicating with others on this subject.

(e) Job Analysis and Learning Design

In a new plant the need to develop from scratch a complete set of job breakdowns and training programmes for a large number of plant operatives, maintenance craftsmen, technicians and technologists against a very tight timetable presents management at one and the same time with an extremely difficult task which also provides a major learning opportunity.

The following summary concentrates on the training of plant operatives and is based on a number of case examples of new plants being established in rural areas, where the technology involved was a mixture of established processes and new approaches in the proportion of around 3 : 1. In each case, for each major department, the tasks of preparing job breakdowns and outline training programmes were carried out by small teams of the line managers and supervisors who would in due course be responsible for running the departments concerned. Trainers were allocated to each main area of plant operations as a technical resource to the teams, not to do the work for them.

(i) The aims of the approach

By involving large numbers of managers and supervisors directly in the process of learning design, it was intended that the plant should get three main outputs : well conceived and practically-based programmes of operative training ready in time for start-up, a strong commitment on the part of all the managers involved to make the training work well in practice, and finally a team of managers with the necessary skills and knowledge to bring this result about.

Although not always formally included in the initial aims, it often proved to be the case that the plant gained an important long-term benefit through having a large number of managers who could deal with the learning issues which arose at later stages when new employees joined as replacements, when expansion took place, or when technology changed.

(ii) Initial Preparation

The personnel team played a key role at the preparatory stage in each case, visiting both the parent company and other enterprises who were supplying specialised equipment to identify the range and type of operative jobs for which training would have to be given and to prepare outline analyses of the main tasks which comprised each job. (NOTE: This sub-section focusses attention on the training of the plant operative. In practice, initial studies of training need covered all job categories including management).

During the preparatory stage, assessments were also made of the training resources available in the parent company and from equipment suppliers, and of the key staff who would be needed as a nucleus of technical experience in the new plant, both as trainers and to work directly as supervisors or key operatives until local staff had reached an acceptable level of performance. Finally, manpower forecasts were finalised, incorporating estimated training times for each key job category.

(iii) Training Principles and Methodology

Central to the approach was the intention that key job holders should have responsibility for ensuring that their subordinates could perform their jobs well. Each key individual (managers, supervisors and engineers) would be involved in the analysis of manual jobs and in the design and implementation of training in their own sections. To this end they had to be given time to acquire the necessary trainer skills for their new roles and to prepare detailed training plans. A team of trainers (in small plants this might be a single part-time trainer) would monitor the whole process and provide specialist advice. Measurable objectives would be set for each training programme. Finally, in each section of the plant, operative training would be a team activity, which would reinforce the team building activities being provided in other parts of the plant development programme.

(iv) Developing and Implementing the Training

Although the overall action plan for training differed in considerable detail from case to case, each plan involved the creation of a series of small teams consisting of managers, supervisors and key operatives who had to follow a four-stage programme consisting of their learning the new work themselves, preparing detailed technical dossiers and training manuals for each job category, acquiring basic trainer (particularly instructing) skills and finally training teams of

operatives, often in the parent company initially, but as soon as possible at the new plant location.

The training methods involved include one-to-one coaching by experienced parent company staff, action-centred learning in which the trainees undertake projects to find out all there is to know about new materials, or to write quality specifications, tutorials for small groups to consolidate each day's learning, and preparatory work by trainees on fault analysis charts, set-up instructions for machines or procedural instructions for administrative jobs.

(v) Key aspects of the approach

It is clear from common experience in a number of new plant projects that the key features of the approach adopted have been the preliminary assessment of the overall training needs by an external manpower consultant or a senior company trainer, the openness with which development plans for the new plant were discussed at all levels of the organisation, the use throughout the project of a high calibre training team or individual to monitor its progress, and the central decision to make departmental management teams responsible for planning and implementing all their own learning.

New plant start-ups which use the approach to learning described above almost always achieve both output and quality targets and often exceed them. They also achieve high morale, a sense of purpose throughout the workforce, and integrate most successfully within the local community.

(f) Training local counterparts

The training of local counterpart staff in technology transfer where two different cultures are involved will not normally need to be dealt with significantly differently from training given to parent company staff. This is because the action learning approach within the organisation is particularly well suited to meeting the special needs of the counterpart which, in addition to those which he shares with his expatriate colleagues, are:-

(i) To become strongly motivated in the whole area of accepting and carrying business responsibility.

(ii) To be assertive in carrying out management tasks, without being aggressive.

(iii) To acquire a particularly high degree of skill in presenting his views to colleagues and influencing their acceptance.

The help and support which the counterpart needs from his expatriate colleagues is, of course, much more likely to be forthcoming within the framework of an organisation which has been designed to facilitate learning,

and where as far as possible management teams are made responsible for organising their own learning.

(g) Measuring Results

Although there is insufficient space in this paper to deal fully with the important subject of measuring management performance, it is useful to note that the new plant situation provides a number of basic opportunities for management to establishment "benchmarks" for performance measurement and to acquire the skills and knowledge needed to carry it out. Two key examples can be drawn from the cases referred to in this paper:-

(i) The Key Result Area approach to performance measurement

In the course of carrying out the role clarification activities described in sub-section 4(d) above, it is only a small step to identify the key result areas of each job holder, ie those aspects of the job which, if done extrremely well, will ensure the job as a whole is done well. On this analysis of their work priorities management teams can base an ongoing system of individual and group performance appraisal which uses the minimum of paperwork.

(ii) Training evaluation

Just as the maintenance engineer has a once-in-a-lifetime opportunity to learn about the machinery for which he is going to be responsible if he is present when it is being installed but before the concrete is poured, so the trainer has a one-off opportunity to establish useful criteria for the evaluation of training effectiveness when training systems are being installed for the first time in a new plant.

Some of the key activities which may be involved at this stage are to define clearly the objectives of each training arrangement, determine an appropriate training method, calculate the significant costs involved, check to ensure that there can be no obviously less costly way to achieve the same results, make sure the learning objectives will have a business pay-off which can be measured and, finally, set up provision for feedback at regular intervals, not just at the end of the training cycle.

The preceding paragraph gives only the sketchiest outline of a practical approach to evaluation. A detailed account of ITS experience in trying out a range of possible ways of measuring the outcomes of training is given in two papers on this subject by Alun Jones of ITS, one given at the British IPM Conference in 1970 and the other (unpublished) written in 1972 (7) and (8).

(h) The role of the personnel and training specialist in the new plant situation

Although great emphasis has been placed throughout this paper on the extent to which managers, supervisors and others working on a new plant project must be made responsible for the management of their own learning, experience has shown that this makes more rather than less demands on the skills and knowledge of the personnel staff, and particularly the senior trainers involved. Their key roles are in the initial assessment of overall training need, in advising top management on the development of

a comprehensive manpower strategy, in teaching trainer skills to large numbers of managers, in acting as process consultants in role conflict situations and generally in providing training advice and feedback on results throughout the project.

It is not easy to find trainers with the necessary skills and knowledge to carry out this role and it is often necessary to use a combination of external consultants and internal trainers to provide the full range of consulting skills and company knowledge which is required. Training in the new plant situation is, however, a unique learning opportunity for the trainers themselves, from which they gain both new insights and new skills which can be of great benefit to their parent company thereafter.

5. Some wider implications

The experience of developing personnel and training programmes in new plant projects where a considerable amount of new technology transfer is involved has applications on a much wider scale:-

(a) For the individual manager

The manager who is trained to deal with the issues described above acquires skill and knowledge which are likely to have useful applications in a wide variety of other situations. This might involve development work at the same plant in the future, where involvement in the start-up phase and the insights which this provides, will make it much easier for the individual manager to deal with future change. Examples of this might be helping new recruits to come to terms with their new roles, or recognising the need for changes in structures or training arrangements.

Alternatively an expatriate manager should find his career prospects in his parent company considerably enhanced when it becomes clear that he is not only a more skilful manager than he was before, but that he is motivated to continue his own self-development and knows how to make to make it happen.

(b) For the new plant

A new plant which has enjoyed a trouble-free start-up and has a well-trained workforce from the beginning, should and normally will operate in highly cost-effective way. When it does run into trouble or has to adjust to changes, it will be able to deal with most of these issues by itself and not have to seek expensive help from the parent organisation or suppliers. This will be particularly the case with such services as plant maintenance.

(c) For the parent company

What is good for the individual manager and for the new plant will also be good for the parent company. The flow of benefits which it will gain will include such varied items as better trained managers, a high return on capital invested, less demands for help in the future than is usually the case, better relationships with the local community and local government

institutions and, as indicated in sub-section 4 (h) above, a better qualified and generally more resourceful personnel department.

(d) For the developing economy

Third World countries will obviously gain directly from having profitable manufacturing units or cost-effective utilitites which, when new, have a trouble-free start-up and a well-trained and adaptable labour force. They are also likely to enjoy at least two "spin-off" effects of a more indirect kind ie:-

(i) Training facilities in the local community where each plant is established will improve generally as a result of the demands made by the plant and the good example which it sets.

(ii) Knowhow associated with the process of launching a successful new plant will spread informally to other businesses and public institutions, permitting them to apply it to great advantage in their own affairs.

(NOTE: a third possible benefit whereby local firms might seek to poach skilled labour from a particular new plant development is very likely to be offset by labour flows in the other direction).

Much more benefit still will be obtained by countries which systematically use new plant developments to disseminate knowhow throughout the local industrial community on this subject. This is essentially a task for the training development institutions which have been set up in many Third World countries, either as part of a Ministry of Labour or Manpower, or as independent training authorities such as SENA in Colombia, SENATI in Peru, or the ITF in Nigeria. This kind of knowhow is also of course of great value to industrial development corporations such as SABIC in Saudi Arabia.

The latter theme is developed at considerably greater length in the Amsterdam conference paper referred to in Section 1 above (2).

6. CONCLUSIONS

The main theme of this paper has been that, in new plant situations however complex or simple the technology transfer may be, both the immediate and the ultimate responsibility for managing the learning involved rests fairly and squarely with the plant management, and cannot be sub-contracted to a network of outside organisations.

To fulfil this responsibility, management needs some important new resources: a resourceful and highly professional personnel team in an advisory role, and a wide range of new skills and knowledge on the part of its managers and supervisors, individually and in teams.

Within an organisational climate which is openly sympathetic to learning and development, experience in a large number of similar cases has shown that individual managers, using an approach strongly biased towards "action learning", not only deal most successfully with their work problems in the new plant, but

also find that their new skills and appoaches transfer equally well back in the parent organisation or elsewhere.

Perhaps the greatest potential benefit of all in the new approach comes in the training of local counterparts in a cross-cultural transfer of technology. The key features of the approach which make it work well in his case are the openness of the communication system, the stress on teambuilding and teamwork, and the unequivocal devolution of responsibility for his own learning and development to the individual manager at every stage in the project.

REFERENCES

(1) "Developing New Organisations - Training and Organisational Development in Greenfield Site Situations". Paper by F W Greig et al. International Federation of Training and Development Organisations: 10th Annual Conference, Dublin 1981.

(2) "Training for Employability and/or Productivity - the Problem of Transferring Knowhow at the Cultural Interface". Paper by F W Greig and J B Senior. International Federation of Training and Development Organisations: 12th Annual Conference, Amsterdam, August 1983.

(3) "How do UK Firms Prepare their Employees for Technological Change?" What are the implications of Company Experience for Training Institutes and Schools?" Paper presented by F W Greig at a European Forum on "Technological Change, Employment and Training" held in Milan, May 1986.

(4) "Making Training Interventions more Effective" Article by Dr J A G Jones in Journal of European Industrial Training, June 1982.

(5) "Training Intervention Strategies - Some Practical Applications - Get it right, do it well, make it stick". Article by Dr J A G Jones in "Training and Development" - February 1985.

(6) "Innovation not Maintenance" article by F W Greig in "Personnel Management", July 1969.

(7) "Evaluation and Cost Effectiveness of Training" address by Dr J A G Jones to National Conference of Institute of Personnel Management" in 1970, reprinted as article in "Industrial and Commercial Training" November 1970.

(8) "A Practical Framework for Evaluating Training" - unpublished Industrial Training Service paper written by Dr J A G Jones, 1972.

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CONTINUING TRAINING
IN ENTERPRISES FOR
TECHNOLOGICAL CHANGE

THE EVOLUTION OF EMPLOYMENT AND TRAINING IN THE AUTOMOBILE SECTOR PEUGEOT GROUP

"WHICH TRAINING FOR WHICH EMPLOYEES"

BY:
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- THE DEVELOPMENT OF INDUSTRIAL SYSTEMS

. COMPLEXITY
. GENERALIZATION
. INTEGRATION
. TOWARDS NEW FORMS OF WORK

- CONCEPTUAL APPROACH

. PRODUCTIVITY AS A GLOBAL CONCEPT
. MANAGEMENT: THE DYNAMISM OF THE ENTERPRISE

- ACTION POLICIES

. NEW PROFILES
. NEW ORGANIZATIONS
. NEW WAYS OF BEHAVING

- CONCLUSIONS

THE DEVELOPMENT OF INDUSTRIAL SYSTEMS

Automation, which has been long a concern in the automobile industry, is part of a flow of coherent and continuous evolution in which the technologies and social structures interact: whilst all technology initially had to be dreamed of by humans, what has been successful has also been accepted by human society.

With the constant striving towards greater competitiveness and the development of micro-electronics automation has now entered a phase of acceleration. The robots are the most advanced of a whole line of machines which have made increasing use of "intelligence" and have been part of a certain pattern of major developmental characteristics:

- a growing COMPLEXITY of the means of production with corresponding new qualifications, new profiles and new forms of knowledge;

- GENERALIZATION of automatic machines in more flexible self-regulated systems associated with new types of organization and new modes of thinking;

- INTEGRATION of the techniques and functions inevitably leads to new forms of work, new ways of behaving and new types of relationship.

In all these fields the objectives of competitiveness arise more from changes in dimension than from local improvements.

They stem from different cultural backgrounds:

- abstraction alters the relationship between man, the machine and the product; the activities of production become "intellectualized", gradually reducing the gap between those who think and those who execute;

- information reaches all the cells of the factory, as far down as the machine operator, through means of production which generate, transform and process an increasing number of data: a new distribution of roles and powers evolves, altering the inter-personal relations in and between teams.

TOWARDS NEW FORMS OF WORK

Robotics has frequently been presented from the reductive viewpoint, with the emphasis on the loss of jobs. However, here it is necessary to distinguish between jobs in terms of profiles and jobs in terms of employment, and between gross and net, direct and indirect, short- and long-term effects. Moreover, it is not possible to deal with the relationships between technical progress and employment in isolation, since they are closely associated with a specific economic period and industrial strategy. While it is true that robots have replaced humans, in particular in the execution of certain un-

pleasant functions, they have also very often replaced machines which had already been automated, providing an even higher level of flexibility. Robotics does not simply mean replacing humans with machines, but is one technical component among others contributin to the extensive reorganization of the industrial system in response to the demands of competition. In this particularly complex process the effects of robotics, or rather, of automation in the wider sense, are probably greater on the training for and characteristics of jobs than on their status. There is a shift in the major stakes and it becomes less a question of keeping a specific job than of keeping a job at all. From the effects on the status of a job we progress to those on its characteristics and structure, also its flexibility, the fluidity of the internal and external labour markets, and the adaptability to the system of production.

In the management of these changes developments in organization and human skills are the main elements. They call for an appropriate conceptual approach and suitable action.

CONCEPTUAL APPROACH

PRODUCTIVITY AS A GLOBAL CONCEPT

The traditional model of the enterprise tends to give priority to technical problems and financial concerns. Today the approach is different: the diversity, contingency and complexity of the industrial systems imply a more global approach in which technologies and social structures are seen as mutually co-determined.

Industrial systems can only develop if the people concerned function as the originators and protagonists of the new organizations produced. The competitiveness which is at stake then depends essentially on the capacity to mobilize the imagination, intelligence and will of the personnel.

The information generated in fact permits the exercize of intelligence to spread to all the cells of an enterprise. This gives rise to a potential for reflexion, creation and decision-making.

MANAGEMENT: THE DYNAMISM OF ORGANIZATION

The management of the new systems can no longer be conceived in terms of norms and standards but in terms of coherence between the policies of action, the objectives of the enterprise and the expectations of the personnel. It is a dynamic rather than a model, which shows us in which direction and to what extent we should develop

without departing too far from the dominant cultural traits of the enterprise.

POLICIFS OF ACTION

NEW PROFILES

Whilst the process of development of automated systems is not linear, it is also not homogenous, and, depending on the sector, the associated qualification structures sometimes differ considerably. However, over and above this diversity there is an emerging trend towards substantial retraining. There are an increasing number of high-level technicians in production groups and workers increasingly highly qualified in the installation of equipment. Everywhere increased efforts are being made with regard to training and profiles are taking new requirements into account. They are determined on the basis of criteria of technical competence, open-mindedness, and the ability to understand organization, to work together. People are being required to be more mobile, more versatile, more creative and at the same time to add considerably to their purely technical qualifications.

In these far-reaching transformations of the qualification structures training as an investment appears as high in the list of priorities of industrial projects as material investments. We are thus witness to the emergence of a more general concept corresponding to a new industrial and social factor, namely "non-material invest-

ment". From now on human intelligence will constitute one of the main strategic resources of a business.

These developments in the qualification structures are taking place against the background of a policy of manpower adjustments, together with effects of volume, technological and organizational developments and industrial restructuring. At the end of 1986 the Peugeot Group had 165 000 employees of whom 66.5 % had worker status (73 % in 1978).

These adjustment measures have particularly affected the less qualified vocational categories, inducing by a simple mechanical effect a rise in overall qualification levels which is augmented by the effects of internal training and the raising of the recruiting levels.

- Workers' careers can now be individualized and have a wider scope, and from now on recruitments will be at the level of workers with vocational qualifications. The proportion of non-qualified manpower in the working population has fallen considerably (for example, at Automobiles PEUGEOT the percentage of workers with the UIMM classification level 1[1] has fallen from 57.8 % in 1978 to 12.4 % in 1986).

  The PEUGEOT Group was among the first in France to take into account the impact of the new technologies in the administration of human resources, namely on job profiles in automated systems, and on training, safety and information. This step was taken in October 1986 with

the signing of an industrial agreement.

- Large-scale training schemes are being linked to industrial projects, the training of a system operator, for example, requiring 1 000 hours of training. The developments associated with the production of the CITROEN AX included 300 000 hours of training, in particular at Aulnay; at Sochaux nearly FF 7 000 000 000 will be invested between now and 1994, accompanied by training on a very large scale. In 1987 alone 590 000 hours of in-firm training are planned, and the figure will be higher in the years to come.

- New staff were recruited from outside in order to strengthen the technical potential in the production units. For example, 350 employees and technicians were taken on by CITROEN in 1986. The thresholds of acceptance will from now on be at the same or a higher level than the CAP[2] for workers and between the BAC[3] and the BAC + 2[4] for the ETAM[5] categories.

THE NEW ORGANIZATIONS

Production units are complex structures in which the technical characteristics of the product and the means of production and the social and organizational structures interact. To function they depend on the coherent implementation of these different components in response to the demand on the market. The growing potentials of the machines are nothing without the human reflective, cre-

ative and decision-making abilities and without a suitable organization of the system, on which, in the last analysis, it will depend for its "viability".

The distribution of the operative information right down to the workplace, associated with the diversification of the pick-up devices of the machines allows greater control over the quality of the products and the process: the degree of autonomy of the teams is thus raised to a more global responsibility for production.

Gradually individual machine operator jobs are giving way to multidisciplinary teams, which encourage a participative and versatile approach, and the teams are responsible for their own production and the necessary means.

Organization is becoming decentralized and the depth of the hierarchy reduced and more autonomous groups are being formed, thus increasing delegation and personal initiative in a wide appeal for all contributions. New cultural processes are developing, quality assurance groups, value analysis groups, groups on progress, etc. are evolving, again necessitating a substantial increase in training.

New functions are appearing, gradually replacing the idea of job or task. These functions are becoming integrated and the systems interconnected, each team constituting a node in a vast network in which the role of humans determines the performance of the whole. It is humans who provide the coherence, that is, coherence

between teams, coherence with the objectives of competitiveness defined in a more global strategic plan.

All these transformations are being studied in detail in a participative action, in close co-operation with the trade union organizations, with regard to the introduction of the new technologies, a concrete expression of which is the agreement recently signed at Automobiles PEUGEOT.

Working groups have been formed in each of the automobile companies with a view to defining these new forms of organization, which are gradually being instituted[6]. Certain sectors are already completely organized in "modules", for example, the Usine de Trémery and Emboutissage de Sochaux.

NEW BEHAVIOUR

The changes in profiles on the one hand, and the distribution of roles in the organization on the other, cannot be dissociated from the new modes of behaviour.

- With regard to situations: a substantial amount of training has already been provided at the methodological level: problem-solving, value analysis, instruments of quality control, etc.
  These activities account for roughly 10 to 15 % of the hours assigned to industrial projects.

At the same time the creation of participative structures has been promoted, to provide a forum for the confrontation of ideas, the discussion of dogmatic positions and the search for novel solutions.

- With regard to the partners of the organization: the integration of the techniques and functions necessitates the formation of multi-disciplinary teams. Furthermore, the distribution of information and the means of processing it (micro-informatics) to the individual workplace is associated with a new distribution of power. Individual modes of behaviour are thus determined more by interaction than laid down by statute and depend largely on the quality of inter-personal relations.

  - These changes have been facilitated by specific forms of training in communication and by a broader information policy in all sectors of the company and at all levels. For example, 85 000 hours of informative activities were conducted when the multi-purpose production line was set up at the Poissy factory. Finally, encouragement of internal mobility considerably improves horizontal relations due to the knowledge of the different sectors of the company and thus lead to better understanding of the industrial organization.

- The change in modes of behaviour has a specific effect on the function of management, which has been substantially altered with regard to both form and content. The shortening of the hierarchical line and the organiza-

tion in modules implies greater delegation of responsibilities, a growth in technical knowledge and a broadening of profiles, in other words, the development of man's organizing and inspirational capabilities.

CONCLUSIONS

Recently at the end of a state of the art report on technology the French Centre for Forecasting and Evaluation of the Society of Engineers and Scientists[7] concluded in favour of the "revolution of intelligence", as the "leitmotiv which gives direction to the whole".

Rather than a revolution we are being witness to a progressive transformation of the manner of production, calling into question our traditional conceptions of power and organization. Company strategy develops through information, training and intellectual investment. Technological progress is equally dependent upon the taking into account of these factors as social developments are upon technological progress, and our competitiveness is dependent upon both.

As a result of these two characteristics large areas of uncertainty and questioning as regards the endurance of certain social processes and the development of new relationships between power and talent overshadow the new structures. These are both personal and company concerns and lead to the adoption of an approach which is both highly pragmatic and it differs widely from one factory to another.

NB This paper was presented by Mme. Beretti at the conference "Groups Peugeot et l'Evolution des Emplois et des Formations du Secteur Automobile" organized by the Institut d'Etudes Politiques de Paris - November 1986.

[1] UIMM - Union des Industries Métallurgiques et Minières - Union of Metal-Working and Mining Industries - trans.

[2] Certificat d'Aptitude Professionelle - certificate of vocational skills awarded on completion of lower-level vocational studies at secondary school - transl.

[3] Baccalaureat - advanced school-leaving examination - transl.

[4] Baccalaureat + 2 years of higher level technical studies - transl.

[5] ETAM - Employés, Techniciens, Agents de Maitrise - white-collar workers, technicians, management staff - transl.

[6] Conseil Evolutions Technologiques (PEUGEOT)
Plan MERCURE (CITROEN)

[7] Centre de Prospective et d'Evaluation

CONTINUING TRAINING IN ENTERPRISES FOR TECHNOLOGICAL CHANGE

TECHNOLOGICAL CHANGE IN A FOOD MANUFACTURING COMPANY AND A RETAIL DISTRIBUTION GROUP

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This short report concerns the introduction and use of new technologies in a European food manufacturing company and a retail distribution group, both of which wish to remain anonymous for business reasons.

THE FOOD MANUFACTURING COMPANY

In recent years, the company has been able to treble its market share. The price and quality advantage was one source of business growth. The other, and probably equally important, was its remarkable adaptiveness to technological and structural changes in the retail trade.

As the larger retailers have rapidly adopted the electronic point of sale (EPOS) terminals at the check-outs, they are able to pursue optimal stock control methods. An important adjunct of EPOS terminals has been the newly-created national value-added network of the retail trades. This brings together the computer infra-structures of the retailers and manufacturers to the extent that the transactions recorded at the check-outs activitate an elaborate, electronically-controlled process of stock ordering, distribution, invoicing and accounts settlement - a process based on the familiar "Just-in-Time" principle.

At the company's end, the value-added network feeds into the newly-created management information system that is designed to give a minute by minute account of all operations.

As a result, the company's former field representatives have been transferred permanently to the head office and regarded as "customer managers". Previously, each representative used to collect orders physically from retailers in their locality. Now they monitor sales at their designated batch of retailers through the value-added net-

work and arrange production and distribution in a way that complies with the optimal stock level guidelines.

In practice, this involves significant interaction with the production manager in the first instance; thereafter, with the transport and account managers. This kind of sideways dealing is indicative of the vertical job-loading under which the customer managers are responsible for a whole cycle of work associated with their designated customers. Indeed, the cycle extends beyond the company and involves interaction with the food technologists at the retailers who decide on product content and specifications.

The value-added network and the management information system have been instrumental in forcing the change. By having access to detailed information at the retail end, the customer managers can activate and coordinate all activities of those concerned with the conception, ordering, production, distribution, invoicing and payment of meat products in the company. As a result, each manager has de facto become a profit centre whose financial and sales targets are set in conjunction with the directors of the company.

As sales representatives, their skills base was narrow, largely comprising sales and marketing competences. Now it has been widened to include knowledge-based and intellectual skills, the former to understand the basic principles of food technology, production methods and accounts, and the latter to facilitate the system's usage, analysis of its output and planning of production, distribution and accounts.

The new skills have been acquired from multiple sources in a well-planned sequence. First came on-the-job-training in sales, production, distribution and accounts departments in the company. Its principal feature was job-rotation so as to give hand-on experience in different activities in the work cycle. Then came a six-week off-the-job training programme organized by the computer manufacturer, the vendor of the value-added network. This involved classroom instruction on the theoretical and operational aspects of the network. Then came three weeks of computer-based training, jointly organized by the company, the computer manufacturer and a group of retailers. This involved elaborate simulations of the work cycle in which numerous problems had to be solved interactively at each stage. The training was entirely oriented towards solving the untoward problems. Finally, the whole training programme was punctuated by short periods of secondments to various departments at the head offices of the retailers concerned.

THE RETAIL DISTRIBUTIVE GROUP

The retail distributive group, which aims for a middle class market in affluent areas, offers a very wide variety of high quality products and good personal service.

The individual store managers enjoy autonomy in the purchase of perishables from local services, display, staff recruitment, ordering, local advertising and promotions. All standardized products are delivered from a central warehouse.

The impact of new technologies has so far been limited to the introduction of forklift trucks and robotics in the

warehouses, the use of information technology in all head office departments, and the use of mini computers and automatic data captive units in stores for stock control.

Electronic point of sale terminals are gradually being introduced but there are still some problems to be overcome. This is caused partly by the fact that not all the items on sale are bar coded for EPOS treatment, a proportion of the turnover is in perishable goods which are wrapped on the premises and there is a very high rate of failure of the EPOS because of problems with the type of ink used in the bar codes.

The use of new technology is therefore felt mainly away from the stores. It is felt that such a use has resulted in a lower growth rate in staff numbers at head office and backroom clerical activities in the stores and warehouses. No detailed evaluation has been made on job savings because the growth projections have automatically assumed the availability of such technologies. It would be reasonable, however, to assume that had it not been for these technologies the head count may have been higher than originally anticipated.

With regard to the working methods, no fundamental changes have been made. If there have been any discrete changes, they have merely reinforced two twin pillars of the company success - excellence in quality and customer service.

With regard to the employment and occupational mix of the

group the main determinant of employment has been the sales volume indirectly and total selling area directly. The relationship between employment and selling area, however, is not equally proportional.

The work time estimate is converted into full time, part time and casual requirements. The trend over the past three years has been less favourable to the employment of part-time and casual employees in each product department. These two categories are employed mainly at check-out or in shelf filling and other labouring tasks at peak times. There are two reasons for this. The first concerns customer sophistication. It is felt that customers in the various social categories are now seeking advice on product contents that requires confidence, good communication skills and product knowledge. This has long-term training implications. The company prefers to train full-timers and those part-timers with long service records.

The company therefore has a policy on part-timers and casuals. The policy has two elements; employ them to cater for peak load; and encourage many part-timers to become permanent employees so that the return on training investment is worthwhile for the company.

With regard to the use of new technology in the actual stores each department or manager makes a daily return to central warehouse and head office through the services of a full-time data processing clerk. They also advise the manager on customer needs, stocks, display promotion and local purchases.

With regard to skill shortages two occupations have presented some recruitment difficulties in the past - these concern mainly computer specialists and food technologists.

With regard to the computer specialists the retail distributive group are in competition with many other organizations able to offer much higher salaries and more attractive career opportunities.

With regard to the new technologies and working methods two technologies - the EPOS and robotics for shelf filling - are under active consideration. The constraints on the use of EPOS terminals have already been mentioned. The introduction of robotics will involve a significant investment in invisible tracks and floor adaptation for a long time. The cost will continue to compare unfavourably with labour costs.

A trend towards shops within shops will create semi-autonomous units, each with its own accounting system and a small team of workers. The check-outs will serve as common cash collection points and points of input into the stock control and ordering systems. Where EPOS do not exist, more use will be made within the units of the automatic data captive devices. These perform two functions: calculate the number of items on the shelf and transmit this number to the backroom mini computer through a simple plugging facility.

With regard to forecast changes in employment and occupational mix it is expected that the composition of staff at head office will move towards data processing

specialists, technologists and marketing experts. These groups will gradually replace clerical staff whose jobs are being continuously automated. The shortages of recent years will continue. However, it is anticipated that expansion will improve promotion possibilities and make the company an attractive employer. Besides, the company is increasingly looking to the polytechnics to resource its specialists needs.

The expansion of stores will favour full-timers as well as part-timers. However, some store managers will change the ratio in favour of full-timers since the shops within shops concept would require training and commitment from the staff concerned. Currently the national wastage rate for part-timers and casuals in this type of business is about 30%. Over time, the part-timers and casuals will increasingly be moved away from the shop floor. EPOS and EFTPOS (still at the pilot stage in the retailing industry) will automate about 80% of the work at check-out. They may even reduce the number of check-out points. Hence, at the minimum, the proportion of part-timers and casuals will not rise.

In the future, the skills most needed in the stores will be - social skills, facilitating effective interpersonal communication - product-based knowledge, underpinning sales and marketing skills - simple keyboard and accounting skills. When selecting the stores based staff, more and more emphasis will be put on social skills. The individuals concerned will then be given simple modular training; initially off-the-job for six weeks, then on-the-job. The company does not expect to face skill shortages in the near future.

The company's view is that customers are becoming more sophisticated and an aspect of this sophistication is the quality of service. A policy of recruiting too many part-timers can act to the detriment of the customers it is felt. New concepts such as shops within shops call for greater professionalism, requiring people who want to make a career in retailing. This trend to increasing professionalism places new demands on those responsible for initial and continuing training within the group.

NB: The information contained in this report is based on case studies carried out by Amin Rajan, Institute of Manpower Studies, University of Sussex.

CONTINUING TRAINING IN ENTERPRISES FOR TECHNOLOGICAL CHANGE

TRAINING FOR TECHNOLOGICAL CHANGE IN A LARGE BANKING GROUP

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TRAINING FOR TECHNOLOGICAL CHANGE

In the late '70s the forecast for the next decade was one of both recurring change and permanent change, exemplified by slower real growth, continuing inflation, rising expections among employees, higher levels of education, persistent energy problems, extensive human rights demands, ethical considerations, and increasing consumerism and environmentalism. Experience has proved that forecast to be remarkably accurate.

If such is the nature of change at a strategic level, the reality is often harsher at an organisational level. Most organisations, at some time, have to face significant and far-reaching change such as mergers, expansion, contraction, responses to competition, relocation, restructuring - to say nothing of changes to management style or organisation culture which may in fact be either the cause or the effect of some of those very changes.

The problem is that too many businesses are waiting for conditions to return to "normal" when, in fact, what we are seeing today is the "new normal". The good old days are gone! We have two choices: we can adjust to these changes, make the most of them, find new opportunities and keep moving forward; or we can dig in, keep our heads down and wait. The first is not easy; the second is unthinkable.

On all sides the only constants seem to be complexity and contradiction. But in this welter of uncertainty a key ingredient for stability, and for successfully coping with and managing change, is the contribution which properly organised and integrated training can make; by planning ahead, by making training congruent with corporate objectives, and by investing in human resource development so that other business investments are enabled to pay off.

Of all sectors of industry and commerce banking is one of the most traditional and conservative; but developments both nationally and internationally have compelled radical changes in the way we go about our buinsess. At the macro-level four driving global forces - political, economic, sociological and technological - are dictating the pace of change.

The first of these changes comprises deregulation and consumerism, with Big Bang opening the door to change and thus presenting banks with the chance to enter new financal markets. With one or two exceptions all the new entities which have evolved over the past couple of years to take advantage of the deregulation of the City were put together and are now dominated by banks. Banking, as it has always been known, will never be the same again.

The second force for change - the shifting of economic power - means that money can be moved around the globe at the touch of a button - and this is determined by the third force - technology.

In brief, the factors which are forcing change upon banking are:-

- Irresistible market forces.
- A major change in the level of sophistication of our customer base.
- Aggressive competition from non-traditional sources - plus
- massive competition from foreign banks.
- Diversification of product portfolio.
- Legislation and deregulation.
- New technology bringing system changes and enhancements and organisational restructuring.
- Competition for good quality staff.
- And inevitably cost containment and problems of finite resources of all kinds.

By definition, managers must meet these challenges with and through the efforts of others. BUT, a further challenge facing the Bank, which by implication relates to all the other challenges, is the changing nature of the work force. For example, the average young member of staff today is more socially and educationally sophisticated, is more questioning, is more demanding and will generally seek and expect earlier responsibility than his or her counterpart in the past. Managers will therefore need to adapt to meet this challenge if the required results are to be achieved in all other areas. Training in general, and in particular management training, must consequently take this factor into account, by focusing sufficiently on the most appropriate ways in which managers can obtain the optimum contribution from all members of staff in achieving the required quality of service and level of productivity.

To maintain our pre-eminent position as one of the world's top financial institutions we have to adapt and respond successfully to the demands of the banking and financial services market place in which we must operate. However, the pace of change has gathered momentum, influenced by a number of factors which can be grouped into four main categories, the four "C"s - Customers, Competition, Costs and Computers - each of which has a profound impact on our business.

1. Customer needs and Expectations

In the Corporate Sector our larger business customers are becoming increasingly sophisticated in the way they handle their financial affairs. This is reflected in the professional services and support they demand. Personal customers too expect more from us, both in the types of service we offer and the ways in which we provide them. The key to success lies in providing the products and services which different customers and potential customers need. If their requirements change, so must the products and services we provide.

2. Competition

Currently, there are no fewer than 600 banks in the City of London. As if that were not bad enough there are almost 50,000 financial outlets (banks, building societies, insurance companies etc), in the UK as a whole. The real challenge arises fom the fact that these organisations are increasingly selling very similar services to our own.

3. Costs

Quite simply we are a commercial organisation and profitablity is essential if we are to continue to grow and prosper.

In any basic profit and loss calculation, expenditure is just as important as income, particularly in the competitive market in which we operate. Competition is driving prices down. So if we are to be successful we need to see 'value for money' from our expenditure, no matter where it is incurred - and this has a greater significance for the Training and Development function than ever before.

4. Computers

New technology brings opportunities to control costs and help staff to provide an efficient and effective service. The part that technology plays in branch banking operations is something to which we have all become accustomed. In short new technology, and its management, are inescapable features of the environment in which we operate our business.

Of course there have been many studies of the impact of technology on organisations but in reality these have been of three main kinds - studies of the consequences of change; studies of "changing itself"; and studies of the design of new work systems with the objective of achieving certain desired human and technical results. All of these approaches have tended to accept technology as deterministic - in other words it is technology which is calling the shots! Technology thus has been accepted as something that can be monitored and assessed but not really influenced or controlled. Until recently behavioural scientists have been reluctant even to question the values of technical specialists; these have been regarded as sacrosanct and it has not really been regarded as necessary to relate outputs to inputs. They have merely been prepared to study the "consequences" of technology without attempting to identify the technical, economic and social factors which are present at the design stage and which lead to the choice of a particular technical solution and therefore to a set of specific "consequences".

Studies of the consequences of change have focussed on resistance to change, and the reasons for this, and on the impact of technology on the organisation of work. Studies of "changing" have attempted to identify those levers and strategies for assisting this process and have frequently been normative in character.

And finally studies of the "design" of technological change have been both analytic and normative, aiming to develop theories and methods which would enable organisations introducing new technology to control the design process so as to achieve certain desired efficiency and human goals.

Obviously there is always a design task associated with the introduction of new technology. The problem up to now has been that it has often been defined solely as a technical design task. The need for complementary organisational design has either not been perceived, or there has been an assumption that human organisations will adjust naturally, and spontaneously, to the requirements of a new technical system.

Yet there is little doubt that technology, if it is to work effectively, must be associated with an organisational structure that fits easily with it. The Tavistock researchers of the post-war years developed the notion of "Joint optimisation". In other words systems must be designed so that both the technical and the human parts were seen to be working as close to the optimal level of effectiveness as possible. The theories and practices of the Tavistock teams and their ideas are still the most influential with those who are implementing socio-technical design. However, they have not addressed the problem of designing management roles and structures for a technological age and there is now a pressing need for fundamental research in this area. Communities and organisations should not, indeed must not, be designed to fit technology; they should be designed to fit social and business requirements as well as human needs, with technology a contributory means to the achievement of these and not merely an end in itself. Human beings, particularly managers must now be able to adjust to constant change and be able to manage it. This requires quite different skills and talents from those of the traditional manager. This is one of the key areas in which training can generally facilitate technological change and its many consequences

One of the most dramatic influences which is re-defining the financial environment is computer technology. The wave of change started in small, isolated cases, but has been accelerating rapidly towards a world wide revolution. It was not too long ago that the 3.00pm deadline in Banking was synonymous with the end of Banking business. The rise of the automated teller machines (ATMs) changed all this and the retail relationship as well. Initially, some people questioned their importance. But slowly acceptance rose, as did customer willingness to use these automatic tellers and technology within the retail market. Shared system, on-line credit checks and debit cards followed. Point-of-sale (POS) terminals, perhaps the most important next step in the technological revolution, are beginning to reach the retail level with experimental systems already in existence in the UK. The industry is committed to this next step into POS technologies and the concomitant reduction of paperwork. This is another high potential area for training of staff in support of the new systems.

At the same time that the retail, consumer-based banking environment is being revolutionised, corporate level activities are also changing as a result of technology. Net-working has made cash management a real time phenomenon in major firms. The old days of large, idle deposit balances are gone, in favour of a cash management that makes the traditional methods of demand deposit management a relic of the past. Indeed, on-line capabilities are going to redefine a new corporate relationship, where the customer uses bank technology as a network of information, rather than the deposit accumulation function it once was. Customers must still have access to the expanded array of products now available, so that they do not choose to shift to the multi-product firm; but today's technology makes this possible. Networking capability is a reality of the 1980s and the 1990s. It will matter very little who provides the individual services for the firm or the household as long as those services are available and the menu is complete. Here there is endless scope for much more sophisticatd training in new product knowledge, marketing skills, selling skills, and customer care.

On another level this acceptance of new technology by the financial markets provides instantaneous world wide communications, transfers of funds and high powered data bases for a much wider range of professionals and their clients. Firms such as IBM, Biotech, Apple, Fuji, Intel and MCI are actively competing for greater shares of this business as they gear for further market penetration. New technology means even fiercer competition for the financial institutions which may find their expensive branch offices replaced by automated machines. One of the inevitable consequences of this is retraining as valuable staff are required to migrate from one activity to a very different job calling for new repertoires of knowledge and skills.

Exploiting Technology

No one doubts that technology will ultimately transform banking practices - this is already with us to some degree. Already back office systems are substantially automated, new front office systems are being introduced, the "fully automated branches" have passed through the pilot stage, and experiments are in hand with home banking.

The arrival of truely paperless banking is inhibited now less by technology itself than by a combination of:-

1) Funding limitations (especially with EFT-POS).
2) The lack of confidence in the appetite or receptiveness of the various banking markets.
3) Fear of being "The first over hill" and becoming tied into too inflexible a technical system.

In the public sector no one bank is outstriping the rest in the use of technology, nor do many aspire to pole position. Naturally differences do exist, perhaps in commitment to types of ATM for example, but these are relatively slight.

In terms of employment Banks are publicly maintaining their stance that technology will be used to absorb increased volumes of transactions and will not lead to extensive de-manning - within the next five years at least. Sceptical observers recognise the industrial relations reasons for these statements but argue that the forecast will only prove correct if the Bank's make it so. What is broadly acknowledged is that technology will continue to change the tasks performed by staff. In the future the most likely impact is seen to be the "de-skilling" of some tasks to the level of data entry and the emergence of more demanding roles for junior staff, particularly in the context of customer relations and selling activity.

Over the next ten years, therefore, when it is likely that de-regulation will expose significant over-capacity in many areas, when branch structures in all sectors are likely to be pruned or heavily de-manned and when technology has impacted not only on processing but also on delivery systems, there is every reason to believe that a very substantial reduction in employment is likely to occur. Meanwhile a rising proportion of domestic business is being conducted through ATMs and most banks are beginning experiments with automated branches which are either wholly unmanned or which retain a reduced compliment of staff for customer advisory and sales functions. Such changes both occurring and anticipated in the banking industry will call for a different range of skills and attitude from staff. Service industries, despite, or perhaps because, of technological developments, will in the final analyis remain dependent on the quality of their staff, effective management and motivation. Greater emphasis and commitment will have to be applied to training and development, particularly in the area of sales and marketing; two crucial aspects which will demand continuous up dating and refreshment.

Improvements in the quality of staff coupled with technological advances should in theory place the banks in a better position to service their customers more effectively.

Automation will probably result in a decrease in face-to-face encounters at branch level, but it is still uncertain how far and when these changes will have an impact - not all customers will want to go electronic.

The implications for training

Over the last few years trainers have been progressively confronted with the need to produce the necessary training and development programmes to enable organisations and the individuals within them to cope with change. The assumption has been that, if the opportunities created by change are to be harnessed then employees must be trained to cope with the problems that inevitably arise from such a change. This negative stance has helped to perpetuate the view that training departments should adopt a purely reactive and somewhat submissive role within the organisation.

Change should no longer be looked at as something to cope with or react to. It should be seen as providing new challenges, opportunities and directions to be siezed in order to improve ways of working, providing improved levels of service and new forms of products for customers. This in turn will help increase profitability and ultimately aid the survivial of the organisation in a fiercely competitive market place.

This "coping with change" approach merely emphasises that the training function has traditionally tended to be reactive to a given set of problems which have either been defined by the organisation as "Training Problems, or assumed to be so". The typical and almost inevitable outcome has been to develop courses which are now likely to incorporate the latest training technology if appropriate. However the development of a more systematic approach to training has encouraged the evolution of structured system of analysis, R & D, design, development, implementation and evaluation so as to identify what precisely the problems are and how they can be resolved. A corner stone to this approach has been to establish what the organisation's business objectives are and to select the most appropriate training strategies, methodologies and media to meet them.

Whilst this approach has done much to improve the quality and cost-effectiveness of training and to improve the performance of employees, the commencement of a "training needs analysis" can limit the value of the study by pre-supposing, within its terms of reference, the fact that there is a problem which will lend itself to a training solution once it can be identified. Thus training once again takes on a "fire fighting" role to react to problems which could have been anticipated with a little more foresight but which may now not best be resolved by a traditional programme of training.

Self-evidently, training programmes must be relevant and timely if they are to be effective, and yet a purely reactive approach by training can only increase the time lag between identification and resolution of the emerging training problems. As these problems become more complex, they require the application of sophisticated instructional methods to resolve them. These new methodologies in turn take longer to develop and thus help to extend the response time still further.

In such a rapidly changing environment there is the real danger that training will continually be striving to hit a moving target. But if the training department is to fulfil its mission it must become better informed, forward looking, anticipate changes and recognise opportunities. This inevitably implies working in partnership with its customers within the organisation who inevitably will come from a range of different Divisions and Departments. Working with such internal customers implies that training must sell its services to one part for the benefit of the organisation as a whole. This supplier/customer interface calls for a much closer working relationship between the previously segmented and separated functions. To do this effectively training must move from "fire fighting" to "fire prevention". It must develop sensitive scanning mechanisms to detect influences that will have an impact on employee performance not only from within the organisation of which it is a part but also from its external environment. Additionally training must become involved much earlier in the assessment of future manpower requirements and their resultant training implications.

There must be better processes of planning, controlling and improving individual performance and potential within a carefully thought out career progression.

It is both appropriate and of interest I hope to talk a little about training for change within the context of National Westminster Bank and its Management Services Division. This Division which is responsible for the whole of our information technology planning and implementation developed a few years ago in response to the need to apply computing technology to a wide variety of the Bank's systems and services. Its growth from youth through to maturity has occurred over a period of time during which change and uncertainty have been the rule rather than the exception.

Many of the Bank's software systems initially evolved on hardware that was, in technological terms, in its infancy. The design and development of the software was carried out by pioneering project g. ps who did not have access to the very latest systematic design techniques. Development times were long and required a sizeable investment in manpower. Because of the high cost, the shelf life of the system had to be lengthy. 'Health Care' or maintenance, has become a predominant activity as such systems move into old age. But more importantly such activity tends to maintain the status quo without creating any need for change, or a pro-active attitude towards change.

The 'pioneer spirit' is prevalent in staff who have invested a large proportion of their working life with the organisation in making new systems work. They have in due course grown old with their systems. New structured methods and more sophisticated training are viewed with suspicion. This is characterised by such comments as "when we installed system XYZ all we had to go by were the technical manuals and a page of information on what the user required. We did not have or need these fancy methods of training".

It is within this framework that the Bank has had to rejuvenate its computing services to prevent systems falling into old age and resultant decay. The Bank has thus made a positive commitment to change rather than coping with it.

The first response was critically to appraise the Management Services Division as a whole and as a result to create an integrated information technology division within it which pulled together related but fragmented parts of the Division itself. To ensure that this heart transplant would have a probablity of success and avoid tissue rejection, senior management recognised the need to change the culture of the organisation as a whole. Embedded in this strategy is the contribution of training and development. To reorganise is no guarantee that the culture will change since to some reorganisation is merely perceived as a cosmetic layer. What is needed is a culture that will encourage organic growth and which in turn will become self-sustaining.

Management Development is one fundamental approach in the cultural change strategy. Training is now taking a proactive role in changing behaviour. A number of managers have been promoted because of their technical expertise or project management skills rather than man-management skills. Consequently development programmes under design have had to be sympathetic to this situation. However management commitment to change, combined with the necessary skills in managing and motivating staff to achieve this change, is the critical factor in the success and the progress.

The information technology technical training function is currently going through a period of change to gear itself up to meet the needs of its customers - the operational departments. It is not only faced with a demand for new knowledge and skills, for revised or new systems, of hardware and software, but also it has to assist in making up the shortfall created by the skill shortages which are endemic in the computer industry. Whilst the Management Development process is encouraging organic growth, technical training is looking to "refine" the peoples skills of the organisation. Training has to deliver individuals with the necessary combinations of knowledge and skills and of the right quality in the appropriate quantities at the right price and according to the required timescale. At the same time it has to make it relatively easy to recycle these individuals within the organization and thus enable them to exploit new opportunities in future.

Communication

At a time of constant and accelerating change it is impossible to over-stress the importance of commitment at all levels. But commitment must be positively communicated if it is to be effective.

Conveying the right message, at the right time, and by the right method, not only avoids practical errors but also encourages staff to develop their own commitment to coping with change.

With this in mind, and with the additional objective of assessing staff training needs arising from the changes, we set up a far-reaching staff attitude survey, to find out exactly what our staff thought and felt - and feared - about the changes which lay ahead. The survey covered a sample of 2,000 out of our 50,000 staff in the Domestic Banking Division, which itself was undergoing a major restructuring.

The survey explained what was happening and asked what people felt about the level of communication on the subject, how well they understood the new structure, their attitude to change in general, their degree of work satisfaction, how they viewed their working environment, their feeling about their own careers and prospects, including their level of knowledge about company training, and a number of other points.

The data were then summarised in a booklet, distributed to everyone in the Division and reactions to the booklet were then fed back to us. The first thing to emerge was that people did not like the style of the booklet! We had tried to make it easy to read but it transpired that people actually wanted more detailed information about the survey. We have now decided that future surveys should be followed by publication of the detailed findings.

But more seriously, the survey and discussions on the booklet pinpointed a number of areas of concern, including the level of job satisfaction, the communication of information about the change, and career development, including training.

Trainings guides gathering dust

One surprise was the level of ignorance about the opportunities for training available within the Bank. Despite copious publicity about courses including a comprehensive Guide to Training, the information had not reached people. The problem in a large organisation is that an enormous amount of paperwork is generated and there is a tendency for the Training Guide to gather dust in the branch manager's bookcase, failing to reach its target. As a result, we are restructuring our guide and publicising it more openly and making our circulars more user-friendly. The survey and its aftermath have been an important milestone in regenerating staff morale and motivation and in developing commitment.

Managing Change - The Human Resource Implications

So what of the role of training and development?

That there is no virtue in training for its own sake - only in terms of profitability and efficiency has a certain grim logic. Training does not stand or fall in its own right and trainers delude themselves if they think otherwise.

Nevertheless, the contribution which training and development can make towards the achievement of a company's corporate objectives and thereby its greater profitability, is enormous, and the overwhelming majority of recent research shows that it is the companies which commit significant resources to training which are the successful ones.

This fact is central to NatWest's commitment to Human Resource Development, and over the past two years we have made far-reaching changes to our systems of recruitment, selection, assessment, training and development.

And there are overwhelming reasons for doing so:-

- First there is a diminishing school-leaver and graduate market 20% down over the last decade.
- Secondly the financial services market for good people is growing, at least by 8% per annum for graduates and probably even more for good school-leavers.

- Thirdly we need to develop our best young people in different ways. Traditional bankers have tended to be task-orientated, reactive and judgemental. We still need some of these valuable traits, but our Managers in the future will have to be pro-active, innovative, able to do deals and close sales, fast on their feet, alive to business opportunities and so on. Hence the need for better training and development, and starting younger.

We need to recruit sufficient better people, retain a higher proportion of such people, and develop them for wider career and business needs faster than before. So, two years ago we instituted a new Management Development Programme.

Although this is not the only route to management in National Westminster, it lies at the core of our management development. It is geared to identifying future managerial talent and to providing relatively early training and development opportunities for recruits. In the past, we have tended to leave such opportunities until rather late in a person's career. In addition, we are trying to provide more opportunities for older staff with management potential.

The Management Development Plan starts with a detailed selection process, involving psychometric tests, interviewing and other devices, leading to accelerated training for those accepted, zig-zagging people through a variety of real jobs faster than they would otherwise experience. The plan is based on assessment centre and personal development training programmes.

The Assessment Centres examine leadership potential, problem solving ability, interpersonal skills and basic skills in oral and written communication and personal lea .g programmes, which last between 6 and 24 months, depending on ' needs identified in stage one. These take place at work. Each person is provided with a Personal Development Advis - a mentor, counsellor and coach - and learns both on-the-job and through personal learning packs and self-paced open learning materials for use in the trainees' own time in the workplace. Once the trainees have reached an agreed stage in this process they are are recommended for further assessment.

The programme was introduced only two years ago but over 2,000 are already going through the system. The really important thing about the new system is that the emphasis is not on a meritocracy or the creation of the elite, but on creating a process which anyone can go through, provided they have ability and potential.

The world is changing and we must change with it - "survival is not compulsory!"

As far as training is concerned, we are now investing more resources than ever before. But it is not just a question of throwing money at the problem. We are filling key appointments with professional trainers working to an annually approved and assessed management plan.

The 7 point plan aims to:-

1. Ensure that the training function is involved at the outset in the planning stage of new business initiatives and system changes.

2. Continue to provide centrally-managed training support to the Group as a whole so as to achieve maximum efficiency in meeting corporate objectives.

3. Provide training consultancy services at senior levels throughout the Group.

4. Co-ordinate the work of trainers in all Divisions of the Group so as to ensure adherence to Group training policy and avoid duplication of effort.

5. Improve the skills of training staff at all levels.

6. Decentralise more of the routine and structured task training by the provision of Distance Learning - notably Computer Based Training.

7. Validate and evaluate existing training programmes so as to ensure their continued cost-effectiveness and relevance to the needs of Line Management, and their congruence with the needs of the job-holders.

The sixth point in our plan is the provision of more distance learning, particularly through computer based training. The Group has been engaged in distance learning since the mid-1970s when in-branch traning kits were introduced to replace certain central residential courses. These were paper-based and of limited value, partly because their success was very difficult to monitor.

So in 1983 we did a feasibility study into distance learning and as a result set up a two-year project the following year to test the applications of computer based training. We looked mainly at the highly structured parts of our central training which seemed highly adaptable to CBT; information about safe custody, taking security and certain aspects of lending.

Encouraging result

The results were very encouraging indeed. The training was more acceptable to people, retention rates were higher and they enjoyed doing the training. Many people could not be torn away from the terminals once they had started!

We have now introduced this scheme much more widely, and have set up a network of some 250 workstations, with the aim that no students will be more than 30 minutes from a learning centre. We are also extending the CBT coverage to other aspects of our training programmes. By the end of next year, we reckon we will have converted something like 30 percent of our centrally delivered training to CBT. Clearly, there are implications in this for our trainers. We now have less need for the traditional tutors, performing in front of a class, but a much greater need for specialists, particularly courseware writers, in our central department. Consequently, some of the old jobs are being run down and being replaced by the new jobs. We have had no redundancies because, so far, we have had to carry both systems alongside each other and trainers are themselves re-training to take on new roles.

Trainers more professional

The training department is also affected by our desire to become more professional on all fronts - not simply in the manufacture of distance learning.

If we pride ourselves on being a truely professional organisation, then our human resource development function must be as professional as any other specialist function in the Bank. If our training provision is genuinely congruent with corporate objectives then we in turn must be accountable for what we do.

Training is now a budget item that demands focus and we must be prepared to be questioned accordingly on whether the training is effectively controlled and managed, whether it reflects the Bank's business goals and objectives, how much is costs, the return on training expenditure and whether knowledge and skills are being transferred most effectively and efficiently. Finally, we will be asking if training is managed to increase or optimise profitability.

In facing such penetrating questions it is encouraging to find trainers themelves are warming to the notion that they too are accountable and must be prepared to be assessed as to the quality of their product.

To help us answer these questions we have changed our trainig policy from one of drafting in line managers for a two or three year tour of duty as trainers, to one of recruiting highly specialised trainers into key posts, to carry out research and development, training needs analysis, training audit and similar functions while still retaining experienced line bankers for tutorial roles and training management generally. Development of CBT courseware is, of course, justone such function. It is quite clear to us that training is becoming a much more professional and expert activity and so far, we have recruited several such experts from outside the Group.

Finally, with the help of these experts, we are setting up systems to monitor the effectiveness of training to ensure that the questions posed about the training function are accurately answered. We are particularly interested in trying to gauge the cost of training, down to unit costs per student, so that we can get some idea of how cost effective our policies are for the Group, and to enable us to be much more accurate and objective in arbitrating between conflicting training priorities.

To conclude, recent years have witnessed major changes in the way most companies are being managed. Beyond the obvious problems of run-downs and redundancies, there is evidence of better management, both in achieving improved operational effectiveness and in the involvement of subordinates - the management of people.

Such changes have not emerged by chance. Rather, as organisations have moved from the affluent sixties to the turbulent eighties, facing change at an ever-increasing rate, they have had to put more real decision-making into the hands of those at the sharp end of the business.

Debates about corporate culture - you have only to read "In Search of Excellence" and "The Winning Streak" - are essentially debates about the balance between operational autonomy, corporate coherence and effectiveness within a turbulent business environment, but above all else, they are about leadership and example.

To be sure, some of our best companies invest a great deal in the development of their managers, and some of our best companies are outstandingly well led. But, if you look at the norm, we as a nation still cling to the belief, quite illogically and unreasonably, that good people will make out in the end, simply because they are good and for the most part can learn by doing. That sounds suspiciously like amateurism, and the international competitive world of today is most definitely no place for amateurs.

We in National Westminster regard training and development as a process which needs to be managed in a professional and business-like way. It must be cost-effective and it must be accountable. It should contribute to the wealth, in the widest sense, of the individual, the Bank and the community at large.

Finally, there is a need for change in the status of the training and development function itself. Such a change cannot be brought about if we do not regard and treat the providers of learning - whether they are teachers in schools, lecturers in higher education, faculties in business schools or trainers in companies - as people engaged in work of high importance, whose responsibilities are often daunting, of whom a great deal is expected and required, and to whom equivalent respect and reward should be accorded.

Trainers have a prestigious and crucial role to play. Let us take pride in what we do - and do it well.

CEDEFOP — European Centre for the Development of Vocational Training

Continuing training in enterprises for technological change

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