Trade union-orientated research for democratization of planning in work life—problems and potentials

ÅKE SANDBERG
The Swedish Centre for Working Life

SUMMARY
Recently some Scandinavian work researchers have begun to work exclusively for and with trade unions in order to produce the knowledge necessary to support local union action as well as to develop relevant theories of democratization of planning and work life. The ‘DEMOS’ Project included action research field studies on four workplaces. The four local unions tried to influence ongoing changes in technology and work. The researchers together with the unions developed a model for independent union investigations in processes of change. Some research questions were: How can broad activation of the membership be combined with trade union research work? How can the need for knowledge for today’s negotiations be united with the need for long-term development of basic knowledge? The limits to local union influence were also analysed. Some of these have to do with shortcomings in the research model itself, others have to do with factors like the limited trade union resources, the type of technological change/rationalization, and practices of management. The more structural limits are also discussed in relation to social theory identifying contradictions on different levels: economic, political, ideological and ecological. Against a background of the analysis of limits to local union influence the possibilities of a positive and offensive trade union policy of technology are discussed.

INTRODUCTION
Social scientists have a long tradition of research on workers and the quality of their working life. In the early 1960s in Scandinavia, researchers began working with labour-management cooperative committees to humanize and democratize the quality of working life (QWL). More recently, Scandinavian work researchers have begun to work exclusively for and with trade unions in order to produce the knowledge necessary both to advance union interests and to develop relevant theories of democratic planning and action (see Sandberg (Ed.), 1979, 1981). We can call this recent development union-orientated action research. It has been primarily applied to the issues of computerization and new technology as they relate to trade union interests. This change from doing research on workers or with joint labour-management committees to doing action research for and with trade unions has required new theory on the democratization of planning and work. (On work research in Sweden, see e.g. Sandberg, 1982).

Our main purpose here is briefly to describe this theory and its application in a long-term, union-orientated action research effort called the DEMOS Project. We will also evaluate this project’s participatory action research field studies with four local unions—focusing on the limitations and possibilities for developing independent trade union influence and knowledge about planning, control and computer-
The contents and results of the field studies will not be discussed here. Finally, we will describe possible strategies for the future—offensive trade union policies for influencing new technology and the work environment. We conclude by describing a new union-orientated project, UTOPIA, which is based on our main experiences and conclusions from the DEMOS Project.

THE LIMITS AND POSSIBILITIES OF DEMOCRATIC PLANNING

Planning is an integral and necessary part of work and purposeful activity. All work must be conceptualized or planned before it is carried out, and planning and execution can be done together. On the other hand, they may be separated from each other. Separation makes it possible for people to control their own activities cooperatively and democratically. It also, however, becomes possible to separate controllers and those who are controlled (cf. Braverman, 1974), making planning an ‘alien force’. This duality is basic to the possibilities and limits of democratic planning.

Democratic planning ideally means that the person or people who plan the work also do the work. This integration of planning and execution is quite possible in groups and small organizations. However, in large organizations planning activities are usually quite separate from execution. Democratic planning under these conditions requires that planning activities themselves must be subject to strict democratic control. Such control is subject to a variety of limitations which become more apparent if we consider limits to the democratization of planning on the level of society as a whole. We are back to the classical problems of representative democracy—not least clear in the field of economic democracy. (For a more detailed analysis of the theoretical framework summarized briefly here, see Sandberg, 1976, 1980; Therborn, 1978).

On the economic level, the restrictions and possibilities for democratization of planning manifest themselves in the division of labour. Here it is clear that productive forces and productive relations are not chosen freely by human beings! Such factors as large-scale technology and production, the concentration of ownership, control of R & D, as well as closer relations of dependence between different parts of the economy, make it evident that democratization of planning in working life must have a collective character.

On the general political level, limitations and possibilities to democratic planning lie in the fact that the state has a double function in a capitalist society. It needs to secure the economic viability of the country as well as the legitimacy of the system. For example: on the one hand, technology might represent a means for narrow-minded rationalization, and on the other hand, possibilities for more democratic, meaningful work. State policies (influenced by capital and labour according to their strength) will influence which type of technology will be developed and used.

On the ideological level mechanisms exist that legitimate existing systems and, on a deep level, form the personality of people in different ways in different classes. One essential contradiction on this level is the need of the system for workers’ wholehearted activity, initiative, and creativity on the one hand, and for subordination and hierarchical control on the other hand. This is expressed, for example, in the double function of the so-called ‘autonomous group’. One function of such
groups is to improve daily working conditions and productive efficiency. Another function can be either a step in the direction of manipulation (e.g. a tool for utilizing workers' knowledge and loyalty to goals and within limits that are not discussed) or in the direction of democratization of planning on higher levels. One of the most important effects of the ideological level for individuals might be called the isolation effect: workers are postulated as being isolated individuals without any class identity or consciousness. For example, a report from the Swedish LO prepared for its 1976 national convention, found that the developmental projects of the Swedish Employers Confederation (SAF) (e.g. SAF's (1980) 'New Factories' design project) 'stressed the individual in a form which complicated collective solutions and the possibilities available to the trade union movement' (LO, 1977).

A complementary ideology is the managerial ideology of 'socially responsible management': the individual employee should rely on the management's responsibility for the quality of work and for employment security. Research about production, planning etc., in cooperation with management, which supposedly is responsible for 'all the stakeholders', then is supposed automatically to be neutral and impartial. The idea of value free knowledge and politically impartial social science which operates completely independently of conflicts of interest reinforces this managerial ideology of social responsibility.

The isolation effect and the ideology of social responsibility imply that union and class-based political struggle are superfluous. Against that ideology stands the labour movement's class consciousness and ideology of worker solidarity which find that QWL strategies of individual development and 'human relations' are not enough. Only with a strong trade union consciousness can management's small steps towards 'group autonomy' possibly form a basis for further demands for democratization. Under a situation of hegemony of bourgeoisie and employer ideologies, ideas about 'individual freedom' tend to stay on an isolated, individual level, and may have quite the opposite effect.

Finally, the ecological dimension must not be overlooked. Even if it is true that societal conditions determine what technology is developed and what consequences it has, there are still basic limits to man's mastery over nature. As the Finnish philosopher von Wright (1979) pointed out, today, we have a rational theoretical attitude towards nature. That is, reality and nature determine what is true and what is false. The ancient Greeks however had a more rational practical attitude toward nature—an attitude of deliberation where people act from an understanding that human beings are part of a larger system of which they have only incomplete knowledge.

DEMOCRATIC PLANNING, PARTICIPATIVE RESEARCH AND TRADE UNIONS

Democratic planning is also an important issue for the organizations representing workers' interests and strivings for democracy, i.e. for trade unions themselves. To achieve democratization of planning in working life, trade unions must develop their organization and policies so that the important new issues in the field of co-determination (e.g. computerization) lead not to bureaucratization and uncon-
trolled expert power, but to activation and knowledge among union members. Ideally, knowledge should be developed through collective, participative research by workers about their own work situation and the societal structure that determines it.

Worker-orientated education and participative research are essential prerequisites for people's effective participation in planning activities. In this way, a common perspective about reality as well as solidarity among workers might develop. However, this democratic ideal is becoming more difficult to realize as the issues facing unions become more complex.

The traditional work of a trade union has been to advance the interests of its members on relatively straightforward issues such as wages, working hours, and grievances. The trade union works independently of management, but in close contact with its own members and their experiences. Traditionally, union representatives have bargained with management on these issues in which the union had privileged knowledge and worked out policies. This makes it easy for union members to formulate mandates for their representatives (see Hoel and Hvinden, in: Sandberg (Ed.), 1979; Lysgaard, 1961).

Today, however, trade unions in Scandinavia have won the right to participate in totally new, much more complex issues such as computerization, and productivity planning, where they have little special expertise. On the contrary, management has traditionally had a monopoly on the relevant expertise in these areas. Ironically, the Scandinavian trade union movement's success in reducing 'managerial prerogatives' has created quite new and difficult challenges for unions which they have yet to fully master.

The problems now facing trade unions have thus become more complex and demands are growing for specialized technical-scientific knowledge within the unions as they extend their rights to participate in management decision-making and change processes. This is making it increasingly difficult for union members to formulate clear and informed mandates for their own representatives. It is therefore necessary to develop trade union procedures that facilitate both union autonomy and solidarity on the one hand, and a high degree of co-determination in management's decision-making on the other.

In short, the new challenge to trade unions, at least in Scandinavia, is to formulate and apply relevant principles of democratic planning. This challenge requires that unions utilize available resources in the form of both experts and the experience, demands, and consciousness of union members. We formulated a union-orientated action research project in the latter part of the 1970s that was designed to develop such a trade union-orientated body of knowledge and practice on approaches to and methods of democratic planning. This project—called the DEMOS Project—was aimed at developing ways of planning and research methods compatible with the strivings for democracy in working life.

THE DEMOS PROJECT—BACKGROUND AND FIELD STUDIES

'Democratic Control and Planning in Working Life' is the complete and ambitious name of what we called the 'DEMOS Project'. (For a more complete description of the project background, see Sandberg (Ed.), 1979). The project was initiated in
Trade Union-orientated Research

1975 in cooperation between an interdisciplinary research team with competences in sociology, economics, engineering, and computer sciences, and the Swedish Trade Union Confederation (LO) whose ‘Computerization Council’ acted as an advisory group to the project. The project aim was to study and support local trade union efforts to democratize working life. During the project, we developed a ‘negotiation model’ for independent trade union investigatory work. The main purpose of the model is to provide and evaluate structures independent of management within which the union can develop its own knowledge and formulate its own demands concerning new technology in a democratic and efficient manner.

In contrast to ordinary trade union work, this model stresses local unions doing their own research as a basis for taking actions based clearly on their own interests, rather than just reacting to management plans and initiatives. If new issues such as computerization are important for unions, then unions need to take initiative if they are to avoid negotiating in a situation unilaterally defined by management. DEMOS developed ways for trade unions to cope more effectively with issues such as new technology.

The DEMOS Project also diverges from earlier experiences and perspectives about research in the areas of industrial democracy. As mentioned earlier, a cooperative model involving joint projects in which researchers worked with labour-management cooperative committees, was the common research form in the 1960s in Scandinavia. These earlier research experiences were criticized both by trade unions and researchers as not advancing trade union interests. As a result, practical research cooperation between trade unions and researchers without the involvement of managers was developed in Norway in the early 1970s (Nygaard and Bergo, 1973; Nygaard in: Sandberg (Ed.), 1979). Following the Norwegian example, in the action part of the DEMOS Project, researchers worked directly with trade unions alone. Unlike the earlier projects, we strove to develop a trade union-orientated body of knowledge and practice on approaches to and methods of corporate planning and control and computerization. An interplay between action research and basic research is a central element in the DEMOS Project. New theoretical perspectives are required to illuminate a fuller range of possible actions by broadening problem definitions and the range of alternative solutions; and in turn, pragmatic investigation plays a vital role in furthering theoretical development. Some criticism of ideology was done in the earlier phase of the project. However, theoretical work and methodological reflection could be undertaken only after the project was terminated.

The DEMOS Project therefore had multiple aims. On the one hand, we tried to connect research with ordinary trade union activities and support the development of local union competence in coping with new issues. On the other hand, we tried to understand both theoretically and practically the limits and restrictions to such developments.

During the first three years of the DEMOS Project, action research projects at four different workplaces dominated project work to a large degree. After visits to about 25 workplaces and discussions with the respective local union leaders, the researchers selected four workplaces as ‘field sites’: a newspaper, a repair shop, a metal factory, and a department store. This selection was based on criteria that were formulated during the research process in collaboration with trade union representatives.
There should be an acute problem that the local union wanted to work out. The problem should be of general scientific interest within the fields of competence of the researchers. The local union itself should be committed to developing both independent union knowledge and the broad activation of its members. The concrete problem should be such that it could be developed into an analysis of strategic questions concerning limits and possibilities for democratization.

Subject to these criteria being met, local ‘investigative groups’ were established jointly with the local union committee at the four workplaces. The groups included both experienced union people and workers without long union experience. The groups studied their own enterprises (using researchers as ‘resource persons’) and formulated action plans to support both local and central negotiations in issues such as computerization and planning. In addition, these local participatory research projects became a way for the trade union to activate more of its members.

The work of these groups has provided important data on new ways of working for local unions and has clarified to some extent what sorts of issues may be influenced on the local level. Given the limits and purposes of the present article, we can present only a brief synopsis of what these groups undertook here. More complete descriptions of these groups and the results of their participative research and action programmes may be found in one report from each field project: Ehn, Erlander and Karlsson, 1978; Erlander, 1980; Ehn, Perby and Sandberg, 1982; Perby and Carlsson, 1979.

In the State Railroad repair shop in Örebro, the investigative group studied production planning technology. Management was planning to introduce a new computer-based work measurement system (ISA-KLAR) which could have entirely changed the way in which production was planned and controlled. This system would have introduced the possibility of detailed, direct control of the repair work.

The investigative group in the department store intended to study staff policy and administration. They saw dangers in the development of a new computer-based system for the registration of working hours, sales, and personal data, etc.

At Svenska Dagbladet, the conservative newspaper in Stockholm, the typographers faced the introduction of new, computer-based technology, leaving lead and linotype text production behind. The local trade union group wanted to investigate problems such as manning levels, work organization, and planning with the aim of solving key problems at the design stage and before the new technology was introduced.

Finally, the group at the rolling mill at a big steel plant in Oxelösund was responding to management attempts to develop more advanced systems of production planning and control. The trade union felt that the new system would decrease the content of jobs and that the jobs themselves would become more isolated.

Besides having significant impacts on local developments, the work of these groups generated a substantial and unique data base. Since the end of the field work phase, we have been engaged in analysing these data in order to answer our theoretical questions, especially those concerning the possibilities of and limits to our approach.
POSSIBILITIES AND PROBLEMS IN DEVELOPING LOCAL UNION INFLUENCE OVER CHANGES IN TECHNOLOGY AND WORK ORGANIZATION

Data from the four workplace investigations and the theoretical work of the DEMOS Project revealed a number of problems and limiting conditions for local trade union influence on technological development. Some of these have to do with shortcomings in the research model/method itself and with traditional approaches to both social science research and trade union work. As the project developed, it became clear that there were many problems with the dual goals of the investigative groups and with their mixed-level composition:

- How can broad activation of the membership be combined with trade union research work?
- How can local unions, in cooperation with researchers, formulate the problem and perspective of the study?
- How can the need for knowledge for today’s negotiations be united with the need for the long-term development of a critical view of society?
- What are the possibilities for and limits to building knowledge and initiating change in the context of researcher–local union collaboration?

Other shortcomings, however, have to do with characteristics of the workplace such as market conditions and the type of technological change being introduced. Both kinds of limits determine the possibilities for local unions to develop their own knowledge and realize their demands—particularly with regard to technological development.

The research model and trade union work

One shortcoming of the model itself is conflicts of interest and perspective within the work groups themselves. For example, within some of the investigatory groups, conflicts of interest developed between some of the more experienced, active trade unionists and people with limited union experience. Those with less union experience tended to appreciate the chance to discuss day-to-day experiences and problems with their fellow workers, whereas more experienced unionists wanted to speed up the discussions and go directly into in-depth investigations of the technological and organizational future of the workplace. If the research design does not handle this problem, there is a risk that the more active and experienced unionists will dominate. Instead of including and activating as many people as possible as we had desired, this approach might then result in widening gaps of knowledge among workers, thereby undermining worker solidarity.

To counter such a possible tendency among workers, it may be necessary to begin union investigative work on two levels. That is, have one small investigatory group with experienced and active union members and a broad-based study group for the other, less-experienced members. The study group should try to understand the general issues and formulate demands, as well as serve as a general support for and discussion partner with the investigatory group. Of course, even with this two-level design, there is still the possibility of contributing to a division between experienced union activists and others. If the two activities are developed in one context how-
ever, they could become part of a long-term development of knowledge and activation of many members of the union, thus contributing to reducing potential cleavages within the worker collective.

Our action research approach was influenced by Paulo Freire’s writings (1971). The idea was to begin with the problem situation experienced by the workers themselves. We found however, that the workers ‘own situation’ was often defined in different ways by the experienced and inexperienced union members (see above). In addition, the perspective and problem definition of the researchers was often different from that put forth by the local union. Unlike earlier experiences with action research where the ‘clients’ are very often unorganized, resource poor groups, the trade union movement already had a definition of the problem and an articulated ideology—despite the complexity of the issue.

As a result of these problems, we think that research cooperation with local unions should begin with a long problem articulation and formulation dialogue phase where the union and worker’s perspectives are confronted with the researcher’s perspectives and vice versa. This approach can contribute either to the development of a common framework and set of experiences or to a formulation of differences that can lead to useful research questions. Regardless, insights gained in this process may result in new and better ways for researchers and trade unionists and workers to cooperate in the development of wage-earner based knowledge.

Another obstacle has to do with conflicting traditions. The DEMOS model, entailing a long-term building up of independent knowledge related to technical and organizational questions, does not follow the traditional and more immediate style of trade union work. In unions, today’s negotiations direct much of union activity. In contrast, scientific research is, or should be, directed by an interest in a long-term search for knowledge and truth. Applied research projects increase expectations in workplaces. Some of the more important results of research, however, might tend to focus on widening perspectives and revealing new problems rather than solving concrete problems defined at the start of a project. An essential part of the competence for researcher–union knowledge production might therefore be a dialogue leading to a mutual understanding of the different conditions for research work and union work.

But the issue of tradition is as much an obstacle within the social science community as it is for the trade unions. Union-orientated action research—such as was carried out in the DEMOS Project—is not yet a fully developed way of working for social scientists. It requires an interplay between practical experiences and theoretical work. Theoretical reflection must take place both in a short-term interplay within practically-orientated research projects and in longer-term processes where theoretical work follows periods of more action-orientated research. Social scientists’ contributions to other people’s understanding of their own situations have legitimacy if they are based in an articulated, theoretical perspective. On the other hand, social science practice of the kind discussed here can also provide experiences and insights of more general and theoretical value. This interplay however, is not without important problems which might lead to researchers either ‘adapting’ to demands for short-term results or giving up efforts to develop an action-orientated research programme and returning to strictly theoretical and academic work. Both of these ‘adaptive’ strategies will be degrading for theory and practice (Sandberg, 1982).
One of the most serious obstacles to trade union influence and development of knowledge in new areas is the enormous demands that such strivings place on trade union resources, particularly in terms of organization, time, and money. These demands are especially great if the goal is knowledge production that also activates people. New issues such as computerization are often complex and the changes in enterprises are dramatic but difficult to predict exactly. A union’s need for information is therefore future-orientated, substantial, and multi-faceted. In such situations, it is often difficult for union members to formulate mandates for their representatives based on the best knowledge available as well as the demands of the majority of the workers (see above—p. 62).

On the research side, short term financing is often a serious problem. Changing these conditions and building bases for cooperation on both sides would make possible both long-term theoretical work and practical work. Carefully conceived short-term investigations would also be more feasible within such a framework.

Characteristics of the workplace

Finally, as mentioned earlier, the limits to local trade union action may also be located on the level of the workplace, and understood against the background of structural factors as discussed above in the section on the possibilities and limits of democratic planning. In any enterprise the financial resources and the composition of the existing production apparatus (with its weak points) will determine to a great extent what sort of investments in new technology are feasible, when, and to what extent, union demands may be taken into account.

The possibilities for trade union action and influence also depend on the type of technological change or type of rationalization. The newspaper and the repair shop clearly illustrate this point. The introduction of computers at the newspaper is part of a world-wide technological revolution in the graphics industry—which makes possible enormous increases in productivity. Highly technical and scientific knowledge is needed to understand and influence this type of new technology. The skills and experiences of the workers alone are not enough. Even an extremely strong local union mobilization cannot control this development significantly.

In contrast, at the State Railroad repair shop the proposed new technology involved a computer-based production planning and control system called ISA-KLAR. This system did not require any changes in the technology of production, but could have been used for more detailed control of the work and possibly as the basis of a speed-up. The benefits of the new system were probably not as important as management initially thought, but the drawbacks for the workers could be enormous: deskilling and routinization of work, lower wages, etc. In this case, the knowledge needed to formulate union demands could largely be based on the workers’ own experiences and knowledge of the existing organization and planning system. The possibilities were very good for broad union activity around basic demands (e.g. ‘we oppose detailed control’) and for the development of local union alternative proposals for work organization. The system was not introduced.

A further discussion of the struggle around the ISA-KLAR system at the repair shop also gives us two examples of rationalization strategies aimed at intensification of work. ISA-KLAR is a modern example of direct control of work in accordance with the principles of scientific management. By coupling in a computer system general MTM data and work studies data from the plant, a basis for detailed control
of the repair workers could be created. Some examples of operations that are stored in the so-called ISA-KLAR system are:

(1) Fetch tools x and y  
(2) Go by bogie  
(3) Crawl into position  
(4) Remove split pin  
(5) Remove bolt and washer  
(6) Repeat operations 3–5 for remaining 5 bolts  
(7) Transport out  
Estimated time required for this job: x minutes.

The full introduction of such a system would mean that a skilled occupation would be replaced by unskilled labour executing operations prescribed for them in detail, in the form of a computer printout. The workers in the repair shop agreed with management that planning and work were badly organized. They, however, wanted to find a solution aimed in quite another direction. They wanted to develop the partial group self-management that existed at the time into a more advanced system of work group self-planning. They also wanted to improve overall production planning in the shop and make it subject to union codetermination.

This case illustrates, on the one hand, how the union’s proposal to further develop a group-based work organization that was already in existence could improve the work situation. On the other hand, this union strategy/alternative might also function as an example of another way for management to raise the intensity of the work. This managerial control strategy which Friedman (1977) calls responsible autonomy is also illustrated in SAF’s concept of ‘coordinated independence’ in their ‘New Factories’ project (Agerén and Edgren, 1980). Whether or not the union proposal in the ISA-KLAR case would really mean a higher intensity of work is difficult to say.

In this context, it is also interesting to speculate to what extent the fact that the ISA-KLAR system was stopped depended on union strength and activity, and to what extent it depended purely on the knowledge developed during the process: a knowledge that perhaps showed management that the union alternative was—given the complicated nature of repair work—an alternative that allowed for more efficient rationalization and an even higher intensity of work than the direct control that would be the result of the new computer-based system.

Finally, the practices of management in relation to changes may also be an obstacle to union influence. This is true not only when the change takes place in traditional, centrally planned forms—where it might be difficult for the union to penetrate the complex total solution—but also when management uses more ‘modern methods’ (often presented as more democratic), where the organization is decentralized (‘autonomous groups’, profit centres, etc.) and where decisions are taken stepwise (adaptive planning, flexible planning, etc.). In the latter case, the union might be involved in a gradual and partial change discussed exclusively on technical–economical terms machine by machine, without any possibility to discuss a global solution starting from basic union demands on organization, work content, etc. Other problems have to do with the difficulty of getting an overview of the many different projects that management might have going at a certain time. Not
least problematic is the fact that many changes essential for the employees take place outside the formal project organization, for example under the ‘guise’ of ‘reinvestments’.

STRATEGIES FOR THE FUTURE

Available trade union resources, the company’s investment situation and resources, the type of technological change, and the practices of management all affect the possibilities for local unions to influence technological changes through democratic planning. If trade union demands for a high quality of work can be met using the existing technology, then the local union work and demands discussed earlier are essential for trade union influence and control over technological change—a defensive trade union policy of consequences. But often the driving forces of technological development and the possibilities for action lie above the level of the single workplace. Also, the time perspective is often too short for producing technically and economically feasible alternatives that meet trade union requirements in terms of work organization, skills, etc. (see Olsson, in: Sandberg (Ed.), 1981).

Experience leads us to see existing production technology as a significant barrier to realizing trade union demands. As companies purchase ‘system packages’ for an increasing number of applications instead of developing systems for themselves, the potential influence of local trade unions is significantly reduced. At best, it has been possible to influence the choice of supplier and the ‘company assimilation’ of the system selected.

Therefore, to have any substantial impact on technical development, it may be necessary for unions to propose modifications of existing technology or perhaps even to develop completely new technological alternatives. What is needed is an offensive, long-term and far-reaching strategy coordinated by national unions—not simply reactions to local changes and crises. This will require both trade union cooperation on an international level, and union cooperation with engineers, physical scientists, and social scientists. Through such efforts one might test the possibilities and limits of a positive and offensive trade union policy of technology (Hingel, 1980). An example of a strategy of this type would be national or international trade union cooperation to try to develop a modified or new production technology. This seems to be necessary if substantial union influence is to be exerted in fields where the managerial strategy of rationalization might be characterized as ‘new technology and raised productivity’. An example of this type of offensive trade union strategy is the UTOPIA Project (Ehn et al., 1981), which was recently developed in Scandinavia. The project is both a technological development project and a sociological experiment in understanding the conditions relating to that development. It is based on collaboration between computer scientists, social scientists, and workers in the graphics industry throughout Scandinavia. The computer scientists with social scientists and workers will try to develop an alternative text and picture-processing system for graphics. Using the existing hardware, they will develop new software that takes into account both the quality of work and the quality of the product, and which is flexible enough so that it can be adapted to individual workplaces.

In addition, the UTOPIA Project will develop training alternatives for the new
system based on trade union criteria. The training is to be developed parallel with the alternative technical systems and will include the development and maintenance of the technology and the organization of work and the working environment. It should furthermore create a development process where knowledge of and experience in the use of the system is translated into a further development of technology and the organization of work at local level. In other words, technological development, training in technology, and the organization of work are regarded as an integral whole.

Special attention, however, must be paid to two factors concerning central development and adaptation to local conditions and further development. One is to find good methods of performing development work which do not result in trade union experts taking over the technological development centrally. Local activities must be encouraged and supported. The second factor is the relationship between the groups participating in the central development work: graphic workers and technical and planning experts. Forms of working must be developed which prevent a division of labour dominated by the experts.

The social scientists and other professionals will provide expertise in the areas of work organization, the quality of the work environment, skills development, as well as ideas about the process of systems development, where craft knowledge based on experience must be integrated with theoretical knowledge developed in research laboratories. They will also try to analyse the societal limits and possibilities for this type of offensive trade union policy of technology.

Thus, our pursuit of democratic planning on the local level in the DEMOS Project led also to an understanding of possibilities and limits at a higher level. Whether the new UTÖPIA Project type of strategy will be adequate in meeting these higher level system constraints in democratic planning is a question that can only be answered by means of analysing experiences of this and similar strategies.

ACKNOWLEDGEMENTS

Earlier versions of this paper were presented at a conference on 'Planning and Democracy' at the Interuniversity Center in Dubrovnik, Yugoslavia, April 1981 and at the meeting of the Scandinavian Sociological Association in Reykjavik, Iceland, June 1981. I want to thank the participants at these conferences as well as Joan Acker, Arbetslivscentrum/University of Oregon and Max Elden and Leslie Schneider, IFIM, Trondheim. Without their comments and editorial assistance this article would not have been written.

REFERENCES


*Author’s address:*

Dr Åke Sandberg, The Swedish Centre for Working Life, (Arbetslivscentrum), Box 5606, S-11486 Stockholm, Sweden.