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WORK PROCESS, INFORMATION TECHNOLOGY AND SERVICE QUALITY IN SOCIAL WELFARE INSTITUTIONS

An International Comparison of Developments in the Federal Republic of Germany
Great Britain and Norway

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Abstract

This paper is an abridged and slightly charged version of an application for funding by the "Stiftung Volkswagen" from February 1984.

The project is concerned with the changes in work structures and processes that occur in the communicative services of social programs as a result of the introduction of electronic information and communication technologies and the impact of these changes on the quality of the services offered. In terms of those affected, the object of our investigation is, on the one hand, the changed working conditions of the employees in the social administrations as a consequence of rationalization (labour policy aspect) and, on the other hand, the resulting changes in quality of social services for insured persons in the social security system (social policy aspect).

Thus, the development of work in a society and its protection of individuals against life risks are regarded in a common perspective.
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Summary

The level, distribution and impact of social welfare services have become increasingly important for a growing segment of the population. Increasing industrialization in market-economic societies has resulted in an increase in dependent employment and an enormous increase in occupational and regional mobility, altered family structures, changed living conditions, etc. That is: individual life risks that require societal intervention through social policy. Both the scope and complexity of the social welfare system increased as well as the degree to which individual clients are dependent on it. As a result, communicative services (information, processing of claims, counselling, correspondence) have become increasingly important as a form of interaction between individual clients and the institutions of the welfare state.

Information and communication technologies are being increasingly introduced as the central instrument of administrative rationalization in this highly sensitive area. They offer possibilities for increasing management efficiency not only by increasing the productivity and intensity of work but also by creating a greater potential for direction and control, which affects not only employees but also clients. Furthermore, the new technology renders intellectual work—once it is
programmed—quasi-materiaily reified and can thus hinder "autonomous" feedback and adjustment to changed conditions in the social environment.

Administrative rationalization affects not only employees—by altering their working conditions—but also clients. This is a consequence both of the enhanced possibilities for effective action that it gives administrative personnel as well as for their own strategies for coping with changed working conditions. Communicative services are not merely work processes within an institution but also forms of communication with and interaction between the institutional provider of social benefits and its clients. If the rationalization process increases the interaction requirements for clients, this can in practice alter the distribution of the affected social benefits without any democratically legitimated legislative decision.

On the other hand, the fact that the application of such technology varies according to the institutional context and prevailing economic and social policies shows that technology is not introduced independently of these conditions.

Based on these assumptions, the project pursues the following three lines of inquiry:

- How do work organization, the work process and (the resulting) working conditions in welfare state institutions change as a result of the introduction of modern information
and communications technologies in the course of the rationalization process?

- What effect do these changes have on the quality of social services?

- What is the impact of differences in the structure of welfare state institutions and in the general context of economic and social policies on the application of technology in democratic industrial societies?

Linking working conditions (labour policy) and the quality of social services (social policy) constitutes an approach that promises more than the previous approaches focusing largely on organizational structure—to yield empirical knowledge on the relationship between the introduction of technologies and the quality of social services, including as factors that shape performance both the employees as subjects as well as their strategies for coping with the changes brought about by the new technology.

This study was designed as an international comparison based on national case studies above all in order to investigate the significance of the general context of institutional structures and national economic and social policies for the application of individual technologies; contextual conditions vary while the work processes are identical (in terms of the social risk). The following countries were selected: Great Britain (long-lasting
and deep crisis symptoms, consistently restrictive fiscal and social policies); Norway (relatively low unemployment, relatively nonrestrictive fiscal policy conditions, strong welfare state tradition); and the Federal Republic of Germany (with elements of both of the other countries included in the study).

The study as planned comprehends the following work packages for the relevant institutions in each country:

- Description of the general context of economic and social policies
- Description of the structure of the social security system and social insurance institutions
- Description of the current level of automation
- Description of the co-determination rights of employees
- Investigation of work organization
- Investigation of working conditions
- Investigation of the patterns of interaction in client administration and their results.
Chapter 1

Issues and Problem Definition of the Study

The project is concerned with the changes in work structures and processes that occur in the communicative services of social programs as a result of the introduction of electronic information and communication technologies and the impact of these changes on the quality of the services offered. In terms of those affected, the object of our investigation is, on the one hand, the changed working conditions of the employees in the social administrations as a consequence of rationalization (labour policy aspect) and, on the other hand, the resulting changes in quality of social services for insured persons in the social security system (social policy aspect).

The introduction of computer technologies by the social administrations in communicative services represents the introduction of mechanization and automation into a highly sensitive area. In recent decades the level, distribution and impact of social services have become increasingly important for a growing segment of the population. Beyond the dispute about the "limits of social policy", there is a secular trend toward far-reaching changes in the work and living situation of the population that
is associated with the increasing industrialization of market-economic societies. Thus, for example, the increase in dependent employment, the enormously expanded occupational and regional mobility, changes in family structure and housing, etc. have led to individual life risks that require societal intervention in the form of social policy.

A distinction can be made between the original social welfare services (e.g. medical care, unemployment insurance, etc.) and those activities through which these are mediated, distributed, controlled and administered. The strategic importance of the direct "communicative" services such as counselling, information and the processing of claims has increased as a result of the increasing complexity of the social welfare system and the increased dependency of individual clients. The effectiveness of social policy in coping with life risks is increasingly dependent on the quality of these services that determine the interaction between the individual clients and the large administrative agencies of the social security system.

Standards are formulated for the "Implementation of Social Benefits" in the social legislation of the Federal Republic (SGB, Allgemeiner Teil, # 17) that are similar to the normative consensus in other democratic industrial societies. The agencies responsible for social benefits are "obligated to pursue the following goals: (1) that every entitled person receive promptly and completely the social benefits to which he is (individually)
entitled when they are due; (2) that the social welfare service and facilities necessary for administering social benefits be sufficiently available when needed; (3) that access to social benefits be as simple as possible, in particular by using readily understandable application forms."

Just as existing welfare state institutions do not fully reflect these general norms, the provision of social benefits is not also exclusively determined by legal prescriptions. The conditions under which social benefits are "produced" and corresponding changes in organization, technology and work process play a decisive role. The communicative services are, namely, not merely work processes within an institution but also processes of interaction and communication between the producers of benefits and their clients. Frequently, there is a direct division of labour between the social administration and its client, for example, filling out and processing forms. Management problems of the social agencies can be externalized by shifting the division of labour, which takes place in a context of an asymmetrical interaction relationship, in a way unfavorable to the clients. This would take place in the example given if the client were required to present his "case" by using a computerized form to communicate with the agency. If as a result the "interaction costs" in terms of time or skills increase, then the possibility of claiming benefits as well as the effective uptake are altered—as a result of changes in work organization—without any democratically legitimated decision.
Social policy thus may change, without any change in social legislation, merely as a consequence of an internal institutional reorganization of work processes, which, of course, is itself externally (co-)determined.

Although our primary concern is with communicative services between social agencies and their clients, we can not exclude activities distant from the client relationship and only devote attention to work activities that involve direct communication with clients (i.e. in person, by phone, or in writing). The "agency-client-relationship" is determined by the total division of labour in a social agency. Although this entire process is formally oriented toward the provision of benefits, and hence toward the clients, this does not mean that the client in his or her individuality is central to the administrative work process. As a rule the client does not receive attention that is differentiated according to his specific circumstances and risk situation. However, this must have a particularly negative effect on the fulfillment of the social goals of the agencies, the reason for contacting it is usually that the clients have a limited capacity for social self-help (and hence also for coping with rigid routines of social agencies) due to age, sickness, unemployment or need for rehabilitation. The neglect of this aspect frequently results in the overestimation of proposed solutions that presuppose an "active consumer."

This pattern was also observed in earlier critical literature.
on public administration—with respect to various types of phenomena—long before and independently of the introduction of electronic information and communications technologies. The shortcomings of "bureaucratic organization" for public administration that are generally cited are hierarchy (e.g., formal competence does not correspond to expertise, "negative coordination", etc.), the processing of information and problems (e.g., "selective perception") or the typical behavior of "bureaucrats" (e.g., departmental narrowmindedness, shirking responsibility, formalism). The shortcomings of the agency-client-relationship described in the discussion of social policy (see Achinger 1953) are said to be a consequence of tendencies toward "bureaucratization," expansion of legal regulation, and "economizing."

The particular effects of the introduction of data processing in the course of rationalization measures in social administration remains unclear. Concepts such as "centralization" "standardization," "formalizing" or "typologizing" are employed in the relevant research; the results point more or less clearly toward a specific intensification of the phenomena described. While the work organization and working conditions of the employees undergo a basic restructuring (which until now has received less attention), the clients (for example, as applicants) must cope with increasingly more complex requirements. Even the expansion of information and counseling services, which appears to contradict these observations, is in fact merely an element that compliments this development. It frequently serves primarily to
lower the acceptance threshold of the citizens and to make them willing and able to adapt themselves to the internal needs of the social administration for standardized processing of individual cases or for more uniform utilization of available administrative capacity.

The degree of universal applicability attained by information and communication technologies (see 1.3.2) has increased the potential for instrumentalizing administrative work by dominant interests. This is the principal reason why current developments can be regarded as being an intensification of already existing trends (Reese, et al. 1979). If, for example, control functions become more important in the social welfare system and new technology is utilized for such purposes, this is, in our view, primarily a problem of social policy and only indirectly a question of technology.

Similar same basic structures and interest constellations determine the application of the potential of new technology. Computer technology, which has become the lead technology of administrative rationalization, offers possibilities for enhancing management efficiency not only by increasing the productivity and intensity of work but also by creating new possibilities for integrated direction and control, affecting not only employees but also clients. Thus if power constellations remain unchanged the degree of hierarchy and fragmentation of work in social administrations grows as well as its manifestations in the
agency-client-relationship. The expansion of management control in the administrative agency appears—even though not an "objective necessity"—to proceed hand in hand with the expanded exercise of control functions by the social administrations.

Other developments that are now beginning to intensify problems in the industrial countries are also relevant: the application of information and communication technologies is increasingly affecting the direct communicative services. Moreover, the rationalization strategies, of which the introduction of new technologies is a part, are changing because of the altered general context of economic and social policy. While the emphasis 10 years ago was above all on the expansion and improvement of the problem-solving potential of the social administrations ("modernization or reform rationalization"), cost reduction goals ("cut back rationalization") now determine the utilization of new technology.

Finally, a specific feature of data processing technology reinforces this trend: because this type of intellectual work—once programmed—is quasi "materially reified" it contributes to the codification of administrative practices thus hindering "autonomous" feedback and adjustment processes in response to changed conditions in the social environment.

With regard to social policy, the application of technology thus far manifests the following dilemma: while, on the one hand, the complexity of social risk situations and the resulting
individual dependence on the social administrations has increased, on the other hand, the practical application of information and communication technologies has strengthened precisely those tendencies that reduce problem perception and promote program standardization.

The international comparison of variation in terms of differences in administrative structures, participation practices and the general context of economic and social policy shows how important the conditions are under which technology is applied. In light of the multiplicity of applications and impacts, the discussion about simplistic alternatives such as "technology pessimism" and "technology optimism" appears unfruitful. The information and communication technologies likewise represent an opportunity to improve the success of social administrations in attaining their goals. However, this would require that they undergo more or less far-reaching internal and external organizational changes—which can not be expected without power shifts in the interest constellations that shape these institutions. This raises the question of the feedback effects that occur in response to deficiencies in the quality of services provided by social welfare institutions.

In contrast to the provision of goods through competitive markets, there exists no such economic feedback effect that would be capable of partially (i.e. except "external effects, which are also considerable here) counteracting a decline in the quality of
services and forcing improvements. On the contrary the economic incentives that exist here function as "perverse incentives" in that they both intensify the social problem as well as having an institutionally stabilizing effect. For example, deficiencies in the information and communicative services of the social security retirement system with regard to individual data on the periods of coverage for determining pensions will be reflected in lower pension benefits; the more deficient the data, the lower expenditures will be.

It is a peculiar feature of political (i.e., non-market) forms of distribution that the corrective reaction on the structure of supply and suppliers is dependent on whether and how the political activation of the affected disadvantaged interests takes place. The claim of democratic industrial societies to guarantee the prerequisites for this (freedom of association, participation, the justiciability of administrative actions, etc.) is thus not only significant for political culture but also in a societal-functional sense. Neglecting formal state control over implementation, our study is directed at the actors whose interests are affected by the changed dynamic of working conditions transformed by the introduction of new technologies and their consequences for the quality of social services. These are the employees in social welfare agencies and those persons who are entitled to benefits (present and future clients).

Our principal concern is to link the interdependent aspects of
the application of technology: labour policy and social policy.

As will be described below (1.3.4), the interests of the employees in working conditions or work organization (stress, qualifications, income, etc.), on the one hand, and the interests of clients in the quality of the services provided, on the other, may coincide, conflict or be unrelated to one another. If one regards the communicative services not as the inevitable consequences of "bureaucracies" and "bureaucrats", but as products of work and interaction processes that are constantly in a state of flux (under the given structural conditions of the particular social administration), then it is not readily understandable there should be a fixed and inevitable "bureaucratic dilemma" (HEGNER 1978). According to this view the agency-client-relationship must be regarded as a zero-sum game in which changes for the benefit of one would only be possible at the expense of the other. Without ignoring the situations that correspond to this pattern, this view can be questioned. The concrete form of social administrations will always include elements of control since it must fulfill the double function of, on the one hand, providing social benefits (financing, distributing, mediating) and, on the other hand, controlling the allocation of these benefits. This double function will always be reflected in the agency-client-relationship. However, in contrast to the "dilemma" thesis, we think that an analysis that focuses on the work and interaction process will also find coincidence of interests (not identity) and can specify the conditions under
which this is the case. This is for several reasons a prerequisite for relating labour policy and social policy analytically and for adjusting the relationship between them in practice.

1. In the long run the interests of the employees can be protected against the negative consequences of technology for working conditions and work organization only if their resistance also incorporates a defense of the interests of clients in the quality of the social welfare system (KUEHN 1979). This means nothing less than the abandonment of the current policy of a defensive and rigid protection of their own narrow occupational interest in maintaining the status quo with its high legitimation costs. The labour policy of employees in the social administrations will have to be, out of practical political necessity, increasingly oriented toward active participation in the social policy tasks of their institutions.

2. The actual performance of the social security system is to a considerable extent not the result of the explicit provisions of benefit legislation but of spontaneous "secondary effects" of the rationalization process. These are not, however, determined by the introduction of information and communication technologies but are a result of exchange, bargaining and conflict processes at the levels of work process, the general organization of the social security institutions and their external economic
and political ties.

3. The implications of labour policy for the attainment of the goals of social policy must be understood and thereby also become controllable. The relevant labour policy consequences of administrative rationalization in the social security system could then become the consciously chosen context or even instruments of social policy—rather than unpredictable variables that may obstruct the attainment of the goals of social policy. The effects could at least be minimized as a consequence of which the technology-based rationalization process in the social administrations generates, intensifies, or shifts responsibility for risks, instead of preventing or compensating them.

These goals yield the following principal research questions:

- First: How do work organization, work processes and the (resulting) working conditions in welfare state institutions change as a consequence of the introduction of modern information and communication technologies in the context of rationalization measures?

- Second: What consequences do these changes have for the quality of social services?

- Third: What is the impact of differences in the structure of social welfare institutions and in the general context of economic and social policies on the application of
technology in democratic industrial societies?
Chapter 2

Approach and Principal Variables

The project is intended to be an empirical contribution to the discussion of the effectiveness of services in the area of social policy as well as how they are influenced by the introduction of information and communications technology in the work process of social welfare institutions. A complex approach incorporating elements from economics, political science, administrative science, research on the impact of technology, scientific work analysis, communications theory and client sociology is required.

We approach the problem through several postulated causal constellations, the precise form, direction, and consequence of which must be empirically investigated with reference to work organization, working conditions of the employees, and the realization of the rights of clients vis-a-vis the social administration. These will be sketched here and elaborated in the following sections with reference to current research in several disciplines.

The first causal constellation (see Diagram 1) relates to the
interrelationships between the concrete conditions under which social services are provided, i.e. work organization and the internal and external structures of the social welfare institutions. It is assumed that both the form in which technology is introduced as well as the direction of its impact is a consequence of structural and political factors in the welfare state institutions. We are concerned in particular with the social risks (e.g. age, unemployment, or illness) toward which expenditures are oriented, the distribution of decision-making authority among the individual hierarchical levels (centralization, decentralization), the current state of technology utilization, the possibilities for effective action by individual and collective actors to influence the introduction and form of the new technology (e.g. regulations about participation). The change in the conditions under which social policy services are produced can be understood largely in terms of changes in different aspects of work organization, for example, the (changes in) the division of labour, specialization, or the formalization of the work and control processes, etc. (see Diagram 1).

An isolated examination of the interrelationships between institutional factors and changes in the work process and the quality of social services is methodologically necessary, but the relationship to the general context of economic and social policy (Level 1) must also be incorporated. If that is not done, then the causal relationships, which are our ultimate focus, can only be elucidated within sectors, and the resulting propositions will
Figure 1: 1st Causal Constellation

Level 1:

- Society state

General context of economic and social policy

(Economic conditions and strategies of social policy)

Level 2:

- Welfare state institutions

Existing tasks and decision-making structure

Concentration/deconcentration

Current level of the application of technology

Actors’ potential resources for effective action

Level 3:

- Conditions under which social services are provided, in terms of properties of work organization.

Degree of intensification of work through increased quantitative and qualitative control

Extent of the substitution of human work by machines

Degree of the dividing of labour and hierarchy and structure of payment

Degree of intensification of work by fragmentation and specialization

Degree of displacement of essential preparatory and follow-up work onto the clients

Degree of standardization of factual information and process control

Degree of formalization of work steps and process control

Degree of completeness of the application of laws and regulations and of the formal control of results
be unverifiable because factors prominent in particular areas may only play a subordinate role in society as a whole.

Knowledge of the preconditions and the consequences of changes that result from the introduction of new technology in the processes through which social services are provided can not possibly be "derived" from merely macro-theoretical considerations. Nevertheless, they have an important function: the application of new technologies and new work procedures in social welfare institutions can only be interpreted as a dynamic process when statements can be made about the actual behavioral orientation of the social administrations. This requires both individual investigations as well as knowledge of their relationship to broader social processes. It is very important that the limitations of a "macro analysis" of general economic and social processes be recognized. The results are always only tendencies and processes that are "necessary" but not "sufficient" conditions for the "micro" developments within the defined areas of investigation. On the other hand they can show that the conditions for the realization of institutional strategies are always compelled by the constraints of social reproduction in definite directions that can be elucidated by scientific analysis; that the aims and policies in social welfare institutions are not arbitrary, even though an indeterminate number of alternative variations are possible within a given constellation of economic and social conditions. For the individual actor the general context of economic and social policy is a "magnetic
field in which the individual actor or institution must move when attempting to realize their goals and interests.

The fundamental relationship between the processes at the macro level and the process of change within the institutions of social policy are approached in two ways:

1. The impulses for changes (in the sense of feedback between system and subsystem) result—generally expressed—from the contradiction between the economic, social, technical and political requirements of the total socio-economic reproduction process, on the one hand, and the real development of the subsystems on the other. Expressed differently: potentials for change in social policy (an external determinant of institutional developments) are always to be expected when the social services—be it in terms of usefulness, of political or of economic costs (conflict, money)—become dysfunctional for central aspects of societal reproduction as a whole. It is in particular impulses for expansive state modernization strategies or restrictive adjustment strategies that are set in motion in this manner.

2. Change processes receive direction and energy essentially from socio-economic power constellations; detailed aspects can not be explained in this way (e.g., individual forms of the application of technology), however, large movements, breaks and trend implications can be. The research
strategy pursued may be characterized as one in which the initial empirical findings in isolated areas of investigation (levels 2 and 3) are related to central indicators of economic and social policy. Following G.Laser/Strauss, we employ the concept of comparative case studies, which permits a descriptive analysis and weighing of these factors in the presence of different general economic and political constellations. Adequate variation in these constellations can be best attained if the project is designed as an international comparative project: the different conditions under which social welfare services are provided are, according to our assumptions (see 3.2.) not primarily determined by technological possibilities, but rather by the selectivity, scope and direction of their practical application. This is evidenced by variations in the pattern of rationalization as influenced by variables at the levels of the labour policy actors within the individual institutions, the structures of the system of social benefits and the general context of economic and social policies.

Within a national context the investigation of these relationships could only be carried out by means of long-term time-series studies. The method of a cross-section comparison of different subsystems of the social welfare system would not be contributive to the objectives of this study because the structurally different institutions (e.g., the centralized pension system for employees and the
decentralized public health insurance system) can only be related to different social risks; and because the general context of working conditions, social and economic policies can not be varied. The international comparative investigation includes the Federal Republic, Norway and Great Britain. About the same technological potential can be assumed for all three countries, and this variable can thus be held constant. The structure of the social welfare institutions manifest almost all conceivable characteristics (for example, decentralized public corporations in Germany versus centralized ministries in Great Britain). Since the general context of economic and social policy only affects concrete forms of rationalization with a long time-lag and since the countries with comparable standards of technology are also subject to very similar world economic pressures, it is important to select countries that have had relatively large variations in a middle-term time framework (8-10 years). These are Great Britain (long-lasting and deep crisis symptoms, consistently restrictive fiscal and social policies) and Norway (relatively low unemployment, relatively nonrestrictive fiscal policy context, strong welfare state traditions). The Federal Republic manifests elements of both countries.

After having regarded the changes in work organization as a dependent variable in the first causal constellation, the second and third causal constellations focus on their effects on the re-
relationship between working conditions in social agencies and the quality of social services. The structuring of work processes is regarded as the determinant of the communication and the division of labour between the administrative agencies at the level of case processing and their clients. The general organization of the work process is articulated at the level of claims processors through their job descriptions and their means of work. Communication skill requirements and "essential preparatory and follow-up work" are shifted to clients either directly through changes in the potential for effective action of the employees or officials or indirectly as a result of their reactive strategies for coping with changes in work organization. In the existing literature some theoretical insights can be found about these direct and indirect causal relationships between work organization and the quality of social services, not, however, any developed theory for systematic investigation. A communications theory approach is needed that goes beyond the formally defined boundaries of the institutions and encompasses all work operations necessary for producing benefit services, including even the work required of the client, e.g. supplying information, understanding correspondence, responding to agency communications, etc.

In this way the work process required for producing social services (see 3.1. for a definition) can be redefined as a complementary division of labour in the communications process between social administrations and their clients. Complementary
division of labour means here that communications steps in providing a benefit are constant so that the altered possibilities for effective action of one partner in the interaction process changes the demands made on the other.

The interaction between clients and administrations takes place at the implementing level—hence mediated by the claims processors, through whom the general organization of the institution impacts on the client. Technical-organizational changes in the work processes through which social benefits are provided have direct consequences for the potential for effective action of the claims processors in their work situation and thereby affect the communication and action requirements expected of clients. This direct causal constellation is depicted in Diagram 2.

Thus far there have been only a few initial efforts, in research projects employing a bureaucratic theory approach, to investigate the impact of the application of technology in public administration on the quality of services through structural changes in work organization (see Grimmer et al. 1978; Brinckmann et al. 1978). However, none thus far has recognized the necessity of focusing on the working conditions of claims processors. This should become more clearer when, in addition to the above mentioned direct effects on the potential for effective action of the claims processors as a result of changes in work organization, the indirect and longer-term effects that occur through the
Figure 2: 2nd Causal Constellation

Direct causal constellation at the level of implementation

Level of work organization

Level of worksituation and working conditions

Interaction level

Possible changes

| Technical-organizational determinants of the work process |
| Information base |
| Means of work |
| Claims processors' potential resources for effective action |

Interaction requirements on clients (Communication and action)

Goal realization

Fulfillment of client rights

Feedback
influence of the claims processors on the clients are taken into consideration. These pertain to qualifications, perceptions, and motivations as well as reactive or coping strategies.

For example: the allocation of particular tasks and resources to certain claims processors (groups) determines in the long-run their qualifications and their perception of client interests—irrespective of whether their initial qualifications were higher. Qualifications that are not used and perceptions that are not exercised can not be retained in the long-run. And the motivational impact of certain working conditions (e.g. stress, monotony) on the implementing officers lead to coping strategies vis-a-vis the public that can not be anticipated when work organization is planned. Thus empirically oriented research projects that aim at describing, analyzing, and explaining the impact of the application of technology on the quality of services must focus on the working conditions of the implementing personnel, or they run the risk of overlooking significant causal relationships; the quality of work in the institutions of social policy is thus a significant influence on the quality of benefits. This is illustrated in the indirect causal constellation at the implementation level in Diagram 3.

Corresponding to the last two models of causal constellations, a high quality of social services is guaranteed when the working conditions constituted by work organization permit and encourage a complete realization of clients' rights. The more that com-
Figure 3: 3rd Causal Constellation

Indirect causal constellation at the level of implementation

**Level of work organization**

**Level of worksituation and working conditions**

**Interaction level**

Possible changes

- Technical-organizational determinants of the work process
- Information base
- Means of Work
- Claims processors' potential resources for effective action
- Interaction requirements on clients (communication and action)

Direction of causality

Goal realization

Fulfillment of pension claims

Feed back

Use and development

of qualifications

Perception

Level of motivation

& coping strategies

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munication and action barriers arise as a result of suboptimal working conditions—which, as is well known, particularly affect the disadvantage, i.e., those who are really in need of help—the more the quality of benefits deteriorates.

The total structure of variables is depicted (in simplified form) in Diagram 4. The complexity of the approach is primarily a result of the ambition not only to carry out a dynamic investigation of the application of technology or a static investigation of the effectiveness of certain features of work organization on output, but to unite both of these goals in a single empirical project. One part is, however, as necessary as the other if the general goal of the project is to be fulfilled: the specification of the impacts of existing rationalization strategies (dependent on variables at the institutional and the supra-institutional levels,) in social welfare institutions on the fulfillment of their goals/obligations vis-à-vis clients. This involves, first, the transformation of rationalization strategies through the introduction of information and communications technology, under the given general context of economic and social policy, into concrete forms of work organization, and, secondly, the resulting changes in the relationship between working conditions and what is required of clients, the complementary division of labour which is ultimately constitutive of the quality of social service benefits (see Diagram 4).

Technology is an intermediate variable in the above model.
Figure 4: Structure of Variables

General context of economic and social policy

Influence factors

Application of technology

Work organization

Working conditions (direct and indirect)

Requirements on clients (action and communication)

Work result

Benefit
When it is conceptualized and shaped in the individual organization structure by political and economic interests—under the influence of the intervening variables/influence factors—toward its concrete application, it is a dependent variable. However, in so far as it determines the course and scope of work processes as it is concretely applied, it is an independent variable. In the general framework it is a medium through which interest and influence factors are transmitted to the units of analysis of the project—the work processes and structures.

As a social phenomenon, technology is initially to be regarded as a factor external to the social administrations being investigated that they invoke through some type of mechanism. This resort to technology is itself also in need of explanation—this, however, is not the principal aim of the project. Since the technological as well as the socio-technical development are thoroughly comparable in the three countries to be investigated, due to random variation effects in all probability no essential explanatory factor is lost by this limitation. Thus technology first becomes a relevant variable for the project as it is applied within social administrations.

The current state of theory and research in this area does offer support for a relatively complex research approach. The next section presents a more detailed justification of our approach in terms of previous research. (The essentials of section 5, "The Current State of Research", are already treated
Chapter 3

Explanation of the Research Strategy

3.1 Social Welfare Services as Work Processes in Administrative Agencies

An essential characteristic of our study is that the quality of the social welfare services is not primarily regarded as the result of the bureaucratic structure of social agencies. What is important for our inquiry is, first, that these services are work processes (within the framework of certain administrative structures) and, secondly, that the client outside the institution is more or less incorporated into these work processes. Correspondingly, we have to inquire into the factors determining the output of the administrative agency that result from the specific deployment of manpower, equipment (in particular, the use of modern information and communications technology), the special characteristics of the "work objects" (information and clients as the senders and recipients of information) as well as the organization of these elements.

The predominant emphasis in the relevant literature on public
administration is on questions of output quality, which is expressed in concept pairs such as "client orientation" (Buergernaehé) versus "impersonality" (Buergernferne) or also in categories related to distribution (e.g., underconsumption).

By contrast, "quality of work" within the institutions has received little attention and, consequently, also its consequences for the quality of the outputs of social administrations. Nevertheless, previous work on these partial aspects of the problem does offer an important basis for our research. In our opinion, the growth of critical literature on public administration since the 1970s is not, as is usually supposed, primarily an indicator for widespread "impersonality", anonymity or the lack of transparency of social administration but rather a manifestation of the fact that more articulate segments of the population with a greater capacity for conflict have increasingly become clients and interaction partners of the social administrations, and their shortcomings now receive more scientific and public attention. The fact that this selective attention is specific to certain social strata may be why there has been little interest in the labour policy aspect, i.e., the impact of administrative rationalization on working conditions of the employees (e.g., stress, qualifications, controls and sanctions, etc.), although its importance for the quality of social benefits is obvious. Nevertheless, there is an existing foundation for further inquiry. This can be illustrated by several studies that are concerned with particular aspects of our inquiry.
The common denominator of the recent critical literature on public administration can be formulated as follows: the complexity of the public institutional system and its service offering has reached such proportions that it is directly counterproductive or is threatening to become so, even for citizens with an average education. While this discussion in the Federal Republic has been largely articulated with the concepts "client orientation/impersonality", the emphasis in United States and Scandinavian publications is on the problematic of "underconsumption" of social welfare services.

Kaufmann (1979) describes the cause of the widely articulated feeling of "impersonality" as follows: "The more public administration intervenes in the everyday life of the citizens, the more its "client orientation" or "impersonality" is perceived as a problem" (p.12). Supplementing market-distribution with welfare state redistribution is regarded as the principal external cause. The internal administrative causes of "impersonality" are attributed above all to the following points: increasing division of labour within and between agencies leading to a corresponding need for more coordination, increasing economy measures even in the production of benefits, increasing legal regulation and increasing hierarchy and centralization (see, ibid., p. 12ff.). These factors lead to "insufficient attention being given to the concerns of clients within administrative structures, in which coordination problems within and between agencies and institutions require so much attention
that citizens' expectations that their problems be resolved are regarded as an external nuisance" (Ibid., p. 12). The increased number and growing differentiation of the public service offering has created organizational problems for public administration that it has attempted to resolve largely at the expense of the citizenry. Because more and more citizens are dependent on the level, distribution and quality of social benefits, these problems of public administration impinge on individual lives. This could be the why the shortcomings designated by the label "impersonality" became a political problem. (see Kaufmann 1977, Albrecht and Reidegeld 1976.)

Analysis of this causal relationship requires consideration of the special circumstance that the client—in whatever way—is involved in the process by which social welfare services are "produced" and, correspondingly, changes in this process also necessarily affect his/her situation.

Consideration of this interrelationship has not been confined to the German literature. Scandinavian investigations can also be cited representing another differently formulated approach to the same problem. They focus on the causes and consequences "underconsumption" of social welfare services (Hoven 1981) and reach the conclusion that: "Underconsumption is an attitude problem, an information problem, an access problem, a stigmatization problem and an experience problem" (p.16). "The underconsumers of social welfare services are largely those who are in
most need for these benefits. The system rewards the well-informed and articulate and punishes those who are uninformed and inarticulate" (p 15). The explanatory variables of the information problem as well as of the access problem are located at the same level, as in Kaufamnn and others.

The investigation of the consequences of the introduction of information and communications technology on the performance of social welfare services is based on the causal relationship sketched above between administrative-structural and work-organizational elements as well as on the special situation of the clients (also citizens). The scope of the study is limited to the first level—as also in our investigation—to the technologies mentioned. Correspondingly, not only the contents but also the structures of many earlier formulations of research findings are similar. Thus Lange et al. came to the conclusion that the design of centralized data processing in public administration has made possible technocratic problem solving strategies which, particularly in the area of public order and benefit administration, lead to a situation in which "demands are made on the learning capacity and willingness to learn as well as on the knowledge of citizens that can not be fulfilled, especially by the less educated and disadvantaged. These citizens are, therefore, less and less able to take advantage of benefits designed exclusively for them by the social Administration. Clearly public administration has itself become a social problem" (Lange et. al. 1980).
An example of an investigation of the consideration given to client interests (Grimmer et al. 1978) focuses on how the quality of pension benefits are affected by the introduction of centralized data processing. Its findings can be summarized as follows:

As and consequence of this particular form of the application of technology and its consequences for work organization, the information intake was narrowed, the work steps through which pensions were provided were formalized, the time required for processing of claims was lengthened. Individual cases were no longer readily comprehensible to implementing officials. Communications addressed to individual insured persons by the social administration became so standardized with the use of electronic word processing that they failed to address the circumstances of individual clients. As and consequence the number of informally resolved protests increased, and an unknown number of claims of disadvantaged clients were not considered by the pension system (Grimmer et al. 1978, p. 66f.).

The individual findings and general tendency of the investigations cited vouch for the plausibility of the causal inter-relationships which orient our study. However, it is also—more or less—characteristic of all that, while they mention the dynamic relationship between the application of technology and working conditions/work situation of the employees (i.e. the labour policy aspect), they do not give adequate consideration to its independent importance as a factor influencing the causal constellation between conditions of "production" and the quality
of the social welfare benefits. On the other hand, the predominantly scientific work analysis and social science oriented investigations either do not consider the interrelationships between the introduction of technology and work situation with respect to the quality of benefits, or do so only incidentally. This is above all because such research necessarily has another goals. In order to be practically effective under present circumstances, their findings have to fit into the structure of expectations that is defined in labour legislation as "established findings of scientific work analysis". For this reason not integrated applications of technology are the focus but rather selected individual consequences, for example, jobs at computer terminals or work with word processing systems. (For an overview see Projektgruppe "Humanisierung der Arbeit" (eds.), Informationspakete zur Humanisierung der Textverarbeitung und der Bildschirmarbeit.)

The principal focus of our investigation is, however, precisely on the causal linkage "rationalization by means of the application of technology"--"working conditions of the employees"--"quality of the communicative social welfare services." First, it is a matter of registering change in the social welfare benefit process, which—in addition to changes in benefit legislation—result from changes in the conditions under which benefits are provided. These processes are, however, not determined merely by the introduction of information and communications technology. They are shaped by exchange, bargaining
and conflict processes at the levels of the work process, the organization of the agency as a whole as well as by economic and social relationships external to the administrative agencies. While these changes in benefits do not represent legally legitimated modifications of social policy goals, they are not unaffected by politics. The labour policy aspect of mechanization and automation in the social administrations is especially important here because of the labour policy developments in the social administrations oriented towards making the attainment of social policy goals measurable.

Secondly, this approach can offer a basis for labour policy in the social administrations and specifically for the policy of the employees, whose working conditions are our focus here. It becomes increasingly clear that protection against the negative consequences of the introduction of technology, for example, on health, qualifications, income, etc. can not be achieved or legitimated before the public if it is based on policies of institutional narrowmindedness and a socially isolated "defense of the status quo". A rational policy of the employees to secure their interests must be based on the fact that identities between the work interests of the employees and the goals of the social welfare agencies can not be merely "asserted" or propagated, they must be actually brought about. This necessitates inter. alia. forsaking the (unsuccessful) defensive policy of attempting to ward off the consequences of the introduction of technology for a policy of participation in shaping it in order to orient it
toward goals that make it possible to achieve an optimal relationship between the interdependent factors, "work quality" and "service quality" as defined by social policy. Part of the international character of the project consists in investigating variance in this relationship under different conditions of employee participation in decision-making about the introduction of technology. The relevance of this contribution of the project results in part from the plausibility of the assumptions made as to the degree of freedom (in the sense of labour and social policy) that exists when information and communications technology is introduced (see next subsection).

Since we rely on the existing literature to sketch our assumptions in this regard—which treats this problem under the rubric of material production, the following should be noted in advance:

The concept of social services is used pragmatically as a collective term for the services provided by the social insurance institutions or social administrations. This is a quite limited application of the term, since it does not include several basic social benefits (e.g. medical care). This usage is, however, similar to that in the relevant literature. It encompasses the characteristics of "individually oriented" and "public" services (see Kaufmann) and of "administrative services" or "administrative work" (see Lange et. al.; Gruenewald and Kock 1981). However, benefits such as "pensions" (see Grimmer et. al.) are also included, since they are determined and transmitted to the
individual client by administrative work. In this way all services performed by the social administrations (information, counselling, written communication, monetary benefits and non-monetary services) can ultimately be traced back to processes of collection, processing, distribution, etc. of information. If information is offered separately from the others types of benefits, then it should be regarded as only a form of organizational segregation of certain work steps in the total process by which benefits are provided.

That has the following consequence: between administrative work as information processing on the one hand and information and communications technology on the other there still exists a greater affinity than between this technology and the production of material goods. While it is necessary in the production of material goods to reflect reality completely and accurately (for example, when technology is used in steering processes), the public agencies do not work with material objects but with information that is already conventionally formalized without—even for selected areas—any claim to fully describe reality (see Mendener et.al.; Schroeder 1982). In contrast to material production, even when reality is distorted (e.g. as and result of formalization and standardization), there are no intuitively perceptible negative feedback effects in the production process. In contrast to faulty steering of the production process, an erroneous calculation of pensions first becomes a problem for the administration when it is noticed by a client and he or she is
able to successfully contest it.

3.2 Politics and the Application of Technology

Estimates of the degree of freedom that computer technology allows in shaping working conditions and performance are dependent on assumptions about technological determinism and/or the universality of computer applications. Opinions are strongly influenced by the scientific discipline from which the individual authors come. For most computer scientists and engineers information and communications technology have no necessary consequences for work organization and working conditions. Monotonous jobs and intensification of work as a consequence of the application of these technologies are interpreted as the result of management's "outmoded organizational conceptions" or "lack of organizational imagination" (see Essig, Heibey et al. 1979).

By contrast social scientists emphasize consequences such as loss of jobs, intensification of work, increased division of labour and dequalification (Kern/Schumann 1970; Kern/Schumann 1980) as well as stronger programming and control of work and procedures (Brinckmann et al. 1981; Brinckmann et al. 1983) as well as increased monotony and work job stress.

How do these authors understand the relationship between the introduction of new technology and its consequences? According
to Altmann and Bechtle the desire for external autonomy, maintenance of internal authority and the desire to increase productivity—which is transmitted to the firm via the competitive mechanism—are the driving forces for the constant introduction of new technology in private organizations. For these purposes the application of technology constitutes an "internal area of strategic maneuver" for the firm management. This is accomplished by creating technically determined work processes, introducing automated work sequences to eliminate moments of insecurity (see Altmann and Bechtle 1971). This means that economic and control interests determine its consequences for work organization in every stage of the application of a technology. Thus Kern and Schumann predict, under the economic and political power constellation of the 1960s, that in the long run "technically similar facilities will develop a regulation of work organization that insures a minimum of production costs and tolerable production risks" (Ibid, p.43; see Poehler 1974).

Although we accept in principle this viewpoint, it has the disadvantage that it only corresponds to the facts—and only then—when the interests of entrepreneurs have expressed themselves in consistently the same relationship in the formation of work organization and the application of technology. It thus requires a qualification, which can be taken from the following statement by Fricke (1975, p.19): "The use of this opportunity for autonomous social formation of industrial work is principally open to all groups within the industrial firm: blue and white
collar workers as well as the firm's management. Which viewpoint predominates is not a matter of technical necessity or the inevitable course of the development of technology; it is a question of power, of influence and (...)of social imagination. As Kern/Schumann emphasize, "Decisions about work organization are largely oriented toward considerations of profitability. This does not mean that work organization is necessarily and always regulated according to the criterion of economic profitability, nor does it exclude the possibility that new, entirely different factors enter into the economic calculation and in this way change the way in which the conditions of profitability and return on investment are understood" (see Macher and Mielke 1979, p. 425; Mendner 1975, p. 125).

Against this viewpoint it can with justification be said that it does not consider the structural difference in available opportunities for pursuing interests or tends to underestimate them. Important is, however, that the political element of the exchange and conflict relationships in the firm is again explicitly introduced into the debate as a determinant of working conditions. The plant-level power relations to which Frick refers constitute the starting point for the action-oriented research projects of the Norwegian Computing Center (Nygaard 1974; Elden et al. 1980, 1982; Fjalestad 1979; Pape 1982; see Kubicek 1979), and the same criticism is also applicable to them. Nevertheless, these projects were able to demonstrate the following: under certain structural, legal and cognitive
preconditions (participation rights provided by law and plant agreements and training) the competence of employees to cope with EDP-induced rationalization measures can be developed so that they can be an independent influence on the formation of work organization and work processes. Besides an interest in economy and in maintaining control at the plant level, an interest in the quality of working conditions—which also certainly includes an interest in the social usefulness of the work product—is increasingly recognized and influential (see Keul 1983).

On the whole, all the authors discussed deny that they believe in technological determinism. Merely various factors that mediate between technology and its concrete application are emphasized. Subjective factors such as "outmoded philosophy" or "social imagination" are frequent, however, only secondary in so far as their specific form is linked to prerequisites that shape attitude and behavior in each case, which are presumed to be subject to change (see Freidson 1975, p. 42ff; Kuehn 1980, p.92ff.).

Even when technological determinism is hardly explicitly represented in the scientific literature, this attitude is by no means irrelevant. It can be found at the plant-level as a management ideology and is frequently implicitly present in the literature.

At the other end of the spectrum of views on the formative possibilities in introducing electronic information and communications technology is the hypothesis of universal applicability.
It is justified by computer scientists and engineers as follows: Information and communications technology is a technology for processing syntactically organized symbols according to algorithmic principles. This means, on the one hand, that data processing can not consider the semantic (significance) and pragmatic (goal) aspects of information, however, on the other hand, it is therefore universally applicable for the processing of every type of information—with the necessary programming (see Schroeder 1982).

With the development of remote data processing, very fast real-time systems based on the disk as a storage medium, and a constantly improving price/performance ratio, data collection systems and multiprogramming, automation plans have undergone a clear change in goal orientation. In the terminology of Brandt (1978), one could describe this development as one from work technology oriented projects, i.e. transfer of certain types of work to electronic data processing facilities, toward organizational-technological time-economy oriented measures. This is characterized above all by the storage of information on all plant-level processes, the discovery and elimination of "slack" and a restructuring of the work process according to analytic-rational models (e.g. formalization and standardization) (see Brandt et. al. 1978).

Benz-Overhage et.al. call attention to the new quality of computer technology that "can be seen as an instrumental unity of
technical and organizational elements for the design of production processes and (...) therefore (can) not be understood in terms of traditional conceptions of production technology. Rather they are (...) to be defined as technologies whose economic function lies in the implementation of production-oriented economic rationality manifesting themselves in the temporal coordination of factors of production or the subsumption of subtasks to the computer system as well as in the integration of subtasks in continuously coordinated work processes" (p.4).

Most authors see the consequence for the organization of work processes as follows: first, independently of the degree of its greater flexibility of application, highly developed computer technologies presuppose the analytic penetration of the work process and the design of work organization according to an overall, uniform technical and organizational conception. Frequently this restructuring already leads to cost savings, to changes in working conditions and also influences output, before the technology is fully introduced; after that has taken place, this trend is strengthened because the application of communications technology leads to a doubling of complexity. It presupposes an abstract model of the total framework within which it functions (Zemanek 1978), and the exhaustion of all its potential applications presuppose that the systems are integrated into a total concept (see Schroeder 1982).
On the whole not only the introduction of the new technology but also the creation of the prerequisites for its universal application make the organization more susceptible to instrumentalization. To be sure this does not permit any statements on the actual direction of causality.

We are following here the general "Trend reinforcing thesis"—not necessarily with regard to the concrete inter-relationships between working conditions and the implications of communicative services for the quality of social services, but generally with respect to its interest-oriented analysis. Lange et al. (1982) summarize this thesis as follows:

It is to be assumed that the application of technology is the result of human action that takes place within organizations. In the context of the interests that underlie action and the organizational and social conditions of action (investment conditions), the available elements of technology are selected and combined with organizational- and individual-oriented regulatory elements. The manner in which the potentially available techniques are employed is predominantly determined by these decisions and their implementation. From the viewpoint of the decision-maker technology offers possibilities for cost savings and quantitatively and qualitatively enhanced goal fulfilment. The application of technology is thus closely related to the basic interests and strategies of the decision-maker and is adjusted to conform to them as well as to prevailing social conditions. When the application of technology is controlled by the dominant interests in a social sector, it is to be expected that the introduction of new technology will as a rule also strengthen existing positive and negative trends. Because of its instrumental character and the conditional nature of its application, information technology becomes a reinforcer of existing trends (see Reese et al. 1979)" (p.58f).
Regarding social agencies it must be added that the introduction of information and communications technology, its organizational prerequisites, and its consequences for the quality of work and social services can itself promote processes that result in employee and client interests becoming independent influence factors. As the above cited Scandinavian studies show, both the resulting goal modifications as well as the necessary conditions for action can be specified. These factors are, therefore, also incorporated in the design of our research.

Studies on social agencies in the Federal Republic suggest a combination of political and more budget-oriented goals: rationalization measures—according to Billerbeck in reference to the pension system—are supposed above all to cope with the following problems: increased number of cases, increasing complexity of social legislation, public criticism of excessive time lags in processing claims and limited financial room for maneuver as a result of both reduced contributions in relation to pension payments as well as fiscal policy strategies external to the social insurance system itself (federal subsidies). The goal structure that prevails in this situation reflects certain patterns of selectivity in the application of technology. Roeske (1978) focused on the establishment of a social security data bank, administrative centralization and reduction of administrative costs. Regarding efforts to achieve greater uniformity in the social insurance system, he concludes that these lead from centralization to standardization of claim relevant facts (see
Roeske 1978, p. 16f; Schmidt 1977). In accordance with our approach it must be explained how developments at the level of the total organization are transformed into a concrete reorganization of work (e.g. division of labour, qualification, control, etc.) and the work results (e.g. their relation to the whole person and the life situation of each individual client) at the level of performance. In summary the discussion of the universality of the application of technology assumes the following:

Research results in public administrations in the Federal Republic show that the application of technology is instrumentalized in terms of economic goals (above all an interest in budget-oriented cost reduction) as well as political goals (above all with respect to the legal fulfillment of tasks) as well as toward centralized data aggregation. While the information and communications technologies can already at present be largely universally instrumentalized, their concrete applications reflect prevailing interests and power constellations. The degree of determinism is thus only secondarily a technical and primarily a political and economic problem.

This assumption says no more and no less than that information and communications technology has reached an greater universality of application as a result of which it is no longer possible to consider specific manifestations of work organization and the production of social services as being determined by technologi-
cal imperatives. If one always includes in decisions on the application of technology the possibility (and also the necessity) of consciously holding open the option of nonutilization, at least in certain areas of application (see Weizenbaum 1977), then existing organizational and performance process constellations can be regarded as the results of interest-led and/or incompetent action, the determinants of which can many times be located at the supra-institutional level. This circumstance is taken into consideration within the structure of the following sketch of influence factors.

3.3 Factors in the Technologically Oriented Design of Work Organization and Work Processes

3.3.1 Initial Considerations

The approach sketched above makes it both necessary and possible to choose a pragmatic way of proceeding in dealing with the two following problems: First, it makes it possible to investigate the structure of variables in the context of an international comparative study (large variation in the individual levels of investigation, see Diagrams 1-3) by means of relatively crude indicators and to relate them to one another (see Ch. 4 below: Design of the Study). Secondly, the current state of theory and research necessitates a theory oriented but empirical-pragmatic approach to the linkage between the "macro"
level and the institutional level (Ibid.).

With regard to the last named problem there is the question of the factors that influence the design of work organization and work processes in institutions. It can safely be assumed that they are essentially externally determined. Expressed in another way, it is a matter of the problem of the effective behavioral orientation of welfare state institutions and hence of the ambiguous concept of "rationalization," which is frequently used to describe investment and organizational decisions. Neither an a priori definition of this concept nor the attempt to give an empirically based definition of real action-orientation in the institutions undergoing rationalization, can be the starting point of the investigation; it is rather itself something that has to be investigated.

The Rationalisierungs-Kuratorium der Deutschen Wirtschaft (RKW) defines rationalization as follows: "Rationalization means rationally design." Such a tautological definition does have the "advantage" of not limiting the scope of the investigation. The justifiable reason for rejecting a restricted procedure according to the motto "first a definition" is that the research findings should not be unnecessarily prestructured by an initial definition. On the other hand the price for avoiding such tautologies (ratio = reason) is disorientation. What is "rational"? This question can only be answered if the goals and norms were known that orient action. Since social action always
occurs within historical development, there is yet another question: What dynamic shapes these goals and norms?

In order to inquire into goals and norms at all it is necessary to interpret the concept of rationalization analytically rather than normatively. To pursue this question in every direction the usual economic reductionism must be avoided. This takes as a rule several forms and is not limited to the economic end-means relation. Those factors are also excluded that, while they have an economic significance, can not be expressed in monetary terms, which is usually only possible for goods and services that are traded on markets or can be compared with those that are. Moreover, the monetary values considered usually pertain to an isolated economy and the core problem of "external effects" is lost from view; a measure is, namely, only "reasonable" when it has a positive effect on the balance sheet of a firm or the budget of an administrations agency, even when the cost/benefit ratio at the societal level is unfavorable. Thus, for example, when the "gain" merely arises through a change to the disadvantage of the client in the division of labour in the interaction relationship between client and public agencies, it can be deemed to be positive from the budgetary perspective of the agency.

A further principled objection to a narrowly economic conception of rationalization leads us to the problem of the really effective action orientation of social service institu-
tions: even when the shortcomings of nonquantifiability and its isolated (micro)economic perspective (or departmental narrowmindedness) could be eliminated—if scientific efforts could establish the actual relationship to overall societal development—this approach would have an ideal and possibly normative character, nevertheless, the larger societal (here social policy) effect of a (rationalization) measure in an individual firm or agency is not thereby in any way a stimulus to action. Macroeconomic data are merely statistical aggregations of many microeconomic data in different contexts. Only microeconomic data actually correspond to real actors. We are not referring here to changes in social policy through legislation but those administrative actions usually referred to as "rationalization" or "modernization" that relate to investments, personnel deployment and organizational structure (in the course of which social policy changes occur as a "secondary effect"). For participants in the private market as well as for public agencies the only factors that stimulate action are those that become a problem for the individual firm or the individual public institution. For example, within the context of an individual budget it is—aside from problems of legitimation—only useful to assume more of the burden of interaction in the relationship to clients (e.g. because of an increased rate of error in filling out forms and the resulting administrative costs) because another strategy would lead to greater restraints and costs, and economic changes have a feedback leading to administrative action only for this
kind of reason.

With respect to the framework of action for state or public institutions clearly the levels and the dynamic of the effective behavioral orientation is too complex to be adequately understood in economic categories. "Rationalization" as a concept for the segment of administrative action that is relevant to social policy is too complex to be understood by the approaches that are guided by the normative formalism of business management theory.

The low analytic fruitfulness of this type of "economism" has been reflected for years in academic research and teaching in the institutionalized separation between "pure" economics, on the one hand, and different varieties of "political science" on the other. After its separation from "Staatswissenschaft" (Political Science), "Nationaloekonomie" (Political Economy) ceased to include all those sectors in which resource use and distribution do not take place through the "invisible hand" of the market, but--like the social welfare institutions--are "non-market-regulated" and hence are perceived as being a direct consequence of political decisions.

On the other hand there developed a form of "politicism" that concentrated on decision-making structures and processes, for example, as the result of bargaining processes between interest organizations, in parliaments and in political parties, etc. This school has made and continues to make contributions to empirical knowledge. Nevertheless, it remains static. Because the
complexity of the relationship between "politics" and "economics" is reduced to its political, power-theoretical dimension, the empirical findings are a less and less adequate reflection of reality as the economic dynamic develops over time. Insofar as they are at all a reflection of reality, power-theoretical observations (for example, on income distribution, social policy analyses based on theorems of vote maximization or assumptions about competition among interest organizations) quickly become inadequate as the economic processes (e.g. growth, employment, primary distribution) change in the context of changing structures (e.g. increasing concentration, the evolution of industrial branches). They are not "false" (hence inherently correctable) but "obsolete" because the factors that have led to the unexpected results are not included in their frame of reference.

The causal level for an investigation of social services would thereby be excluded which can plausibly explain the transformation in the delivery of social services and in the goals of rationalization since the mid-1970s. The economic stagnation and its distributational consequences have generated, on the other hand, increased social risks (e.g. unemployment with its manifold social consequences) and lead to increased demands on the social security system. There has also been a deterioration in the financial situation of social security institutions, which are dependent on the state of the private economy. No definite rationalization policy can be derived from this social policy
"dilemma", since this constellation also leaves open a large degree of room for maneuver in social policy. On the other hand, such an economic-political constellation also makes certain trends more probable than others; moreover, a "change of paradigm" in social policy can also be observed, the dynamic and direction of which must, however, ultimately and alone be supposed to reside in ideas and attitudes. Administrative action—and thus also "rationalization"—could no longer be understood as an interaction between behavioral exigencies and real possibilities for action (which lie, for example, in the introduction of computer technology).

There is, however, particularly in this case a considerable theoretical deficit. The issues that concern us here can not be explained in terms of an empirically based really effective action—(and thus also rationalization—) orientation of public administration. The problem of the mediation between the institutional and the supra-institutional levels can be dealt with correspondingly in a more pragmatic manner than is in part the case in industrial sociology. In that case progress could be made against a predominantly phenomenological approach by operationalizing the assumptions of the "classical" economic theory of the goal system of capitalist enterprises—in an historically modified form—for specifically social science inquiries. This permitted the assumption that—in the context of, the concrete competitive situation in the individual firm—each firm has a certain number of strategic possibilities at its
disposal. Under conditions that are in each case different the realization of "enterprise strategies" (ISF-Munich) is constitutive for the conditions or production in the broadest sense. The really effective action-orientations in utilizing personnel or technical resources can thus be conceptually understood in a way that can be the basis for an empirical research design (e.g. "firm problem" = necessity of action; "firm strategy" = coping with the necessity).

In the attempt to investigate the effective action-orientation and hence the rationalization dynamic in social welfare institutions there is no similar consistent theoretical and operational conception available: What, for example, are the conditions under which social problems become "institutional problems," i.e. real action orientations in the decisions of social administrations? Seen from the other side: Are the empirically existing "management problems" of social welfare institutions really problems relating to the translation of social policy into administrative action? In order to catch up with research on the private economy, another step needs to be performed that can not consist in mere acceptance or the use of an analogy. Existing theories of the (social welfare) state are—aside from their individual strengths and shortcomings—not capable of being operationalized for this inquiry. The "economic theory of politics" (Frey 1974; Widmaier 1974) claimed to explain the action of actors in state institutions. However, a critical examination of its basic assumptions showed it to be unsuited since
it represented ultimately merely an application of the neoclassical economic market model to the non-market sector (Baecker/Kuehn 1984). Thus, for example, the conception of "homo oeconomicus" from the neoclassical "Platonic model" (Albert) appears again in new clothing as the "maximizing bureaucrat" (Niskanen 1974). The real action orientations are thereby represented as determinants of "rationalization decisions" in a considerably more multifaceted and complex manner than in capital-economics. For example, such diverse elements had to be joined in one theoretical concept as inter alia, the following:

- Changes in benefit legislation, i.e. the normative demands placed on the institutions;

- Budgetary or institutional economic factors (e.g. the social policy "dilemma" of the widening gap between income and outlays as a consequence of economic stagnation (see above));

- The marketing interests of the suppliers of rationalization technology (e.g. manufacturers of hardware and software) under conditions of market intransparency and therefore greater "supplier sovereignty";

- The legitimation interests of state bureaucracies that, for example, lead to thoroughly "symbolic" rationalization measures consisting of imitations of forms of rationalization in the private economy whereby the imitative behavior
is regarded as "per se" rationale and one no longer inquires into actual effects;

- The influence of different social groups that is directed at the output of institutions, either in relationship to distributive effects or to authority and control effects;

- etc.

These examples make it appear inadvisable, in light of the aim of the project, to subdivide the "external factors" of rationalization processes (and specifically the introduction of information and communications technology) into "economic" and "political" interests. In addition to many theoretical objections, the need for empirical operationalization also militates against such a strategy. The causal relationship between interests, on the one hand, and the forms in which they are manifest, on the other, can not be readily observed. Thus economic interests, for example, those that affect welfare state institutions, frequently express themselves not in efficiency-oriented economic measures by the public administration but in a change of the form in which social services are provided, (e.g. the economic interest in a more flexible supply of labour, on the one hand, and expansion of the conditions and controls associated with wage compensation benefits on the other). Viewed from the other side, the effect of business management improvements in the cost/benefit relationship may also lie primarily in a transformation of social services (e.g.
changes in the division of labour between administrations and client and their consequences).

Because of this situation the following approach was chosen, which can be translated into a workable research design (see Ch. 4):

According to the universality assumption presented above, it can be assumed that general trends in the development of the economic and political preconditions and strategies of social policy are expressed in changes in the structural characteristics of institutional work processes and work organization (Diagram 1, level 3)—and correspondingly can also be observed there. The structural and power-political characteristics of the different welfare state institutions (see Diagram 1, level 2) play a significant modifying role (see Diagram 4). How this approach can be implemented conceptually and methodologically is shown in Ch. 4. In any case it guarantees a better empirical consolidation of the anticipated results with respect to the relationships between developments at the level of work and interaction as well as the characteristics of welfare state institutions (Ch 3.3.2; B-F) than can be expected by just considering economic and social policy trends. (On the different status of the empirical data in each case see below Ch. 4.) The question of the change in the dominant characteristics of rationalization as a result of changes in the general conditions of economic and social policy is here, inter. alia., investigated by means of a (international)
cross-section comparison of case studies. For example, it is assumed that indicators of "cutback rationalization" (in contrast to "modernization rationalization") increase as indicators for a "restrictive" (in contrast to "expansive") fiscal and social policy of government become more frequent, while the concrete form at the level of implementation of social services would vary with the specific characteristics of the institution. The following section surveys factors documented in previous research that influence the design of work organization and work processes during concretely definable, technology-oriented rationalization measures according to the criteria of our approach (see Diagrams 1-4).

3.4 Individual Groups of Factors

Because of the above mentioned reasons that suggest a more descriptive and inductive procedure for investigating the relationships between the social and institutional levels, our approach does not yet distinguish between "interests" or between macroeconomic and macropolitical "determinants." Therefore, even where the literature employs the concept of interest, we have examined it focusing on the rationalization goals that have been empirically observed and their implementation. Since, however, economic goals can be expressed in political instrumentalization
of the organization and political designs can be expressed in efficiency-oriented management measures, we proceed initially from empirically observable measures (A and B). The measures carried out by means of the application of technology can be divided into those that appear to have a political instrumentalization of the organization as their direct consequence (A) and those that focus on managing administrative costs (B). This is consistent with the results of previous research, which has found that the goals of technology-oriented rationalization measures are, above all, cost reduction and enhanced political instrumentalization. At the same time these are also the influence factors that determine changes in work processes and work organization as a result of the increased application of technology. However, particular goals (or general strategies of management for the application of technology) do not necessarily lead to the same consequences at the level of implementation. For this reason points C to G refer to those institutional influence factors that, according to past investigations, are the cause of variance at the level of the concrete social services.

A: The Application of Technology and Political Instrumentalization

A principal aim of technology-oriented rationalization measures in public administration that have been previously studied is the
centralization of decision-making authority in the sense of a shift in authority over work organization and work processes to higher hierarchical levels in the administrations (Roeske, 1978). Thus, for example, an investigation of automation in tax administrations showed that the authority over detailed regulation of work organization and work processes was raised one hierarchical level by the introduction of centralized data processing. This resulted in increased standardization of factual information and a formalization of work procedures, a more systematic and more formalized application of tax laws and a decreasing readiness to service clients by individual tax and revenue offices and claims processors (See Karlsen 1978; Brinckmann et.al. 1981).

The interest of the top policymakers in attaining enhanced planning, steering and control capacities vis-a-vis the subordinate administrations—together with an interest in improving coordination with other administrations—requires the location of decision-making authority at a higher level in the administration as well as the standardization of claim-relevant facts in order to obtain compatible information for purposes of aggregation and planning. In order to insure standardization, controls become increasingly important. Regarding work processes, this means more regulation of details and performance control, which in part can be transferred to appropriately programmed computers, with a corresponding loss of functions by middle management (Karlsen 1978). Although this example frequently gives the impression of
technological determinism, it is largely a matter of political will. It also illustrates the relationship between changed working conditions of the employees and the delivery of services: by means of a rigid control of input data the interaction between claims processors and data processing system in the finance administration was reduced to a "zero sum game" in which only the planned types and quantities of information were accepted by the system. No types of information could be omitted, even if they were not relevant to the individual tax case (see above).

Such use of technology leads to increased work stress for the claims processors due to external control and reduced discretion in the work situation, for example, as a result of the rigorous formalization of the facts to be processed in every case. Where such detailed and objectified forms of control exist, it is doubtful if claims processors can develop compensating strategies for coping with change—and if so—it must be examined how these strategies affect interaction with clients. Although, above all, the fragmentation of work in controllable separate steps can be associated with the intensification of work as well as with increased division of labour, these consequences are not a necessary result of technology-oriented rationalization. Where the motive of political instrumentalization predominates in a rationalization plan, these effects were only observed to a slight extent (Brinckmann et al., p.41ff.). This is different when the predominant motive is budget-oriented (individual (micro)economic) cost reduction.
The goal of efficiency-oriented cost reduction is not just realized by the actual application of technology. Weingart finds (1982, p.14) that "economic orientations do not have merely a selective function in choosing between technological possibilities, but enter the picture early on in the planning and development process." Evans (1981, p.189f.) gives the following example of possibilities in applying new technology: "Intelligent terminal screens can collect data on the performance of an employee such as the time actually spent at a machine, the pace of work, error rates, etc."

Both in the private economy and in public administration, information and communications technology is designed to achieve efficiency-oriented cost reduction goals. This makes them a "reinforcer" of the above described trends--associated with a restrictive general context of economic and social policy--toward "cut-back rationalization" in public administration. More recent studies of social administrations have also concluded that cost savings in the sense of a reduced "unit price for social services" has been the goal of rationalization measures (for example, Roeske, op.cit.; Billerbeck, op.cit.). The focus is on personnel costs, which constitute over 90% of all administrative costs. While administrative costs are on the average only 5% of...
total expenditures, the sums are, in absolute terms, consider-able—which is the source of rationalization pressure. The indirect cost-saving effect on original social benefits through changes in the quality of services resulting from changed work organization, is not a planning goal that can be empirically documented; nevertheless, this is an effect that needs to be investigated (change in social policy without change in social legislation).

How can personnel costs be reduced through the application of information and communications technology in social administra-
tions, and what consequences does this have for the structure of work organization, work processes and, finally, the administra-
tion-client interaction? The following examples are pos-
sibilities documented in the existing literature:

- Technology can, in the form of work tools, replace human work with varying degrees of qualification: Savings through reduction in the number of jobs (Bechmann et. al. 1979; Braverman 1977).

- The total work within an organization enterprise can be so reorganized through increased division of labour that the skill structure and wage rates can be lowered: Savings through lower pay for employees (Evans 1982; Briefs 1980; Jacobi et.al. 1980; Meine and Porschlegel 1982; Semmer and Schardt 1982; Weltz et.al. 1979).
- Rationalization can eliminate organizational slack or "room for maneuver" of the personnel by means of fragmentation of work, specialization or detailed work assignments. The computer assumes the work of coordination of individual tasks and the resulting intensification of labour can be translated into job reductions: Savings through increased individual work volume (Broedner et al. 1979; Kieser and Kubicek 1977; Rolf 1980; Fuhrmann 1977; Heerkommer 1977; for a summary overview: Zimmermann 1982, Vol.4, p. 11ff.)

The possibilities for reductions in personnel costs through the application of information and communications technology are, however, not exhausted by this configuration of measures. The approach in this project emphasizes, in particular, that the realization of client rights vis-à-vis social agencies takes place in interactive and communicative work processes. While traditional studies on the socio-technical work system have been limited to the employees of an organization (e.g. Emery and Trist 1960 and 1971; Trist 1972; Emery and Thorsrud 1969), more recent research on public administration has opened the way for a systematic consideration of "client work" in the description and analysis of work processes in public administrations (see Wolff et al. 1979 on the concept of the constitutive auxiliary function of the clients, Grimmer et al. 1978). Other further possibilities for additional savings become apparent in this perspective: With the aid of information and communications technology the administration-client interaction can be so reorganized that the
latter must assume a greater share of the interaction burden (e.g., formalization of information, interpretation of standardized written instructions). This results, initially, in increased labour efficiency insofar as it is accepted by the clients and, subsequently, in personnel reductions insofar as the volume of individual work of the civil servants is reduced or remains constant. If such forms of rationalization lead to a new pattern of demands on the clients with regard to their capacities for action and communication, the result can be socially differentiated access barriers. This leads not only to further savings for the agency in servicing clients but can also entail a relative decline in the uptake of the social services benefits themselves.

When the goal of cost savings predominates in technology-oriented rationalization measures in social administrations, the anticipated consequences are work organization and work processes with a higher degree of technical support, increased division of labour, increasing qualitative and quantitative work controls, a smaller percentage of higher qualified employees and increased demands on the action and communication capabilities of the clients (see Diagram 1, level 3). Thus in a study of the pension system, Rooske (1978, p. 42ff.) found vertical specialization in work groups organized according to social security numbers, i.e., the number of lower paid employees servicing the integrated data processing system increased in those groups, while the number of qualified claims processors declined. Moreover, an intensificatio-
tion of work occurred as a result of the simplification of work tasks and enhanced tempo of work (less breaks) (Ibid., p.50). Furthermore, the gradual implementation of EDP dialogue systems led to a reduction in the remaining activities of the employees because their work was increasingly transferred to the computer, while the division of the remaining work elements into smaller tasks led to the claims processors performing less and less tasks involving judgment (Ibid., p.51).

Another study of the pension system likewise found that the legal knowledge of the qualified claims processors became in part superfluous as a result of the use of computer programs. Not only simple routine tasks are carried out with electronic data processing but also complicated legal decisions. The use of the computer did not completely eliminate the need for legal qualifications, but such activity was shifted to another office and carried out by a smaller group in the national association of the West German pension systems (Billerbeck 1976, p.25f.).

Some internal influence factors in the institution are sketched below, which, it can be assumed from previous investigations, modify, delay or block the implementation of rationalization goals in work organization and work processes (and therefore differences in the quality of services). The extent to which these factors (and others not mentioned here) have an actual or potential significance should be better understood after the completion of the project, since the international comparison
permits a large variance in individual intervening variables.

C: Existing Tasks and Decision-making Structures

The public administration is a highly differentiated structure of legally defined hierarchical levels with certain decision-making competence, which, moreover, also include definite power constellations and status interests. Since the expanded application of communications technology is oriented toward the functional work process, an anticipated threat to power and status can bring about corresponding defensive reactions. Because these are based on legally established positions, they can be important as an influence factor that shape work organization and work processes. This can in practice lead to the establishment of subsystems that block the intended introduction of data processing and thus also prevent particular forms of division of labour. The existing degree of centralization in the administrative agencies is, above all, significant. In more monocratic, highly centralized administrative agencies (e.g. pension system, finance administration) rationalization measures based on the introduction of information and communications technology lead largely to trend reinforcing effects. In more decentralized structures (e.g. the public health insurance system) different applications of technology at all levels and
diverse impacts on work organization and the outputs of inter-
mediating services could be observed (Brinckmann et al. 1981; 

D: Concentration/Deconcentration

The size of administrative offices varies with the local con-
centration or deconcentration of an agency. The smaller ad-
ministrative offices are, the more limited are the possibilities 
for division of labour and work intensification by means of the 
application of technology. The more tasks and activities an 
employee has, the greater the amount of job autonomy justified by 
the need to switch from one task to another. An investigation of 
the consequences of automation in a local health insurance office 
showed, for example, that the increased division of labour among 
claims processors in the main office as a result of the applica-
tion of technology had to be offset by the claims processors in 
the local offices (Diehl/Karlsen/V. Treeck 1980). In addition to 
the autonomy also the size of the administration to be inves-
tigated must be taken into account as a factor influencing the 
formation of work processes through the application of 
technology. Our research design takes this into account through 
the selection of case studies (see Ch. 6).
Every organization proceeds down the path to integrated data processing, i.e., a situation in which all tasks and activities of the organization are represented by computerized data in a central system, in partial steps that are related to one another in a systematic way and follow consecutively. It is first integrated data processing that—by virtue of technology—permits an organization of work oriented toward economic and political goals that is largely unlimited. It makes it possible, in the pension insurance system, for example, to merge the previous insurance, pension and health sections into large "service departments," for a largely vertical specialization to take place and to largely eliminate the time required for locating and circulating files (Roeske 1978, p. 44ff.).

Since an empirical research project runs a risk that a number of the investigated cases are only at the level of mechanization or partial automation, the state of the application of technology must be considered as a modifying factor in explaining the structures of work organization and work processes.
The Potential for Effective Action by the Institutional Actors

We have already described (3.2) how the political element in the conflict and bargaining relationships in the firm or agency has again received increased research attention as a determinant of working conditions. In the power constellation in the firm—depending on the real and normative preconditions—the available resources of the employees can become an independent influence factor on the technology-oriented rationalization of work organization and work processes (Nygaard 1974). These range from participation rights based on law, collective agreements and plant agreements to knowledge of the course and structure of automation processes and of their own potential for action in the context of the firm (Kubicek 1980, p. 63ff., 94ff.; Keul 1983, p. 209ff.). It is to be expected that interest in the quality of working conditions (which also includes the social usefulness of their work) will become more important and influential, in addition to the goals of management economy and maintenance of authority, as these resources increase.
G: Influence of Citizen (Client) Interests

There are three potential actors within public administrations: top level administrators, the operative personnel and the clients. Since the individual clients are, vis-a-vis the administrative agencies, predominantly amorphous individuals without organization or other resources, consideration of their interests depends on the systematic registration, storage and processing of their needs and wishes by the agency. Since this in practice not the case, client interests can be instrumentalized by other groups. They frequently serve as substitute arguments to legitimize one side or the other in the internal struggle between top level administrators and administrative personnel. While client interests are used by employees to support their demands for additional personnel or more convenient software, etc., top administrators invoke them as a general interest in cost reduction to support demands for cuts in personnel and other expenses. Thus not only is the perception of client interests situationally conditioned, but also the selection of the client interests that are considered, which are necessarily those from which the actual interests will profit the most. Which client interests are considered in rationalization measures will depend on the interest constellation within the welfare state institutions, (which are, of course, shaped by the
economic and social conditions in the environment).

As was already discussed (Ch. 1 above), coincidence of interests (overlapping interests) between the employees and individual clients is becoming increasingly important as a result of the growing interdependence between the labour and social policy aspects of the application of technology in social administrations. The problematic of participation by individual clients is treated together with the discussion of the approaches of Gartner and Riesman in Ch. 4.1 (of the German text--not translated). With respect to collective client participation, the international character of the research design makes possible comparison, for example, between "independent" "public corporations" (Federal Republic) and subordinate agencies in a ministry (Great Britain).

The influence factors C-G (existing decision-making structures, degree of concentration, current level of technology, potential for effective action of the actors within the institution) will modify to different degrees the realization of economic and political goals by individual rationalization projects. Theoretically these factors constitute a problem, above all, because the literature has practically nothing to say about their relative strength, their exact direction of causality and the interrelationships between them. Nevertheless, it is probably not possible to adequately explain the structure of any existing socio-technical work system without recourse to these factors.
The methodological part (see Ch. 6 in German text—not translated) contains a suggestion for dealing with this problem in a pragmatic manner.

3.5 The Relationship between Work Organization/Working Conditions and the Quality of Social Services

There is only a superfluous contradiction between the universal flexibility of the information and communication technology and the "objectified constraints" it produces in organization and work situations. Nevertheless, these "constraints" first become manifest when the new work organization, work instruments, etc. are put into operation, i.e., after the completion of the necessary developmental processes of organization, systems analysis and programming. After the work process and work instruments for the provision of social services have been technically and organizationally determined, their (realized or unrealized) potential for the provision of benefits is largely determined. This approach assumes that certain more or less causal relationships exist between structural characteristics of work processes and work instruments, on the one hand, and the quality of working conditions and benefits on the other.

Although benefits are prescribed by law, they are produced through interaction processes between the claims processors in
the social administrations and their clients which are shaped by patterns of authority and control and characterized by a communicative division of labour. The structural conditions of the institution shape not only the performance of the claims processors but also the number and direction of their individual coping strategies. The position of the clients in this process of asymmetrical interaction is dependent on both; their potential for effective action is, moreover, also limited by their specific social circumstances.

The legal prescription of the content of benefits is regarded as a given and bracketed out of the investigation of quality. The definition of quality should rather be based on considerations of action-oriented and communications theory with respect to the question of whether work organization and work processes are suitable to fulfill the rights of clients as established by social policy. Neither empirical action-oriented research nor applied and impact-oriented research on technology are complete models for this approach, although they contribute important elements. Thus Grimmer et.al. formulated the following approach for a research project on the pension system: rationalization measures (in this case through data processing) lead to change in the work of administrative agencies and thereby to changes in the quality of administrative performance from the point of view of the citizen. Several such relationships could be demonstrated, which manifest themselves in increasing use of appeals and court suits (Grimmer et.al. 1973, p.79ff.). This approach must be
expanded in several directions in order to take into consideration the causal constellations postulated here. Nevertheless, the influence of the application of technology on the work and interaction processes that is implied here is also an important element in our project. What is lacking is a systematic incorporation of the clients in the work processes of the administrative agency in terms of action-oriented and communications theory. For this reason it was not possible to draw any conclusions about the influence of the application of technology on the clients' potential for effective action.

A second element of the approach we have proposed can be derived from the work of the Special Research Area (SFB) 101 at the University of Munich (See Bolte et.al. 1983). By means of action-oriented theoretical analyse a number of public "production performances" are investigated as to the normative, organizational and situational conditions of the work situation under which the employees have possibility of relating to it in a reflective and innovative manner (Bolte et.al.1983, p.57). "In contrast to the Weberian model, the conditions of the concrete work situation are, in our opinion, relevant to the decisions and performance of state administrations" (Ibid, p.59). The employees must in their administrative work "mediate among the different legal, organizational and situational conditions of their work situation and thereby continually cope in a creative manner with their work assignments and shape them innovatively in the interest of 'appropriate' administrative work and the
avoidance of dysfunctional consequences" (Ibid., p.68). Those actions of the employees are "innovative" that take place in the course of their work activities but deviate from their official assignments, aiming at the "improvement of their working conditions or work results," but also inter. alia., an "efficient realization of administrative goals" (Ibid.). That means that administrative work can only to a limited extent be regarded as a "fulfillment of laws" that is controllable through regulations and other organizational measures. The authors conclude that "rigid rationalization and steering efforts are subject to definite limits if one does not want to risk the flexibility and learning capacity (...) of the organization" (ibid., p.87).

In contrast to the approach described, our project is not concerned with laws, regulations or work assignments whose relationship to the work situation is situationally modified and between which the employees mediate in order to remain capable of action and productive with respect to the goals of the administration; we are concerned with largely "objectified" working conditions, for example, computer terminals with access to preset information and applications programs. Under these conditions the mediation of the employees among the contradictory demands of their jobs assumes another character. In comparison to "paper regulations," the technological control of individual work steps or the requirement that a certain sequence be observed may leave little discretion for engaging in positive mediation or "innovations" in the above described sense. It is more probable that
employees will cope with the demands of the changed work situation at the expense of the clients. If one follows the plausible assumption of Freidson that "the behavior of most individuals is not guided by any motives, knowledge or values (and can not be steered by means of them—the authors) (...) in so far as these are not constantly reinforced by the social environment" and concludes that: "the environment can by means of reinforcement move persons (...) to give up one group of motives, values, or skills for another" (Freidson 1975, p.46f.), then the technology-oriented reorganization of work processes must be regarded as a specific change in the "environment" or behavioral conditions. It must then be investigated whether the conditions for realization of clients’ claims ("motives, values, skills") are not drastically restricted in their flexibility and capacity for learning. The consequence would have to be that, if the personnel that interacts with clients is fixed in its work behavior through the application of technology, they will displace the still necessary flexibility on to the clients, compelling them, so to speak, to "innovate." In this case the displacement of the interaction burden does not take place directly through changed administrative norms but indirectly as a result of individual strategies of the employees for coping with their changed situation.

In order to comprehend the total impact of technology-oriented restructuring of work processes and work organization on the quality of social services, we investigate how these relation-
ships are mediated by changes in working conditions.

In the direct causal relation changed features of work processes or work organization directly affect the employees' capacity for action. This is the case, for example, when more limited (expanded) access to information by the claims processors disturbs (eases) the flow of information between the administration and clients and thereby impedes (accelerates) the recognition or adjustment of benefit entitlements (see Diagram 2).

An indirect causal relationship is present when changed features of the work process or work organization (for example, intensification of work or increased controls) first affect a change in the motivation, problem perception or skill levels as well as the total reactive behavior of the employees. The quality of services is then manifest in a transformation of the demands made on the clients for communication and action (see Diagram 3).
Chapter 4
Design of the Study

The necessity of an international project was already sketched in the presentation of our research approach (Ch. 2) since the prospects of carrying out the project successfully would have otherwise—understandably—seemed doubtful given the complexity of the study as we have defined it. The most important advantage of such an approach lies in the fact that sufficient variation in the cases to be investigated can be obtained in the factors at the institutional level (tasks and decision-making structure, degree of concentration, current state of the application of technology, the possibilities for effective action of the different actors, client participation) as well as in the general context of economic and social policy; in each case the situation that has to be examined ("the social risk") can be held constant while a comparably similar level of technology can be assumed.

Glaser and Strauss provide the methodological justification for an approach using comparative cross-section case studies with their concept of "multiple group comparisons, the comparison of "groups in groups" and "plausible exemplification" (Glaser/- Strauss 1979, p. 91). "Multiple group comparisons" can be set up
neutralizing effects can be more clearly discerned.

If the investigation were only carried out in one country, the significance of the variance of these and other factors for the object of the investigation (technology-based work processes) could only be studied with much greater reliance on more sophisti-

with the goal of finding "new data for categories or combination of categories, suggesting new hypotheses and examining initial hypotheses in different contexts, it is not too difficult to compare up to 40 groups; they can be compared on the basis of delimited categories and hypotheses (and not as a whole), and groups can be compared within groups" (Ibid., p. 97). At the micro level, the groups to be investigated in this context are computer and communications technology-supported work processes for the provision of selected types of benefits (identity in terms of social risk). By investigating social insurance administrations in different countries, we can vary the groups in which the objects of the investigation are to be found according to presumed influence factors (political and economic conditions, level of social technology, institutional conditions, organizational conditions, etc.) This makes it possible to develop theory with respect to the causal relationships of these variables to the object on the basis of variation in the variables. By means of precise description of the many similarities and differences in the various groups compared, the impact of the influence factors considered under various political and economic conditions can be better understood and mutually reinforcing or neutralizing effects can be more clearly discerned. If the investigation were only carried out in one country, the significance of the variance of these and other factors for the object of the investigation (technology-based work processes) could only be studied with much greater reliance on more sophisti-
cated empirical methods due to the homogeneity of the prevailing political and economic conditions. "It is much more plausible to refer to the different external structural conditions under which positive and negative cases exist and then, by comparing these cases, to analyze the factors that are responsible for these differences (Ibid., p. 99).

These considerations provide the criteria for the selection of the countries included: the foreign countries selected must have values for these factors that differ from those in the Federal Republic, above all, with respect to the general context of economic and social policy and the structure of the social security system but also for other influence factors. On the other hand, the number of countries included must remain limited due both to reasons of research strategy and limitations on the research resources available. If one considers, for example, economic growth, state policies for extracting and redistributing resources, and the fiscal pressures on the social security system as continuous variables, then the other countries included should optimally have both higher and lower values for these factors than the Federal Republic. This is in fact the case—as well as for nearly all other variables or indicators at this level—for the countries selected, Norway and Great Britain.

In Great Britain the social security administrations have been under a considerable cost pressure due to economic stagnation, high unemployment and an extremely restrictive fiscal and social
policies by successive governments, which has intensified down to present—to a far greater extent than in the Federal Republic. Since the beginning of the 1960s there have been efforts to better coordinate and functionally restructure the variety of historically evolved administrative structures and types of benefits. These efforts peaked in 1975 with the transfer of complete responsibility in this area—including social assistance—to the "Department of Health and Social Security." Nevertheless, there was little change at this time in institutions and organization. The trade unions maintained a strong presence in the social security institutions, although codetermination rights based on either law or collective agreements are very weakly developed in the case of technology-oriented rationalization measures. Both the size as well as the current state of automation vary strongly from the centralized pension system to the "local sickness funds."

In Norway the distributive and fiscal policy pressure on the social security system is less than in the Federal Republic. The less restrictive economic and social policy can be attributed, inter alia, to a long political tradition, the survival of which was favored by the oil revenues since 1974 and other special factors. However, the political goals with respect to the social security system itself show differences. Thus, for example, invalidity and disablement pensions as well as unemployment benefits were already being used in the 1960s to support the regional structure of settlement (Kolberg 1974). The efforts at
political steering by the Norwegian social security system relates to this policy. It is a three-tiered, centralized monocratic administration with a high degree of deconcentration (a social security office in every community). It administers all social security benefits with the exception of unemployed benefits and occupational rehabilitation for the long-term unemployed (retraining measures and subsistence payments). The union presence is strong and codetermination rights based on law and collective agreements are strong. (inter alia, there is a framework agreement for codetermination in the development and implementation of electronic data processing systems). Thus far there is a centralized off-line data processing system for long-term benefits, and the national introduction of an integrated on-line system for all benefits will commence operations shortly.

The selection of the actual work processes to be investigated was undertaken according to the following criteria:

- Need, social relevance;
- international comparability;
- the problems of work organization that they represent;
- their affinity with information and communications technology.

The selection of types of benefits to be investigated according to these criteria contributes essentially to a reduction in the
complexity of the research approach. A maximum number of the questions posed at the individual levels of the investigation can be studied with respect to only three—comparable—types of benefits. A decisive advantage of the international, comparative approach lies, above all, in the very different internal institutional and external organizational forms that can be compared which are oriented toward overcoming (compensating) identical social risks (age, sickness) and hence can be said to have the same tasks. Selected were:

- **A long-term benefit.** As work problem a long-term benefit (e.g., an old-age pension) represents a one-time realization of and/or decision about a long, narrow occupational biography the facts of which are the basis for different legal claims. The length of time for which benefits are provided is long, and the entry control is, as is to be expected, strict. Because of the temporal extent of the relevant biography and uncertainty of the public with respect to the facts that justify an entitlement to benefits, there is a great need for communication and counseling. The affinity to information technology consists for this type of benefit in the relatively large amount of already formalized information (inter alia, rows of figures) which can be much more easily manipulated by the use of such technology. Which pension benefits could be the focus here is to be decided later in consultation with officials of the social security system in the Federal Republic.
A short-term benefit with a number of individual benefits:

As a work problem such a benefit represents primarily a problem of coordination. The benefits are received for a limited period. The decision is based on a brief biography of the client, and there is a broad spectrum of benefits, which can be activated through many separate dependent and independent decisions. In all the countries investigated illness entitles the client to a multiplicity of monetary benefits and services. In case of illness it is, in principle, possible that all rights under the health insurance system are activated, not, however, automatically and independently of the characteristics of the case.

Frequently the claims are made in a certain sequence during the course of treatment/recovery (e.g. hospital, nursing care, household assistance). There is, therefore, a need for coordination by the administrations in many cases and a corresponding need for counselling and action on the part of the client. The capability offered by information and communications technology for storage and distribution of information is particularly attractive for this type of benefit. The coordination problem that arises through an extensive division of labour offers a "natural" starting point for the application of technology and a corresponding restructuring of work processes. The problem of access has already been solved in all three countries for this type of benefit.
- General counselling for the social security system as a whole: The social security system is itself a complex system that insures against the known social risks, does so, however, through an historically evolved multiplicity of institutions with a varying division of labour between them. This makes the clients need for general counselling with regard to the entire social security system in many ways a problem, for which the countries investigated have developed different solutions. It is a problem of institutional location (in individual institutions or separate counselling institutions), a problem of qualifications (what qualifications should this personnel have) an information problem and a locally and temporarily variable problem with quite different starting points for the clients. The use of information and communications technology for the storage and distribution of information about the rights and duties of clients (information on legal rules, programs for model calculations) would be able to resolve in part the problem of the institutional location of general counselling offices. In the case of the German local insurance funds there are already efforts that point in this direction. The problem of access for this type of benefit has already been solved in all three countries.

The selection of these three types of benefits achieves a reduction in complexity that assures the practical implementation of the project. These types of benefits serve not only as quasi
boundary criteria for the technology-based work and rationalization processes to be investigated; the relevant institutions organizations and influence factors are also thereby more or less directly defined and, above all, reduced to a scope that is practically manageable. Even the planned preliminary survey of the general context of economic and social policy can be carried out with these unambiguously delimited benefit types as points of reference. The complexity of the causal constellations to be investigated and the above mentioned methodological justification make the design of the project as a series of comparative case studies—organized around these benefit types in three countries—necessary. A total of 9 case studies are to be carried out: three in each country, which can be compared with one another. Primary empirical surveys of all relevant variables can not be carried out. For the general context of economic and social policy the project will have to rely on aggregate data, i.e. primarily the secondary analysis of available written materials. The same is true for the description of institutions and influence factors. Even the parts of the investigation which most closely approach the concept of "empirical" research—the investigation of the work organization, work processes, working conditions and the interaction between claims processors and clients can and must not go into detail. The degree of differentiation—above all the investigation at the level of administration-client interaction—should not endanger the comparability of the three countries. It is, therefore, even more important that
the the dimensions selected for empirical surveys are theoretically grounded with respect to their relevance for the inquiry and their comparability and are relatively accessible to empirical methods. Thus the greater the application of technology in these areas, the more tasks and processes are regarded as being determined. This can, however, be largely done by analysis of available documentation (system and program documentation). Other basic data on work organization such as the degree of division of labour, of hierarchy of output controls as well as "case load", structure of qualifications and of sanctions and payment can largely be derived from available institutional materials.

The use of specially developed survey instruments will be principally required for the survey of motivational, process, and interaction data. Even part of these data types require no sophisticated empirical methods but can be gained with relatively little difficulty by means of expert interviews, such as, for example, the temporal-spatial dimension of the provision of individual benefits. The two other interaction dimensions, the division of labour between claims processors and clients and the communication dimension can be methodologically divided into two groups. First, there is the level of organizational preconditions which can be covered by a combination of document analysis and expert interviews, and, secondly the fulfillment of the preconditions of work organization in the interaction situation, where only self-developed, reactive survey instruments can be
utilized. The application of methods in the different levels of variables is illustrated in the following diagram.

Since the types of benefits evince a high degree of identity in all countries and are distributed and administered by the employees that have received an education for the corresponding administrative careers, it seems unnecessary to conduct surveys of the certainly relevant problem area of professionalization and informal groups. These factors, we assume, would in all probability not vary greatly in their influence on the work and interaction processes to be investigated because of the general similarity of conditions.

In spite of shortcomings in the empirical data available, in the current state of research, the international comparison of work structures and processes is more fruitful than more
empirically refined approaches within one national context. It is first necessary to gain insight to how political and economic conditions, institutional, and organizational factors influence the formation of work processes by means of information and communications technology and how service organizations with different levels of mechanization of their work processes interact with their clients. For both goals there is no approach that is more suitable to make the causal constellations clearer to the researcher than the comparison of work processes with different degrees of mechanization but identical goals in different institutional contexts and with varying general contexts of economic and social policy.
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