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INSTITUTE OF
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CENTER FOR QUALITY OF WORKING LIFE

STUDIES IN PARTICIPATIVE SOCIO-TECHNICAL WORK

SYSTEM ANALYSIS & DESIGN:

Service Technology
Work Groups

by

James C. Taylor

CQWL-WP-78-1-B

UNIVERSITY OF CALIFORNIA
LOS ANGELES, CALIFORNIA 90024

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PART III

Employment Division

Organization

Employment Division is a group of some 40 people including one supervisor and a manager.

The basic mission of the division is to act as a broker between the lab departments and job applicants. This function is quite important when one considers that some 20,000 people each year apply for jobs at the Lab, and some 1200 are hired. In order to fulfill this mission the division undertakes the advertising, recruiting and interviewing of all applicants for actual or anticipated job openings. The division also provides its own clerical staff, personnel files and internal liaison with other lab departments such as travel, medical, security and so forth.

Employment Division belongs to the Personnel Department, which includes the four other divisions of Compensations, Labor Relations, Employee Relations, and Management Information Systems. Personnel Department employees do not have an employee group or union representation. Employment Division has little contact with the other Personnel divisions in the case of new personnel hires, and very little more in the case of internal Personnel transfers to advertised positions. In the main, Employment Division has more contact with and need for support from the other lab groups mentioned above (medical, travel and security), and of course contact with the requesting departments who wish to have job openings filled.

The Employment Division has traditionally maintained a cadre of skilled employment interviewers who undertake the initial screening of applications and the preliminary interviews. Their task is to make recommendations to the interested department who will review the files, interview the candidates themselves, and make a hiring decision. Once this decision to hire is made, the file returns to Employment Division where an offer is tendered, and when accepted by the applicant the necessary process for hiring is set in motion. The traditional division of labor is for each interviewer to have a secretary (called "Employment Assistant") who would look after the file, and follow-through. This set of tasks has in part remained as the lab has grown and developed. Employment Division response to lab growth has been to absorb the increased complexity in number of applicants, number of jobs, and new personnel legislation by slowly diminishing the number and variety of processing tasks done by the interviewers and their employment assistants, and adding specialist clerical roles to do those tasks. This meant that for employment assistants their jobs became gradually more focused on the files of their particular interviewer, their client department, and their applicants during the process of review. These effects of lab growth, and changes in employment legislation resulted in proportionately fewer changes and simplifications in the interviewer's jobs, than in those of their assistants.

In 1976, a year before the present project was initiated, a concerted effort was made to provide a central operations group within Employment Division; to provide a service to the interviewers and their secretarial assistants for those functions that they had in common,

especially when those task functions required contact with another part
of the lab. Thus, an "operations" group was created with its special
desks for liaison with travel department, with medical department,
with security department, with its "housing desk," its recruiting clerk,
the central files clerks, and word-processor for standard letters, and
other specialized division-wide functions. Plans for automating the
process of acknowledging an applicant, notifying of rejection if
necessary, and maintaining prior application files were also underway
during 1976, and were intended to complement the centralized operations
reorganization.

By the time the present project began in 1977, there were three
basic roles in the Employment Division: Interviewers who were responsive
primarily to the hiring departments, Employment Assistants who were
responsive both to the interviewers and to the applicants, and Opera-
tions Clerks who were responsive both to the Employment Assistants and
to allied service groups throughout the lab. Some of the operations
clerks were skilled, experienced specialists and some were new or
temporary employees. This latter group provided a floating or backup
function whereever it was needed in the division. As it turned out this
backup help was used mostly by the Employment Assistants. Each Inter-
viewer and Employment Assistant formed an "employment team" together
with whatever backups (up to four) were currently assigned to them.
Each employment team was responsible for the recruiting, interviewing
and follow through for a certain type of applicant such as physicist,
chemist, engineer, clerical/secretarial, skilled craftsman, or semi-
skilled labor. This put some teams (e.g. those responsible for

interviewing chemists) in constant touch with certain departments (e.g. Chemistry), and other teams (e.g. clerical/secretarial) in contact with a wide range of different departments, all of whom employ secretaries.

History: The centralization and the proposed computerization of some clerical functions as described above had not been greeted with favor by the employment teams in the division, who felt concern that the specialist clerks would not do as good a job as they had done for themselves. Ironically this reorganization was the creation of a Personnel Department Manager who had left the lab before these changes in Employment Division had even been implemented.

Management succession in Personnel Department and the Employment Division was an important aspect in the recent historical context of the division. Between 1975 and 1978 the department had experienced four managers and the division, three. This rapid turnover of managers meant that many plans and actions of a predecessor were visited upon the successors. Since it is usually the case that a new manager will choose to make his/her "mark" through improving organizational effectiveness, the partly implemented plans of the predecessor will be among the first aspects to be critically evaluated by the successor. Thus considerable confusion and turbulence is usually the result of rapid management turnover, because of this unfreezing and refreezing of partly formed policies and procedures. It is to the credit of the "second" manager of Employment Division that he accepted and was willing to carry through the "centralization" plans of the "second" Personnel Department Manager despite the fact that the latter had immediately left the system after he had introduced the ideas. The second Employment Division

Manager had implemented a large part of the centralized plan, but had withdrawn further planned changes, including computerization in face of considerable resistance by his division's employment teams. This Manager had engineering experience but little managerial or personnel background. He was considered within the lab, and by his own division, to be a sympathetic, well-meaning person.

The Project Design

I met with this "second" Employment Division Manager in April, 1977. I was introduced to him by one of the Employee Development Department's internal O.D. Consultants. The topic of our conversation during that first meeting ranged from my ideas on socio-technical (STS) design and employee participation, to the problems facing the Employment Division in implementing and sustaining the recent reorganization (i.e. centralization of clerical tasks), and the apparent resistance to management-initiated change proposals. The manager, at that meeting, stated that he wanted system flexibility through centralization and automation, and coordination of effort through more comprehensive supervision. We discussed some alternative organizational models to achieve flexibility and coordination. I then suggested that employee participation in analyzing the division as a purposive system -- and themselves suggesting models to achieve flexibility and coordination -- might better achieve both enhanced quality of working life for employees and organizational effectiveness for the division.

A second meeting among the division manager, the internal O.D. consultant and myself was held a month later, in May 1977. The division manager was convinced that involving all parties in a reassessment of the division's organization could be useful. He had the latitude to permit a STS study to take place, but he had also informed his superior, the Personnel Department Manager, of his intention to go ahead with the study. The departmental manager had offered no arguments to the idea of a study. The department manager was willing to delay further pressure on the division to consider a computerized system. The division manager then decided on a meeting of division personnel to discuss the possible project and their role in it. The division manager felt that any further work by him on an STS project would backfire, and be seen as unilateral. He was willing to accept what a design team (composed of his own employees) would propose, following a careful analysis. A structure was agreed upon where division employees would elect representatives to an analysis and design team. The manager and his deputy were to form a "steering committee" to monitor the process and provide the design team with a sounding board to try out their ideas as frequently as needed. The internal O.D. consultant and the manager agreed to present this proposal to division employees during the following month, and assuming a favorable response to the study proposal, would place in motion the machinery necessary to elect the design team members (one interviewer, one employment assistant, and two operations clerks). If everything went smoothly to that point the study would be planned to begin in early August, 1977. I would return to the lab at that time to become the "external consultant" to the design team, and an O.D. consultant from the Employee Development

Department would become the "internal consultant". With the passage of
the two months until August the Employment Division had its third manager
in as many years. This succession however did nothing to impede the
start of the project, although several minor changes and some advantages
resulted.
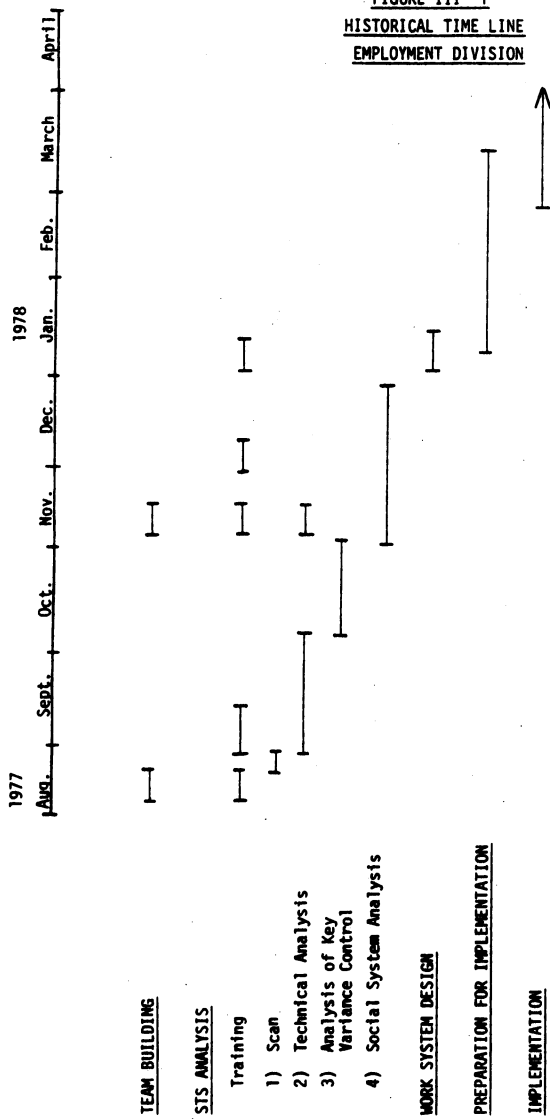

The Project Beginnings

The new Employment Division Manager had been promoted during July
1977, from among the interviewers in the division. She knew about the
project, as it had been announced to the division before her promotion.
She was in basic support of it, though had confided to the external
consultant on their first meeting (August 8), that she wanted more
information. She also knew that her superior, the Personnel Department
Manager, had sanctioned the STS analysis as proposed by her predecessor.
She wanted her superior's support and planned to implement the resulting
design based on his approval of it. Her first act with respect to the
project was to eliminate the Steering Committee and to appoint her Staff
Assistant to the design team instead. Her reasoning was that if manage-
ment was to sanction and to steer, then what better way than to participate
directly so long as the other members of the design team would not feel
inhibited. In addition, she felt, a Steering Committee was an outsized
entity when there were only herself and her deputy to consider. She
raised her proposal to appoint her deputy to the already elected members
of the design committee. They agreed that under the circumstances the
management representative would be a good addition.

The first meeting of the newly constructed design team and the internal and external consultants took place August 10th. The meeting was opened by the division manager, introducing everyone, and stating that she was supportive of the project, that she gave it a high priority and that she would like to meet the design team on a monthly basis in order that she "might support their effort through knowing what was going on". The team decided to meet two half-days a week until a different schedule seemed useful. They knew they were expected to produce a design by January 1978. The remainder of this first meeting was spent in team-building. A time line of the various activities beginning in August, 1977, is shown in Figure III-I.

Team Building

The team discussed the roles of the members and of the consultants. The external consultant (myself) was expected to provide the socio-technical systems (STS) model and train the team in its use, to guide them in applying the process to their own division, and to monitor and help evaluate their efforts. The internal consultant would help them to work as a team, provide a competent back-up to their process efforts, and to observe the STS analysis and design process.

The design team members were to represent the needs and outlook of their co-workers, in applying the STS process to the redesign of their division. Although mentioned by the external consultant, little was made of the members' role in keeping their co-workers informed about progress. During this first meeting the internal consultant asked the

FIGURE III 1
HISTORICAL TIME LINE
EMPLOYMENT DIVISION

1977 1978

Aug. | Sept. | Oct. | Nov. | Dec. | Jan. | Feb. | March | April

TEAM BUILDING

STS ANALYSIS

Training

1) Scan

2) Technical Analysis

3) Analysis of Key
   Variance Control

4) Social System Analysis

WORK SYSTEM DESIGN

PREPARATION FOR IMPLEMENTATION

IMPLEMENTATION

team to think about their major concerns in taking their roles. Three of the team were concerned about understanding what to do, and two were concerned about having enough time to contribute to the team and to maintain their regular work schedule. Someone volunteered that careful listening to one another would be one of the greatest helps to team functioning and the others emphatically agreed. Remaining discussion turned to issues of trust and sharing ideas. The internal consultant suggested discontinuance of the formal discussions of group process since the group seemed to work so well together. He asked the team to set aside a short period at the end of each meeting to discuss their teamwork, and that he would interject with process observations when he felt he could be of help.

Time remained in this first meeting for one hour's initial discussion of the STS concepts in a general way. The team was naturally curious to know more about the STS ideas. Although the external consultant carried the topic there were some questions and dialogue. The team felt that the first meeting had been useful and that they had begun to share ideas.

Socio-Technical Training

The following activity was formal training in the analysis of their system. The initial training in STS Analysis took the form of lecture and discussion led by the external consultant (See Taylor, 1978; for a fuller description). This training schedule covered the following:

. Overview of the STS Method

. A description of the 5 steps in STS Analysis. (See Figure 2)

. Some theoretical background of organizations as socio-
technical systems

. A Scan (Step 1 in the 5 step process) of the major features
of the particular system to be studied.

Subsequent training would involve the technical analysis (4-6 hours of training and 30 hours of analysis), followed by Social Systems Analysis (8-10 hours of training and 30-40 hours of analysis), followed finally several months later by training in design of socio-technical systems (4 hours).

By the half-way period (2 hours) into this second meeting the general material, and the general overview of the process had been covered. The feelings of the team about the meeting's progress was checked at this point. Although they were overwhelmed with new ideas, and weary from trying to absorb it completely, the team also felt that the overview stood as a whole at that point, and they were satisfied with leaving it. They were also receptive to a more general discussion for the remainder of the meeting. The external consultant suggested that they begin the next meeting with the Scan of their own system.

1) The Scan

The Scan took about 4 hours over two meetings. With guidance from the external consultant the team identified the product or "output" of their system as the "new hires" or "transfers", together with the

Figure III 2

Steps in STS Analysis and Design

1. Scanning the Socio-technical System

2. Technical Analysis:

   a. Identification of unit generations

   b. Identification of key variances

3. Variance Control Analysis

4. Social System Analysis:

   a. Internal Role network

   b. Cross-boundary role networks

   c. Individual role analysis

5. The Socio-technical Design.

associated files and management information. Their system's technical objectives, they said, were to fulfill the manpower needs of the lab within budgetary allocations. Their system "inputs" were identified as 1) specific personnel requisitions by departments (together with projections of anticipated needs for personnel) and 2) specific job applicants (new and transfers). These inputs were what the division processes or changes in order to produce the "new hires" or "filled positions".

The team was somewhat unclear in relation to what constituted a technical boundary for their system. Although they could identify "inputs" and "outputs" well enough, the fact that the client or user departments themselves made the hiring decision made these departments' role in the input-output process a central one. It was tacitly decided to include the user departments' decision-making role within the technical process.

The social system on the other hand, was clearly described as including only Employment Division personnel, but within a permeable boundary. The user departments were placed immediately outside this boundary, and the rest of Personnel Department were yet further removed. Interestingly enough, the other support units inside the lab (such as medical, travel and security) were not mentioned at all at this stage in the Scan. Finally, the applicants and the schools from which many are recruited were also listed outside the social boundary of their system. The problems the team listed, and wanted to solve included the following:

Problems in Employment Division

1. Centralization of operations function causes friction internally.

2. 'Management by edict' is hard to accept.

3. Nature of temporary work:

   - Regular tasks for temporary help are boring

   - Back-up jobs are more interesting than regular operations jobs.

4. Trying to meet O.E.O. standards, and getting the work done.

5. Division's image in the lab is poor.

6. Erratic/cyclical work load.

7. Files not returned on time from departments.

8. Proposed, new computer system.

Group Process

Some issues of design team membership and participation were raised during the first three meetings (8/10 - 8/16). First, due to internal transfers among the Employment Division interviewers, the interviewer member of the design team found himself working with a new set of requisitions and applicants, and more importantly he was now quite coincidentally working with employment assistant who was also in the design team. (They formed an "employment team"). This shift created problems of work coverage during design team meetings for the cases they were now totally and jointly responsible for. This was discussed and although assurances were given by the Division Manager to provide extra back-up for this employment team, the subsequent effect on their work was too

great and the employment assistant on the design team requested replace-
ment. (She was replaced on September 20th). A second issue was member
absence from design team meetings. During the first three meetings at
least one member had been absent for vacation or sickness, or leave.
Other members were frequently late. Although the team provided a review
of work to date for returning members, the effect was to slow down
progress, while at the same time providing an opportunity for members
giving the review to test their understanding of the material. The
time pressure was beginning to grow however, and the external consultant
suggested that the team might want to consider spending more time with
the analysis than the two "short" half days they were putting in. This
was resisted, although the team did develop some implicit norms about
absences and meetings starting late. Several minor personal conflicts
among team members were seen, and some of these were dealt with openly.
The others worked themselves out over the course of the project. The
team was otherwise working together very smoothly and with a great deal
of openness and understanding. A "frequency of interaction tally" was
introduced by the internal consultant during the process of developing
the Scan. He asked the team members to guess the proportion of the total
interactions they had made during a certain 1/2 hour period and to choose
an ideal for themselves. After they had done this the internal consul-
tant shared the actual proportional data with the team and the comparisons
were discussed. The members had quite an accurate picture of their own
involvement, and the discussion of ideal interaction patterns began to
pull the quietest members more fully into the discussion.
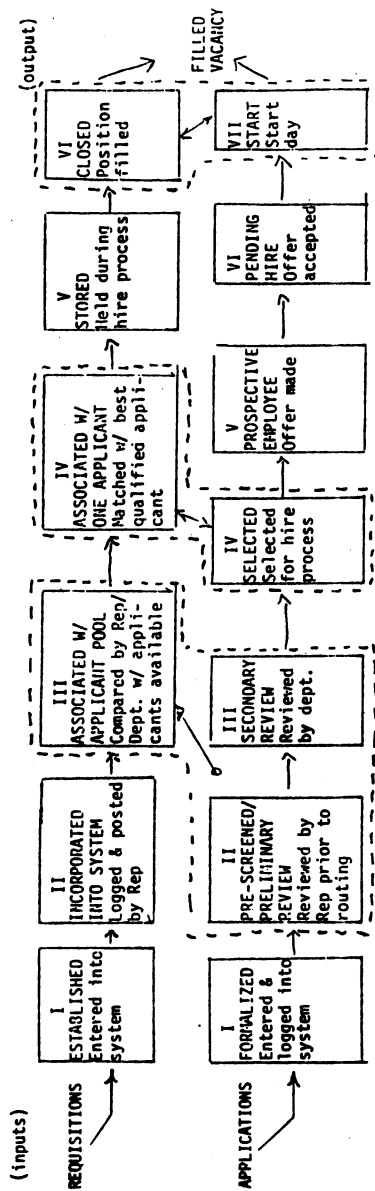
2) The Technical Analysis

With the Scan completed the team was ready to move on to the comprehensive technical systems analysis, which in total would take about 50 hours of the team's time (from 8/18 to 10/10). The external consultant delivered a one-hour training lecture to the group. The lecture dealt with concepts and methods for undertaking a logical analysis of the technical components of the work system and the grouping of these into 'unit operations'. Unit operations were defined as logically integrated sets of tasks, one set being separated from the next by a "change of state" in the work process. Another important objective of the technical analysis was defined as identification of key process variances. A "variance" was described as a tendency for a work system to deviate from a normal or desired specification. Variance analysis in this context is not concerned with temporary problems such as machine breakdown or human errors. An objective of this method is to identify clearly those key variances that significantly affect the ability of a work system to pursue its major objectives and which can be absorbed or controlled by the system (See Taylor, 1978 for details).

The remainder of the August 18th meeting was spent in developing two parallel lists of unit operations (one for the "Applicant" as input, and one for the "Requisition" as input). The following meeting on 8/25 continued the discussion of the two lists of unit operations for the Employment Division system. The concept of "unit operation" itself was not clear to the design team and this was apparent as they tried to review what they had done for a returning member on August 25th. In

addition they discovered another problem with the lists of unit opera-
tions they had. The external consultant had moved through too quickly
on the preceding meeting and the labels they had placed on these "state
changes" in the inputs (applications and requisitions) were not descrip-
tive enough, and were in some cases misleading. The remainder of the
meeting was spent in building another set of unit operation which would
satisfy the team (including the newly returning member). The process
of reiteration was obviously a useful one in labeling the seven unit
operations of the flow of application processing. The team was satisfied,
and the list of unit operations for application remained unchanged for
the duration of the project. The flow of requisition processing on the
other hand required yet a third iteration before the team would accept
a list of six unit operations. Figure III 3 shows the final lists for
both inputs and the points of connection between those two lists.

This process of technical system analysis has been shown to be a
useful method of consciously separating a technical conversion process
from the social system, and jobs surrounding it. Such a separation
permits an examination of what is "essential" in the mission of the
system without recourse to machines, or specific procedures, or jobs
and tasks which usually constrain the analysis to what the current
technology will permit. This perspective, however effective it may be,
also places a burden on the internal team member (as in the present
case) to ignore those very processes, machines, and procedures which
are most visible, and with which the team member is most familiar.
This strain was manifest for the members of the Employment Division
design team. They complained, with ample justification, that the idea

FIGURE III-3 UNIT OPERATIONS/EMPLOYMENT DIVISION

(inputs)

(output)

REQUISITIONS

APPLICATIONS

FILLED VACANCY

| I ESTABLISHED Entered into system |
| II INCORPORATED INTO SYSTEM Logged & posted by Rep |
| III ASSOCIATED W/ APPLICANT POOL Compared by Rep/ Dept. w/ appli- cants available |
| IV ASSOCIATED W/ ONE APPLICANT Matched w/ best qualified appli- cant |
| V STORED Held during hire process |
| VI CLOSED Position filled |

| I FORMALIZED Entered & logged into system |
| II PRE-SCREENED/ PRELIMINARY REVIEW Reviewed by Rep prior to routing |
| III SECONDARY REVIEW Reviewed by dept. |
| IV SELECTED Selected for hire process |
| V PROSPECTIVE EMPLOYEE Offer made |
| VI PENDING HIRE Offer accepted |
| VII START Start day |

of thinking about a technical system while ignoring their present technical procedures was frustrating. They assured the external consultant that they would go along with him only because he seemed confident that it would work in this case as it had in others.

The subsequent process of listing variances continued the frustration for the team. The external consultant suggested the use of a structured "brain-storming" method (see Delbeq and Van de Ven, 1976) for generating the initial lists of variances for the two inputs -- Applications and Requisitions. In this case, the lists which were generated were very extensive, and there existed a tendency to repeat many of the same variances in all unit operations. The net effect of this was a combined list of over 300 variances from which a small subset of key variances would be subsequently derived. Not only did this large number of variances require considerable time to list, the time to discuss them for mutual understanding was lengthy in proportion. During the time these variances were being listed and discussed the external consultant was present at design team meetings only about half the time. Although he had intended to be present for nearly all meetings, the press of prior commitments away from the lab, together with the start-up training for another STS project in the lab prevented the external consultant from more frequent attendance. In retrospect this amount of guidance and monitoring is typical and it is usually sufficient in heading off the sort of redundance problems in the lists of variances described above. In the present case, the external consultant was committed to furthering the team's ownership of the process, as well as to a quality result in identifying variances. Thus it seemed more

important to permit the design team to argue for the lists as they were
developed than to press for the reduction in list size after the fact.
A continual presence and low-level input by the external consultant might
have made the listing process more efficient while team "ownership" of
the process continued. In any event, the lists were created, and the
design team did feel confident in their progress. The process of iden-
tifying key variances was time consuming and tedious but it was accom-
plished satisfactorily. Especially cumbersome was the analysis of
interrelationships among the 300 variances, but it served the purpose
of forcing recognition of the considerable redundancy in variances from
one unit operation to another as noted above. A total of 13 "Key"
variances were eventually identified; and by early October, were
summarized as six "key technical issues". The key variances were as
follows, and the remainder of the technical systems summary is shown,
following the variances, in Figure III 4.

A) In Applications, the Key Variances were:
   1. "Routing Criteria:" Varied rules for passing applications from
       one step in the process to another.
   2. "Completeness:" Variations in how completely the applications
       are filled out by applicants.
   3. "Timeliness:" The speed at which applications are processed
       and the various actions are taken.
   4. "Volume:" Variations in number of applications received per
       month.
   5. "Strength:" Variations of qualifications of applicants.

FIGURE III -4

T E C H N I C A L   A N A L Y S I S   S U M M A R Y / EMPLOYMENT DIVISION

The Technical System Analysis was done in order to understand what the purpose of the Employment Division is, and how the Division works. The purpose was identified as filling Laboratory vacancies with qualified applicants in an effective, timely manner. The process utilized to determine how the Employment Division works was breaking down the work-flow into a series of steps.

Dr. Taylor's method of analysis was used to identify specific changes in the input at each step of the Employment process. The initial step in the process was to identify the inputs to the system, which were found to be: 1. Applications; 2. Requisitions. These inputs were then broken down into Unit Operations. A Unit Operation is a specific change resulting from the standard processing of applications and requisitions.

These Unit Operations were examined individually to identify controllable variations in the process; some 170 such "variances" were listed for Applications and 140 for Requisitions. All of these were charted on a "Matrix of Variances" and evaluated in turn to choose the most important or "key" variances among them. A "Key Variance" is one that has a major impact on the performance/output of our system. Thirteen Key Variances were thus identified: 7 for Applications and 6 for Requisitions:

This entire process of analyzing the crucial technical system requirements resulted in the identification of the following key technical issues:

1. completeness of inputs to the system

2. development & maintenance of a quality applicant pool

3. timeliness/urgency/method of processing data between Employment Division, users, and support systems, particularly as influenced by volume

4. control of processing shifts from Operations to Teams to Departments to Operations

5. Insufficient understanding/awareness by inter/intra-departmental personnel of Employment Division functions and processes

6. wide range in the ability/training/utilization of Employment Division staff, users, and support systems.

This concludes our technical analysis. Finding the most effective means of dealing with these key issues will be addressed after the analysis of the social system.

Employment Division Design Team

6. "Hire Plan OK:" Availability of budgeted funds for a new hire.

7. "Start Date:" Variations in time between offer tendered and applicant starts work.

B) In Requisitions, the Key Variances were:

1. "Form:" Formal or informal; general or specific requisitions.

2. "Timeliness:" Delays between recruiting requests/formal requisition; and job posting.

3. "Posted/Not Posted:" Whether job openings are posted within the lab.

4. "Number:" Variations in the number of applicants currently available for any job opening.

5. "Quality:" Variations in the qualifications of applicants currently available for any job opening.

6. "Customized:" Degree of special job description created for a particular applicant.

3) Variance Control Analysis:

During the second week of October, after the key variances had been identified the team examined where and how these variances were absorbed and controlled. "The Table of Variance Control" created by this analysis is shown in Appendix III A. The team found that in all of the key variances, some of the control activities were undertaken by Employment Division personnel. They also determined that Employment Division personnel did not exercise total, or even adequate control over most key variances, and that reliance was placed on others throughout

the lab for dealing with variances. Thus for each key variance, they then identified the relevant others (such as the user departments, and other support units like the medical group or security department) as sharing responsibility for controlling variation. This analysis confirmed the team's earlier assertion that the user departments, in making the final hiring decision were heavily involved in a step in the process which could dramatically affect the timely processing of that hire or others in process at that time. The variance control analysis also revealed a reliance on internal division competence in the initial processing of applications and of the importance of coordination between the operations group and the employment teams in order to generate complete file information most quickly. Finally, a heavy reliance on other support departments by the operations clerks in starting new hires was recognized.

The process of analyzing the control of key variances in this case clearly initiated the examination of "role" relationships which spread beyond the boundaries of the Employment Division. This was the beginning step in the social system analysis. It also provided a forum to consider some points of coordination within the division and to evaluate the effectiveness of existing control processes. In the case of some key variances, just "doing a better job of what was done" was the conclusion, while in other cases more effective control systems needed to be developed to improve speed or volume of processing Applications and Requisitions.

Communication and Group Process During the Technical Analysis

As the team worked together on assessing their division's output and the variances impacting most strongly on it, the process of evaluating their way of operating continued. As the Technical Analysis got into full swing and the amount of information increased the team members became confused and overloaded but they were anxious to carry on with the analysis since they knew that making progress through the steps of the analysis was a visible achievement and was a sure way for overcoming the discouragement they frequently felt. This discouragement wasn't solely the result of data overload in the analysis, but was also created by the type of support they perceived coming from their division manager, and the sort of response they were getting from their co-workers.

As noted above the division manager had been appointed to that position just as the design team began, and although she had told the team that she supported their efforts, the strength and nature of this support was an unknown quantity. The project after all, had been the brain child of her predecessor; could she be relied on to really understand it or support it? Her monthly meetings with the design team were intended to monitor progress, but the first of these on September 13 also acted as a point of discouragement as the manager candidly expressed her disappointment with their presentations and explanations. Her response on September 13 however did create an improvement in their presentations, and a warmer response on her part in later meetings on October 11 and November 7th.

The team found the first progress meeting with their manager to be an important as well as a discouraging experience. The manager had expected a product and they were only prepared to talk about their feelings. She questioned their commitment to the project and their control of it. She asked three things of them: 1) A January 5th deadline for completion, 2) A decision by the team to either drop the study or work hard, and 3) She wanted to receive concrete conclusions at each of their monthly meetings. In a discussion later, the team noted that they felt a definite lack of support, a lack of understanding, and a lack of encouragement from their division manager and co-workers. The team members also felt that they were overworked on their usual jobs and not fully engaged in the project. By this time one member of the team had left but had not yet been replaced, while another member threatened to quit. Their only encouragement on September 13th was to have completed the listing of Applications variances -- a visible step in the technical analysis. They realized that they needed to spend more time upon the project, and they agreed to expand meetings to 1½ days per week. Although they had been invited to abandon the project by the division manager, the subject was never raised seriously by the team. Subsequent events included the team's decision to add the one replacement member, and to convince the other potential leaver to stay. The team established informal contracts among themselves to maintain confidentiality of personal matters discussed in meetings, to accept and respect the others, to put forth the effort necessary to complete the analysis, and that members returning after an absence would take on the responsibility for their own "catching-up".

The team had discussed their feelings about explaining their activities to others prior to their first progress meeting with their manager on September 13. They reported to one another that they found that they could easily relate to others how they felt about progress but not what they had accomplished. This happened they said because they were not really familiar enough with the content at that time to feed it back. In discussing the purposes of keeping their co-workers informed, they wished to demonstrate a spirit of willingness to communicate; and through this they hoped to have division members trust them and to provide them with sympathetic understanding. They considered reasons why attempts to seem "open" to their co-workers might not "work". The liabilities which they felt were most important were 1) that they didn't feel they had much to say at that point; and 2) they might miscommunicate. Co-workers had communicated with some of the team members that their progress seemed slow. The team wanted support without providing evidence of concrete achievement. Their first meeting with their division manager made it clear that this position was not acceptable to her. No further efforts were made however, to extend the team's efforts at communicating with the division as a whole. The team made no mention about communication with the rest of the division. Their earlier decision on August 20th to communicate informally and "unofficially" to their co-workers was the norm. The team members did not discuss their efforts to communicate during this month.

The second progress meeting with their manager took place on October 11th. Their technical summary was beginning to take shape by that time and they reported the completion of the identification of

key variances for both applications and requisitions, although they hadn't been able fully to understand or appreciate what they had. Thus the team's timing for confidently reporting a conclusion was slightly behind the pre-set date for this progress meeting. Although they could report completion of the key variances they could not yet describe them with facility -- that would have to wait. They were better prepared this time nonetheless and two members explained what they had done, what they would be doing, and the fact that they were still somewhat confused about their progress. The manager accepted their report and indicated her interest in the future steps they described. They promised to deliver the technical conclusions soon and the manager encouraged them to meet with her more frequently, if less formally.

By early November they had completed the variance control analysis described in the preceding section. The team had found (as is usually the case with STS analyses) that the importance of the key variances they had previously identified was much clearer as a consequence of the control analysis. This clarity was apparent in the team's ability to summarize the results of their technical systems analysis. In fact, the technical systems summary as presented in Figure 4 above, was not written until after the team had completed the variance control analysis, in the month following their identification of the key variances. By that time, however, they approached the writing of the summary as a natural consequence of their work, they understood the impact it could have on explaining their efforts for the division. Communications between the team and their co-workers seemed to be improving. The operations clerks worked in close proximity to one another and two of

their number, and their supervisor, were on the design team. This enabled considerable discussion to take place in operations. The division's personnel interviewers and their employment assistants were kept informed at least about important events (such as the progress on the technical summary and the impending survey) by their counterparts on the design team, although their opportunities to communicate with one another were more limited. This was because the interviewers met together not more than once a week, and their agenda was usually so full as to limit the opportunity (or interest) in those meetings to discuss design team matters. Since the employment assistants usually relied on the interviewer they worked with for information about the division, they evidently received even less information about the design team than did the interviewers.

On November 7th, the design team met with the division manager and presented a draft summary of the technical systems analysis and the Table of Variance Control (Appendix A). She understood it and told them that she liked it. They also presented the next steps, which would include a rewrite of the Technical Systems Summary for eventual distribution to the division, and the planning for the survey which would be the main part of the upcoming analysis of the social system. They reported their concern about their progress and requested permission to be able to plan for a workshop retreat of three days to accomplish these immediate tasks.

The team had been working together very well. Evidence of this was the degree of candor with which the members communicated to one another, the high degree of concern for one another, and the good humor

with which they interacted. They frequently mentioned in team meetings
the frustration of trying to do both their own jobs and the design work.
Several members suggested that they should have adequate back-up for the
regular work -- and perhaps should have been pulled off for a full-time
assignment to the project. This led in turn to the idea of the retreat
mentioned above. They felt that the division manager had not, to that
point, provided the back-up they needed. Her approval of the retreat
they felt was a sign of good faith. They also sensed that they seemed
to have a lower commitment to the project than it needed. A major problem
continued to be the way each meeting started late and the difficulties
of getting up to speed each time. They felt they lost momentum from one
meeting to the next. Their request for a three day "retreat" was made
with an eye to building momentum and using it, as well as working on
strengthening their team spirit.

The retreat was approved and took place November 9-11 in a nearby
conference camp. This three day activity strengthened the team's morale
and provided a new vigor, as well as producing a finished technical
summary, and the strong basis for the interview survey they were planning
to do. The retreat also provided time to review their relationships
with one another and with the consultants. They discovered that they
were becoming dependent upon the consultants, and they had mixed emotions
about this. The consultants in turn were absent frequently from team
meetings. The team didn't want to handle their own process observations
because the internal consultant was the expert, yet he wasn't always
there. They also didn't want to move ahead with the STS analysis without
the external consultant, yet he was not always present. The retreat

provided them with some structured work time with consultants and some time without. The final afternoon of the three days was spent in discussion of feelings and process issues with both of the consultants. This discussion resulted in a frank exchange of perceptions, and a sharing of future needs among those present. They felt more cohesive, and better about the analysis. The "groping and searching" which characterized the technical analysis had taken a lot of time, but it had also set a pattern for careful analysis which was easier to grasp in beginning the main part of the social system analysis. They "knew" that they could carry on as an autonomous group. The team came away from the retreat with a strong commitment to and a feeling of confidence about the next steps. They had come into a fuller ownership of the project.

4) The Social System Analysis

The external consultant provided the training in social system concepts, at the three day retreat (Nov. 9-11) which totaled 9 hours. The first activity included two lectures of about an hour each. In the first lecture the concept of "social role" was explained as the basic link between organizational requirements and demands on employees, and their own individual desires and characteristics. The second lecture dealt with the network of work-related communication and coordination, which was described as connected by the reciprocal role expectations among system members. Relationships in this network include superiors with subordinates, members of the same work group with one another, members of different groups at the same level, and between people inside

the "system" with people outside. All of these interactions can be seen to combine into a general "climate" of relationships within the system.

This network (the Social System) was described as serving several functions:

1. Attaining system goals.

2. Adapting to external environmental pressures and demands.

3. Integrating the system's internal environments.

4. Providing support and development for system members.

The following model (Figure III 5) summarizes the conceptual content of the training. The team was encouraged to think about what each cell in the model meant in terms of their division's social relations.

The next step in the process was to begin to develop questions for a division-wide survey. This was done by the team with the assistance of the external consultant. Following the lecture input, the team was led in a structured brainstorming process "Nominal Group Technique", or N.G.T., (See Delbeq, Van de Ven, 1976) to generate a list of social system or job related questions that the team felt were of importance to the division. This listing took approximately one hour and produced some 40 items. These items were listed without regard for their meaning in the model previously presented, but because the lecture material had been presented in advance, the effect of narrowing the content to the relationships and functions in the model was manifest.

FIGURE III 5

Social System Model

Relationships

Functions of Social System	Superior - Subordinate	Intra-Group Relations	Inter-Group Relations	Relations with other Depts.	Organizational Climate	Activities on the Job
1. Goal Attainment						
2. Adaptation						
3. Integration						
4. Support & Development						

Each cell in the above matrix can be measured in any of these three ways:

Behaviour	"How is it done?"
Satisfaction	"How do I like it?"
Values	"How should it be?"

The next four hours of Social Systems Analysis (part of which continued the following week) was spent examining and discussing the list. The N.G.T. is intended first to generate a list of items or issues quickly and without discussion, followed by a discussion of those items. Before an open discussion began, the external consultant went through the list in front of the group and identified each item in terms of its apparent social system "function" or functions, per the model in Figure 5. The consultant then invited discussion in each item as he labeled it. This exercise provided the team with a practical application of the "functions", and permitted the team and the consultant to better understand the meaning of the items on the list. The team next tallied the items on the list in terms of   Figure III 5 aspects which (cells) of the social system model had been given greatest emphasis, and which aspects might need to be expanded. Based on their analysis of the tally of items in the matrix, the team decided to add some items dealing with goal attainment, adaptation   and integrations, and to remove some support-type items. A net increase (from 40 to 62) in the number of items resulted. The next step in the social analysis (Nov. 15, 17, 22) involved taking the now expanded list of items, and developing from it the actual survey questions to be asked of division members. By November 22nd some 65 items, phrased as survey of interview questions had been developed. The team was concerned about obtaining valid answers from their co-workers. They worried about the effect of face-to-face interviews on respondent candor. They discussed whether to use an interview or a questionnaire, and decided to use both. The team then developed a 43 item paper-and-pencil questionnaire which was distributed

a few days in advance of the interviews. The items in the questionnaire were intended to deal with issues of a more "sensitive" nature, and the forms themselves were completed anonymously. They developed a one-hour, 30 item interview with some content overlap with the questionnaire. They wanted the advantages of including some open-ended queries, and of following leads that an interview offered in addition to the more objective, but limited multiple-choice format of the anonymous questionnaire. The interview form and the questionnaire are found in Appendix III-B.

The team considered using multiple interviewers for each respondent as a reliability check, and they also discussed whether the supervisory member of the team should do some of the interviewing. They decided to use each of the team members to interview only the other division employees in their own job class, and to interview each respondent once. The team was given two hour training in interviewing by a professional trainer, and the members seemed to feel reasonably comfortable in the role of interviewer. The supervisor interviewed a few individuals who chose to be interviewed by her. The external consultant interviewed each of the team members, and the division manager. The first interviews began on December 5 and the last were finished by December 12th. The interviewing went smoothly and all employees participated. The questionnaire response was also high. The separate interview answers were typed up (during the week of December 12th) to aid in analysis and discussion. The individual answers were clustered by the three employee groups in Employment Division; the interviewers, the employment assistants, and the operations clerks; and within those clusters,

by question. The responses from the paper and pencil questionnaire were also tabulated by groups and by question.

The team undertook their analysis and discussion of the data during the week of December 19th and continued it after the holidays. The external consultant and/or the internal consultant were present at most of the meetings to discuss the data. The structure of the survey analysis followed the structure of the interview and questionnaire in that it divided the content into four social system functions and five types of relationships (see Figure III-5).

Results of the Social Systems Analysis

In general, the design team's initial conclusions about the task were that the interview had a net advantage over the questionnaire. Comparison of the interview and questionnaire data suggested that the latter was too limited although easier to tabulate. On the other hand the team felt that while the interviews might not have elicited as much candor as the questionnaire, the open-ended interview questions produced richer information. They found that different things came out of each method, but that the most important aspects were repeated.

There were several general results which distinguished among the three employee groups -- interviewers, employment assistants, and operations clerks. The three groups differed in their primary orientation. Operations clerks saw their most important function as following rules for a smooth work flow. Employment assistants said service to applicants was very important. Interviewers said service to the client departments

was most important. The operations clerks felt that they received good
cooperation from others in the division. Their results also revealed
that they shared a common supervisor, common space, common resources for
back-up, and common clients. The interviewers said they experienced
adequate cooperation from others; and it was clear that they shared the
same immediate superiors, and common resources for help, despite their
separate work space and different clients. The employment assistants
reported barely adequate co-operation from others in the division; and
they as a group had no common supervisor, no common or stable back-up
resource, separate work spaces, and different clients. Operations, it
was clear had strong leadership and had a lot of interaction. The other
two groups had less strong leadership and much less interaction among
themselves. This led to lower cooperation and lower satisfaction with
work organization in the latter two groups.

A majority of employees in all three groups shared the following
perceptions:

- Improvements in team spirit and cooperation go together.
- Contact with people is the best thing about their jobs.
- Satisfaction with support and backing they received from
  their immediate superior.
- A high reported understanding of the functions of the
  different positions with which they interact.
- Division morale was seen as improving.
- Reported that noisy working conditions and drab surroun-
  dings detract from the quality of their working lives.

SOCIOTECHNICAL DESIGN

On January 5th, 1978, the design team met to consider the data they had collected from both the technical system analysis and the social system analysis. The external consultant presented nine principles of design (Cherns, 1976) in a lecture/discussion format. The design team related well to those ideas, and set to considering changes in their division which would jointly optimize the key technical issues they had identified (see Figure III-4), together with the social system issues described in the preceding section. They worked on design ideas for the following week, and prepared a draft proposal for discussion with their division manager. The most critical design parameters specified were the achievement of high flexibility and speed in servicing departmental needs for filling vacant positions; together with providing jobs and a work place which facilitated employees' sense of social support from others, division teamwork, and leadership guidance. These aspects were seen as interdependent in that changes in some were to cause changes in the others.

The recommendations for design fell into three categories: Structural changes (who would do what work with whom), physical changes (what the physical environment would be like) and process changes (changes in how people would behave differently).

Most structural changes the design team recommended involved the paired teams of interviewers and their employment assistants. The design group suggested that 2 groups of four of these paired teams be brought together in physical proximity and under the guidance of two section

leaders, who would themselves be interviewers. The design group had learned that the employment interviewers and their employment assistants wanted more sense of team-work among themselves than they were able to achieve by working in teams of two. In particular, mention was made of need for trained back-ups and opportunities for personal development on the job. The larger work groups and specifically assigned group leaders were designed to address these problems.

Other structural recommendations included developing some two and three person sub groups of clerks within the operations section for such tasks as hiring and recruiting, applicant data entry, new starts, and special projects. Certain other tasks (such as maintenance of personnel files) were recommended removed from operations and turned over to other divisions and departments as appropriate. Some of the jobs taken from the employment assistants in the centralization change of the year before were proposed returned to them. Changes in operations structure were intended to address faster processing of applicant logging, together with improved variety in job tasks, and increased growth potential for the clerks.

Changes recommended in the physical environment included enlarging space for the new work teams, carpeting, installation of acoustical panels, cheerful colors and decorating, sun control on windows, improved heating and air conditioning controls, and elimination of foot traffic by others through their division's work space. The issues addressed through these changes went beyond the purely physical effects. Noise and temperature concerns were of course primary, but the carpeting and redecorating were intended to improve the image of the division in the

eyes of others in the lab, and of the applicants, as well as providing a direct boost to the morale of the division employees.

The process changes included an appeal for clear standards of performance to be set and maintained by management. Other recommendations included holding workshops and training programs to help develop employee skills in work processing and work coordination and cooperation, to develop standardized procedures when possible, and to build better understanding with the hiring departments.

The design team met with the division manager on January 17th. In the main the manager was in support of the proposed changes. She indicated to the team that she wanted to implement much of their proposal right away. She approved of the restructuring proposed. She felt that the clustering of employment teams would permit better time management, and would reduce the amount of paper pushing for any one paired team, and it would provide competent back-up for interviewers and employment assistants. She also felt that the changes within the operations group would better serve the employment teams and in some cases these operations people ought to report directly to them.

The division manager however was more hesitant in her acceptance of the recommendations for changes in the physical environment. She felt that budget availability for redecoration was going to be hard to justify. In particular, she mentioned that the carpeting for portions of the division's space would have to wait until the structural changes had proved successful. She had some advice on implementation strategy. She indicated that if the division employees were informed a little in advance of a formal presentation, and if they would understand the

reasons for the changes, that they would become used to the new ideas, and accept them. The division manager realized that there would be a few interviewers who would resist because they were not part of the planning, and a few clerks would feel threatened because their jobs would disappear, but in the main she seemed optimistic about implementing the proposal.

The manager suggested that a full division meeting be held on January 26th following the general distribution of an edited version of the proposal together in a package with the technical and social systems summaries, and a cover letter from the division manager. In the meantime the division manager said she would check the proposal with her superior, the Personnel Department Manager, for his approval.

Process of Design

Following their January 17th meeting with the division manager, the design team met together to discuss the upcoming mass meeting of the division, and to share their feelings about the design process with the consultants. Their first feelings were discouragement -- they felt that they had recommended nothing that couldn't have been recommended without the technical and social analysis. They also felt discounted by their coworkers and their division manager. They wanted to be recognized for their sincerity in looking out for all interests, and for all their hard work, but they felt they were not. Since the analysis phase had been so demanding they felt a let down and disappointment that the design was so prosaic after all.

They recognized and stated clearly however two aspects of the design process which they felt were worth commending. First they acknowledged that with the analyses they had developed a basis of defense or justification of their proposed design which they doubtless could not have developed with less effort. This ability to use a rational approach to produce design proposals was novel in their experience and it was valuable. The second positive aspect of the sociotechnical design process was the purely intrinsic pleasure of pulling the various analyses together during the design phase. This was stated as "the major reward in the six month process was the way the technical and social analyses flowed together to become a design proposal -- the final two weeks of drafting the design was "fun".

The design team did feel that the project was worthwhile, but they had several recommendations for doing such a project again. First, it should be done on a full-time basis over a four to six week period. Second, they felt that a psychological contract should be struck with the division head and with coworkers which would sanction and acknowledge the good will of the design team. The division should also test this sincerity, and interest of the design team members; and praise, support and reward them accordingly. The design team members said that they had never expected full implementation of their results -- but they always expected to be supported more genuinely than they were. They stated that they knew it was difficult for the division manager to do this under the circumstances. She had to prove to her division that "management" was not influencing the analysis or design, so she had to force herself to pull back. However in pulling back, the design team

also recognized their manager's sensitive role in dealing with her
superior the Personnel Department manager. They stated clearly that the
division manager's strength of support was in part determined by what-
ever support she must have received from her superior. The influence of
the department manager, they knew, must not be discounted.

Preparing for Implementation

Between January 17 and 26 the division manager met with the
department manager to discuss the proposed changes in Employment Division
and to win his support. This approval step was a consequence of the
management turnover at the beginning of the study some six months earlier.
The current division manager had "inherited" the sociotechnical design
project from her predecessor who has approved it with his department
manager. Although that early approval in the process had been pro
forma, or at least a low stress activity on the part of the current
division manager's predecessor; the department manager's approval of
the final recommendation was not pro forma to her. She felt that the
department manager's outright and public approval would be required
before she would vigorously pursue implementation. As it turned out
the division manager found her superior to be in enthusiastic support of
the proposal when presented to him in January. However her pleasure in
his acceptance was more than offset by his news that he would be leaving
the lab within the month. This fact would color the division meeting
on January 26th and would reverberate for fully three months until his
successor began work.

Two days before the January 26th meeting, the design team met with the interviewers, the employment assistants, and the clerks as separate groups. Copies of the proposal package were passed out at these pre-meetings and some introductory remarks about the upcoming mass meeting on January 26th were made. The division manager was expected to be specific about what she would implement, and the rest of the meeting would be open for questions to the design team, to the consultants, or to the division manager. A series of implementation meetings with the three groups would follow the mass meeting. The reactions from the division employees prior to the mass meeting were difficult to gauge. The division manager said she was getting negative signs from the clerical staff, but the design team felt that the clerks were pleased in the main. There were some questions from the interviewers who appeated to feel threatened by the addition of senior level positions over their "clusters". Finally some discomfort by the employment assistants was noted.

The mass meeting was held but no discussion took place about the proposal. The meeting itself took no longer than ten minutes. After introductions of the consultants and a few words by the design team, the division manager simultaneously opened and closed the meeting by saying that 1) she "liked some parts of the proposal and disliked other parts", 2) that "the department manager liked it, but he's leaving," and 3) because his successor "may not like it, the division may not do anything at all." A brief stunned silence was broken as division members rose to go back to their desks.

The meetings that followed were as varied as they could be. The operations clerks met on January 31st. The division manager opened the meeting by promising to make at least some changes. The clerks asked a few questions and then totally endorsed the proposal as presented. The clerks said that they felt well represented by the design team. They all signed a copy of the proposal as evidence of their endorsement.

The subsequent meetings (January 31st, Feb. 2 and 7) with the employment assistants were more complex. The employment assistants were ambivalent. Some of them liked the larger team idea but some of them did not. The employment assistant who had been on the design team felt trapped because she did support the proposal. The employment assistants finally met with the division manager on February 21st. They agreed to the team concept although they were concerned about increased work load and predicted increased noise and decreased privacy by the proposed changes in work space.

The interviewers also met with the division manager on January 31st to voice reactions to the proposal. They unanimously disliked the added level of supervision, and they were split on the notion of clustering together in larger units. The division manager pushed hard for the clustering idea as a way to lighten their load and to provide better service. Interviewers asked for time to meet privately and to come back to the division manager. When they did report back after a period of six weeks they announced the negative results of a vote taken on the proposed section leaders, and on clustering. The results were 5 against and 3 in favor of the change. They were not, they said, willing to share work load, and they disclaimed any problem with back up, with

paper work, or with promotional and development opportunities which had been revealed in the social analysis. The vote had deepened a split between the group of interviewers. Since these personnel interviewers were a crucial element in the proposed changes, it looked as if the project was finished.

The division manager had been in touch with the temporary department manager to see if he would approve the structural changes in the proposal, but he would not. His reluctance probably stemmed from uncertainty about when his permanent replacement would be made, as well as from his overburdened schedule.

Implementation

Although the picture looked bleak in February, by June, 1978 a great many of the proposed changes were actually implemented. This gradual change came about through the efforts of the division manager, and her assistant (who had been the management representative on the design team), the operations clerks, and ultimately through the new Personnel Department Manager who joined the lab in May.

The division manager was by early March able to obtain approval for some of the physical changes proposed, such as sun-filters on the windows and acoustical panels. She was distressed that the proposal was meeting with such resistance from the interviewers and from the employment assistants. The choice, however, was clear to her. Either she as division leader met the needs of the user department through the use of the existing autonomous teams of an interviewer and an

employment assistant, or she must try something different. As noted
above the design team had come up with the use of interdependent teams
of eight people each with individual members servicing particular user
departments but providing back-up, coverage and training for one another.
The division manager felt that this proposal was appropriate, and her
disappointment in not obtaining it was acute.

Implementation of the physical changes recommended continued
through the following three months (April-June). For instance, carpeting
was justified for parts of the office space by the fortuitous location
of several pieces of noisy data processing equipment which were subse-
quently moved together into their own space. Tasteful color redecoration,
and the installation of doors encouraging alternative patterns of foot
traffic through the division were similarly achieved in a piecemeal
way. Some of the space rearrangement to create smaller work teams
within the operations functions were also underway as early as April,
although most of them were to wait several months.

By early April some process and structural changes in the opera-
tions group had been achieved. Some of the work previously done by
employment assistants and included in the operations centralization were
returned to the employment assistants. A recommendation that inter-
viewers discourage the use of written references for every applicant had
been implemented. Thus the operations clerks expected to receive fewer
requests, and therefore lessening the need to send out letters requesting
recommendations on applicants.

By mid-May the new Personnel Department manager had been appointed.
This new manager reviewed the Employment Division proposal and agreed

with many of the changes. She agreed with the proposed level of super-
vision between the division manager and the interviewers, as providing
a necessary level of support and direction to the interviewers as a
whole. She also approved the division manager's proposal that one employ-
ment team be eliminated (an interviewer and an employment assistant),
based on work load figures. To use the extra interviewer as an inter-
viewer-supervisor (or "division staff assistant" as it would be called)
seemed like an acceptable alternative to those persons concerned.

Thus by late June 1978 most of the recommendations (some of them
altered in detail) had been implemented in Employment Division, or were
immanent. Division employees in general liked the changes that had
occurred, and generally positive expectations were held for the remain-
der. The Division Manager prepared a memo to her division describing
the changes to date which had resulted from the work of the design team
(Appendix C). A memo was also issued to the hiring departments announ-
cing the consolidation of employment teams under one Supervisor, and the
planned use of permanent assigned back-up assistance for each inter-
viewer and employment assistant. That memo also noted for each Department
the names of individual Employment Division employees who were assigned
as back-up (Appendix D).

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Appendices

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