Job redesign: improving the quality of working life

John W. Slocum, Jr.
Southern Methodist University

Follow this and additional works at: https://scholar.smu.edu/business_workingpapers

Part of the Business Commons

This document is brought to you for free and open access by the Cox School of Business at SMU Scholar. It has been accepted for inclusion in Historical Working Papers by an authorized administrator of SMU Scholar. For more information, please visit http://digitalrepository.smu.edu.
JOB REDESIGN: IMPROVING THE QUALITY OF WORKING LIFE

Working Paper 81-501*

by

John W. Slocum, Jr.

Distinguished Professor of Organizational Behavior and Administration
Edwin L. Cox School of Business
Southern Methodist University
Dallas, Texas 75275

*This paper represents a draft of work in progress by the author and is being sent to you for information and review. Responsibility for the contents rests solely with the author. This working paper may not be reproduced or distributed without the written consent of the author. Please address correspondence to John W. Slocum, Jr.
ABSTRACT

Whenever a job is changed, a manager has a chance to increase both the quality of the employees' work life and their on-the-job productivity. This manuscript briefly reviews the salient concepts in the job redesign literature and permits the reader to undertake a job redesign program. Actual company data are provided that indicate the effectiveness of the company's strategy.
INTRODUCTION

In the early part of this century, organizational theorists attempted to improve the efficiency and effectiveness of organizations by developing a set of principles. The idea would be that efficiency was the ultimate criterion toward which organizations should strive, and that the use of rational administrative practices and procedures would enable managers to reach this goal.

Classical theorists developed a number of principles that they believed would maximize the rationality and efficiency of the firm. These principles emphasized the importance of clear and unambiguous channels of authority, centralization of decision making, adherence to rules and regulations, and the division of labor. The latter principle had a great impact on the worker. In essence, this principle specifies that maximum work efficiency will be achieved if jobs are simplified and specialized to the greatest extent possible (Van de Ven & Ferry, 1980). The notion is the employees will function most efficiently if they perform the same specialized functions repeatedly rather than spreading their attention and energies across several more complex tasks. The task of pin-making illustrated by Adam Smith (1850) is the clearest example of how the division of labor principle applied to the design of work.

The theorist responsible for developing the principles of scientific management that underlie the industrial engineering approach to the design of work is Frederick Taylor (1911). Taylor's views can be summarized as follows:

1. The work to be done should be studied scientifically to determine, in quantitative terms, how the work should be divided among workers for maximum simplicity and efficiency, and how each part of the work should be done most efficiently.

2. Employees selected for the job should be matched according to the skills demanded by the job.
3. Employees should be trained by management on how to perform the task as specified exactly by the scientific analysis of the work. In addition, industrial engineers and foremen should watch the workers to make certain that they are performing the tasks that they are supposed to, and there are not distractions that workers must attend to other than the work itself.

4. To motivate employees, incentive systems should be developed by management that reward employees for the completion of each day's production that meets the standards set by management.

While there are some similarities and differences between the classical and industrial engineering views, the two approaches share a common view of the worker. The worker will produce efficiently and effectively on well structured and repetitive tasks. Unfortunately, numerous studies (e.g., Hackman & Oldham, 1980; Aldag & Brief, 1979) have shown the work designed according to the principles of classical and scientific management did not always improve productivity. A report of the Special Task Force to the secretary of health, education and welfare stated that: "Significant numbers of American workers are dissatisfied with the quality of their working lives. Dull, repetitive, seemingly meaningless tasks, offering little challenge or autonomy, are causing discontent among workers at all levels" (1973, xv).

A third approach to the design of work focuses on the characteristics of the employees' jobs. The basic idea is to build into those jobs characteristics that create conditions for high motivation, satisfaction, performance. Job characteristics theory began with the major study of Turner and Lawrence (1965) and has been extended by Hackman & Lawler (1971) and Hackman & Oldham (1980). Studies by Hackman and his associates provided evidence that job characteristics can directly affect employee attitudes and behavior at work. These researchers predicted that if specific core job characteristics are present, employees will experience a positive, self-generated internal drive when they perform well. This internal drive will provide an incentive for continued efforts towards good performance.
The paper briefly describes the underlying rationale for job redesign and an operational procedure for a job redesign project. The basic aim of the exercise is to restructure a task so that it is performed more effectively and, at the same time, workers find the task personally rewarding and satisfying.

GOALS OF THE EXERCISE

In summary, the goals of the exercise are as follows:

1. To provide a learning environment in which individuals can discover for themselves the characteristics of jobs.
2. To demonstrate the usefulness of the job characteristics model to the redesign of a job.
3. To emphasize the keys and problems to successful implementation of a job redesign project.

JOB REDESIGN

Job design is the deliberate purposeful planning of the job including all its structural and social aspects and their effect on the employee. Job design is a broad concept that can refer to any part or combination of parts of the job. For example, industrial engineering and job enrichment are both job design approaches. Figure 1 provides an overview of the dimensions of job design. It highlights their overlapping nature. It also indicates that many factors affect job design, such as managerial style, unions, working conditions, and technology. While this exercise focuses on the job enrichment approach, the impact of the total system must be considered for a complete understanding of the field of job redesign (Cummings, 1978).

For over the past ten years, behavioral scientists have studied the characteristics of jobs and how they affect the employee's motivation to work. (For those desiring this, see Hackman & Oldham, 1980; Aldag & Brief, 1979.)
Figure 1. Overview of Job Redesign Dimensions

- **Job Enrichment**: making jobs meaningful, interesting and challenging.
- **Job Engineering**: maximizing efficiency through time and motion studies and man-machine interfaces.
- **Job Enlargement**: adding more tasks to the job for variety.
- **Sociotechnical**: making the group responsible for the job and balancing the social and technical parts of the job.
- **Goal Setting**: using objectives or incentives to structure the job.
- **Job Rotation**: doing different jobs to add variety.

In general, individuals may experience higher order need satisfaction when they learn that as a result of their own efforts they have accomplished something worthwhile or meaningful. In an attempt to coalesce the major findings from this literature, three major factors appear relevant.

First, the job should allow a worker to feel personally responsible for a meaningful portion of his or her work. A job is meaningful to an individual when he or she feels that they are personally responsible for the job's success or failure. The key to this is autonomy.

Second, the job should involve doing something that is intrinsically meaningful or otherwise experienced as worthwhile to the individual. There are several ways that jobs can be made more meaningful. First, individuals' jobs can focus on an entire unit as opposed to just a portion of it. For example, a bank teller may be responsible for satisfying all the bank needs of a customer, including transactions involving checking, savings, utility payments, loan payments, mortgage payments, rather than specializing only in savings account deposits and withdrawals. Behavioral scientists have referred to this as task identity. Second, the task may require an individual to develop and use a variety of skills and abilities in the performance of the task. In the case of a general superintendent of a manufacturing plant, the technical knowledge of the firm's machinery, the skill to supervise others, and the ability to determine plant shutdowns and repairs without lost revenues provides a significant amount of task variety. Third, jobs should have a substantial impact on the welfare of the organization. The dean of a college by recruiting high caliber students and faculty not only satisfies society's needs for well educated men and women, but also provides jobs for others at the college. A high degree of task significance is attached to this job.

Third, the job should provide feedback about what is accomplished. Knowl-
edge of one's task performance is a requirement for higher order need satisfaction. If an employee is working on a task that is meaningful, for which he or she is held personally responsible, satisfaction of higher order needs will not be obtained unless some form of task feedback is provided. Feedback may originate from either doing the task itself, or from others, such as supervisors, co-workers, or customers.

A job that is high on all core job dimensions is the surgeon. There is a constant opportunity for using highly varied skills, abilities and talents in diagnosing and treating illnesses. There is plenty of task identity since the same surgeon normally diagnoses, performs the operation, and monitors the convalescence period. Task significance is also high since much of the surgeon's work will be a matter of life, death or comfort to the patient. Autonomy is quite high since the surgeon is the final authority on the procedures and techniques of the job during the operation. Finally, the feedback from the job is high because the surgeon can tell within a short period of time if the operation was successful.

Task variety, identity, significance, autonomy and feedback have been termed the "core" dimensions of a job because they related directly to the attainment of personal satisfaction. The model by Hackman and Oldham is shown in Figure 2. The model illustrates the relationship between the core job characteristics, the critical psychological states, and personal outcomes.

Insert Figure 2 about here

This Figure also suggests five implementation concepts for increasing the core dimensions. First, combining tasks. When tasks are combined, all tasks required to complete a given task are performed by one person, rather
Figure 2. Hackman and Oldham Model

Implementation Concepts → Core Job Characteristic Dimensions → Critical Psychological States → Personal and Work Outcomes

Combining tasks
Forming natural work units
Establishing client relationships
Vertical loading
Opening feedback channels

Task variety
Task identity
Task significance
Task autonomy
Feedback

Experienced meaningfulness of the work
Experience responsibility for outcomes of the work
Knowledge of the actual results of the work activities

than by a series of individuals who do separate, small parts of the job. When a number of tasks are combined to form a single large one, skill variety almost invariably increases. Moreover, task identity often improves as well because the employee is able to identify with the complete product or service.

Second, when work is formed into "natural" units, the parts of work handled by employees are arranged into a logical grouping. This technique focuses on the "ownership" of a job by giving the worker continuing responsibility for an identifiable part of work. Among the possible bases for forming natural work units suggested by Walters and Associates (1975) are the following:

1. Geographical: Salesperson might be given a particular section of the city or county as their own "turf."

2. Organizational: Employees in a word processing center might be given work that originates in a particular department of a large organization.

3. Type of Business: Insurance claims adjusters might be assigned to business groups, such as utilities, service, manufacturing, and so on.

4. Alphabetical or numerical: File clerks could be made responsible for materials to be filed in specified alphabetical groups.

5. Customer Groups: Employees of a public utility might be assigned to serve particular institutional or business accounts.

Third, establishing client relationships. The individuals can gain a new perspective on his or her work by establishing direct relationships with clients. In many cases, it may be possible to put the employee in direct contact with those clients and give the person the responsibility for managing relationships between the firm and client. Creating client relationships involves a threefold process. First, the client must be identified. Second, direct contact between client and worker should be established. Face-to-face contact is the most desirable, but when that is impractical, telephone or mail can be used. Third, criteria must be established by which the client can judge
the quality of the product being received.

By enabling employees to establish contact with clients, three core job dimensions are affected. Feedback increases because of the additional opportunity of the worker to obtain direct praise and criticism for their work. Skill variety increases because of the need to exercise interpersonal skills in maintaining good client relationships as well as technical skills in completing the task itself. Finally, autonomy increases because the worker has personal responsibility for deciding how to manage each client.

Fourth, vertically loading. This aspect concerns providing the employee greater latitude and responsibility for doing the tasks. Vertical loading can be accomplished through giving the worker discretion to set schedules, work methods, and deciding upon when and how to make quality control inspections. Employees can be encouraged to seek solutions to problems on their own, consulting with co-workers, rather than calling immediately for the supervisor when problems arise. The central idea is to give the employee almost total authority for their work.

Fifth, opening feedback channels. Job-provided feedback is usually more immediate and salient than supervisor supplied feedback. It increases the worker's feelings of personal control over his or her work. The intent of this strategy is to provide employees with direct, immediate and regular feedback about their performance effectiveness.
THE EXERCISE

Group Size

Any number of small groups of from four to eight members in each group can participate. The case part of the exercise has also been used for an examination question with excellent results.

Time Required

Approximately two hours are required. The amount of time can be shortened if the students are familiar with the materials on job redesign found in most basic organizational behavior textbooks (cf. Hellriegel & Slocum, 1979).

Materials Required

The materials required are:

(1) One copy of the Job Characteristics Inventory for each participant plus a self-scoring sheet (see Appendix A for a copy of this instrument).

(2) One copy of the case for each participant (see Appendix B for a copy of the case).

(3) One copy of case solution provided by the company (see Appendix C).

Physical Setting

A room large enough for small groups to work without influencing one another unduly is required.

Steps in the Exercise

(1) Prior to the session, the facilitator explains the concepts of job redesign. Those presented in the Introduction are especially salient for this exercise.

(2) The facilitator distributes a copy of the Job Characteristics Inventory and asks each participant to fill it out. The facilitator explains that the participants need to use a job that they have performed to complete the
questions. The purpose of the instrument is to familiarize the students with the basic characteristics of jobs discussed in the introduction. The facilitator distributes the self-scoring sheet and requests the participants to score their own instruments.

(3) The facilitator then leads a discussion of how the various job characteristics affected the participants' job satisfactions and performances. This is necessary so that the participants have a real grasp of the underlying dimensions of jobs before they analyze the case.

(4) The facilitator distributes the National Insurance Company Case (see Appendix B). Each participant is asked to read the case and answer the questions. All participants are given 30 minutes to complete this task.

(5) The facilitator divides the participants into groups. Each group is given the task of making a presentation on how they would redesign the jobs. Twenty-five minutes is usually sufficient time for this task. A warning should be given to the groups five minutes before the end of the analysis period. No attempt is made on the part of the facilitator to assist the group in their task.

(6) The facilitator asks each group to give a short five-minute presentation on its answer to the questions. The groups are asked to state: (1) what they considered to be the most important problems; (2) how they redesigned the jobs of the group policy-holder and accounting departments, and (3) what are some of the criteria they would use to determine the effectiveness of the redesign efforts.

(7) After all groups have made their presentation, the facilitator attempts to pull together and make sense out of the group's remarks. The facilitator indicates how the company actually redesigned the jobs and the benefits that the company derived from the redesign effort (see Appendix C). All participants are urged to read the company's analysis. The facilitator can encourage
more discussion if time permits.

(8) The facilitator needs to stress some of the problems with redesigning jobs. While these problems were not apparent in the National Insurance Company case, Hackman & Oldham (1980), Slocum & Sims (1980), among others, have cited these as problems.

First, rarely does management diagnose the jobs before the redesign effort is attempted. A diagnose might reveal that: (1) some aspects of the job are as good as they will ever be considering the technology and working conditions; (2) some jobs are already too complex and redesigning the job according to the principles of job enrichment might complicate the problem, and (3) management does not want to devote sufficient time and resources to making the changes.

Second, the work itself does not change. Adding a few tasks to the job does not necessarily change the job. If managers only make slight changes in the task because of tight resources and/or time pressures, the task itself is not sufficiently changed for the participant to derive any benefits from the job redesign program.

Third, management failures to consider unexpected effects from the redesign program. For example, the National Insurance Company did not anticipate restructuring the jobs of the supervisors. However, when the subordinates took over some of these tasks, the supervisors' jobs were "unexpectedly" changed.

Fourth, lack of managerial training. While the redesign effort is targeted at the employees, managers must be given sufficient information to learn about the redesign program. If managers are not trained and rewarded for new behaviors, then wide variations in effectiveness can result.

Finally, managers assume that job enrichment works for all employees.
People who have strong needs for personal accomplishment and for developing themselves beyond where they are now on the job will be more receptive to job enrichment than those with lesser needs. Individuals with lower needs may find the opportunities of job redesign threatening and balk at being pushed too far by their work. Rarely do these employees initiate redesign programs.

(9) The facilitator needs to close the session with some concluding remarks about keys to successful implementation. According to Hackman (1974), there appears to be some ingredients that are common to many of the more successful projects. A few of the more important are reviewed below.

Ingredient 1. Key individuals responsible for the work redesign project tackle the difficult problems, and do so early. There is apparently a great temptation to get the project sold to management and then only begin to deal with the difficult problems. Particular issues that need attention before the project is initiated include: (1) explicit specification of the nature and extent of the commitment of management and union leaders, including the circumstances under which the project may be terminated; (2) criteria to evaluate the overall success of the project, including what measures will be used; (3) development of feedback mechanisms for management so that all parties can "learn" about the "roadblocks" and successes as the project progresses.

Ingredient 2. A diagnosis of the job(s) prior to change. Among the general questions raised in a successful diagnosis include: (1) Can the jobs under consideration be meaningfully changed, i.e., will job redesign make enough of a difference in the jobs to make a major impact on the people who perform them? (2) If the jobs can be meaningfully redesigned, what specific aspects of the job are problematic at the present? (3) Are the employees reasonably ready for change and capable of handling their new assignments? It is particularly impor-
tant for managers to get specific bread-and-butter satisfaction issues on the table, i.e., issues of pay, working conditions, supervision, company policies and practices; (4) is management reasonably willing to take on the extra burdens and challenges that will be created by the change; (5) what other aspects of the work system are likely to be affected by the change (including management, peer groups, and clients) and are they ready and able to handle the change, or is prior developmental work required before beginning work on the jobs themselves?

Ingredient 3. Specific changes are planned explicitly on the basis of the diagnosis and are done so publicly. There appear to be three reasons for this statement. First, by basing action plans explicitly on the diagnostic results, the project is protected from looking at a myriad of other organizational ills. This prevents managers from more general probing. Second, when the diagnosis is carried out and discussed publicly, all parties to the redesign project have an opportunity to contribute ideas and energy toward making the project successful. Since the quality of the diagnosis is enhanced when the planning process is open, the respondents might try especially hard to provide valid data for the diagnosis. Third, it will be easier to trace reasons why things went well or poorly when the links between diagnosis and action are made explicit in advance.

Ingredient 4. Contingency plans are prepared ahead of time for dealing with the inevitable "spin-off" problems and opportunities that surface from the redesign activities. Pre-planning for possible problems leads to an increase in the readiness of all parties to deal with them when they do emerge. Problems typically crop up at the worst-possible moments. Therefore, having a few contingency plans filed away can lessen the chances that when these unexpected problems appear, they will drain all of management's energy and morale
required to keep the redesign project on stream.

Ingredient 5. Those responsible for the project are ready and able to evaluate, iterate, and evaluate again throughout the life of the project. Most of the successful projects were run by managers who learned from the change activities. There is no neat package available for undertaking all projects. It seems essential that managers and workers will have to learn as they go how most effectively to design, implement, and manage enriched jobs in the company.
REFERENCES


Appendix A

JOB CHARACTERISTIC INVENTORY*

DIRECTIONS: Listed below are a number of statements which could be used to describe a job you have performed. Please indicate the degree to which each statement is TRUE or NOT TRUE of your job. Try to be as objective as you can in deciding your answer to the statement—regardless of whether you like or dislike your job.

<table>
<thead>
<tr>
<th></th>
<th>NOT TRUE</th>
<th>Slightly NOT TRUE</th>
<th>Uncertain</th>
<th>Slightly TRUE</th>
<th>TRUE</th>
</tr>
</thead>
<tbody>
<tr>
<td>-2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>-1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>0</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Your Job

This job ...

1 ... provides much variety.

2 ... permits me to be left on my own to do my own work.

3 ... is arranged so that I often have the opportunity to see jobs or projects through to completion.

4 ... provides feedback on how well I am doing as I am working.

5 ... is relatively significant in our organization.

6 ... gives me considerable opportunity for independence and freedom in how I do the work.

7 ... gives me the opportunity to do a number of different things.

8 ... provides me an opportunity to find out how well I am doing.
<table>
<thead>
<tr>
<th></th>
<th>-2</th>
<th>-1</th>
<th>0</th>
<th>1</th>
<th>2</th>
</tr>
</thead>
<tbody>
<tr>
<td>NOT TRUE</td>
<td>NOT TRUE</td>
<td>Uncertain</td>
<td>Slightly TRUE</td>
<td>TRUE</td>
<td>TRUE</td>
</tr>
</tbody>
</table>

Your Job

This job ...

9 ... is very significant or important in the broader scheme of things.

10 ... provides an opportunity for independent thought and action.

11 ... provides me with a great deal of variety at work.

12 ... is arranged so that I have the opportunity to complete the work I start.

13 ... provides me with the feeling that I know whether I am performing well or poorly.

14 ... is arranged so that I have the chance to do a job from the beginning to the end (i.e., a chance to do the whole job).

15 ... is one where a lot of other people can be affected by how well the work gets done.

* This instrument was developed by Henry P. Sims & John W. Slocum, Jr. No permission is needed to use it for instructional purposes.
SCORING INSTRUCTIONS

For each of the five "scales" (A, B, C, D, E), compute a TOTAL SCORE by summing the answers to the appropriate questions.

<table>
<thead>
<tr>
<th>Question Number</th>
<th>Your Job</th>
<th>Question Number</th>
<th>Your Job</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>+ ( )</td>
<td>2.</td>
<td>+ ( )</td>
</tr>
<tr>
<td>7.</td>
<td>+ ( )</td>
<td>6.</td>
<td>+ ( )</td>
</tr>
<tr>
<td>11.</td>
<td>+ ( )</td>
<td>10.</td>
<td>+ ( )</td>
</tr>
<tr>
<td><strong>Total Score</strong></td>
<td></td>
<td><strong>Total Score</strong></td>
<td></td>
</tr>
<tr>
<td>3.</td>
<td>+ ( )</td>
<td>4.</td>
<td>+ ( )</td>
</tr>
<tr>
<td>12.</td>
<td>+ ( )</td>
<td>8.</td>
<td>+ ( )</td>
</tr>
<tr>
<td>14.</td>
<td>+ ( )</td>
<td>13.</td>
<td>+ ( )</td>
</tr>
<tr>
<td><strong>Total Score</strong></td>
<td></td>
<td><strong>Total Score</strong></td>
<td></td>
</tr>
<tr>
<td>5.</td>
<td>+ ( )</td>
<td>9.</td>
<td>+ ( )</td>
</tr>
<tr>
<td>15.</td>
<td>+ ( )</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Total Score</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Next, on the following graphs, write a large "X" to indicate the TOTAL SCORE for each scale for YOUR job.

A. Task Variety
   ![Graph for Task Variety]

B. Autonomy
   ![Graph for Autonomy]

C. Task Identity
   ![Graph for Task Identity]

D. Feedback
   ![Graph for Feedback]

E. Task Significance
   ![Graph for Task Significance]
Appendix B
National Insurance Company*

Jerry Taylor has been involved with the administrative functions of the National Insurance Company for almost twenty years. About three months ago, Jerry was appointed group manager of the Policyholder Service and Accounting Departments at the home office. Before he actually assumed the job, Jerry was able to get away for a three week management development program at the State University College of Business. One of the topics covered in the program was the concept of job enrichment, or, job redesign. Jerry had read about job enrichment in several of his trade journals, but the program was his first opportunity to think about the concept in some detail. In addition, several of the program participants had had some experience (both positive and negative) with job redesign projects.

Jerry was intrigued with the idea. He knew how boring routine administrative tasks could become, and he knew from his previous supervisory work that turnover of clerical personnel was a real problem. In addition, his conversations with the Administrative Vice-President and Joe Bellows, the Personnel Manager, led him to believe that some trials with redesigning the work would be supported and favorably regarded.

Description of the Work

Group Policyholder Service Department

The principal activities undertaken in this department are the sorting and opening of incoming mail and then matching to accounting files; reviewing of Group Insurance Bills from policy holders; and coding required changes to policies (e.g., new employees and terminations). These activities are carried out by approximately 28 people; 53 percent of whom were over age 35, 82 percent female, 89 percent high school graduates, and 53 percent with less than two years' experience in their current job.

Organizationally, the department is headed by a manager. The employees are grouped into the four functional categories of clerical support, senior technician, change coder, and special clerk. The general work flow and a more specific list of the tasks carried out within each functional category are shown in Figure 3.

The Group Policyholder Service Department shares the same physical working area as the Accounting Department. The people within Policyholder Service who work in the different functional categories are in very close proximity to one another, frequently just one desk away. The files for the department are located at one corner of the work area and the supervisors had offices along one side (see Figure 4).

* This case and the analysis are adapted from Alber, Antone F., An Exploratory Study of the Benefits and Costs of Job Enrichment, Ph.D. dissertation, The Pennsylvania State University, 1977. Several figures are reproduced directly, and major portions of the text are quoted directly. Permission to use the case has been obtained for inclusion in Hellriegel, D. and Slocum, J. Management 3rd ed. Reading, MA.: Addison-Wesley Publishing Company, 1982.
Clerical Section
- Receive, Open, Date Stamp, Sort Incoming Mail
- Pull Accounting Files and IBM Cards

Senior Technicians
- Review
- Retain Own Work
- Distribute Work on a Random Basis
- Phones

Change Coders
- Review
- Code
- Purify
- Mail Bills

Problem Cases

Special Clerks
- Review
- Code
- Process Special Functions

Accounting Department

FIGURE 3.

POLICYHOLDER SERVICE DEPARTMENT
WORK FLOW AND TASKS
FIGURE 4.

POLICYHOLDER SERVICE DEPARTMENT AND ACCOUNTING DEPARTMENT
PHYSICAL LAYOUT

\(^a\) Indicates relative positions and not actual number of employees or floor space occupied.
In the last few months, Jerry has observed that the functional break­down and the accompanying physical arrangement of people and files leads to a number of problems. Since work is assigned or selected on a random basis, there is no personal accountability for it. Files are at one corner of the work area where they can be retrieved by the clerical group and distributed to a senior technician who randomly distributes them to be processed. After a file is coded, it is placed in a holding area for processing by the Accounting Department. Here, assignment of work is also done on a random basis. It is difficult to respond to phone calls or written requests for information promptly, because it is frequently difficult to find a file. In fact, several people are kept busy doing nothing but looking for files.

The typical employee performs a job which consists of two tasks on approximately an eleven minute cycle. All work is cross checked. The training for the job is minimal and there are a number of individuals performing the same set of tasks on files randomly issued. A clerk occasionally corresponds with a policyholder, but all correspondence goes out with the manager's signature on it. The manager thus receives all phone calls and correspondence from policyholders.

Because of the random distribution of work, individual performance is difficult to measure. There are spot checks on some completed work by someone other than the doer, but it is difficult or impossible to determine the specific individual who was responsible. Consequently, it is not possible to provide specific information to individuals at regular intervals about their work performance.

Accounting Department

The Accounting department processes the files, bills, and checks received from the Group Policyholder Service. Premiums are posted on IBM cards and work­sheets. Necessary adjustments are made to accounts and the checks, cards, and worksheets are balanced. Approximately 28 people are employed at any one time performing these tasks. Seventy-seven percent of the work force are under 35 years of age. Everyone has at least a high school degree and 54 percent have less than two years experience in the job they are performing.

The department has both a manager and a supervisor. The employees are divided into senior technicians, premium posters, and special clerks. The general work flow and tasks carried out in each of these functional areas is shown in Figure 5. As shown in Figure 4, the Accounting Department shares its work and files with Policyholder Service.

Work is selected on a random basis. Clerks go to a bookcase file and choose the cases they wished to do. Occasionally, correspondence with a policyholder is necessary, and is signed by the manager.

Question:

Jerry believes that if the work in his department can be properly rede­signed, then departmental effectiveness can be improved. In addition, he be­lieves that substantial improvements can be made in terms of individual employee work satisfaction.

1. Diagnose the job characteristics of the employees in the Group Policy-
**Figure 5.**

ACCOUNTING DEPARTMENT
WORK FLOW AND TASKS
holder Service Department and Accounting Department. Use your Job Characteristic Inventory to measure these job characteristics.

2. What are some of the current problems facing Jerry?

3. Redesign the jobs of the employees. What criteria would you use to use to determine the effectiveness of your redesign efforts?
Appendix C.

National Insurance Company Analysis

How the Work Was Changed

As shown in Figure 6, there is no longer a Group Policyholder Service Department or a Group Accounting Department. Instead, the activities and people which comprised these departments have been integrated to form one operational unit divided for organizational purposes into two billing departments, performing similar functions on a regional basis. The new department contains approximately the same number of people as were originally employed in each of the separate departments. As indicated below, senior technicians, change coders, special clerks and premium posters as distinct jobs were combined to form a new work category called account analyst.

<table>
<thead>
<tr>
<th>Before Change</th>
<th>After Change</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Group Policyholder Service Department</strong></td>
<td><strong>Premium and Billing A and B</strong></td>
</tr>
<tr>
<td>Clerical Section</td>
<td>(8) Clerical Support</td>
</tr>
<tr>
<td>Senior Technician</td>
<td>(2) Account Analyst</td>
</tr>
<tr>
<td>Change Coder</td>
<td>(16)</td>
</tr>
<tr>
<td>Special Clerk</td>
<td>(2)</td>
</tr>
</tbody>
</table>

| **Group Accounting Department** |
| Senior Technician | (2) |
| Premium Poster | (24) |
| Special Clerk | (2) |

The regions were formed on the basis of a detailed volume analysis of policyholders by geographic area. Each region is managed by a supervisor who reports to a manager. The employees are grouped into the two functional categories of clerical support and account analyst (see Figure 6). Each account analyst does their own coding and posting on the cases for which they are responsible. Some account analysts within a region are assigned individual sales offices and others share sales office responsibility. Correspondence is now signed by the account analysts themselves and they also handle most phone calls.

Group Premium and Billing A and B continue to share the same floor area but they have been separated physically by a waist-high wall against which files are stored (Figure 7). Regions A and B are clearly delineated with signs hang-
Supervisors

- Plan
- Train
- Develop Manpower
- Evaluate
- Offer Technical Assistance on Problems

(a)

Organization

(b)

Clerical Support

- Clerks Assigned to Regions
  - Receive, Open, Date Stamp, Sort Incoming Mail
  - Pull All Materials and Give to Analyst in Charge of Account

Account Analyst

- Review and Schedule Work
- Lapse Accounts
- Code New Accounts
- Code Changes
- Record Payments
- Telephone and Write
- Purify and Mail Bills
- Solve Problems

Work Flow and Tasks

FIGURE 6.

GROUP PREMIUM AND BILLING A AND B
FIGURE 7
PREMIUM AND BILLING
PHYSICAL LAYOUT

Region 1

Region 2

Region 3

Low Wall With Files

Region 5

Region 4

Desk and Files

Desk and Files

Managers' Offices and Conference Area

a Indicates relative positions and not actual number of employees or floor space occupied.
ing from the ceiling and the clustering of desks. Around each desk are located files which contain a "terminal" digit. This serves to identify the desk and person responsible for handling a group of policyholders within a region.

The new job content and work flow have eliminated or significantly reduced the severity of many previously described problems. For the first time a sense of ownership has developed since specific individuals are now responsible for specific policyholder files. In addition, supervisors are now able to visit regional offices to discuss problems on specific cases. There is no longer a problem of missing files since a minimum number of people handle the files. Phone calls and written requests are handled rapidly and smoothly by the individual responsible for that policyholder.

The work itself is not as repetitious and monotonous since employees are typically performing eight tasks rather than the two they were doing previously. Surprisingly, the cycle time has fallen from 11 to 7 minutes because of the reduction in delays and waiting time. Employees have a voice in establishing their own work quotas. Incidentally, scheduling their own work was a new experience for most of the account analysts and close managerial and supervisory guidance were necessary during the incipient stage of the project. In addition to having greater control of their work pace, employees are also able to control their method of working by varying the order in which they execute their assigned tasks.

It is now possible to match specific individuals with their work and employees have been given responsibility for inspecting their own work. Cross checking has been reduced or eliminated accordingly. The separation of employees by region creates a team-like approach to the work as distinct groups of individuals are responsible for an identifiable body of policyholders.

The introduction of accountability through the use of "terminal" digits permits measurement of individual performance and direct feedback. Comments made by employees and collected by the job enrichment team reveal the desire by individuals to learn of their mistakes so they can correct them.

I like coding up the new cases. I did get quite a few errors on these when I started but this was the way I learned to do them. I saw where my errors were made.

My work is checked only when I want it to be. I like that because I wouldn't want my supervisor to allow someone else to correct my errors. I want to know my mistakes. I want to know my good and I want to know my bad.

The new design enhanced the opportunities for employees to participate more fully in performing their jobs. For the first time they are able to schedule their own work, influence the hours they work through a modified flexitime program, and correspond directly or speak on the telephone with the policyholders they serve.

**Principles Guiding the Change**

The work redesign was carried out in accordance with the following job change principles:
1. Combining tasks. Instead of performing a few specialized tasks that were only one part of a sequential chain of tasks, the account analyst now has responsibility for a much longer sequence. As a consequence, the analyst experiences greater variety, and has a greater sense of task identity ... the "wholeness" of each change to the policy.

2. Forming natural work units. Jobs are now assigned on the basis of geographical region. Each analyst now has a sense of "ownership" of the policyholders in the analyst's region. The perceived significance of the task is therefore improved.

3. Establishing relationships with clients. Since the analysts now communicate directly with clients, delays and information are minimized. Because of this change, the analyst experiences greater variety, and has greater sense of autonomy regarding the work. Also, direct contact with clients provides timely and accurate feedback about problems which inevitably occur.

4. Vertical loading. Analysts are now given significantly greater leeway regarding decisions that must be made to solve client-related problems. This authority enhances feelings of autonomy. A representation of this autonomy is the authority to sign correspondence.

5. Opening feedback channels. In addition to direct feedback from clients, supervisors are now able to determine responsibility for specific aspects of the work (this responsibility had previously been hidden). The fact that performance can now be attributed directly to employees provides an opportunity to reward meritorious service, and also provides an opportunity to coach and instruct problem employees.

Some Results

In the opinion of management, the enrichment project was very successful. There were a number of original objectives.

1. Increase worker productivity.

2. Improve service.

3. Increase job satisfaction.

Quality. In an operating system of this type, quality is traditionally measured by the error free paperwork which is processed. Unfortunately, prior to implementation of the job enrichment project records of error were not kept. Instead, when errors were detected senior technicians corrected them. Therefore, there are no hard figures to determine quality improvement. However, based on interviews with the employees who normally would process cases with errors and their own feedback from customer complaints and the quality of recycled files, management estimates a significant reduction in errors.
The number of items produced which were rejected for failure to meet quality standards. 11-20%

The number of customer complaints received. 11-20%

The amount of work which had to be recycled. 11-20%

Resource Utilization. One of the principal objectives of the enrichment program was to increase worker productivity. In order to determine whether productivity increased, a detailed analysis was performed by the job enrichment team of the company pre- and post-enrichment productivity levels. A 12-month period called the base year was created against which all future productivity levels could be compared.

The productivity rate was 0.5735 hours per bill for the base year based on the volume of bills processed and the time required. During the change period when jobs were being redesigned, productivity was adversely affected, falling by an estimated 2 percent for three months. In the post change period beginning approximately one year from the date changes were first made, productivity improved 6 percent as the time required to process a bill fell to 0.5387 hours per bill. A detailed analysis performed by the company indicates that this gain saved $29,017.16 in salaries which did not have to be paid. This dollar figure is direct remuneration and does not include costs for furniture, floor space, and other sundry expenditures which would accompany an increase in the work force.

Service. Further evidence of the gain in productivity is revealed by an examination of the service rates. During the change period, approximately 84 percent of the premiums and 85 percent of the changes were performed within acceptable time limits. In the post change period, a goal was established to record 88-92 percent of premiums and code 90-94 percent of changes within the established time periods. In the following year, the goals were raised to 90-94 percent changes.

Satisfaction. Prior to the change period, 50 percent of the employees were interviewed extensively concerning the work they did and how they felt about it. After the changes had been made and a sufficient time had elapsed for the employees to become acclimated, interviews were conducted with everyone who had worked in the department before and about half of the new people. The three basic questions which were asked concerned:

1. The interest and variety of work now as opposed to earlier.
2. The reaction to responsibilities and challenges which occur on the job.
3. The ability to determine how well one is doing (job performance).

Absenteeism. Absenteeism due to "reported illness" was not a major factor in the decision to implement the enrichment program. There has been a gradual improvement since the base year in both the company and the Premium and Billing Departments but, in the opinion of management, "...we don't know if we can relate it to the fact that we were designing jobs."
Turnover. One of the surprising paradoxes of the project was a turnover rate of 41 percent in the Premium and Billing Departments for the full year immediately following the change period. This figure compares to a company rate of 25 percent for the same period. In an attempt to isolate the reason, a detailed study was made as to why each termination occurred. Three categories of terminations were considered:

1. Terminations for cause (i.e., unacceptable performance).
2. Miscellaneous terminations.
3. Left company for other jobs.

Several terminations for cause can be attributed directly to the redesign of the work. The new jobs required increased responsibility and accountability. Individual employees who were not performing well could no longer "hide in the crowd."

Item (2) included terminations such as moved out of state, went to college, lost baby-sitter, and other reasons uncontrollable by the company. Item (3) represents separations that generally are termed "controllable." They occur for reasons as diverse as offers of higher pay and dissatisfaction with one's current type of work. The turnover rate for item (3) is 13 percent. This is still significant and is being closely monitored. This category may well represent individuals who prefer "simple" jobs to "enriched" jobs.

Work Force Reductions. There were no reductions in the size of the labor force. Two individuals were promoted to supervisor and, over a 24-month period (beginning when changes were first introduced) three additional employees were added. However, this was due to approximately a 20 percent increase in the number of policies in-force rather than as a result of the design used to change the way work was done. It is possible to speculate that in the absence of the job redesign project, it might have been necessary to increase the work force by 20 percent or 11 people to compensate for the increased volume.
The following papers are currently available in the Edwin L. Cox School of Business Working Paper Series.

79-100  "Microdata File Merging Through Large-Scale Network Technology," by Richard S. Barr and J. Scott Turner

79-101  "Perceived Environmental Uncertainty: An Individual or Environmental Attribute," by Peter Lorenzi, Henry P. Sims, Jr., and John W. Slocum, Jr.


80-100  "Implementing the Portfolio (SBU) Concept," by Richard A. Bettis and William K. Hall

80-101  "Assessing Organizational Change Approaches: Towards a Comparative Typology," by Don Hellriegel and John W. Slocum, Jr.

80-102  "Constructing a Theory of Accounting--An Axiomatic Approach," by Marvin L. Carlson and James W. Lamb

80-103  "Mentors & Managers," by Michael E. McGill

80-104  "Budgeting Capital for R&D: An Application of Option Pricing," by John W. Kensinger

80-200  "Financial Terms of Sale and Control of Marketing Channel Conflict," by Michael Levy and Dwight Grant


80-301  "Controlling the Performance of People in Organizations," by Steven Kerr and John W. Slocum, Jr.

80-400  "The Effects of Racial Composition on Neighborhood Succession," by Kerry D. Vandell


80-801  "Comparison of the EEOCC Four-Fifths Rule and A One, Two or Three σ Binomial Criterion," by Marion Gross Sobol and Paul Ellard

80-900  "Bank Portfolio Management: The Role of Financial Futures," by Dwight M. Grant and George Hempel

90-902  "Hedging Uncertain Foreign Exchange Positions," by Mark R. Eaker and Dwight M. Grant
| 80-111 | "Sources of Performance Differences in Related and Unrelated Diversified Firms," by Richard A. Bettis |
| 80-112 | "The Information Needs of Business With Special Application to Managerial Decision Making," by Paul Gray |
| 80-113 | "Diversification Strategy, Accounting Determined Risk, and Accounting Determined Return," by Richard A. Bettis and William K. Hall |
| 80-114 | "Toward Analytically Precise Definitions of Market Value and Highest and Best Use," by Kerry D. Vandell |
| 80-115 | "Person-Situation Interaction: An Exploration of Competing Models of Fit," by William F. Joyce, John W. Slocum, Jr., and Mary Ann Von Glinow |
| 80-116 | "Correlates of Climate Discrepancy," by William F. Joyce and John Slocum |
| 80-117 | "Alternative Perspectives on Neighborhood Decline," by Arthur P. Solomon and Kerry D. Vandell |
| 80-121 | "Project Abandonment as a Put Option: Dealing with the Capital Investment Decision and Operating Risk Using Option Pricing Theory," by John W. Kensinger |
| 80-122 | "The Interrelationships Between Banking Returns and Risks," by George H. Hempel |
| 80-123 | "The Environment For Funds Management Decisions In Coming Years," by George H. Hempel |
| 81-100 | "A Test of Gouldner's Norm of Reciprocity In A Commercial Marketing Research Setting," by Roger Kerin, Thomas Barry, and Alan Dubinsky |
| 81-200 | "Solution Strategies and Algorithm Behavior in Large-Scale Network Codes," by Richard S. Barr |
| 81-201 | "The SMU Decision Room Project," by Paul Gray, Julius Aronofsky, Nancy W. Berry, Olaf Helmer, Gerald R. Kane, and Thomas E. Perkins |
| 81-300 | "Cash Discounts To Retail Customers: An Alternative To Credit Card Performance," by Michael Levy and Charles Ingene |
| 81-400 | "Merchandising Decisions: A New View of Planning and Measuring Performance," by Michael Levy and Charles A. Ingene |