This article reports on five of a number of job enrichment studies which were and are still being carried out in Imperial Chemical Industries Limited and other British companies. The purpose of the studies was an attempt to shed light on important job enrichment questions dealing with (1) the generality of the findings, (2) the feasibility of making changes, and (3) the consequences to be expected. In addition, the studies set out to determine how the concept of job enrichment may be most effectively applied in furthering the attainment of companies’ business objectives. Among them, they cover not only widely different business areas and company functions, but also many types and levels of jobs. Collectively, they provide insights which add to management understanding of both theory and practice.

In his pioneering article, “One More Time: How Do You Motivate Employees?” Frederick Herzberg put forward some principles of scientific job enrichment and reported a successful application of them involving the stockholder correspondents employed by a large corporation. According to him, job enrichment seeks to improve both task efficiency and human satisfaction by means of building into people’s jobs, quite specifically, greater scope for personal achievement and its recognition, more challenging and responsible work, and more opportunity for individual advancement and growth. It is concerned only incidentally with matters such as pay and working conditions, organizational structure, communications, and training, important and necessary though these may be in their own right.

But like a lot of pioneering work, Herzberg’s study raised more questions than it answered. Some seemed to us to merit further consideration, particularly those in regard to the (1) generality of the findings, (2) feasibility of making changes, and (3) consequences to be expected. Consider:

1. **Generality**—Can similarly positive results be obtained elsewhere with other people doing different jobs? How widespread is the scope or need for equivalent change in other jobs? Can meaningful results be obtained only in jobs with large numbers of people all doing the same work and where performance measures are easily available?
2. **Feasibility**—Are there not situations where the operational risk is so high that it would be foolhardy to attempt to pass responsibility and scope for achievement down the line? Because people’s ability and sense of responsibility vary so much, is it not necessary to make changes selectively? Do all employees welcome having their jobs enriched, or are there not some who prefer things to be left as they are? Can one enrich jobs without inevitably facing demands for higher pay or better conditions to match the new responsibilities? And, in any case, is not the best route to motivational change through participation?

3. **Consequences**—In view of so many possible difficulties in the way, are the gains to be expected from job enrichment significant or only marginal? Do they relate primarily to job satisfaction or to performance? What are the consequences for supervision if jobs are loaded with new tasks taken from above—i.e., does one man’s enrichment become another’s impoverishment? Finally, what are the consequences for management if motivational change becomes a reality? Is the manager’s role affected? If so, how? And what are the implications for management development?

There are undoubtedly more questions that could be raised and investigated. But these seem particularly important from a corporate point of view if job enrichment is to take place on a widespread basis, as part of management practice rather than as a research activity. Accordingly, the purpose of this article is to probe into the complexities of job enrichment in an attempt to shed light on these questions and to determine how the concept may be most effectively applied in furthering the attainment of corporate business objectives.

In order to do this, we shall report in Part I on five studies carried out in Imperial Chemical Industries Limited and other British companies. Two of the studies—covering laboratory technicians in an R&D department and sales representatives in three companies—will be examined in some detail. The other three—encompassing design engineers, production foremen on shift work, and engineering foremen on day work—will be summarized. In Part II, the main conclusions emerging from the studies will be presented in the form of answers to the questions raised at the beginning of this article.

Each study was initiated in response to a particular problem posed by management, and the conclusions drawn from any one can be only tentative. Among them, however, they cover not only widely different business areas and company functions, but also many types and levels of jobs. Collectively, they provide material which adds to our understanding of both theory and practice.

**Part I: The Job Enrichment Studies**

As in all studies on job satisfaction and performance, the need to measure results introduced certain constraints which do not exist in normal managerial situations. Consequently, three main features were common to the studies we are reporting in this discussion:
First, the “hygiene” was held constant. This means that no deliberate changes were made as part of the investigation, in matters such as pay, security, or working conditions. The studies were specifically trying to measure the extent of those gains which could be attributed solely to change in job content.

Second, recognition of the normal hygiene changes led to the need to have an “experimental group” for whom the specific changes in job content were made, and a “control group” whose job content remained the same.

Third, the studies had to be kept confidential to avoid the well-known tendency of people to behave in an artificial way when they know they are the subject of a controlled study. Naturally, there was no secret about the changes themselves, only about the fact that performance was being measured.

All studies set out to measure job satisfaction and performance for both the experimental and control groups over a trial period following the implementation of the changes. The trial period itself generally lasted a year and was never less than six months. The performance measures always were specific to the group concerned and were determined by local management of the subject company. To measure job satisfaction, we relied throughout on a job reaction survey which measures the degree of people’s satisfaction with the motivators in their job as they themselves perceive them.

Laboratory technicians

Managers in an industrial research department were concerned about the morale of laboratory technicians, or “experimental officers” (EOs). This group’s job was to implement experimental programs devised by scientists. The EOs set up the appropriate apparatus, recorded data, and supervised laboratory assistants, who carried out the simpler operations. The EOs were professionally qualified people, but lacked the honors or doctorate degrees possessed by the scientists.

The average age of the experimental officers was increasing. A quarter of them had reached their salary maximums, and fewer now had the chance to move out of the department. Their normal promotion route into plant management had become blocked as manufacturing processes grew more complex and more highly qualified people filled the available jobs. Management’s view of the situation was confirmed by the initial job reaction survey. Not only were the EOs’ scores low, but many wrote of their frustration. They felt their technical ability and experience was being wasted by the scientists’ refusal to delegate anything but routine work.

Against this background, the research manager’s specific objective was to develop the EOs into “better scientists.” If job enrichment was to be useful, it would have to contribute to the attainment of that goal.
Changes & experimental design

Here is the specific program of action devised and implemented for the experimental officers.

Technical:

EOs were encouraged to write the final report, or “minute,” on any research project for which they had been responsible. Such minutes carried the author’s name and were issued along with those of the scientists. It was up to each EO to decide for himself whether he wanted the minute checked by his supervisor before issue, but in any case he was fully responsible for answering any query arising from it.

EOs were involved in planning projects and experiments, and were given more chance to assist in work planning and target setting.

They were given time, on request, to follow up their own ideas, even if these went beyond the planned framework of research. Written reports had to be submitted on all such work.

Financial:

EOs were authorized to requisition materials and equipment, to request analysis, and to order services such as maintenance, all on their own signature.

Managerial:

Senior EOs were made responsible for devising and implementing a training program for their junior staff. In doing so, they could call on facilities and advice available within the company.

Senior EOs were involved in interviewing candidates for laboratory assistant jobs, and they also acted as first assessor in any staff assessment of their own laboratory assistants.

These changes drew on all the motivators. Each one gave important chances for achievement; together, they were designed to make the work more challenging. Recognition of achievement came in the authorship of reports. Authority to order supplies and services was a responsibility applying to all the EOs involved. The new managerial responsibilities reserved to senior EOs opened up room for advancement within the job, while the technical changes, particularly the opportunity for self-initiated work, gave scope for professional growth.
Some 40 EOs in all were involved in the study. Two sections of the department acted as experimental groups (N = 15) and two as control groups (N = 29). One experimental and one control group worked closely together on the same type of research, and it was anticipated that there would be some interaction between them. The other two groups were separate geographically and engaged on quite different research.

The changes were implemented for the experimental groups during October and November 1966, and the trial period ran for the next twelve months. After six months, the same changes were introduced into one of the control groups, thus converting it into an experimental group (N = 14). This was done to see whether a similar pattern of performance revealed itself, thereby safeguarding against any remote possibility of coincidence in the choice of the original groups.

Research work is notoriously difficult to measure, but as the aim was to encourage more scientific contribution from EOs, this was what had to be judged in as objective a way as possible. All EOs were asked to write monthly progress reports of work done. Those written by experimental and control group EOs were assessed by a panel of three managers, not members of the department, who were familiar with the research work concerned.

Reports were scored against eight specifically defined criteria thought to reflect the kind of growth being sought: knowledge, comprehension, synthesis, evaluation, original thought, practical initiative, industry, and skill in report writing. Whenever the assessor found particular evidence of one of these qualities in a report, he would award it one mark, the total score for a report being simply the sum of these marks.

In order to establish a baseline for clarifying standards and testing the assessors’ consistency of marking, reports were collected for three months prior to the introduction of any job enrichment changes. The very high consistency found between the marking of the three assessors encouraged confidence in the system. The assessors, naturally, were never told which were the experimental and control groups, though it became easy for them to guess as the trial period went on.

The other main measure was to use the same system to assess research minutes written by the EOs. These were compared against an equivalent sample of minutes written by scientists over the same period, which were submitted to the panel for assessment, again without identification.

**Motivational results**

The assessment of monthly reports written by the experimental officers is given in Exhibit I, which compares the mean score achieved by all experimental group EOs each month with that achieved by all control group EOs. On occasions when a monthly report had obviously suffered because of the attention devoted to writing a research minute covering much the same ground, a marginal weighting factor was
added to the score depending on the quality of the minute concerned. Both experimental and control groups improved their monthly report scores at about the same rate during the first five months. There is no doubt that with practice all were getting better at report writing, and it may be that the mere fact of being asked to write monthly reports itself acted as a motivator for both groups.

Exhibit I. Assessment of EOs monthly reports

Once the changes had been fully implemented in the experimental groups, however, performance began to diverge. Although the reports of the control groups continued to improve for a time, they were far outpaced by those of the experimental groups. With some fluctuations, this performance differential was maintained throughout the rest of the trial period. When, after six months, the motivators were fed into one of the two control groups, its performance improved dramatically, following the pattern achieved by the original experimental groups. Meanwhile, the performance of the other control group, unaffected by what was happening elsewhere, began to slip back toward its original starting point.

During the 12 months of the trial period, a total of 34 research minutes were written by EOs, all from the experimental groups, compared with 2 from the department as a whole during the previous 12-month period. There were also a number of minutes jointly authored by scientists and EOs, which are excluded from this analysis. Of the 34 being considered, 9 were written by EOs in the control group which was converted into an experimental group, but all came from the time after the changes had been introduced.

It is one thing for laboratory technicians to write research minutes, but whether the minutes they write are any good or not is a different matter. Exhibit II shows the quality of the EOs’ minutes compared with that of the scientists’. The EOs’ mean score was 8.7; the scientists’ 9.8. All EO scores except three fell within the
range of scores obtained by the scientists; the three exceptions were written by one man. Three of the EOs’ minutes, one in fact written by a laboratory assistant with guidance from an EO, were judged to be as good as the best of the scientists’ minutes.

Exhibit II. Assessment of EOs research minutes

Encouraged by the success of a training scheme designed for laboratory assistants, the EOs initiated one for themselves. It aimed to give them the opportunity to come to terms with the ideas and terminology of chemical engineering. Managers judged it to have been of considerable value, and one EO summed it up by saying, “A couple of pages of chemical engineering calculations and formulas won’t frighten us off now.”

One original idea followed up, as the changes now permitted, by an EO from an experimental group resulted in an important discovery with possible applications in certain kinds of national emergency. The idea was investigated further by a government department, which described it as the most promising of some 200 ideas submitted on that topic.

Three staff assessments on EOs were carried out—at the beginning, middle, and end of the trial period. Each followed the normal company procedure. The only group which showed a consistent improvement was one of the experimental groups.

The job reaction survey was given both before and after the trial period. In the initial survey, experimental and control group EOs could not be specifically identified, and so an exact comparison of the before and after scores of each group cannot be made. The overall mean score attained by all EOs in the department was no higher at the end of the trial period than it had been at the beginning. Although managers believed there had been a positive change in job satisfaction, that is not a conclusion which can be supported with data.
An internal company report, written by the personnel officer who managed and coordinated the study throughout, concluded that there had been definite evidence of growth among the EOs, particularly in one group, and that much useful work had been accomplished during the exercise. One of the experimental groups had been able to keep abreast of its commitments even though it lost the services of two of its six scientists during the trial period and functioned without a manager for the last five months of the study. There can be little doubt that job enrichment in this case helped to further the research manager’s objective of tackling a morale problem by getting at the root of the matter and developing experimental officers as scientists in their own right.

**Sales representatives**

To investigate the potential of job enrichment in the sales field, work has been done in three British companies dealing with quite different products and markets, both wholesale and retail. In only one study, however, were experimental conditions strictly observed.

The company concerned had long enjoyed a healthy share of the domestic market in one particular product range, but its position was threatened by competition. A decline in market share had been stabilized before the study began, but 1967 sales still showed no improvement over those of 1966. So far as could be judged, the company’s products were fully competitive in both price and quality. The critical factor in the situation appeared to be sales representatives’ effort.

The representatives’ salaries—they were not paid a commission—and conditions of employment were known to compare well with the average for the industry. Their mean score in the job reaction survey, like that of other groups of salesmen, was higher than most employees of equivalent seniority, which suggested that they enjoyed considerable job satisfaction.

The problem in this case, therefore, was that for the vital business objective of regaining the initiative in an important market, sustained extra effort was needed from a group of people already comparatively well treated and reasonably satisfied with their jobs. Here, job enrichment would stand or fall by the sales figures achieved.

**Changes & experimental design**

Here is the specific program of action devised and implemented for the sales representatives.

**Technical:**
Sales representatives were no longer obliged to write reports on every customer call. They were asked simply to pass on information when they thought it appropriate or request action as they thought it was required.

Responsibility for determining calling frequencies was put wholly with the representatives themselves, who kept the only records for purposes such as staff reviews.

The technical service department agreed to provide service “on demand” from the representatives; nominated technicians regarded such calls as their first priority. Communication was by direct contact, paperwork being cleared after the event.

**Financial:**

In cases of customer complaint about product performance, representatives were authorized to make immediate settlements of up to $250 if they were satisfied that consequential liability would not be prejudiced.

If faulty material had been delivered or if the customer was holding material for which he had no further use, the representative now had complete authority, with no upper limit in sales value, to decide how best to deal with the matter. He could buy back unwanted stock even if it was no longer on the company’s selling range.

Representatives were given a discretionary range of about 10% on the prices of most products, especially those considered to be critical from the point of view of market potential. The lower limit given was often below any price previously quoted by the company. All quotations other than at list price had to be reported by the representative.

The theme of all the changes was to build the sales representative’s job so that it became more complete in its own right. Instead of always having to refer back to headquarters, the representative now had the authority to make decisions on his own—he was someone the customer could really do business with. Every change implied a greater responsibility; together they gave the freedom and challenge necessary for self-development.
The company sold to many different industries, or “trades.” In view of the initial effort needed to determine limit prices and to make the technical service arrangements, it was decided that the study should concentrate on three trades chosen to be typical of the business as a whole. These three trades gave a good geographical spread and covered many types of customers; each had an annual sales turnover of about $1 million.

The experimental group (N = 15) was selected to be representative of the sales force as a whole in age range, experience, and ability. An important part of each member's selling responsibility lay within the nominated trades. The rest of the sales force (N = 23) acted as the control group. The changes were introduced during December 1967, and the trial period ran from January 1 to September 30, 1968.

The background of static sales and the objective of recapturing the market initiative dictated that sales turnover would be the critical measure, checked by gross margin. The difficulties of comparing unequal sales values and allowing for monthly fluctuations and seasonal trends were overcome by making all comparisons on a cumulative basis in terms of the percentage gain or loss for each group against the equivalent period of the previous year.

Since they were selling in the same trades in the same parts of the country, the performance of all the representatives was presumably influenced by the same broad economic and commercial factors. In two of the trades, the experimental group had the bigger share of the business and tended to sell to the larger customers. In these cases it may be surmised that prevailing market conditions affected the experimental group's performance, favorably or unfavorably, more than the control group's. As it happened, in one of these trades commercial trends were favorable, while in the other they were distinctly unfavorable. In the third trade, the experimental and control groups were evenly matched. Taken together, then, the three trades give as fair a comparison as can be obtained between the performances of sales representatives under those two sets of conditions.

**Motivational results**

During the trial period the experimental group increased its sales by almost 19% over the same period of the previous year, a gain of over $300,000 in sales value. The control group’s sales in the meantime declined by 5%. The equivalent change for both groups the previous year had been a decline of 3%. The difference in performance between the two groups is statistically significant at the 0.01 level of confidence.
Exhibit III shows the month-to-month performance of the two groups, plotted cumulatively. It can be seen that the control group in fact started the year extremely well, with January/February sales in the region of 30% above the equivalent 1967 figures. This improvement was not sustained, however, and by May cumulative sales had dropped below their 1967 level. By the last five months of the trial period, performance was running true to the previous year’s form, showing a decline of about 3%.

Exhibit III. Sales turnover within trades chosen as typical of the business as a whole

The experimental group, on the other hand, started more modestly, not exceeding a 20% improvement during the first quarter. During the second quarter, outstanding results in May compensated for poorer figures in April and June. The third quarter showed a steady, if slight, rise in the rate of improvement over 1967. This sustained increase of just under 20% was in marked contrast to the previously declining performance of the trades as a whole.

Comparisons with other trades suffer from the disadvantage that different economic and commercial factors affect the various parts of the business. Nevertheless, the experimental group’s performance was consistently between 6% and 7% better than that for the rest of the business. Exhibit IV shows the month-to-month picture. It can be seen not only that the experimental group maintained a higher rate of improvement than the rest of the business throughout the trial period, but that the gap widened if anything as time went on. At the 1967 rates of turnover, this performance differential in all trades would be worth $1.5 million in sales value in a full year.
Exhibit IV. Sales turnover: experimental group and rest of business

In view of the greater negotiating authority granted to the experimental group representatives, it is important to check whether their substantial increase in turnover was achieved at the expense of profit. As all quotations other than at list price were reported by the representatives, it was possible to analyze the gross margin achieved by both groups. The analysis showed without doubt that the gross margin of the experimental group’s sales was proportionally as high, if not higher, than that of the control group’s sales.

Managers had the impression that representatives actually used their price discretion less often than they had previously asked for special prices to be quoted by the sales office. Also, in the sales manager’s view, once the representatives were given real negotiating authority, they discovered that price was not the obstacle to sales which they had always imagined it to be. Under the new arrangements, they were able to assess more completely what the true obstacles to sales were in each individual case.

Over the trial period the control group’s mean score in the job reaction survey remained static. In contrast, the experimental group’s score rose by 11%.

Design engineers

The engineering director of one of the divisions of ICI wanted to see whether the job of design engineer might lend itself to motivational change. His design department faced an increasing work load as more design work for the division’s plants was being done internally. The situation was exacerbated by difficulties in recruiting qualified design engineers. People at all levels in the department were being overloaded and development work was suffering.

Changes & experimental design
Here is the specific program of action devised and implemented for the design engineers.

**Technical:**
Experienced engineers were given a completely independent role in running their projects; the less experienced technical men were given as much independence as possible. Occasions on which reference to supervision remained obligatory were reduced to an absolute minimum. The aim was that each engineer should judge for himself when and to what extent he should seek advice.

Group managers sponsored occasional investigatory jobs, and engineers were encouraged to become departmental experts in particular fields. They were expected to follow up completed projects as they thought appropriate.

When authority to allocate work to outside consultants was given, the engineers were to have the responsibility for making the choice of consultants.

**Financial:**
Within a sanctioned project with a budget already agreed on, all arbitrary limits on engineers’ authority to spend money were removed. They themselves had to ensure that each “physical intent” was adequately defined and that an appropriate sum was allocated for it in the project budget. That done, no financial ceiling limited their authority to place orders.

**Managerial:**
Engineers were involved in the selection and placing of designers (drawing office staff). They manned selection panels, and a recruit would only be allocated to a particular engineer if the latter agreed to accept him.

Experienced engineers were asked to make the initial salary recommendations for all their junior staff members.

Engineers were allowed to authorize overtime, cash advances, and traveling expenses for staff:

**Motivational results**
In summary fashion, these are the deductions that can be drawn from this study:

- Senior managers saw a change in both the amount and the kind of consultation between experimental group design engineers and their immediate supervisors. The supervisors’ routine involvement in
projects was much reduced, and they were able to give more emphasis in their work to technical development. Some engineers still needed frequent guidance, others operated independently with confidence. The point is that not all were restricted for the benefit of some; those who could were allowed to find their own feet.

• The encouragement of specialist expertise among design engineers was a long-term proposition, but progress was made during the trial period.

• The removal of any financial ceiling on engineers’ authority to place orders within an approved project with an agreed budget proved entirely effective. Whereas before the design engineers had to seek approval from as many as three higher levels of management for any expenditure over $5,000—a time-consuming process for all concerned—now they could, and did, place orders for as much as $500,000 worth of equipment on their own authority.

• There is no evidence of any poor decision having been taken as a result of the new arrangements. In fact, at the end of the trial period, none of the senior managers concerned wanted to revert to the old system.

• The changes involving the engineers in supervisory roles were thought by the senior managers to be at least as important as the other changes, possibly more so in the long term.

• There was no doubt about the design engineers’ greater involvement in the selection process, which they fully accepted and appreciated. Significantly, they began to show a greater feel for the constraints involved in selection.

• The responsibility for overtime and travel claims was fully effective and taken in people’s stride. There was no adverse effect from a budgetary control point of view.

• The involvement of design engineers in making salary recommendations for their staff was considered by the senior managers to have been a major improvement. If anything, engineers tended to be “tighter” in their salary recommendations than more senior management. There was general agreement that the effectiveness of this change would increase over time.

• Senior managers felt that none of the changes of its own accord had had an overriding effect, nor had all problems been solved. But there was no doubt that the cumulative effect of the changes had been significant and that the direction of solutions to some important problems had been indicated.
The changes may have been effective, but in this particular study the important question was whether they had a significant impact on job satisfaction. Some of the motivators introduced into the experimental groups had been in operation in the control group for some time; others—because of the specialist nature of the control group’s work—were not as important to it as to the experimental groups. The control group had scored high in the initial job reaction survey, while the experimental groups had both achieved very low scores. If the experimental groups’ scores did not improve, doubt would inevitably be cast on the relationship between job content and job satisfaction. As it turned out, comparison results of the before and after job reaction surveys revealed that the mean scores of the two experimental groups had increased by 21% and 16%, while those of the control group and all other design engineers in the department had remained static.

**Factory supervisors**

The final two studies, one in ICI and one in another British company, concerned factory supervisors: production foremen on shift work fabricating nonferrous metals, and engineering foremen on day work providing maintenance services. As the two studies seem to be complementary, they are considered jointly.

In both cases management was concerned about the degree to which the traditional role of the foreman had been eroded in recent years. The increasing complexity of organizational structures, plant and equipment, and industrial relations had left the foreman isolated. Decisions in the areas of planning, technical control, and discipline—originally in his province—were now passed up the line or turned over to a specialist staff. Many managers believed that as a consequence small problems too often escalated unnecessarily, managers were being overloaded, and day-to-day relationships between the foreman and his men had been weakened.

**Changes & experimental design**

Here is the specific program of action devised and implemented for the production and engineering foremen.

**Technical:**

Foremen were involved more in planning. Production foremen were authorized to modify schedules for loading and sequencing; engineering foremen were consulted more about organizational developments, given more responsibility for preventive maintenance, and encouraged to comment on design.

All were assigned projects on specific problems such as quality control, and could draw on the necessary resources for their implementation.
Other changes included giving foremen more “on the spot” responsibility, official deputizing for engineers, the writing of monthly reports, and more recognition of foremen’s achievement of plans.

**Financial:**

Engineering foremen were given complete control of certain “on cost” budgets. Production foremen were encouraged to make all decisions on nonstandard payments.

**Managerial:**

Production foremen were given the authority to hire labor against agreed manning targets. They interviewed candidates for jobs and made the decision on their selection.

All the foremen were given complete disciplinary authority, except for dismissal. They decided what disciplinary action to take, consulted the personnel department if they thought it necessary, conducted the interviews, and kept the records.

All were given formal responsibility for the assessment, training, and development of their subordinates, and in some cases for the appointment of their own deputies. On the production side, a newly appointed training officer acted as a resource person for the foremen. Engineering foremen were involved more in the application of a job appraisement scheme and in joint consultation and negotiation with union officials.

The objective of integrating the foreman more fully into the managerial team dictated that responsibility should be the motivator chiefly concerned in these changes. Control of his own labor force, backed up by more technical and financial responsibility, was designed to give the foreman more opportunities for achievement and personal growth in the job. The main issue in these studies was whether foremen would prove themselves capable of carrying the increased responsibility. Thus, in monitoring the effectiveness of the changes, the aim was primarily to detect any instability or shortcomings in performance.

**Motivational results**

In summary fashion, these are the deductions that can be drawn from this study:

- In six months the production foremen recruited nearly 100 men, and were judged by the personnel officer to be “hiring a better caliber of man at an improved rate.” Their immediate supervisors were categorical in their approval and noted that the foremen were taking special care to “design their own shifts.” Recruitment interviews were said to have improved the foremen’s ability to handle encounters with existing staff and shop stewards.
• Training was handled equally successfully by the production foremen. For each job it was specified that there should be a certain number of men trained to take over in an emergency. During the trial period, the margin by which the target number was missed was reduced from 94 to 55; the number of operators unable to do another's job fell by 12%, and the number of assistants unable to do the job of the man they assisted fell by 37%. No comparable improvement was achieved in the control group.

• It became clear from both studies that foremen were fully capable of carrying disciplinary responsibility. An analysis of all cases arising during the trial year showed that there had been a reduction in the number of “repeat offenses” among employees with poor disciplinary records and a substantial reduction in short-term work stoppages. The analysis concluded that foremen were not prone to take one kind of action rather than another, they had developed a purposeful approach to such problems, and there had been no adverse union reaction.

• About 50% of the engineering foremen’s monthly reports during the trial year referred to consultation and negotiation with union officials—this on a site not noted for its harmonious industrial relations. Topics included demarcation, special payments, and the easing of bans imposed on “call outs.” The incidence of such reports was spread evenly throughout the experimental group; their frequency increased during the trial period as the foremen became more confident of their abilities. All such matters appear to have been handled capably.

• From both studies came evidence, confirming what has long been demonstrated in training courses, that special investigatory projects give foremen much needed opportunity to contribute their experience and expertise to the solution of long-standing technical and organizational problems. In only three cases where financial evaluation was possible, the estimated annual savings totaled more than $125,000.

• Regarding the engineering foremen’s control of budgets, in some cases the aim was to meet the target exactly; in others it was to reduce costs as much as possible. Both aims were achieved by the foremen at least as well as they had been by the managers. There is no evidence that plant efficiency or work effectiveness suffered in any way as a result of cost savings achieved by the foremen.

• In the case of the engineering foremen, the experimental group’s staff assessments at the end of the trial year were markedly better than those of the control groups. Despite the attempt made in the initial selection of experimental and control groups to achieve as good a balance as possible in ability and experience, there can be little doubt that the experimental group did in any case contain some more able men. But no one anticipated that such a large difference would show itself at the end of the trial period. As evidence of development, 45% of the experimental group’s assessments referred to significant improvements in performance during the year, and 36% made particular mention of how effectively the foreman had dealt with increased responsibility received during the year. These assessments were written by managers who were not party to the study.
• In the production foremen’s study, superintendents reported that the new conditions were “separating the wheat from the chaff”; some of those who had previously been thought to be among the best of the foremen had not lived up to their reputations in a situation which placed little value on compliance, while others had improved enormously.

• The production foremen’s job reaction survey scores showed no particular improvement over the trial period. In the case of the engineering foremen, the experimental group’s mean score showed a 12% increase, while the control group’s had only risen by 3%.

Part II: The Main Conclusions
What has been described in the first part of this article is the consistent application of theory in an area where custom and practice are normally only challenged by individual hunch or intuition. As we have seen, each study posed a separate problem concerning a different group of employees; the only common element among them was the conceptual framework brought to bear on the problem, enabling a specific program of action to be devised and implemented. Much was learned in the process, by ourselves and managers alike.

Now in Part II, the main conclusions which emerged from the job enrichment studies are presented in the form of answers to the questions raised at the beginning of this article.

Generality of findings

Can similarly positive results be obtained elsewhere with other people doing different jobs?

Yes. The studies reflect a diversity of type and level of job in several company functions in more than one industry. From the evidence now available, it is clear that results are not dependent on any particular set of circumstances at the place of study. Our investigation has highlighted one important aspect of the process of management and has shown that disciplined attention to it brings results. The findings are relevant wherever people are being managed.

How widespread is the scope or need for equivalent change in other jobs?

The scope seems enormous. In brainstorming sessions held to generate ideas for change in the jobs covered by the studies, it was not uncommon for over a hundred suggestions to be entertained. The process of change in these particular jobs has started, not finished. In many places it has not even started. Though there probably are jobs which do not lend themselves to enrichment, we have never encountered a level or a function where some change has not seemed possible. It is difficult to say in advance what jobs are going to offer the most scope; the most unlikely sometimes turn out to have important possibilities. We have certainly not been able to conclude that any area of work can safely be left out of consideration.
The need is as deep as the scope is wide. The responsiveness of so many people to changes with a common theme suggests that an important and widespread human need has indeed been identified in the motivators. Moreover, it would seem to be a need which manifests itself in a variety of ways. If, from a company point of view, a gain once demonstrated to be possible is accepted as a need, then the performance improvements registered in these studies would seem to betray an organizational need which is far from fully recognized as yet.

*Can meaningful results be obtained only in jobs with large numbers of people all doing the same work, and where performance measures are easily available?*

No. Meaningful results can be obtained in situations very far from the experimental ideal. Indeed, the very awkwardness of many “real-life” situations leads to perceptions which could not come from a laboratory experiment.

Organizational changes are made, work loads fluctuate, people fall sick, managers are moved, emergencies have to be dealt with. The amount of attention which can be given to managing changes designed to enrich people’s jobs is often slight. When a man’s immediate supervisor does not even know that a study is taking place, there is no vested interest in its success. In circumstances such as these, whatever is done stands or falls by its own merits.

In few of the studies could members of the experimental groups be said to be doing exactly the same work. Changes sometimes had to be tailor-made to suit specific individual jobs. Yet from the diversity of application came an understanding of the commonality of the process. Although laboratory technicians were engaged in quite different kinds of research, they were all doing research work; although foremen were looking after radically different operations, they were all supervising.

The changes that seemed to have the most impact were precisely those which related to the common heart and substance of the role played by people whose jobs differed in many important details. More than this, it became clear that all of them—the laboratory technician following up an original idea, the design engineer buying equipment, the foreman taking disciplinary action, the sales representative negotiating in the customer’s office—are essentially in the same situation, the crux of which is the private encounter between an individual and his task. Only a change which impacts on this central relationship, we believe, can be truly effective in a motivational sense.

Real-life conditions not only give an investigation authenticity; they highlight the problem of measurement. What is most meaningful to a manager, of course—a foreman’s proprietary attitude toward his shift, for example—is not always quantifiable. An important discovery, however, was that the better the motivator,
the more likely it was to provide its own measure. Employees’ “sense of responsibility,” judged in a vacuum, is a matter of speculation; but the exercise of a specific responsibility, once given, is usually capable of meaningful analysis. Laboratory technicians may or may not be thought to have innate potential; the number and quality of their research minutes can be measured. Several times managers commented that job enrichment had opened up measurement opportunities which not only allowed a more accurate assessment of individual performance, but often led to a better diagnosis of technical problems as well.

**Feasibility of change**

*Are there not situations where the operational risk is so high that it would be foolhardy to attempt to pass responsibility and scope for achievement down the line?*

Probably there are, but we have not encountered one. The risks attached to some of the changes in the sales representatives’ study seemed frightening at the time. Few managers who have not tried it can accept with equanimity the thought of their subordinates placing orders for $500,000 worth of equipment on their own authority, even within a sanctioned project. The research manager in the laboratory technicians’ study concluded that a change was only likely to be motivational for his subordinates if it made him lose sleep at nights.

Yet in no case did disaster result. In reviewing the results of the studies with the managers concerned, it was difficult in fact for us as outsiders not to have a sense of anticlimax. By the end of the trial period, the nerve-racking gambles of a few months before were hardly worth a mention. The new conditions seemed perfectly ordinary. Managers had completely revised their probability judgments in the light of experience.

Theory provides an explanation for the remarkable absence of disaster experienced in practice. Bad hygiene, such as oppressive supervision and ineffectual control systems, constrains and limits performance, and may even lead to sabotage. Administrative procedures that guard against hypothetical errors and imaginary irresponsibility breed the very carelessness and apathy which result in inefficiency. With too many controls, responsibility becomes so divided that it gets lost. Hygiene improvements at best lift the constraints.

The motivators, on the other hand, make it possible for the individual to advance the base line of his performance. The road is open for improvement, while present standards remain available as a reference point and guide. When a man is given the chance to achieve more, he may not take that chance, but he has no reason to achieve less. The message of both theory and practice is that people respond cautiously to new responsibility; they feel their way and seek advice. When responsibility is put squarely with the person doing a job, he is the one who wants and needs feedback in order to do his job. His use of the motivators, not our use of hygiene, is what really controls performance standards.
As managers, we start having positive control of the job only when we stop concentrating on trying to control people. Mistakes are less likely, not more likely, than before; those which do occur are more likely to be turned to account, learned from, and prevented in the future, for they are seen to matter. Monitoring continues, but its purpose has changed. Now it provides the jobholder with necessary information and enables management to see how much more can be added to a job rather than how much should be subtracted from it. That way, continual improvement, while not being guaranteed, at least becomes possible as the scope for the motivators is extended. It is the nearest thing to a performance insurance policy that management can have.

Such is the theory, and from the evidence of the studies, practice bears it out. If the studies show anything, they show that it pays to experiment. No one is being asked to accept anything on faith; what is required is the courage to put old assumptions and old fears to the test. For the manager, the process is like learning to swim: it may not be necessary to jump in at the deep end, but it surely is necessary to leave the shallow end. Only those who have done so are able to conquer the fear which perverts our whole diagnosis of the problem of managing people.

Because people's ability and sense of responsibility vary so much, is it not necessary to make changes selectively?

No. To make changes selectively is never to leave the shallow end of the pool. We are in no position to decide, before the event, who deserves to have his job enriched and who does not. In almost every study managers were surprised by the response of individuals, which varied certainly, but not always in the way that would have been forecast. As the job changed, so did the criteria of successful performance change. Some people who had been thought to be sound and responsible under the old conditions turned out merely to have been yes-men once those conditions were changed; their performance was the same as it had always been, but now compliance was no longer valued so highly. At the other extreme was one classic example of an awkward employee, about to be sacked, who turned out to be unusually inventive and responsible when he has given the opportunity to be so.

In one study, not reported, a promising set of changes brought relatively disappointing results—the changes had been implemented selectively. When pressed to explain the grounds on which people had been chosen, the manager quoted as an example someone who had already carried similar responsibility in a previous job. It is exactly this kind of vicious circle that job enrichment seeks to break.

When changes are made unselectively, the genuinely good performers get better. Some poor performers remain poor, but nothing is lost. Because the changes are opportunities and not demands, all that happens is that the less able ignore them and go on as before. Some people, however, develop as they never could
under the old conditions, and do better than others originally rated much higher. This is the bonus from job enrichment. Not only is overall performance improved, but a clearer picture emerges of individual differences and potential.

So long as a foundation of new job opportunities available to all is firmly established, there is no harm in restricting certain changes to the more senior of the jobholders. Such changes can be seen in both the laboratory technicians' and the design engineers' studies. This is a very different matter from introducing changes selectively in the first place. It is a way of providing scope for personal advancement within the job and recognizing the achievements of those who build well on the foundation of opportunity already provided.

Do all employees welcome having their jobs enriched, or are there not some who prefer things to be left as they are?

Individual reaction to job enrichment is as difficult to forecast in terms of attitudes as it is in terms of performance. Those already genuinely interested in their work develop real enthusiasm. Not all people welcome having their jobs enriched, certainly, but so long as the changes are opportunities rather than demands, there is no reason to fear an adverse reaction. If someone prefers things the way they are, he merely keeps them the way they are, by continuing to refer matters to his supervisor, for example. Again, there is nothing lost.

On the other hand, some of the very people whom one might expect to duck their chance seize it with both hands, developing a keenness one would never have anticipated. In attitudes as well as in performance, the existence of individual differences is no bar to investigating the possibilities of job enrichment.

Can you enrich jobs without inevitably facing demands for higher pay or better conditions to match the new responsibilities?

Yes. In no instance did management face a demand of this kind as a result of changes made in the studies. It would seem that changes in working practice can be made without always having a price tag attached.

Here, as in the matter of operational risk, what is surprising in practice is easily explicable in terms of theory. The motivators and the hygiene factors may not be separate dimensions in a manager's analysis of a situation, but they are in people's experience. It is time that our diagnosis of problems took more account of people's experience. The studies demonstrate again that, when presented with an opportunity for
achievement, people either achieve something or they do not; when allowed to develop, they either respond or stay as they are. Whatever the result, it is a self-contained experience, a private encounter between a person and his task.

It is something quite separate when the same person becomes annoyed by his poor working conditions, worries about his status or security, or sees his neighbors enjoying a higher standard of living. The cause-effect relationship between hygiene and motivation scarcely exists. Motivation is not the product of good hygiene, even if bad hygiene sometimes leads to sabotage. Higher pay may temporarily buy more work, but it does not buy commitment. Nor does commitment to a task, by itself, bring demand for better hygiene.

Managers often complain of their lack of room for maneuver. In doing so, they are generalizing from the rules of the hygiene game to the total management situation. There is little evidence that the workforce in fact prostitutes its commitment to a task, although incentive bonus schemes, productivity bargaining, and the like assiduously encourage such prostitution. Before the process goes too far, it seems worth exploring more fully the room for maneuver freely available on the motivator dimension.

This is not to say, however, that the motivators should be used as an alibi for the neglect of hygiene. If people genuinely are achieving more, taking more responsibility, and developing greater competence, that is no reason to take advantage of them for a short-term profit. Any tendency to exploitation on management's part could destroy the whole process.

*Is not the best route to motivational change through participation?*

Yes and no. We have to define our terms. So far as the process of job enrichment itself is concerned, experimental constraints in the studies dictated that there could be no participation by jobholders themselves in deciding what changes were to be made in their jobs. The changes nevertheless seemed to be effective. On the other hand, when people were invited to participate—not in any of the reported studies—results were disappointing. In one case, for example, a group of personnel specialists suggested fewer than 30 fairly minor changes in their jobs, whereas their managers had compiled a list of over 100 much more substantial possibilities.

It seems that employees themselves are not in a good position to test out the validity of the boundaries of their jobs. So long as the aim is not to measure experimentally the effects of job enrichment alone, there is undoubtedly benefit in the sharing of ideas. Our experience merely suggests that it would be unwise to pin too many hopes to it—or the wrong hopes.
Participation is sometimes held, consciously or unconsciously, to be an alternative to job enrichment. Instead of passing responsibility down the line and possibly losing control, the manager can consult his subordinates before making a decision, involve them, make them feel part of the team. It all seems to be a matter of degree, after all. Participation, in this sense of consultation, is seen as a safe halfway house to job enrichment, productive and satisfying to all concerned.

A multitude of techniques are available to help the manager be more effective in consultation: he can be trained to be more sensitive to interpersonal conflict, more sophisticated in his handling of groups, more ready to listen, more oriented toward valuing others’ contributions. Better decisions result, especially in problem-solving meetings that bring together colleagues or opponents in different roles or functions.

But in the specific context of the management of subordinates, it is worth asking who is motivated in this kind of participation. The answer would seem to be the person who needs a second opinion to make sure he comes to the right decision—the manager in fact. The subordinate does not have the same professional or work-inspired need for the encounter, for he is not the one who has to live with responsibility for the decision. It is doubtful whether his “sense of involvement” even makes him feel good for long, for an appeal to personal vanity wears thin without more substance. However well-intentioned, this halfway-house kind of participative management smacks of conscience money; and receivers of charity are notoriously ungrateful. In the case of professional staff it is downright patronizing, for the subordinate is paid to offer his opinion anyway.

Theory clarifies the position. It is not a matter of degree at all. The difference between consultation and enrichment is a difference in kind. Consultation does not give a subordinate the chance for personal achievement which he can recognize; through involvement, it subtly denies him the exercise of responsibility which would lead to his development, however humbly, as an executive in his own right. Far from being the best route to motivational change, this kind of participation is a red herring. It is hygiene masquerading as a motivator, diverting attention from the real problem. It may help to prevent dissatisfaction, but it does not motivate.

The laboratory technicians, sales representatives, design engineers, and foremen did indeed participate, but not in a consultative exercise designed to keep them happy or to help their managers reach better decisions. Nor was it participation in ambiguity—an all too common occurrence in which, although no one quite knows where he stands or what may happen, the mere fact of participation is supposed to bring success. The participation of employees involved in the studies consisted of doing things which had always previously been done by more senior people. In all cases consultation continued, but now it was consultation upward.
In consultation upward there is no ambiguity; tasks and roles are clear. Both parties are motivated, the subordinate by the need to make the best decision, to satisfy himself, to justify the trust placed in him, to enhance his professional reputation; the manager by the need to develop his staff.

When design engineers consulted their more senior colleagues, it was on questions of technical difficulty, commercial delicacy, or professional integrity—all more to the point than the mere price of a piece of equipment. Foremen consulted their managers on unusual budgetary worries, or the personnel department on tricky disciplinary problems. Sales representatives consulted headquarters on matters such as the stock position on a certain product before negotiating special terms with a customer.

Participation is indeed the best route to motivational change, but only when it is participation in the act of management, no matter at what level it takes place. And the test of the genuineness of that participation is simple—it must be left to the subordinate to be the prime mover in consultation on those topics where he carries personal responsibility. For the manager, as for the subordinate, the right to be consulted must be earned by competence in giving help. Therein lies the only authority worth having.

**Expected consequences**

*In view of so many possible difficulties in the way, are the gains to be expected from job enrichment significant or only marginal?*

We believe the gains are significant, but the evidence must speak for itself. In all, 100 people were in the experimental groups in the studies described. A conservative reckoning of the financial benefit achieved, arrived at by halving all estimated annual gains or savings, would still be over $200,000 per year. Cost was measurable in a few days of managers’ time at each place.

*Do the gains relate primarily to job satisfaction or to performance?*

Contrary to expectation, the gains, initially at least, seem to relate primarily to performance. Wherever a direct measure of performance was possible, an immediate gain was registered. In one or two instances, performance seemed to peak and then drop back somewhat, though it stayed well above its starting point and well above the control group’s performance. Elsewhere there seemed to be a more gradual improvement; if anything it gained momentum through the trial period. We have no evidence to suggest that performance gains, once firmly established, are not capable of being sustained.
In the short term, gains in job satisfaction would seem to be less spectacular. Attitudes do not change overnight. Satisfaction is the result of performance, not vice versa, and there is a long history of frustration to be overcome. When direct measurement of job satisfaction was possible, the most significant gains seemed to come when the trial period was longest. There is every reason to think that in the long term attitudes catch up with performance and that job enrichment initiates a steady and prolonged improvement in both.

What are the consequences for supervision if jobs are loaded with new tasks taken from above—i.e., does one man's enrichment become another's impoverishment?

The more subordinates' jobs are enriched, the more superfluous does supervision, in its old sense, become. Several of the studies showed that short-term absences of the experimental groups' supervisors could be coped with more easily as day-to-day concern for operational problems shifted downward. The need for the supervisor to be always “on the job” diminished; greater organizational flexibility was gained.

But though supervision may become redundant, supervisors do not. Fears of loss of authority or prestige were never realized. Far from their jobs being impoverished, supervisors now found that they had time available to do more important work. Design engineers' supervisors were able to devote more effort to technical development; production foremen's supervisors found themselves playing a fuller managerial role.

The enrichment of lower-level jobs seems to set up a chain reaction resulting in the enrichment of supervisors' jobs as well. Fears that the supervisor may somehow miss out are based on the premise that there is a finite pool of responsibility in the organization which is shared among its members. In practice new higher-order responsibilities are born.

Even when subordinates are given responsibilities not previously held by their own supervisors, as happened in the sales representatives' study and to a lesser extent in some of the others, there is no evidence that supervisors feel bypassed or deprived, except perhaps very temporarily. It soon becomes apparent to all concerned that to supervise people with authority of their own is a more demanding, rewarding, and enjoyable task than to rule over a bunch of automatons, checking their every move.

Finally, what are the consequences for management if motivational change becomes a reality? Is the manager's role affected? If so, how? And what are the implications for management development?
The main consequence is that management becomes a service, its purpose to enable, encourage, assist, and reinforce achievement by employees. Task organization and task support are the central features of the manager’s new role. In task organization two complementary criteria emerge: (1) tasks have to be authentic—i.e., the more opportunity they give employees to contribute to business objectives, the more effective they are likely to be motivationally; (2) tasks have to be motivational—i.e., the more they draw upon the motivators, the more likely they are to produce an effective contribution to business objectives. In task support, factors such as company policy and administration, technical supervision, interpersonal relations, and working conditions all have to be pressed into the service of the motivators. Control of the job is achieved by providing people with the tools of their trade, with the information they require, with training as appropriate, and with advice when sought.

The job itself becomes the prime vehicle of all individual development, of which management development is only one kind. In aiding the process of development, our starting point, as always, is problem diagnosis—in this case, assessment of individual abilities, potentials, and needs. When people are underemployed, we have no way of distinguishing between those who are near the limit of their abilities and those who have a great deal more to contribute. All too often, potential has to be inferred from risky and subjective judgments about personality. Such judgments, once made, tend to be static; people become categorized. The studies show that when tasks are organized to be as authentic and motivational as possible, management receives a more accurate and a continuing feedback on individual strengths and weaknesses, ability, and potential. Task support becomes a flexible instrument of management, responsive to feedback.

If the job itself is the prime vehicle of individual development, task support is the means by which management can influence it. We still think of individual development, especially management development, far too much as something which can be imposed from outside. We pay lip service to on-the-job training but go on running courses as a refuge. We speak of self-development, but we are at a loss to know how to encourage it. Now, however, we can postulate a criterion: self-development is likely to be most effective when the task a person is engaged in is authentic and motivational and when in doing it he receives understanding, imaginative, and capable support. When these conditions are met, the job itself becomes a true learning situation, its ingredients the motivators.

Though only one study set out specifically to measure individual development, the most pervasive impression from all was one of development and personal growth achieved. The latent inspirational value of jobs appeared to have been released. People were able to demonstrate and utilize skills they already possessed, and go on to learn new ones. Each new facet of the task required a response in terms of individual development, and results suggest that that response was seldom lacking.
The best evidence of development came, however, not from the experimental groups in the studies, but from the managers who put the studies into effect. It is sometimes said that attitude change is the key to success. But in seeking to improve the performance of our business, perhaps we rely too much on efforts to change managers’ attitudes. These studies went ahead without waiting for miracles of conversion first. Just as the experimental groups in the studies represented a cross section of employees engaged on those jobs, so the managers who put the studies into effect represented a cross section of managers. Enthusiasts and skeptics alike agreed to judge the studies by their results. They did, and the effect was clear for the observer to see. Success proved to be the key to attitude change. In retrospect, who would want it otherwise?


Of the two men who conducted the tests and have written this report, Mr. Paul is a Management Consultant in England, specializing in behavioral science and personnel research; and

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