



Harvard Business Review

Decentralized Management



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Editor's note

Many of the articles we include in this series were written before women started to play an important role in management in impressive numbers. For this reason, the authors of certain pieces assumed all readers were men and that the typical manager was a "he" instead of a "he or she." In planning this series, we wanted to correct our older articles but found that the expense of resetting them would increase the price of the series and thus limit its distribution.

The editors ask that whenever you read the words "he," "him," or "his" in an article, you take it to mean "she," "her," or "hers" as well. Whenever you see "man" either alone or as part of a word, think of a person of either gender. We hope that the archaic use of the masculine gender does not undermine the effectiveness of the articles.

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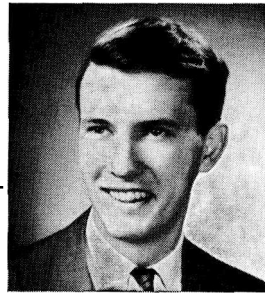
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Summary of contents

This selection of 16 articles reprinted from HBR presents a variety of topics related to the issue of decentralization. The articles discuss the formation and functions of divisions and subsidiaries, intracompany pricing, and problems concerning the decentralization of profit and financial control. Executive development, profit responsibility, the impact of information technology on decentralization, and strategic planning in large and diversified companies are also examined.

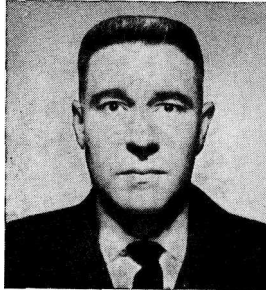
PROBLEMS IN REVIEW



HUGO E. R. UYTTERHOEVEN

*Assistant Professor
Harvard Business School*

*"Inaction will not avoid
but only delay the
necessary organizational
change."*



JACQUES A. MANTOUX

*Marketing Director
Compagnie des Freins et
Signaux
Westinghouse*

*"Rationalization would
be useful to at least some
products."*



NORMAN B. M. SMITHSON

*General Parts Sales Manager
Perkins Engines Limited*

*"One area in which action can
be taken relatively quickly
is that of new products."*



IRA W. HUTCHISON

*Director, International
Operations
Dow Corning Corporation*

*"Most . . . economic factors
can be pinned down with
acceptable accuracy."*

The Case of the Multiplant Manufacturer

Should companies have duplicate manufacturing facilities in several locations, or should specific plants be responsible for specific products? In this case study, management faces these questions, and others, raised by both the changing economic face of Europe and the increasing size of multinational companies.

The author, Robert C. K. Valtz, was formerly Research Associate, l'Institut pour l'Etude des Méthodes de Direction de l'Entreprise (IMEDE) in Lausanne, Switzerland, and is Professional Staff Member of the Management Services Division of Arthur D. Little, Inc.

• THE EDITORS

The following case, based on an actual business situation in Europe, is disguised. But the company exists in real life, and its top management recently had to face the problem described here — a problem relevant to many companies with more than one plant, in the United States or around the world.

* * *

"Gentlemen, I've called this meeting because it seems to me that we ought to take a hard look at our manufacturing policy throughout Europe. At the moment, we're making almost every one of our products in several different countries. This is the way we've always done it, and I know some of you think it's the only possible way. But others think that our policy of duplicating manufacturing facilities in several countries ought to be changed, and that we should make a given product in only one plant. As you know, we're going to start making a number of new products in the next year or two, so it's high time we decided in how many places we're going to make them."

Claude Bruyère, the President of Universal Manufacturing and Control Europe, Inc., usually referred to as UMCE, was speaking at a meeting with a group of his top executives. Bruyère had called the meeting specifically to consider whether his company should "rationalize" its production facilities, i.e., make each product in only one location.

COMPANY PROBLEM

UMCE was a subsidiary of Universal Manufacturing and Control Co., Inc. (UMCC) — a long-established U.S. corporation. UMCC was outstandingly successful in the United States, and it had entered the European market late in 1945

to participate in the postwar reconstruction. As the company's international activities continued to grow, it had established UMCE as a wholly owned subsidiary with full responsibility for all European operations.

UMCC's product line contained about 30 items; it consisted chiefly of heavy machinery for manufacturing and construction and a new line of industrial process control equipment. The basic product line had been developed well before World War II, but in the postwar years the company's extensive research and development had created an entirely new line of complex products. By 1963 UMCC's sales had grown to \$750 million per year, and the company was rated one of the industry leaders both in heavy machinery and in process control equipment. UMCC had, however, many formidable competitors along its several product lines.

UMCC's products ranged in price from under \$10,000 for its simpler construction machines to several million dollars for its advanced vertical cranes. Its process control machines similarly ranged from about \$10,000 to several hundred thousand dollars. Of necessity, manufacturing had to meet very high standards of precision, coupled with ruggedness. Because the typical product was an important capital equipment purchase for the customer, and since competition was intense, management set a high premium on quality control, performance, and reliability. Altogether about 20,000 parts were needed to make the products in the line. Many of these parts were of high precision; a number called for special high-quality alloys.

In recent years UMCC and its competitors had substantially increased the rate of new product introduction, both in the fields of machinery for factories and construction and to a still greater extent in the process control field. In the latter field, products were steadily becoming more complex, sophisticated, expensive, and shorter-lived.

UMCE was the head of all of the subsidiaries of Universal Manufacturing and Control Company throughout Europe, which were generally referred to as "local" companies. Europe had been divided into three areas, and the general manager of each local company was responsible to his area manager for his country's sales activities and manufacturing operations (if any). EXHIBIT 1 shows the geographical organization of UMCE.

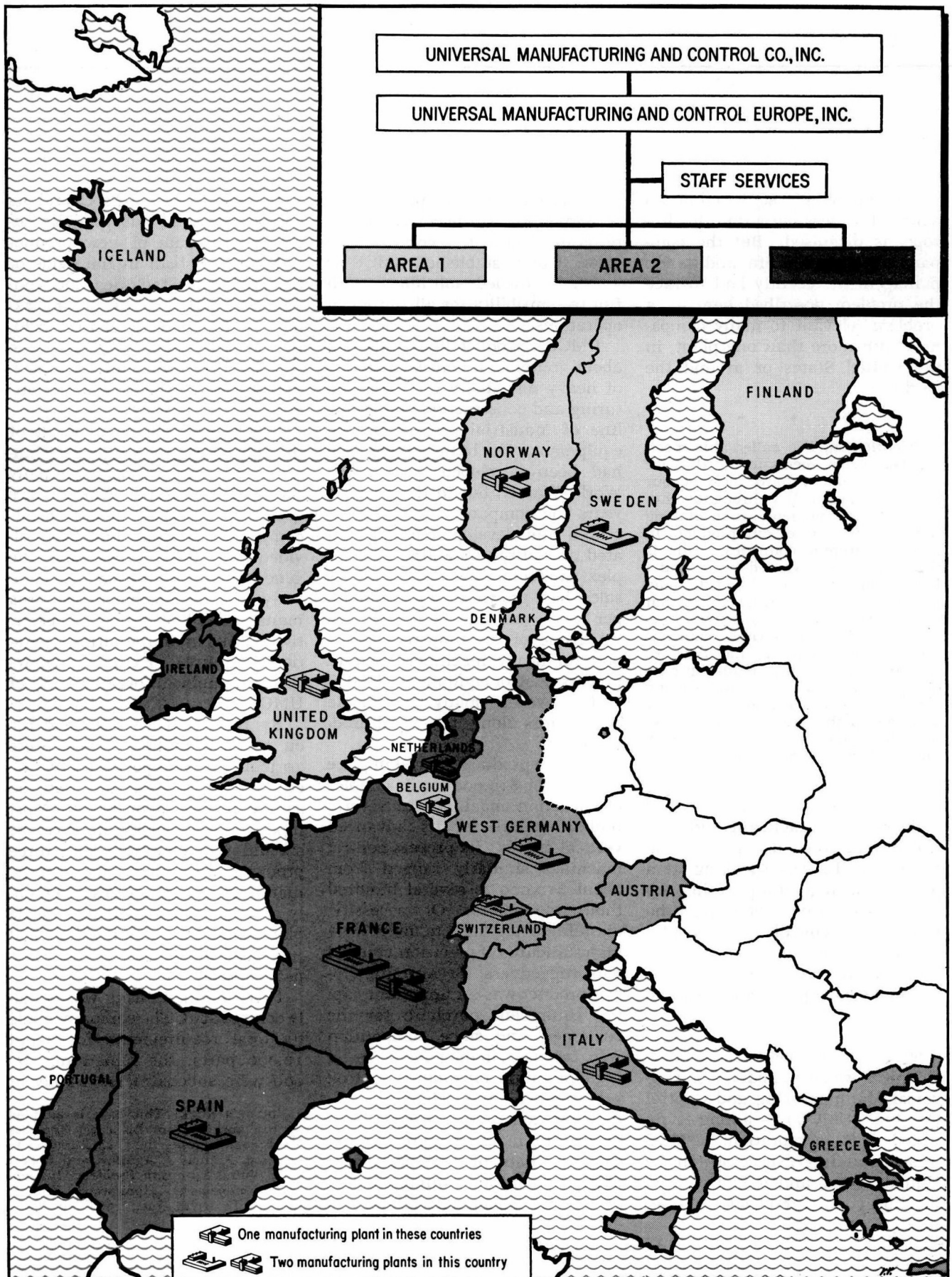
By 1963 UMCE's sales had risen to \$200 million. There were 10 plants in Europe which included 10,000 workers and 800,000 square feet of floor space. Most products were made in three to six different countries, and three products were made in all nine manufacturing countries. The only products being made in a single plant were four items which had just been introduced in the European market.

Parts manufacturing was equally complicated. The company made its total requirements for about 10,000 parts; the remaining 10,000 were subcontracted wholly or

EDITOR'S NOTE: This case is adapted by the author from his case, "Process Machinery Europe, Inc.," in Edmund P. Learned, Francis J. Aguilar, and Robert C. K. Valtz, *European Problems in General Management* (Homewood, Illinois, Richard D. Irwin, Inc., 1963), p. 75.

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EXHIBIT I. GEOGRAPHICAL ORGANIZATION OF UNIVERSAL MANUFACTURING AND CONTROL EUROPE, INC.



in part. In general, UMCE made those parts which required unusually tight tolerances or sophisticated manufacturing techniques. A single part was very often manufactured (or subcontracted) in five or six different countries, because import duties were so high that in many cases a local company could make a part cheaper than it could import it from a sister company. Local managers were generally free to decide whether they would make or import a given product or part.

As a result, a typical machine — which might contain 5,000 parts and sell for \$25,000 — might be manufactured in Sweden as well as in five other countries. European sales of such a machine might total 400 units per year. Parts for the Swedish-assembled version might come from half a dozen other countries besides Sweden.

THE MEETING

President Bruyère had called together, for a policy meeting, the five men who, he thought, were in the best position to contribute to the solution of a major organizational problem. They were:

William Casparis, Group Vice President, Manufacturing

Emilio Borghese, Group Vice President, Marketing

Alan Winters, General Manager, United Kingdom

Kurt Halbach, General Manager, West Germany

Paul Matté, General Manager, France

Casparis and Borghese had the over-all responsibility for European manufacturing and marketing, respectively, in a staff capacity. Winters, Halbach, and Matté represented the three countries which had by far the largest sales volumes.

After opening the meeting, as quoted earlier, Bruyère continued speaking:

BRUYÈRE (president): The five of you have, I think, been most concerned with our manufacturing policies, and I know that you don't all agree on what we ought to be doing. I don't imagine we're going to reach a final decision today, but

at least we ought to be able to get the main arguments on both sides out on the table, and to decide where we go from here. I think that you've taken the strongest position of anybody, Borghese; do you want to start off?

BORGHESE (marketing): Well, in the first place I don't really see how we *can* rationalize, even if, in theory, it's a good idea to make a product in only one location. Just think of what would be involved in retooling all ten plants. We'd have to move machines all over Europe, we'd have to transfer workers and train new ones, and every factory would have to be ripped apart and laid out completely differently. We'd be shuffling half-finished products and raw materials all over the place, and I think there's a good question whether we could rebuild work forces at each plant which would contain the right number of workers with the skills needed.

How long would it take us to tear ten plants apart and put them back together again? Even worse, I hate to think of how much production we'd lose during the switch! We're selling all the machines we can turn out now, and our sales forecasts are getting better every day — think of all the sales we'd lose! It would take us years to do this job, and the cost would be incredible; I don't see how it can be worth it.

WINTERS (the United Kingdom): Those problems are bad enough, but I think the really impossible aspect for us will be the effect on our costs. If I have to import most of the machines I sell, I'll have to pay pretty stiff import duties which will send my costs sky-high. I'm sure we're not going to reconsider our policy of selling the same machine at about the same price in every country; so if my costs go up, I'm going to get squeezed pretty badly. It's all well and good for you chaps in the Common Market, but even among *your* countries duties are still fairly steep for our type of product, and if you have to import some of your machines from outside the Common Market, your duties may be huge.

Last month when we discussed Common Market tariff barriers against outsiders, we saw that these barriers still make for a healthy price difference — 10% to 20% — and it hardly looks as though they'll come down much in the near future. I don't have to tell you that the United Kingdom is one of UMCE's largest markets, and I really don't see how — at least in my country — we *can* do very much importing of finished machines. It's one thing to bring in parts and assemble them; tariffs are a good deal lower. But I'm afraid we're out of luck on entire machines.

CASPARIS (manufacturing): I see your problem, Winters, but I feel there's a way around it. I guess I'm the only one here who feels strongly that we ought to "rationalize," and I know I'm outnumbered, but it still seems to me the right answer, particularly for the long run. Let me remind you of one grim fact. Even though our average labor cost in Europe is only about 40% of what we pay in the United States, it still costs us more to make every single product in our line than the same product in the United States — *every single product*, gentlemen.

When you find a situation like that, there *has* to be something basically wrong, and what's wrong is our crazy hodgepodge of a system. When you start trying to assemble a machine with parts that come from six or eight different countries, it's too much to expect that all the tolerances will be uniform and that the right number of parts will arrive when you need them. The amount of overhead we need to support this system is frightful, and the time wasted when the parts don't arrive on schedule is even worse. And another thing: How can we get any mass-production economies when we make such small quantities in each country? Furthermore, we have to spend astronomical sums of money in setting up half a dozen identical assembly lines and sets of tooling.

I know it would be a huge job to switch now, but it's not going to

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get any easier as time passes. We're growing at about 20% per year, and in five years it looks as though we'll have 40 products in the line, instead of 30. One of these days it will be *impossible* to make the change. As a rough guess, I figure that if we go ahead and rationalize, we can cut our costs down to something like 75%-85% of what they are in the United States, instead of the current average of 105%-115%. That difference would pay for a huge amount of import duties.

HALBACH (West Germany): I'm sure you have a point, and a good one, but we haven't even begun to list all the reasons why we can't rationalize. You know, when we go out to sell in West Germany, it helps us a lot if we can tell our customer that the machine was made in West Germany, and the government likes that too. I think that one of the company's strong points throughout Europe has been that we've gotten on very well with our respective governments, and part of the reason is that we've been such good citizens.

CASPARIS: I've heard that "good citizen" argument from all our local managers; they certainly are a patriotic group!

More seriously, if we rationalized, I admit that most of our products wouldn't be made in West Germany, but we could arrange things so that your employment would be just as high, even if you specialized on a few products. And wouldn't your customers be happier, in the long run, with lower prices than with a "Made in Germany" sticker? The way to get prices down is to rationalize.

HALBACH: What happens to all my workers if we rationalize? Can you guarantee that when the dust finally settles, I'll have enough volume to keep them all busy? We have a policy against laying off men if we can possibly avoid it. Will my present workers have the right skills for the machines they're going to be making?

CASPARIS: Well, Halbach, most of our workers are pretty highly

skilled, so I don't see too many problems in teaching them how to make one or two new machines. Certainly, *some* of the machines would be ones they'd worked on before. And instead of trying to work on 12 different machines over the course of a year, they could concentrate on a few and become real experts.

MATTÉ (France): One interesting question, Casparis. Who will decide which country makes which product? I'm not particularly anxious to be stuck with all the little machines; some of them have been around for 20 years. Who gets to make this new Mark XIV? I know I'd like to, but I must admit that if France were the only country to make it, we couldn't make anything else. That by itself would keep us busy full time. Judging from experience in the United States, it looks as though the Mark XIV ought to sell fantastically well here, so the country which makes it might have to expand its operations enormously just to tool up. And where would the capital come from? UMCC itself isn't particularly anxious to keep pouring money into Europe; we're supposed to finance growth out of our own profits, but it looks as though no country has enough capital right now to tool up for the Mark XIV.

BRUYÈRE: I think we could overcome any difficulty of that kind, Matté, if we could show UMCC that our rationale was basically sound.

MATTÉ: Perhaps so, but what about the country that ends up with only two or three products? Our experience shows that sales for an individual product can fall to virtually nothing overnight, if one of our competitors brings out a better machine. What happens to the work load of a plant, and possibly an entire country, when that happens? It would take an awful lot of time to get a new product going in any factory.

It seems to me that there's another problem nobody has touched on. We use many special raw materials, and we've all spent years in establishing good relationships

with local suppliers for these materials. What happens to the French supplier of, say, special stainless if next week we don't need that kind of steel any more in France? We've always been careful about maintaining good relationships with suppliers, but we could lose our good reputation overnight. And how long would it take another country to get a good supplier for that stainless steel? I can think of cases where, at least in France, it took us six months to find good sources for some of our materials.

CASPARIS: I think what you're describing, Matté, is a minor technical problem which we'd have to overcome — not a basic difficulty. I'm sure we could work things out in this area.

Let me point out a couple of other advantages to rationalizing:

« It's currently taking us altogether too much time to start production on a new product, once we get approval from the States. The reason is the production scheduling problem, and the result is that *we're spending about a year before we begin manufacturing from the time we secure approval*. I bet we could cut that time at least 50% if only one plant had the responsibility for getting it going. We like to think that we keep comfortably ahead of our competition in bringing new products into the marketplace, but I think that our lead is shrinking, and a good way to get back most of that lead is to rationalize.

« If all European demands for a specific machine were met from a single stockpile, instead of from half a dozen inventories, our total inventory for a given product could be a lot smaller and still do the job. This would cut down our capital requirements, and if we could avoid all this duplication of manufacturing facilities, and especially tooling, this would also sharply reduce the investment needed in UMCC as a whole. One of these days UMCC is going to start wanting high dividends from its European operations, so cutting down the required investment would not be a bad idea.

I guess I've just about said my piece, except for one more point. Without naming anyone, it's no secret that some of our local managers modify certain products to meet supposed local requirements. Maybe this is a good idea once in a while, but some of the modifica-

tions I've seen have cost a lot of money, both in engineering and in scrapped inventory, and they were not necessary. When you come right down to it, each of our basic machines ought to work perfectly well — without modifications — anywhere in the world. Maybe if there were no opportunity for managers to make changes, we'd save a little money in manufacturing, too.

BORGHESE: Well, I certainly don't agree with that. From what I've seen, better than 90% of these changes are perfectly valid, and most of them are pretty inexpensive. I can't see that rationalizing would help us very much on this score.

BRUYÈRE: I guess it's still one against four, Casparis against the rest of you, and I don't see any evidence that there's going to be a change of heart on either side in the near future. But there has to be. As I've listened to you, I've jotted down the disagreements. Let me just run down the chief points for and against rationalization:

FOR

1. Lower manufacturing costs by:
 - Having longer production runs.
 - Cutting down production scheduling requirements.
 - Avoiding problems of failure to coordinate shipments from all plants.
2. Start production faster on new products.
3. Cut down the investment needed for inventories and manufacturing facilities and equipment.
4. Eliminate the cost of special changes.

AGAINST

1. Cost of changing over, moving equipment, stocks, and so on.
2. Lost sales through lost production during the period.
3. Problems of finding new workers, if needed, and keeping current workers employed.
4. Increased costs to the local country because of import duties.
5. Some loss of "made-in-this-country" prestige, and possible impact on relations with local governments.
6. Risk to a local company of suddenly losing sales volume for one of its few products.

7. Extra capital possibly required in some countries making unusually large machines.

8. Fair treatment of current suppliers and problem of getting new suppliers in other countries.

BRUYÈRE (*continuing*): I didn't put down one other thing which Matté hinted at. I know that the local managers like to make the newer products in the line, and especially the big cranes. This is exciting, it gives them a lot of responsibility, and it's probably a useful sales tool. But we haven't got enough of those big machinery jobs to satisfy all nine manufacturing countries, and so there would certainly be some delicate problems of allocating if we rationalized. The new Mark XIV is a pretty good case in point: everybody wants to make it.

One further thing we haven't discussed at all, and one which may help us find a solution, is the *degree* of rationalization. We might, for example, rationalize parts production completely so that each part is made in only one place, but still assemble in several locations. Or we might go all the way and assemble in only one place. A temporary solution might be to rationalize only those new products which we add to the line, and leave the old ones as they are. But I'm not sure that any country could take on the Mark XIV, for example, and do anything else without an abnormal expansion.

I've spoken to our economic analysis group about the possibility of making a detailed economic evaluation of this issue. Various group members tell me that it would take them 12 to 18 months to produce a good mathematical model of our European manufacturing operation. We could use this model, they say, to get a reasonable indication of the lowest-cost manufacturing system. The time to do the job would therefore depend largely on how long it took them to collect all the necessary data. I don't know whether we can wait this long. Frankly, I think that Casparis is right when he says that if we are going to rationalize, we'd better do it pretty quickly, because it's going to become more

difficult every year. If it's a big job in 1964, I hate to think what might be involved by 1968.

From what I've heard today, it doesn't look as though we've come to any meeting of the minds on this subject. It seems to me, though, that it's vital for us to reach a decision in the near future. I'm not saying that we have to make up our minds next week, or even next month, but I suggest that before we break up today, we figure out just how we're going to tackle this issue.

* * *

QUERY TO READERS

If *you* were Claude Bruyère, what steps would *you* take? What would be the basis for your decisions? To discuss the UMCE situation, HBR interviewed four men with experience in overseas operations, men from both sides of the Atlantic. Their observations reflect the broad focus within which they analyze problems such as those faced by UMCE.

Why not make your own mental notes right now, so that you can compare your opinions and reactions with the collective views of our commentators?

CHANGING ENVIRONMENT

The specific issue faced by UMCE in this case — whether to rationalize — is interesting in itself, but perhaps the major significance of the case is its relevance to a business world which is becoming increasingly international in outlook and character. Since the end of World War II, many U.S. firms have been looking increasingly for foreign markets, especially in Western Europe; yet in recent years more and more foreign companies have been looking to the United States as a potential area for expansion.

Hugo E. R. Uyterhoeven has taught at IMEDE in Switzerland and at the International Marketing Institute, as well as heading the course in Management of Foreign Operations at the Harvard Business School for several years. "A company which hopes to develop major international interests," he observes, "must be agile

and flexible enough to adapt itself to an entirely new business climate."

Within this changing environment, Professor Uytterhoeven comments, companies from all countries will now encounter greater organizational problems:

"In order to develop successfully, the worldwide enterprise will have to be prepared to make many time-consuming and expensive adaptations which, in turn, are likely to encounter a significant amount of organizational resistance. Effective change will be neither easy nor immediate because old ways of doing business, which were perfectly adequate when only one country was involved, have now become firmly entrenched in many corporations; unfortunately some of these patterns are completely inappropriate to the demands of international activity."

Looking at some of the questions raised specifically by this case, Professor Uytterhoeven observes:

"With UMCE having the bulk of its operations in the European Economic Community (Common Market), which is progressively unifying several segments of business activity, one can question the appropriateness of the local managers' autonomy, not just in terms of manufacturing but also in terms of make-or-buy decisions (either from sister companies or from outside suppliers), capital budgeting, and local borrowing policies. Economic integration of hitherto separate nations requires a complete reappraisal of the traditionally thorny question which seems to be a permanent headache for any geographically decentralized operation: *How much authority should be delegated to the local units, and what aspects should be decided, or at least coordinated, by the head office?*

"Even in a fully integrated economy such as the United States, the problem of centralization versus decentralization is enormously difficult and complex; in countries aiming toward economic integration, whose economies are no longer entirely separate but are not yet completely unified, the centralization-decentralization issue is compounded by a large number of additional variables which, in turn, are constantly changing as economic unification progresses.

"Under these circumstances, it is not surprising that companies will be reluctant to undertake a reappraisal of their situation. Yet the alternative to reappraisal is inaction — pretending that nothing has changed. However, *inaction will not avoid, but only delay, the necessary organiza-*

tional change. And, at a later stage, the readjustment is likely to be more difficult, more costly, and more disturbing. Marking time will not help solve a problem; it will aggravate it. Nevertheless, it takes both foresight and courage on the part of management to undertake an immediate reappraisal at a time when economic conditions are uncertain and when the problems arising from an antiquated organization are still minor."

LONG-TERM IMPLICATIONS

The magnitude of the decision facing UMCE's executives is enormous. A fully rationalized UMCE will, for better or worse, be a vastly different organization from today's. Ten years from now, this problem will probably be seen by company historians as having marked a critical point in the company's development; thus, it follows that the problem should be evaluated as expertly and exhaustively as possible.

And yet it appears that a decision must be made fairly soon. Casparis, at least, believes that if the company continues to grow as rapidly as it has in the past, it will soon be impossible — or at least highly uneconomical — to rationalize. If he is correct, then excessive delay will probably produce a decision by default, which certainly is an inappropriate procedure for a problem of this importance.

Thus UMCE's management must balance the desire for full analysis against the fact that if rationalization proves the wisest course, undertaking it becomes more expensive with each day's passing.

Recognizing this, Bruyère has pointed out that even if it will take some time to arrive at a decision, his committee had better select the approach to be used as quickly as possible.

ECONOMIC FACTORS

The costs saved and incurred under any manufacturing system will certainly be a major input to the final decision, and yet the sheer size of UMCE's problem is so formidable as to be somewhat disheartening — 10 plants, 20,000 parts, 30 products, and a maze of import duties are only a few of the important variables. It was sug-

gested in the case that developing an economic model of this complicated system might well provide some answers to the complex questions facing UMCE.

Jacques A. Mantoux, Marketing Director of Compagnie des Freins et Signaux, Westinghouse in Paris, discusses this issue:

"Such a full-scope economic analysis could be very helpful. But it would take *at least* a year to develop the model, and, more importantly, this would not necessarily give the whole answer. For even if a mathematical model proved rationalization to be the best move economically, a model is still a model and may not reflect many of the factors involved, such as:

- The varying degrees of success attained by current and future products in each country.
- The very real effect of teamwork — or lack of it — on the part of the company's top management, and the possibility of changes in management.
- Sudden and unforeseeable changes in government policies, competitors' behavior, and so forth."

Any model, however good, will at best be only an approximation of reality. Norman B. M. Smithson, General Parts Sales Manager of the English company of Perkins Engines Limited, looks at this same area of analysis, and states his belief that some quantitative analysis can and should be undertaken:

"While full-scale study may take 12 to 18 months, the economic analysis staff can surely produce *some* valuable guidelines within 90 days or so, especially if they are pushed by top management. To say that the whole answer cannot be rapidly laid out is not to say that no analysis is useful. Quite the contrary, in fact; *if the problem is as complicated as described, then any insights whatever will be valuable.*"

EVALUATION & ANALYSIS

Obviously, any evaluation will require careful estimates in many areas. Ira W. Hutchison, Director of International Operations of the Dow Corning Corporation, outlines a number of critical estimates in the evaluation:

"Source and price of special raw materials.

"Present and potential markets, by countries.

"Ratio of labor costs to total costs for various products, by countries.

"Adaptability of skilled mechanical workers.

"Current and expected custom duties.

"Number and type of parts used in more than one machine.

"Savings available from longer production runs and reduced scheduling requirements."

And he goes on to observe:

"Most of these economic factors can be pinned down with acceptable accuracy."

Admittedly, Europe's political trends are crucial to a forecast of duties, and predicting politics is a difficult business at best. But as Mr. Smithson notes:

"This entire decision is bound up with the future of the Common Market and the European Free Trade Association (Outer Seven). The problems of worker and raw material availability are already diminishing in the Common Market, as are internal tariffs. Furthermore, the probability is that the United Kingdom will eventually join the Common Market and take most of the Outer Seven countries in with her. If this happens, the economic arguments against rationalization will be very much weakened."

Whatever amount of economic analysis is finally performed, Mr. Mantoux observes that it will be a difficult and critical part of the final evaluation and should be done with great care:

"My experience has taught me that even the most carefully planned rationalization projects are susceptible to at least one major danger: underestimating the costs involved in the move. It is much easier to determine the cost of building a new plant than it is to appraise the cost of rationalizing among even two or three plants, and the economies which will result from such a move. Situations where costs are characteristically underestimated include these:

« "A plant having to make new products suddenly learns that its present machines won't do the job and, after a few vain attempts, new equipment is purchased.

« "Those plants which have traditionally been the lowest-cost operations may, for this reason, be given all the extra 'left-over' jobs, and their costs will go up enormously.

« "Nobody allows enough time for thorough integration of new plants and products; pressure is applied to move goods out the door, and often quality goes down while costs soar."

UMCE thus needs a considerable amount of thorough and realistic economic analysis, and it needs the results fairly soon. Bruyère and his colleagues will have to spell out precisely what types of information they want, so that the appropriate groups and individuals can go right to work.

PERSONAL INVOLVEMENT

One problem which UMCE's executives face in dealing with the issue of rationalization is that they have, at least in some instances, developed a way of looking at European business operations which may not be so applicable to today's situation as was the case 10 or 20 years ago. In any event, their discussion of this problem suggests that there may be emotional commitments to positions on one side or another. Mr. Hutchison remarks on this aspect:

"The reaction of the area managers is understandable; they have a vested interest in protecting the status quo. Under the current system, they have almost complete freedom to decide what they will manufacture and how. As a result, most of them try to make everything in the product line.

"Nor is Borghese's response surprising; he is taking the usual attitude of a marketing executive who has a successful sales position to protect and doesn't want to rock the boat. His philosophy is, 'Anything that hinders the usual flow of goods from the plant to the customer is undesirable.' He is, however, exaggerating the difficulties which would be caused by rationalization, even before plans have been developed to put it into effect. There is no reason why the proper phasing in and out of operations in the various plants cannot be orderly and without significant production losses."

Mr. Mantoux believes that, in view of the emotional responses to this issue, certain steps may be indicated:

"Cannot Bruyère select some of the UMCE products which, from certain viewpoints, seem most suitable for rationalization? If all the executives in the meeting could be convinced from the outset that rationalization would be useful to at least some products, and that the new policy would never be used to diminish or suppress the role of an individual country, a lot of the threat of this issue would disappear. By suggesting that

everything be rationalized, Casparis takes away all security from each marketing executive and each country manager.

"Furthermore, a task force might be created to study which products could be rationalized and which ones could not. This task force might consist of the manufacturing managers from several of the major countries, as well as marketing men from various operations, under the leadership of Casparis. This group, working at a lower level than the present committee, could discuss the pros and cons of rationalizing each product individually, rather than attempting to decide whether rationalization of the whole operation were good or bad."

Mr. Smithson points to one useful approach to such a study:

"Attention will, and should, be paid to the potential for rationalization among *existing* products, and decisions in this area cannot be made quickly. One area in which action can be taken relatively quickly is that of *new products*. This is the most likely field for going ahead immediately with rationalized production programs. This does not mean that only one plant will produce a new product; but it does mean that if more than one plant is to produce new products, this will be a *planned operation* rather than the result of default."

The organizational question is, Professor Uytendaele points out, particularly important for an international business:

"Temporary organizational adaptations to transitory economic conditions are likely to become permanent fixtures, even after the economic conditions change. A management must continually review the suitability of its organization and policies to underlying economic conditions, which can change with striking rapidity in the case of a worldwide business.

"Thus, even though Europe has changed markedly since 1945, several members of UMCE's management continue to think and speak in terms of the old economic order. Many comments made at the meeting belong to the early 1950's rather than to the 1960's. Moreover, the organization of UMCE by areas (see EXHIBIT 1) seems to ignore both the Common Market and the Outer Seven. Countries belonging to these two economic groups are spread almost evenly over the two areas.

"Furthermore, the rationalization issue could even encompass the company's U.S. operations, particularly if tariff liberalization between Europe and the U.S. should increase."

10 Decentralized Management

CONCLUSION

In examining Bruyère's list of the pros and cons of rationalization, it is clear that the advantages of rationalizing are real, although their exact magnitude is unknown. Longer production runs, the elimination of the present scheduling system, rapid start-up on new products, and reduction of inventories should be attained through rationalizing, and the savings will probably be considerable. Even without building a model of the system, it seems likely that, at least on the basis of an individual product, it should be possible to estimate the size of each type of saving through rationalization.

By this time, UMCE should have sufficient experience in European operations to permit a reasonably good estimate of what retooling and moving of machines would be necessary to rationalize a single product by making it only in a given country. It should be equally feasible to estimate the demand for a given product in each consuming country and the duties which would have to be paid if the required machines were shipped from another country.

There will be uncertainty as to the trend of tariffs, but some educated guesses can be made, and in the case of the Common Market this problem is rapidly disappearing. Since one can postulate that a large portion of UMCE's sales are to members of the Common Market (which contains three of Western Europe's four largest economies), the tariff problem is perhaps not so great as might appear at first glance. In short, the advantages of rationalization and two of its major drawbacks can probably be evaluated with adequate precision if enough men are put to work on the task. In a company of UMCE's size, finding the men should be possible.

But there are five other drawbacks cited to rationalization.

(1) *Loss of Production.* It appears inevitable that manufacturing efficiency and output will fall off if a given product is moved from one plant to another, and perhaps inventories cannot be ac-

cumulated in all cases to cover the temporary loss. Light can be shed on this problem by sales forecasts, and by estimates of the time required to change over and the production lost. If there appear to be threats of serious shortages, it may be possible to reschedule deliveries or, in some cases, to bring in the machines from the U.S. company. Whatever solution is proposed, an analysis of the extent of the problem for each product will help management to determine whether some action can be taken. It may prove better not to rationalize some products for this reason, or at least to postpone rationalizing them, but careful planning and scheduling can perhaps eliminate the problem in some cases.

(2) *Work Force Problems.* We are told that UMCE's work force is very highly skilled, and thus this factor is a major drawback to rationalizing in those countries of Western Europe without major pools of available skilled labor. Again, however, careful scheduling may eliminate the need for much alteration in any plant's total work force, and surely some plants will be in areas having extra workers available.

(3) *"Made-Here" Prestige.* One can question whether the argument that a product made in a given country is preferred to a foreign product has very much validity for the purchaser of industrial machinery, on the assumption that such purchases are made primarily on economic and quality considerations. Furthermore, UMCE can point to major manufacturing operations in nine Western European nations, and there is some chance that rationalization might permit lower costs and, ultimately, lower prices for its customers. This issue might be clarified considerably by marketing research among major UMCE customers in each country. Such research would, if properly designed and carried out, indicate how serious an objection this would pose to rationalization.

(4) *Danger of Specialization.* It is argued that, if a plant were to concentrate on only two or three

products, a sudden sales drop in any of these products could wreak havoc with employment and efficiency. An analysis of all UMCE's products, present and past, should help management to appraise the likelihood of this problem, and also the suddenness with which sales actually can fall off in a market as large as Western Europe. If there is a real problem in this area, one solution might be to give each plant with only two or three products those terms which are the most predictable, and to distribute among the plants with five or six products the most unstable items in the line.

(5) *Extra Requirements for Capital.* To some extent the claim that some plants will need much more capital under rationalization, and that this will present problems, appears to be an excuse rather than a solid argument. It seems likely that rationalization will, through avoiding duplicate tooling, actually lower total capital requirements for UMCE. Capital may have to be reallocated among the various plants, but this should not present major problems when all the subsidiaries are wholly owned.

As the case indicates, even a business like UMCE, which has been international for almost 20 years, is not immune to rigid attitudes and policies. UMCE's current manufacturing organization was created for a different Europe, one with import quotas and high tariffs, exchange difficulties, and strongly nationalistic feelings. In fact, the present system was mandatory in such a climate. In today's Europe, however, the UMCE system is clearly cumbersome and expensive, and it is likely that all the members of the committee recognize this fact. The only disagreement arises as to whether improvement, however desirable, is possible in a vastly changed Europe. Most of the executives at the meeting do not believe that the change requires rationalization. As Professor Uytendaele suggests:

"The organizational and rationalization problem facing UMCE is so complex because the company is trying to adjust to an economic world

which is part international and part national. As the Common Market and the Outer Seven show, the continent has moved away from the purely national state. But it has a long way to go before it achieves the kind of unity found in the United States. *It is some sort of a halfway house*: certain areas are still regarded in almost purely national terms, while others are partly or entirely unified. For instance, tariffs may disappear more rapidly than will nationalistic purchasing habits.

"Some of the comments at the UMCE meeting reflect the difficulty of living within an environment which, at least in economic terms, is so schizophrenic. Many executives reach different conclusions; yet each man is at least partially correct in

his interpretation of that environment. Thus, agreement will be difficult to reach *not* because the executives themselves are confused, but because the underlying economic situation is unsettled."

In summary, we cannot determine on the basis of the evidence presented whether rationalization is good or bad for UMCE. It does appear, however, that sudden and complete rationalization might be both difficult and very expensive to achieve. On the other hand, there seem to be real economies to rationalizing at least some UMCE products, and thus UMCE's major problem could perhaps be

restated as one of identifying whether, at least for some of the products, it is possible and worthwhile to centralize production at one point.

— Robert C. K. Valtz

New System for Divisional Control

*. . . supplanting ROI
as a method of performance evaluation.*

*By Bruce D. Henderson
and John Dearden*

A large and growing number of U.S. corporations are evaluating the performance of divisions on the basis of return-on-investment (or ROI) calculations.¹ More and more, ROI has come to be the "approved" method for this purpose; certainly, it has received the blessing of many noted authorities in the management field.

In this article we want to challenge the prevailing view. It is our conviction that ROI for divisional performance evaluation can be so misleading that it is destructive. It provides information that logically leads to incorrect decisions. It motivates division managers to take actions contrary to the best interests of the company. And it provides top management with misleading information about divisional performance. ROI fails in these ways because it uses profit centers which cannot really be profit centers, transfer prices which are not really prices, and investment bases which are not in fact relevant.

Fortunately, there is an alternative approach which is quite workable and far more appropriate to the needs of top management — and of division managements — in multidivisional corporations. After analyzing the severe limitations of ROI as the basic system of management control, we will, therefore, outline the new system. The system is an improvement, in our

opinion, because it holds division managers responsible only for what they can control, and it immediately signals variations in performance from expectations. The proposed system is based on a budget of the division's expected contribution to corporate profits for the coming year, on a fixed- and managed-cost budget, and on a capital budget.

It must be emphasized that this discussion applies to integrated, multidivisional companies. Our generalizations are not appropriate for small firms, companies without divisions, or companies with relatively independent, semiautonomous divisions whose performance is evaluated over a span of years. In such cases, ROI is not used for control purposes; transfer prices are not involved; and there is no problem of optimizing relations between different units.

Desired Specifications

Prior to World War II, the subject of this article would have been primarily of academic interest; the multidivisional conglomerate was rare. The integrated company tended to be run from the top on functional lines. Then General Motors demonstrated the value of divisionalization on product lines; Du Pont emphasized the importance of return on investment as a management concept; and General Electric dramatized the combination by breaking itself into nearly 100 semiautonomous profit centers and using ROI as the basis of corporate control.

These examples were widely emulated. Unfortunately, the concept was copied literally in

¹ See "Misevaluation of Investment Center Performance," by John J. Mauriel and Robert N. Anthony, HBR March-April 1966, p. 98.

many cases, without reference to the subtle side-effects and by-products or the limitations. The consequences have been similar to those of a miscalibrated speedometer or compass. It either keeps one from performing as well as one can or leads him into serious trouble.

The need in a multidivisional company is for a financial management control system to replace the intimate, intuitive knowledge which is possible in a simpler company. Profit centers, ROI, and transfer prices were conceived to make it possible to deal with a complex organization by breaking it into a number of independent parts which can be regarded as if they were independent entities.

Of course, such an attempt cannot succeed fully in an integrated company. This is impossible, even theoretically, except in the purest of conglomerates. If there is integration, there is necessarily some gain or benefit by having the various operations integrated. The integrated performance should exceed the performance achieved when the two operations are kept separate. If it does not, why integrate? If it does, which profit center is to be awarded the benefits of the synergy?

Often the optimum results are achieved by restricting the performance of one division in order to achieve a net performance gain for the organization as a whole. Accordingly, if the profit centers are treated as truly autonomous, the potential gain from integration is sacrificed. If we place the corporate interest first, we must regard the profit-center concept as a dangerous fiction.

What is needed is an inclusive management control system. The purpose of such a system is to cause the best decisions to be made for the benefit of the corporation as a whole, whether or not those decisions are delegated to divisions. In short, the system should —

- . . . provide relevant information to all managers at each point where a decision must be made;
- . . . provide a basis for evaluating management performance;
- . . . motivate each manager in such a way as to optimize total company performance.

Failures of ROI

Why cannot these purposes be achieved by a management control system based on ROI and profit centers? One set of troubles has to do

with the information produced by ROI calculations; another concerns the motivations stimulated by ROI. Let us examine each in turn, after first outlining some basic principles of transferring parts, components, and other material from one division to another.

Principles of Transfer

Profits are maximized when all management decisions are based on taking the action that optimizes the profit of the company as a whole. This is self-evident. But to make such decisions, it is necessary to know their effect on the company as a whole. This relevant information is simply the marginal contribution, viz., the net change in value that results from a given action. More precisely still, marginal contribution is the difference between (a) the increase in income that the action would produce — what is technically called the marginal revenue — and (b) the increase in expense which would be produced — what is often called marginal cost.

By definition, company profits will be maximized when marginal contribution is maximized. Consequently, it is vital that a management control system provide approximations of marginal contribution to decision makers at each point where a decision must be made.

Where material is transferred between divisions, the marginal cost is either the market price of the material (less selling expense), where a true market for the material exists, or the out-of-pocket cost of the additional production. It is the market price when a true market exists because this is the lost opportunity cost if it is not sold. In other words, the market price is the revenue which is given up by using the material in the corporation instead of selling it. If the material could not be sold, marginal cost is no more than the out-of-pocket cost of production because this is the expense incurred in order to use the material as desired.

This concept is very important in intracompany pricing. It means that market prices should be used as transfer prices only where there is an actual market which could absorb the amount of product in question at the transfer price agreed on. So-called “approximate” or “negotiated” transfer prices do not represent the marginal cost to the company if there is no alternative market in actual fact, because there is no opportunity cost; that is, no income is lost by keeping the material in the company. Consequently, all “approximate” or “negotiated” trans-