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WHAT I LEARNED, AS AN ECONOMIST, FROM MANAGING A BUSINESS (*)

Mots-clés : Théorie de la firme, théorie de la décision, systèmes économiques, apprentissage

Key words : Theory of firm, Decision theroy, Economic systems, Learning from business

I base this paper mainly on the experience I gained during fourteen years spent as Chief Executive of Oxford University Press. I imagine that I was offered this job because I had been for some years in effect a « non executive director » of the business and held a University post in economics. So two questions naturally pose themselves. Did knowing some economics help me in the job ? And did my experience in the job improve my understanding of economics ?

Although as an academic economist I was chiefly interested in and had written about theory, I had come also to do a good deal of business consultancy.

This gradual widening in intellectual focus had moreover become associated, by 1972, by the feeling that I wanted no longer merely to be providing opinions as to what business men should do, or, as a member of the Monopolies Commission, on what they should be told not to do. I now wanted myself to assume responsibility for taking decisions and living with their consequences. The OUP job, although in an industry of which I had no previous experience, responded therefore both to intellectual interest and emotional need.

When I joined OUP I sold all my economics library save a handful of books, a neurotic, boat – burning exercise which I now regret. For many years I have read virtually no economics, and this, I fear, will show. All I can say in self-

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defense is that my ideas, old or new, right or wrong, are the product of brooding on my own direct experience.

The raison d'être of OUP is to provide a service to the world of learning and scholarship through publishing and, in recent years, by giving financial help to its University. At the same time it has to ensure long – run profit maximisation, subject, not only to the normal legal and moral constraints, but also to being prepared to publish any good monograph irrespective of its financial return. When I first joined the Press, as OUP within the University is generally referred to, earnings were very inadequate and the principal aim was survival.

In our textbook theory of the firm, we take as given what the firm makes, together with the appropriate demand and production functions. The business maximises profits by deciding how much of the « given » product to make and with what input combination. Of course this little model is meant to be no more than a brick in the larger theoretical edifice which we use to try to explain, successfully or otherwise, how markets work. In order to focus on the *logic* of certain decisions, it abstracts from everything else with which a chief executive is concerned. It has no bearing, for example, on decisions regarding the activities the firm should or should not be undertaking or the choice of an appropriate internal organisation. But although decisions about pricing and output levels are by no means the only or even the chief concern of management, they are nevertheless important, and I shall now say something about them before moving on to the matters which, when I was Chief Executive, took up most of my time.

I suppose that we can describe publishing firms as being in monopolistic competition. They are of course multi-products, the products being so-called « titles », of which OUP, incidentally, may well have a uniquely large number. In each title, the firm has normally, but not always, a monopoly based on copyright.

But although firms usually have monopolies in each of their titles, the industry is exceedingly competitive. It is possible to enter it, for reasons which I shall give shortly, with virtually no capital, and firms can usually switch, without too much difficulty, from one kind of book publishing to another. Titles may also compete closely with each other, not only in books out of copyright but also in, say, dictionaries or standard school or university texts. Where no obvious differentiation exists between competing titles, publishers will try hard to introduce some. Brand names therefore matter.

Dictionaries, for example, are very important to OUP, which had about half the UK market, and the name « Oxford » attached to them provides some protection against competition from rivals by suggesting, I hope properly, a degree of authority. When I was at OUP, Robert Maxwell came out with a Pergamon Oxford Dictionary and I sought an injunction and damages on ground of « passing off ». (That is to say for representing something to be what it is not). I lost in the High Court but won at The Court of Appeal.

The actual manufacturing cost of book, paper, printing, binding and so on, is only a small part of what one hopes to sell it for – perhaps, 20 %. Calculated per copy, it falls with the number printed, because of the constant setting costs, but modern technology has made this curve flatter than it used to be. This manufacturing cost, together with a royalty paid on sales, are the only outgoings reliably attributable to individual titles. The bulk of the overhead so very hard to allocate, being to do with editing, warehouse storage and handling, distributing, marketing and selling, the cost of the computer people, the accountants and so on. You know that a slow selling monograph, which may have to be picked from store individually, costs more to distribute, say, than a fast moving school textbook. You may also know, however, that the monograph came in as camera ready copy, whereas the school textbook took up many hours of market research and editorial development. So you try to get some clearer idea of attributable cost by assessing these factors, although the point soon comes, in many cases, when the marginal cost of trying to do so effectively – getting editors to fill in time sheets and so on – looks like outweighing any resultant benefit.

Broadly speaking, therefore, except where large investments are concerned, you try to make sure that the receipts to be obtained from the sale of the book are at least enough to meet the low attributable costs plus an amount, which may vary between categories, sufficient to make an adequate contribution to overheads. Only in some cases, however, does this mean thinking in terms of a single price – output combination, of one point, that is on an estimated demand curve. Generally, you make the most of the monopoly you have in the title by price discrimination and other devices.

You may, for example, first bring out a hardback to cream the market and then have a paperback a year later. The difference in price between these two editions has little to do with differences in cost, which are not great. One may also try to charge different prices in different markets, although limits to this are set by the possibility of so called « buying round », by the ability, say, of a Harvard professor to buy directly from Blackwell's bookshop in Oxford. It may be more profitable to sell sheets for binding up in foreign markets or to sell rights – that is to permit a foreign publisher himself to bring out the book in his own market on payment of a lump sum, or, more usually a royalty, with precise specification as to where his edition can be sold. And of course you can sell translation rights for foreign language editions.

Deals of this kind are sometimes reached after the books have been published, but where, say, expensive art books or childrens' picture books are concerned, they may have to be fixed up in advance before the investment risk is taken. It would be tedious to mention all the ways in which profits can be squeezed from a title, but they are many. In my day, for example, we arranged to have one of our older popular dictionaries to be sold cheap by Marks and Spencers under the title « The St Michael's Dictionary », estimating that it would not compete much with our other bookshop dictionary sales. The posssibility of these various kinds of price discrimination is important in publishing, and without them many titles would never see the light of day.

My time as Chief Executive was not much spent on individual publishing decisions which, given that there were thousands of titles, had to be taken lower down. If the investment was large, I did however become involved and we did go through the kind of appraisal that the book on business studies recommends. But it often came down to judgement rather than calculation.

The decision to put the great multi-volume Oxford English Dictionary on CD Rom disk was of this kind. The costs were very high and their recovery were not possible from the sales expected. Yet the case for going ahead seemed to me very strong. The best hope of keeping the dictionary up to date at an affordable cost was to have it in machine readable form. Although computerisation enabled us to publish a new hard copy edition, it seemed to me that this would be the last such, as the electronic edition offered enormously superior forms of access. Given that we were in business to serve scholarship, this consideration had to be given great weight. I was also sure that, although the printed book had still a long life ahead of it, reference works, of which we published many, as well as large textbooks, would probably, sooner or later, be sold in electronic form. If we did not gain experience in this field, a large part of our business would therefore slip away from us. So we took the plunge. In matters of this kind, timing is of the essence; one should not leave it too late, but if one comes in long before the market is ready, a good deal of money can be squandered.

The kind of investment decisions that get taken at Chief Executive level tend to be those where formal decision theory does not take one very far. The important bit is deciding what one should be thinking about, not the process of formal reasoning. Of course you collect relevant information, and you discuss it a great deal, but, whether it be a consortium deciding whether to build a Channel Tunnel, or little OUP deciding whether to enter electronic publishing, judgement, guesswork, and animal spirits play a major part.

So much for pricing and investment decisions; let me now turn to the matters which took up most of my time and from which our theory of the firm abstracts. They relate, on the one hand, to the external relations of the firm, and, on the other, to its internal organisation.

When I talk of the firm's external relations I wish to refer to its position in the complex pattern of transactions, association and affiliation which I described in an article I published in 1972, just before I gave up economics. I said there that market economies worked not merely through pure market transactions, but by virtue of cooperation, taking place within a network of inter-firm relationships which, at that time, although perhaps not now, economists tended to neglect. This neglect was connected, I think, with the habit of treating firms as making products, rather than undertaking activities which could be combined within firms or distributed among them in many different ways.

All this proved highly relevant to publishing. I may have given the impression that book publishers all do the same thing, differences in titles apart. This is very far from the case. When I joined OUP, for example, we had our own printing business and our own paper mill. I am told that we had earlier made our own ink. I sold off the paper mill and reduced the printing from a work force of over a thousand to just two hundred. It has now all but been eliminated.

Let me explain why we did these things. When I joined, OUP's publishing side bought only 8 % of the paper produced by our mill at Wolvercote. The mill had a single large machine which could switched from producing one kind of paper to another only at the cost of a good deal of down-time. As our publishing required a variety of papers, it did not therefore make sense to produce them all ourselves. Our printing business was therefore allowed to buy paper where it liked – subject to some arm twisting when our mill was very short of work – it being encouraged to sell the bulk of its output where it could.

All this worked very badly and helped to give me premature grey hair. I knew that the mill would be much safer as part of a larger paper making group, with an extensive marketing organisation and owned by people who knew something about the trade, and I knew that the Press would be better without it. To use the terminology of my 1972 article, the activity of paper making is *complementary* to the activity of book production and has to be coordinated with it, but it does not make sense, nowadays at any rate, to do this by consolidation in one enterprise. This is so for two reasons. First, the activities, though complementary, are not *similar* in the special sense that the *capabilities* (that is the knowledge, experience and skills) of the organisations undertaking are different. Secondly, the *economies of scale* associated with making particular types of paper are large enough to make it uneconomic for a publishing business, which needs a variety of papers, to manufacture them itself.

It was more difficult to give up printing. The work was in the same building as our publishing staff, and, of course, as the name indicates, the « Press » had started with printing, so that its abandonment represented a great break with tradition. But, as in the case of the paper mill, the demands from the publishing side were for a variety of printing greater than one plant could economically supply. Very small monograph runs, very large dictionary runs, colour work, examination papers… all these called naturally for specialised facilities all of which our own business could not expect to have.

The case for running down our printing business was therefore strong, quite apart from the existence of certain internal weaknesses and the easy availability of cheap setting in India and printing in Hong Kong. I have to admit, however, that whereas I had decided at an earlier stage that the paper mill had to go, I did try to make the printing profitable, perhaps mistakenly, and I failed.

OUP was, I suppose, the most vertically integrated book publishing business in Britain, as well as one of the largest. At the other end of the spectrum could be found people who published from their living rooms, putting out all functions save commissioning. They scarcely needed capital, if those responsible for the distribution were content with a percentage of sales value and the printer was prepared to wait for payment until books had been sold. All the so-called publisher had to do was to get authors to write saleable books for him.

As well as being multi-products, therefore, in the sense that they have a list of more than one title, publishing firms are also multi-activities, there being great variation in the range of activities they can choose to undertake. I could refer here to degree of vertical integration, but activities cannot all be ranked in the kind of order that it implies. Commissioning, copy editing, design, so called production (the preparation of books for printing and dealing with printers), warehousing, order servicing and distribution, marketing, sales, the provision of information services, these are some of the activities which publishing businesses may either undertake themselves or pay others to undertake. And there can be further sub-divisions; a firm will typically undertake its own marketing in some countries, for example, while deciding, in others, to rely on agents.

Given then that publishing businesses can be so various, in terms of the activities they undertake, it does not make sense to talk about an optimum size for them. And there is no reason to believe that because particular activities come to show increasing returns to scale, firms will therefore necessarily become larger. I remember as an undergraduate being made to worry on this score; the fact that manufacturing firms had falling unit cost curves raised the spectre of one firm coming in time to take over each industry, an ineluctible process bound ultimately, according to Professor Sraffa, to spell doom for the competitive market economy. Refuge was sought in administrative diseconomies of scale, or in the aging process that brought down the trees in Marshall's forest, but there was no real conviction that these factors could save the situation.

As so often of course, the problem was created by our conceptual apparatus, which did not make sufficient allowance for the fact that the development of scale economies, which are associated with activities, leads to changes in industrial structure. At no time would printers, for example, think of getting bigger just to exploit the scale economies inherent in making ink; they naturally chose to stop making it and buy in. Marshall saw the importance of industrial morphology and so of course did Adam Smith, but somehow by the time I was being taught economics of the profession had sometimes become blinded by its own schematisations. I should have been made to read Smith rather than Sraffa; when Smith said that the division of labour was limited by the scale of the market, he was thinking in terms of a continuous process accompanied by a constant separating out and re-grouping of the activities that firms undertake.

Paradoxically, the exploitation of scale economies may be greater when there are small firms, each concentrating on a few activities only, than when there are large firms, each undertaking a great many. OUP, for a variety of reasons, had in fact become a large firm of this kind. I have explained the inheritance of printing and of a paper mill. Furthermore, the natural desire of the Delegates that the University's Press should be prepared to publish any good scholarly work irrespective of its discipline, together with the loose rein maintained on editorial initiative, led OUP to publish in almost every field save modern fiction, so that, although a large publisher overall, it was and is small relative to more specialised competitors in many particular categories.

The issue constantly arose, indeed, as to whether to do something ourselves, or get others, apparently better placed, to do it for us. Take, for example, a large medical textbook published by us in the UK, for which there was a potential U.S. sale. One option was to have the book marketed by our own American business in New York. Another was to identify a large American medical publisher specialising in works of this kind, who would market it on our behalf. If we went the former way, it was alleged by the Oxford editors that our US marketing staff failed to have as much specialised experience, with example, as good specialised mailing lists as had the large American medical publisher. If we went the latter way, we seemed ostensibly to lack faith in our own US business and would certainly be depriving it of turnover. And so on. I therefore spent much time uncomfortably on the horns of this dilemma, pushed and pulled in different directions by people, who, seeing things from only their own angle, were sure what to do.

Publishers, in all manners of ways, live by taking in each others' washing. They take in books from publishers in other countries in order to sell them in their own; they acquire licenses to publish other firms' books in agreed territories or in particular forms – say in paperback rather than hardback; even within the country in which they are established they may pay a specialised firm to warehouse and distribute their books or get another publishing business to do it for them. Of course it is the smaller firms that rely most on obtaining services from others, but large firms may do so also.

At one time, for example, we considered in OUP whether Collins might take over the warehousing of our books; our Neasden warehouse was old and inefficient, the Glasgow warehouse of Collins was too big for their own needs. The possibility was very seriously considered, even although we were probably the two largest publishers in Britain and, in some areas, such as dictionaries, in « head on » competition. I shall not give the reasons, which you can probably guess, why the deal was not made; my point is this context is that firms may at the same time both cooperate and compete with each other. Blackwell's for example, competed with OUP in publishing, traded with it as a retailer and cooperated with it through joint ownership of bookshops.

One constantly hears of the need for managers to be competitive, even aggressively so, but much less about the need for them to be able to cooperate effectively, chiefly of course within their own firm, but also in its relations with others. But successful business, as it is almost too obvious to note, depends on having people that can be trusted and who can be identified with the interests of a group and not just their own. I read, some time ago, how Robert Frank had shown that students of economics were more likely than were students in other areas to be defectors rather than cooperators in games based on the Prisoner' Dilemma; whether they had this inclination through the effect of economics, or had taken up the subject because of it, was not stated. It might in any case do no harm if we said more about how cooperative as well as competitive dispositions help make the economic world go round.

I have probably said enough about the external relationship of firms. Their variety and importance had come to my attention before I knew anything about publishing, and prompted me to write the 1972 article. My experience in OUP confirmed my belief in what I said then. I became Chief Executive, however, knowing nothing about the *internal* organisation of firms and my experience led me to see that the reference I made to that subject in the article was misleading.

I was sometimes careless enough, when first teaching our subject, to say that firms were islands of central planning, within a sea of arm's-length market transactions. I later learned, for all the reasons that I have just given, that I was wrong about the sea. I learned only later that I was wrong about the islands. In the 1972 article, I said that complementary activities could be coordinated by pure market transactions, or by cooperation or, after consolidation in one enterprise, by central direction. While accepting that it was impossible somehow to centralise information so as to run an economy by central planning, I unthinkingly held to the view that such centralisation was fully possible within a firm, so that direction was, in that context, the way in which coordination would always be achieved. I failed to appreciate what a difference it made on the island when Robinson Crusoe was joined by Man Friday. I failed to appreciate that, when more than one person becomes involved, efficient resource allocation is no longer just a question of the logic of choice but a question of social organisation. I unconsciously clung to our so-called theory of the firm, which postulates a single decision taker.

The staff of OUP, when I joined it, was some 3000 strong. (It is now more numerous). They were of course all, in a sense, under central authority; they were under the authority of the Chief Executive who in turn was under the authority of the Delegates representing the University. The job of the Chief Executive was so to try to establish their delegated authorities, their goals, the rules they had to follow and their relationships with each other, and so to influence attitudes and atmosphere that the interaction of their activities would result in an efficient use of resources and the maximisation of profits.

A firm is a bundle of activities that have to be coordinated. Central direction is one way of doing this; when OUP decided to build a new distribution centre at Corby, a careful plan had to be made prescribing who would do what, when, and much the same will be necessary in constructing a power station or a ship. Moreover, some decisions were so important for OUP as a whole, that they had to be taken at the centre; whether to give up printing, whether to computerise the OED, whether to change the management in New York, these were decisions of this kind. Scrutiny of new book proposals was undertaken at fairly high levels, and, in the case of UK academic books, by the Delegates sitting in Oxford's seventeeth century Clarendon Building.

We had also a system of budgetting to try to ensure that the number of new titles we planned to publish, which in my time amounted to about a thousand a year, together with back list sales, would generate sales sufficient to cover all our costs and provide a profit. But, despite central control of this kind, we were dependent essentially on a large number of often risky investment decisions taken by a fairly large number of people to whom the responsibility had been delegated, people who were expected to be enterprising and creative and not just to do what they were told.

I have not the time now to present, nor you the patience to read or listen to, an adequate account of how organisation and rules have to be developed in the endeavour to ensure that all this decentralised decision-taking promotes the maximisation of group profits. But I should like to make, and then develop, one point.

What I learned at OUP, and had not before fully appreciated, was the extent to which the internal organisation of a firm is a *microeconomic* system similar to the *macroeconomic* system within which the firm operates. The coordination of activities within a firm is achieved, in other words, in some ways similar to those in which coordination of activities is achieved *among* firms. The task of a top management is indeed to set up within a firm an economic system in which not only some central direction, but also both market transactions, of a kind, and cooperation, of a kind, can be effective. I am referring, of course, to my experience in one industry, publishing, in which the scope for central direction is less than in many, perhaps most, others. In the chemical industry, or the heavy electrical industry, it is certainly greater, but, in general, de-centralised decision – taking always has some role to play.

The microeconomic system, if I may so call the firm's internal organisation, is similar to the macroeconomic system, if I may so call the system within which it operates, but is of course not the same. Microeconomic systems are the product of conscious design, albeit influenced also by evolution, whereas macroeconomic systems are not.

The design of an economic microsystem involves introducing a system of internal prices. In our standard theory of the firm, the single decision taker is faced with only market prices for inputs and outputs. But within real life firms, there are decision takers not faced by these real prices but who have to be led to take decisions which promote profit maximisation. The goods and services supplied within the firm have therefore somehow to be priced so that decision takers, in choosing which of them to use, and how much, will be aware of the cost incurred. Internal transactions, in other words, have to be carried out in accord with signals that reflect cost. Some titles, as I mentioned earlier, cost more to distribute than do others and editors must work under instructions that cause them to take account of this fact. Where prices do not exist, they have to be invented, or instructions must be given which have the same effect, an example being the rule that, on the sales of a title, editors must normally seek a specified gross profit margin judged sufficient to recover the relevant overhead expenses.

It is striking how closely, at least in OUP, our microsystem design came to model what the classical economists would have called the natural order. OUP's many branches and jointly – owned companies throughout the world operated as distinct profit centres, in accordance with rules which, it was hoped, would cause group profits to be maximised if each of the centres sought to maximise its own. These centres were the microsystem's equivalent to firms, and they were linked by the approximate equivalent of the market transactions which coordinate activities in the macrosystem.

In certain circumstances, the equivalence was very close. As I mentioned earlier, the Oxford publishing divisions were free to give work to, or withhold work from, our own printing division, which was itself free to accept or refuse it. In other circumstances the equivalence was imperfect. The publishing divisions in Oxford, for example, sold books to our businesses in New York or Melbourne for onward resale – and vice versa. But such inter-branch trading was subject to constraints. The parties were *obliged* to buy and sell from each other, as they would not have been in transactions with outside parties. OUP Australia could not have said, for example, that they wished to switch from selling Oxford dictionaries to those produced by Collins. The prices at which trading took place were not established, as in the printing case, in a competitive market, but either settled by bilateral bargaining or determined by rules set by group management. In any case, intra-firm trading, albeit more restricted than inter-firm trading, was one of the ways in which activities were coordinated within OUP.

Cooperation represented another way, the job of the Chief Executive in this context being to construct an organisation that will promote the patterns of cooperation required. Perhaps I can explain this best by giving an account, not of how OUP got it right, but of how OUP got it wrong. Before I became Chief Executive, but while I was a Delegate, there was great concern about the very inadequate level of profits being earned by OUP, and an outside member of its Finance Committee managed to persuade the Vice Chancellor and Delegates to bring in consultants to recommend changes.

The new structure which they proposed, and which the management accepted, was, for the UK operation, something like this. There were to be three so-called Publishing Divisions, which were to be provided with services by a UK Publishing Services Division, such services including warehousing, order servicing, marketing, sales, design and so-called production, which meant arranging for books to be printed.

I became Chief Executive before this new structure was in place but after it had been decided upon. My job therefore was to sell it to the troops and I recall haranguing staff in London and Oxford as to its advantages. They were of course the advantages of scale and specialisation. Instead of each publishing division looking after their own marketing, production and design, these functions would be undertaken by specialists within the services division. The new large production department, for example, would be able to get better terms from printers by having more work to put out. Hitherto one small production or design department could be over-stretched while another had excess capacity, but by the total demands on a combined production department would be more stable. Within the large production department, there could be further specialisation, some people concentrating on paperbacks, someone on jacket design and so on. These were the kinds of advantages I promised.

What had been recommended by the consultants, and accepted by OUP management, was duly put into effect. And it worked very badly. Why was this so? Essentially because, in some cases, effective coordination between editing books, their design, production and marketing requires continuous, trusting cooperation between those undertaking these activities, and the possibility of arbitration between them in the case of disagreement. In the organisation we had set up, an editor within a Publishing Division could have his book designed or marketed by someone in the Services Division, whom he did not naturally see as a colleague and who was working in a quite different part of the building; more importantly, were the editor to be dissatisfied with the design or the marketing, he could appeal only by taking the matter to his own superior, who could take it up with a more senior person in the Services Division. If disagreement then still persisted, the issue could be decided only by taking it right up to the Chief Executive, to whom the heads of the Publishing and Services Divisions reported.

As the business could not be run effectively in this manner, much of the new organisation came to be scrapped. Each Publishing Division, and indeed sometimes particular groupings within them – science and medicine, school books, journals and so on – got their own production and design people and to some extent their own marketing people. Whatever scale economies existed in the old structure were sacrificed in order to get the ease of communication, the option of rapid arbitration and the sense of common loyalty that comes with a smaller group. Each Publishing Division, however, could not be given its own warehousing; here scale economies were great enough to dominate other considerations, so that this service remained centralised.

In determining a satisfactory arrangement of activities within a firm or a satisfactory distribution activities between firms, the same considerations have to be borne in mind. I discussed earlier the circumstances that influence the decision whether or not a firm undertakes an activity in-house. If the activity *is* undertaken, the same circumstances influence the decision whether, and to what extent, it should be decentralised within the firm. On the one hand, there are the economies of scale and specialisation, on the other the advantage for effective cooperation of short lines of communication, of the development of team loyalty and of rapid arbitration where needed.

The balance is not always easy to strike and changing circumstances may call for its readjustment. During my time at the Press, for example, printing seemed best bought in, distribution done in-house, but centralised in each country, marketing, production and design done in-house but decentralised in each branch down to the level of broad publishing categories – monographs, English

Language Teaching books, school books, music and so on. In previous periods the balance may well have been different and it may indeed be different today. One tends to be conscious, moreover, of the disadvantages of the status quo. I was frequently pressed, for example, to appoint a group marketing director, but although this might have offered some advantages, I thought it would deprive us of others associated with our decentralised marketing responsibility. Some argued that we could somehow get the best of both worlds, and have both a group marketing director and maintain the decentralisation of the function, but I judged, rightly or wrongly, that this would make it too difficult to know, what it seemed to me important to know, namely, who was in charge.

Business is sometimes like war, of which Clausewitz said it was often easy to see what to do, but very hard to do it. And what I am presenting to you as a mere problem of organisational theory, presented itself to me also as a power struggle between men eager to defend or extent their territories. Understanding the principles is a necessary, and sometimes difficult beginning, but, for a Chief Executive, the hard work is in their application.

In conclusion, therefore, what can an economist learn from managing a business? And, more particularly, how relevant to his subject is what he learns? You may have thought, as you listened to me, that I came to talk less and less about economics and more about the organisational questions we should leave to business schools. But should we, as economists, so to limit our subject as to leave these questions out of account?

I have no doubt that the pure logic of choice, the principles of rational allocation, decision theory, if you will, can be directly useful in business, but, in relation to the issues discussed in the latter part of my paper, it hardly helps at all.

It seems to me that the neo-classical economists took a false turning when they thought that they could somehow develop the pure logic of choice to provide a model of economic organisation. The need for organisation arises because each individual sees only a small part of the picture, and that darkly, and because of the problems of coordination created by the division of labour; it arises, that is, because of the existence of circumstances with which Smith and Marshall were very familiar but which Walras assumed away. Perhaps that is why Keynes, in a letter written in 1934 to Hicks (of all people!) expressed the view that « Walras's theory and all others along those lines are little better than nonsense ».

This much I know; models of the economic system based on assumptions about perfect knowledge, whatever that means (if anything) make no sense. It is precisely because knowledge is fragmented and imperfect that we require economic systems to further the efficient use of resources, and there can therefore be no merit in model systems that postulate the absence of these very conditions. My experience in business led me to understand how firms, as well as being part of economic systems, are economic systems in themselves, both kinds of system being proper objects for our study.