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T I T L E P A G E

"STRATEGIC PLANNING IN A DECENTRALISED INDUSTRIAL
GROUP : A PROCESS-ACTION STUDY".

Thesis submitted for the Degree of
DOCTOR OF PHILOSOPHY

by

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A B S T R A C T

The research was carried out within a major public company. It sought to implement an approach to strategic planning which accounted for organisational values as well as employing a holistic value-free analysis of the firm and its environment.

To this end, an 'ecological' model of the firm was formulated. A series of value-free strategic policies for its development were generated. These policies were validated by the company's top-management. They compared favourably with their own planning outcomes. The approach appeared to be diagnostically strong but lacked sufficient depth in the context of finding realistic corrective measures. However, feedback from the company showed it to be a useful complementary process to conventional procedures, in providing an explicitly different perspective.

The research empirically evaluated the company's value-systems and their influence on strategy. It introduced the idea of an organisational 'self-concept' pre-determining the acceptability of various strategies. The values and the 'self-concept' of the company were identified and validated. They appeared to have considerable influence on strategy. In addition, the company's planning process within the decentralised structure was shown to be sub-optimal. This resulted from the variety of value-systems maintained by different parts of the organisation. Proposals attempting to redress this situation were offered and several accepted.

The study was postured as process-action research and the chosen perspective could be succinctly described as a 'worm's-eye view', akin to that of many real planners operating at some distance from the decision-making body. In this way, the normal strategic functionings of the firm and any changes resulting from the researcher's intervention were observed and recorded. Recurrent difficulties of the planning process resulting from the decentralised structure were identified. The overall procedure suggested as a result of the research aimed to increase the viability of planning and the efficiency of the process. It is considered to be flexible enough to be applicable in a broader context.

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P R E F A C E

There are so many to thank. There is so little space in which to do justice to my feelings of gratitude. Nevertheless, within the University, I owe a very substantial debt to my IHD and Main Supervisor Dr. D.J. van Rest who has constantly motivated me and has provided guidance throughout the fairly intensive research programme. Sincere thanks must also be offered to my Associate Supervisor Mr. S.A. Gregory who has never ceased to stimulate and coax me throughout. Additionally, Professor S.L. Cook has given me much valuable advice; Professor W.O. Alexander and Professor E. Davis both helped with aspects of the project; and Professor J. Child has provided useful comment about the research. All must be thanked most deeply.

Within Delta, I owe a very great debt to my Industrial Supervisor and Main Board Director, Mr. R.G. Purnell who has never ceased to help in the production of this thesis and who has given me so much of his valuable time. My most sincere thanks must also go to Lord Caldecote, the Group Chairman, without whose help and generosity none of this would have been possible; to Mr. A. Constant who originally set up the project; Mr. K.R. Harding for giving me so much of his valuable time; and indeed all the remaining Executive Main Board Directors and Divisional Chairmen who have so generously participated in the research and who showed so much genuine interest in the project. In addition, special thanks must go to Mr. W.J. Turley, Mr. R.A. Ryder and the Market Research Department who have afforded me so much assistance, even at the busiest times.

Finally, on the production side, sincere thanks must go to L.W. who typed the manuscript so quickly and professionally, and to H.L. for the many hours spent proof-reading and correcting. Countless others have also contributed and I should like to thank them all as well. One can only hope that the thesis does at least some justice to all who have made it a reality.

R.A.E. January 1974

"Though there be many paths
About the foot of the Mountain;
Yet, when the top is reached,
It is the same Moon that is seen."

Japanese Proverb

I N T R O D U C T I O N

Tribute must be paid to the company. Allowing research to be carried out in such a critical area is, without doubt, a significant innovation. This thesis outlines the experiences of one specific project which was carried out within one unique organisation. Therefore 'generalisations' must be accepted in such a context. Nevertheless, the findings are, it is asserted, 'real' ones and it is hoped that they will contribute to the general body of strategic planning knowledge.

From the outset a recurrent theme in the research was that "validity is workability". Unless theoretical constructs or normative procedures can contribute in the real world, they are not entirely valid. The literature is full of detailed and comprehensive approaches to strategy formulation. It is also full of records of failure in practical application. Hence, it seems that although these approaches have satisfied almost all the relevant theoretical considerations, they are being significantly inhibited in practice.

In essence, the research itself was formed of a trichotomy of areas. The first was an attempt to effect a holistic and value-free analysis of the strategic posture of the firm by means of an 'ecological' model; and to generate a series of policies for the strategic development of the firm. This was done and the approach compared favourably with the company's own strategic planning processes. The second area concerned itself with the problems of value-influenced strategic decisions. A considerable amount of research was directed towards identifying and empirically evaluating those value-structures which influenced strategy. A suitable methodology was proposed and implemented.

The research also introduced the idea of some organisational 'self-concept' which pre-determined the acceptability of strategies. It was considered important to explicitly accommodate the 'self-concept' within the planning process; rather than purposefully ignore it. The third major area involved the overall posture for the study. This was 'process-action' research; so called because so much stress is now laid on 'planned change' in conventional action-research. Thus the researcher, in this case, was neither a participant observer nor any explicit change-agent. Instead, perhaps, he was some mix of the two for both normal processes and induced changes were observed and then recorded. There was, however, no fundamental desire to effect change.

Within the thesis itself, Chapter I sets out the background to the research and describes the company, its evolution, and its present structure and product-mix. Chapter II is a review of the relevant literature. It is relatively comprehensive and therefore parts may be by-passed by means of Figure (5) for selective reading. However, it was considered that strategic planning bibliographies are, as yet, rare and thus the review might serve a useful purpose. Chapter III gives an account of the research hypothesis and overall methodology. It discusses the reasons for the choice and illuminates the objectives. Chapter IV is a tight summary of the first major research phase - the 'ecological' methodology of strategy formulation. In fact this area consumed a considerable proportion of the research effort and for greater detail Appendix (A) - which is the original summary report which was prepared for the company - should be consulted. The chapter outlines the theoretical background of the approach, proposes a method for value-free strategy formulation and offers a review of the outcomes.

Chapter V gives an account of the action-observation of this first phase of research. It demonstrates the most interesting instances of the researcher interacting with the company, and draws inferences. Chapter VI presents an examination of the company's planning approach and an analysis of data collected during a series of in-depth interviews with the company's top-management. Subsequently, the shortcomings of the

process and the inconsistencies within company objectives are illuminated and corrective proposals made. Chapter VII provides an account of the action-observation relating to the second major research phase. It outlines an anatomy of the company's value-structures and strategic decision-making.

Chapter VIII introduces the idea of the organisational self-concept. It offers a methodology for its assessment and profiles the self-concept held by the top-management of the company. Chapter IX then attempts to validate this construct. It subjects the 'value free' policies generated by the 'ecological' model to a selection procedure which incorporates the self-concept. Chapter X provides an assessment of the total process-action study. It outlines a chronology of its development and proposes some guidelines for the type of research, as drawn from this specific project.

Chapter XI sets out an overall evaluation of the procedures implied by the research hypothesis. And, finally, Chapter XII aims to draw the salient conclusions of the study and examines the broader implications of the research. A series of possible areas for further study is also proposed.

It is also reasonable to record that the study does not accurately incorporate any information which is confidential. The data upon which the conclusions were based is of 1970 vintage; and the conclusions themselves are not necessarily in agreement with the company's views. Where data was deemed to be sensitive, it has been either disguised or replaced by hypothetical information.

C H A P T E R I

Contents

Background to the problem - historical development of Delta - changes in profitability - product-mix and structure - present organisation and function.

Abstract

The chapter outlines the development of the company together with its difficulties and the subsequent need for planning. It sets out the background against which the research was carried out and outlines the reasons for its instigation.

CHAPTER I: BACKGROUND TO THE PROBLEM

(I) Introduction

1.1 This chapter traces the evolution of the Delta Metal Company from its original foundation to the present form and structure. It also outlines the circumstances which led the Group to adopt a formalised strategic planning process and describes the broad characteristics of that process, together with the present functionings of the company. In essence the chapter seeks to set out the background conditions against which this research was carried out.

(II) The Historical Evolution of Delta

1.2 The Delta Metal Company was founded in 1883, largely as a result of the invention of the brass extrusion process. In the U.K. the Group remains the largest single manufacturer of brass-rod, and is also a major force in the non-ferrous industry of Western Europe.

1.3 Delta gradually expanded its brass-rod production until, in 1955, the company had net assets of some £5m and annual profits of around £1m. The very profitable nature of the business, in its formative years, can be attributed to the 'sellers market' conditions ruling at that time and subsequently to the maintenance of relatively high profit margins.

1.4 It was largely the potential threat to these margins which provided the stimulus to the company for growth into new but related areas. Between the years 1955 - 1962 a period of rapid expansion took place when Delta bought (mostly by paper acquisition) many of its customers and thus extended its product-mix vertically to include

brass-founders, hot stampers and forgers, and turned parts manufacturers. During this phase of expansion, there was also a limited degree of horizontal integration, where other non-ferrous activities such as the manufacture of brass strip, copper tubes, brass tubes, (subsequently sold off to Yorkshire Imperial Metals - now part of IMI) and aluminium fabricating were acquired. Thus by 1962 the Delta Metal Group had assets of some £24.5m and was generating an annual profit of approximately £4.4m. This phase of growth, from 1955 to 1962, could be regarded as the first significant metamorphosis*, and the predominant strategic posture appeared to be one of buying end-users of brass-rod.

1.5 During 1963, Delta underwent its second major metamorphosis as a result of the merger with Enfield Rolling Mills Ltd - (providing the origins for the present ERM and Cables Divisions). The motives for this merger are to some extent unclear, but the potential of synergy was obviously one, and the need to have a company large enough to compete with the growing ICI Metals Division (now IMI) may have provided the other. Enfield produced rolled and cast non-ferrous metals - (mostly using copper)-and also manufactured a variety of cable; thus there was a marked horizontal integration. At any rate the merger doubled Delta's assets and pushed the annual profit up to around £7m.

1.6 A year later the cables manufacturing activities of the Group were further strengthened by the acquisition of Johnson & Phillips Cables Ltd. This was a logical step for Delta but it was soon overshadowed by a severe slump in the market for cables due to an over-capacity and a low level of demand. At the same time, the Group was administered by having two 'wings'; one for copper products and one for brass.

* 'metamorphosis' is used here in a notional sense but has been more specifically defined by Starbuck - see Starbuck W.H. "Organisational Metamorphosis" in Millman R.W. and Hottenstein M.P. (eds) Promising Research Directions Academy of Management 1968.

1.7 In 1968 a Divisionalised structure evolved and this is maintained today. Accompanying this change was a series of rationalisations which tended to concentrate the original scatter of fairly small individual companies into larger and more viable ones. Delta also sold off several (mostly peripheral) activities, the most notable of which was its aluminium interests.

1.8 Three years later, in 1971, Delta made a large scale acquisition in Midland Electric Manufacturing Ltd., a company engaged in the manufacture of low voltage electrical switchgear, control gear, fusegear, and domestic electricals. This company, together with several others acquired recently, became the nucleus for a new Electricals Division and was part, perhaps, of Delta's third distinct metamorphosis.

(III) Changes in Profitability

1.9 Over the years 1955 - 1967, when the rate of growth of Delta was most marked, there were also some very significant changes in profitability. Figure (1) outlines these changes and also provides indication of growth. It seems clear that the years 1955 - 1962, during Delta's first metamorphosis (when it changed from being exclusively a brass-rod manufacturer to an integrated group of companies) were fairly successful ones. Profitability was good, the share prices reflected the Stock Exchange's interest in Delta, and acquisitional growth was thus facilitated.

1.10 However, after the merger with Enfield, the return on capital employed began to drop fairly sharply. Much of this drop can be attributed to the fact that Delta had installed several new pieces of capital equipment, and thus both depreciation charges and capital employed were significantly increased. In addition to this, the Group's product-mix was sensitive to the economic cycle and this was almost in recession. The next peak of the cycle

DELTA METAL GROUP: GROWTH AND PROFITABILITY 1955-73

(Source: Delta Annual Accounts)

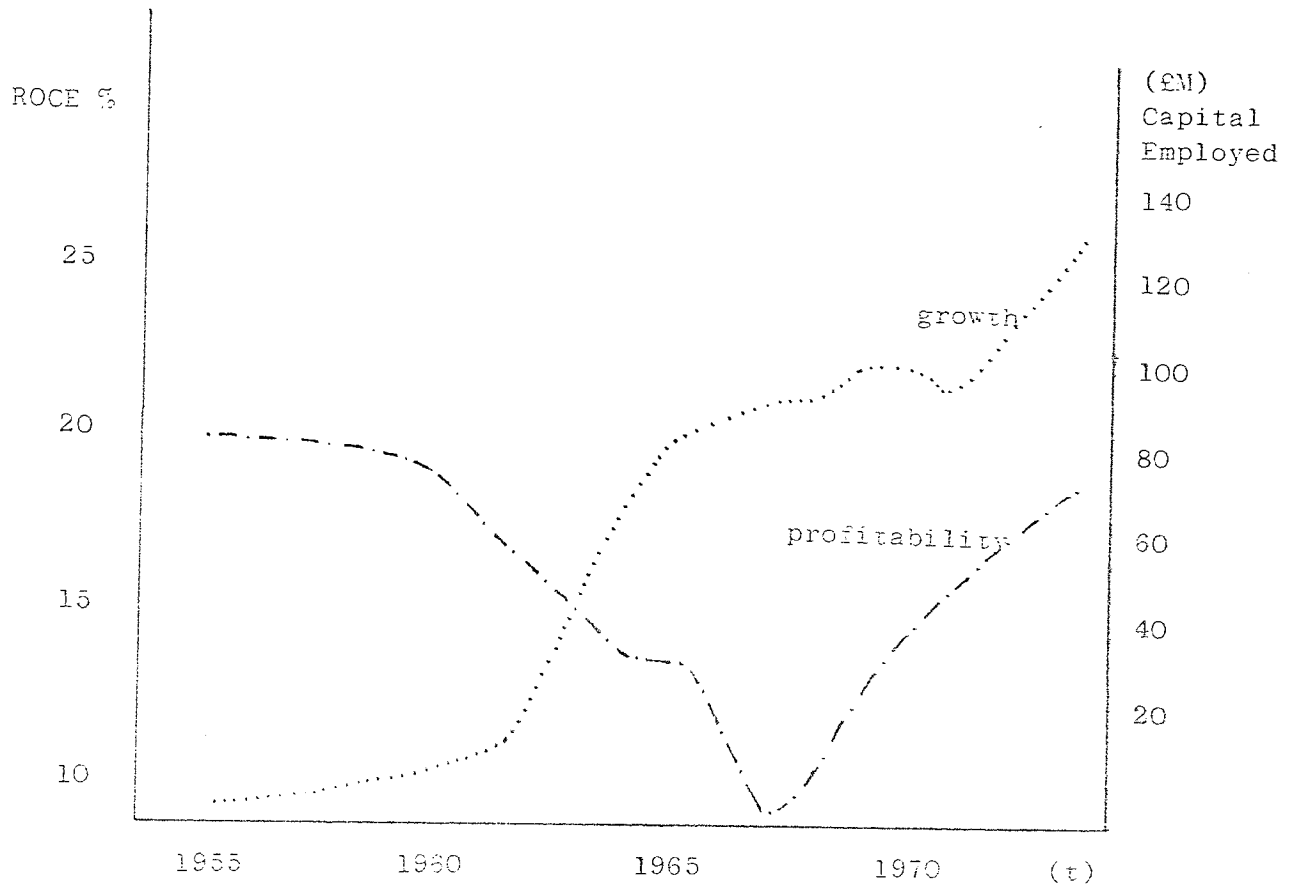


FIGURE (1)

(in 1964) provided Delta with enough activity to temporarily halt the decline in profitability but this was to some extent off-set by the subsequent poor conditions in the market for cables. At any rate the following slump in 1967 pushed the return on capital down to 9.0% because of the drop in throughput coupled with a need, at the time, to write off certain exceptional expenditures.

1.11 Whatever the reasons for the 1967 slump in Delta's profits, the 'City' tended to lose faith, and indeed the memories of Delta's "hiccup" seem to remain vivid to this day. Figure (2) shows the movement of the average prices for Delta shares on the London Stock Exchange (in both 'real' and 'nominal' values) together with the Group's trend in earnings per share. It is immediately apparent that the Enfield merger may have caused some dilution of earnings and that, after a rally in 1964/65, earnings per share slumped fairly drastically to a 'low' of 3.6 pence per share in 1967. Dividends remained unchanged during the time but the cover was obviously thin. (i.e. the retentions declined severely). The price of Delta's shares tended to reflect this lack of confidence for they also dropped sharply in 1967, and on a deflated basis have indeed only recently recovered to pre-1963 values, (although there has been a substantial fall since then.)

(IV) The Need for Planning

1.12 All these factors cumulatively made the Group's position in 1967 vulnerable. The vast proportion of assets were employed in non-ferrous semi-manufactures where demand is still markedly cyclical. Delta's cables interests were also suffering. As a result of this, a period of rationalisation began in 1968. Many of Delta's companies were small units lacking the economies of scale. Thus a strategy of concentration was successfully embarked on. As well as this,

DELTA METAL GROUP: GROWTH AND PROFITABILITY 1955-73

(Source: Delta Annual Accounts)

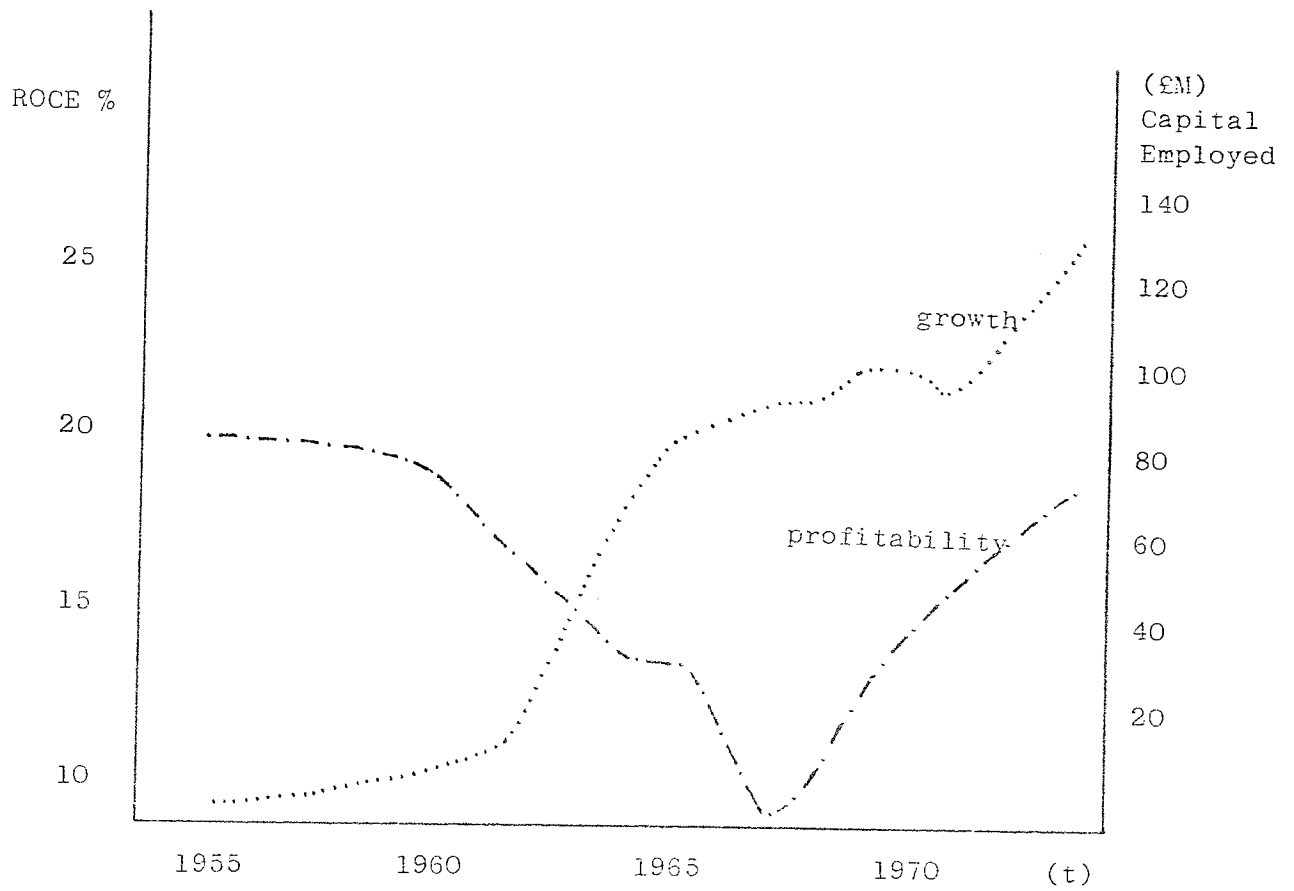


FIGURE (1)

a series of peripheral assets were 'pruned' and sold off in order to relieve the Group's poor liquidity position, and to promote a more cohesive operating unit.

1.13 The result of these activities was a significant increase in earnings per share and return on capital employed. The trend of recovery has not faltered and the Group is now once again an efficient economic unit. However, in a sense, this recovery left Delta at something of a 'cross-roads'. In order to maintain its growth in earnings following rationalisation a comprehensive corporate strategy was required. Thus in 1970 Delta set up its Group Planning Committee, a body of mostly central staff members, including the Group Chairman, the Deputy-Chairman, and several Main Board Directors. The function of this committee is to assess and advise upon strategic proposals generated by the Divisions. Their recommendations are passed to the Main Board for the final decision. All the members of the Group Planning Committee are also 'part-timers' as each has a main function in other areas. The broad policy formulation which was made in 1970, was that Delta should reduce its dependence on semi-manufactures because of the cyclical nature of the business, and that it should grow into areas where there was higher-value added output. Thus a philosophy of selling manpower skill and expertise against the bulk turnover of semi-processed material was decided upon.

1.14 One successful concrete result of this policy is the present Electricals Division. But permission was granted for this research because the Group Planning Committee considered that there might be some value in a completely detached analysis of the strategic posture of the Group. And it was considered that the interaction of ideas - as the Group Chairman put it - .."untainted by experience".. together with that experience itself, might prove to be constructive.

(V) Structure of the U.K. Non-Ferrous Industry

1.15 The non-ferrous industry in the U.K. is clearly dichotomised, as far as the two most commonly used metals are concerned, into those companies operating exclusively with aluminium and those which deal mostly with copper. The philosophies differ between these two sectors to the extent that in the aluminium industry, which is largely dominated by foreign companies, the emphasis is placed upon primary production and turnover of bulk aluminium, perhaps at the expense of the fabricator. The largest U.K. aluminium fabricator (Alcan Booth Industries) was in fact once partly owned by Delta. (The Group held the equivalent of about a 25% stake). However, a conflict of interests about philosophies of operation led the Group to sell its share in 1968 to Alcan - and of course Delta's liquidity problem at that time was undoubtedly also an important consideration.

1.16 Those companies which operate in copper, however, are primarily interested in the semi-manufacture, fabrication, and production of finished copper based output. They do not have, as the aluminium side does, a high degree of vertical integration backwards into extractive metallurgy and, as a result, are not dominated by the 'bulk turnover' philosophy to a similar degree. Since the Delta Group is primarily engaged in the fabrication of copper and copper alloys, it is this sector upon which interest is centred.

1.17 There is a significant amount of industrial concentration in the U.K. as regards copper fabrication. The overall market is dominated by three major groups of companies, Delta, IMI, and BICC. They differ in that BICC is heavily involved in the manufacture of cables whilst IMI is more concerned with general engineering activities and several rare metals. In contrast Delta is more evenly spread between electricals, building products, and engineering. All produce a variety of semi-manufactures in copper which are further processed in integration.

One more major company - McKechnie Bros. - is also worth mentioning since it produces a significant amount of brass-rod. Thus the production of semi-manufactures is fairly well concentrated, apart from those activities which several companies (e.g. Vickers, Pegler-Hattersley) maintain more or less exclusively for internal consumption.

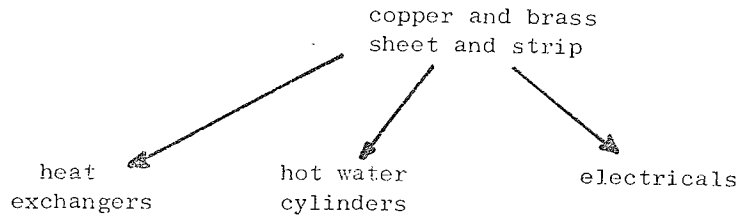
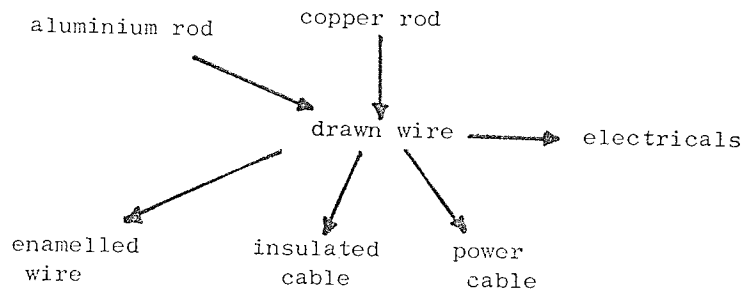
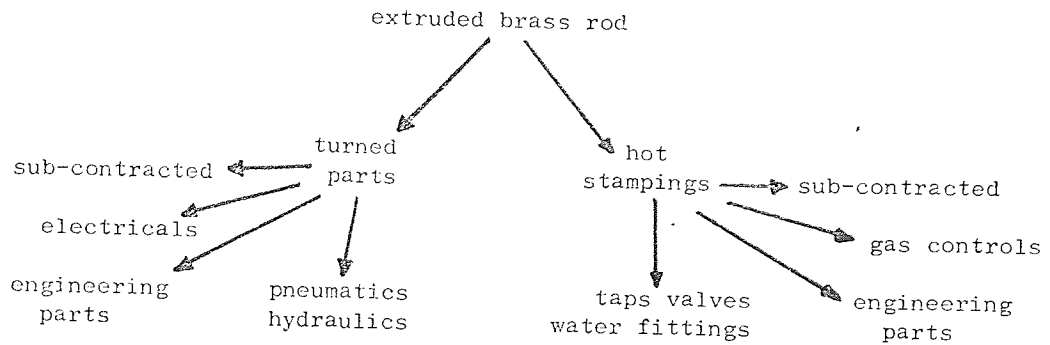
1.18 As one descends the integrated ladder towards the finished products, however, the concentration becomes less and less marked. The production of turned engineering parts from brass-rod is a good example since, because the capital investment in plant is relatively small and economies of scale elusive, the business is characteristically composed of a large number of small companies.

(VI) Delta's Major Product Groups

1.19 The Delta Group could presently be well described as a manufacturer of building products, electrical equipments and components, and general engineering output - all based to some degree on non-ferrous semi-manufactures. Figure (3) schematically outlines the major product groups together with the patterns of horizontal integration.

1.20 It can be seen that Delta's original and still important product - extruded brass rod - is used to produce both hot stamped and forged products and turned parts. Different alloys are of course used for each process. Some of this secondary output is actually sub-contracting work for a variety of industries but some is also internally further processed or assembled to produce finished articles such as water taps, gate valves, gas controls, various water fittings, engineering parts, electrical assemblies, and pneumatic and hydraulic equipments.

MAJOR PRODUCT GROUPS



also produced:- aluminium sheet, zinc sheet, diecastings, plastic components
machine tools, nickel silver strip, castings, switchgear
controlgear, fusegear, commutators, copper tube, hardware

FIGURE (3)

1.21 Another major primary product - copper or aluminium rod - is used for the manufacture of drawn wire, enamelled winding wire, or woven into a variety of low voltage insulated power cable, insulated cable and certain specialised cables.

1.22 Finally the production of rolled copper and copper alloy sheet and strip is the first stage in the process which manufactures hot-water cylinders, various electricals, and such things as heat exchangers.

1.23 Whilst these three categories of semi-manufacture give rise to most of the vertically integrated processes within the Group, it is also clear that Delta produces a very wide variety of other products, both in manufactured and semi-manufactured form.

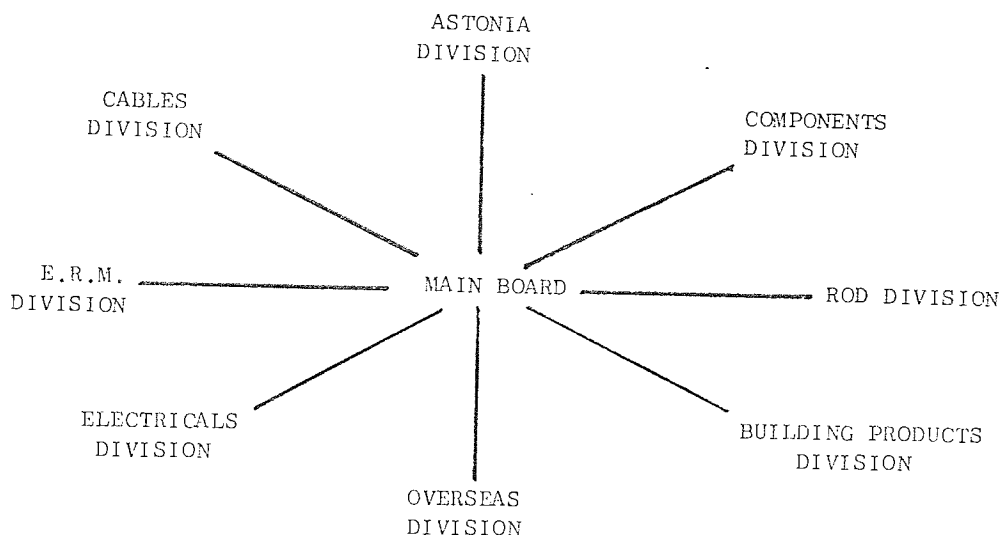
(VII) Delta's Divisional Structure

1.24 Figure (4) schematically outlines the present Divisionalised structure of the Group. Each Division is reasonably autonomous and many promote autonomy within their component companies. The 'profit-centre' philosophy is dominant within the Group.

1.25 Each of the eight Divisions is administered by a Divisional Chairman (who is chief executive) and a board of directors. Since most of the Divisions have a capital employed of around £15m and three have a figure of over £20m, it is clear that each of these units is a large industrial complex in its own right. The companies controlled by the Divisions often have their own boards as well.

1.26 The main board of Delta is comprised of several Divisional Chairmen, together with a number of central function personnel such as the Group Chairman (who is the Group Chief Executive), the Deputy Chairman, the Financial Controller, the Group Marketing Director, as well as other executive and non-executive directors.

DIVISIONAL STRUCTURE



ASTONIA....turned parts, pneumatics, machine tools, plastics
COMPONENTS..hot stampings and forgings, gas controls, diecastings
CABLES.....low tension power cables, insulated wire and cable
E.R.M.rolled and cast metals, copper and aluminium rod
ROD.....brass rod, capillary fittings, diecastings, copper tube
ELECTRICALS..low voltage switchgear, fusegear, controlgear
OVERSEAS...various activities broadly similar to those in the U.K.
BUILDING P...taps and brassware, hot water cylinders, gate valves.

FIGURE (4)

1.27 In the past the Group Administration Unit has primarily been concerned with monitoring the financial aspects of the autonomous Divisions. However, recently several other central advisory functions have evolved to help in the co-ordination and planning process, and the most important ones are Group Market Research and Publicity, the Central Materials Research Laboratories, the Group Training, Management Development and Manpower Unit, and finally the Group Corporate Planning Committee.

1.28 The main products for each Division are outlined in Figure (4) and this gives some idea of the diversity of the Group. However, certain common threads are present and these are:-

- (i) Non-ferrous metals - mostly copper based.
- (ii) Vertical integration on the semi-manufactures.
- (iii) Serving the broad markets of Building Products, Electricals and General Engineering.

(VIII) Conclusions

1.29 Certain characteristics about the historical evolution of the Delta Group are perhaps worth emphasis. The company's development has been to a reasonable extent dominated by:-

- (i) Acquisitional growth.
- (ii) Buying outlets for the original semi-manufactures.
- (iii) The 'non-ferrous' character of growth.

1.30 Having undergone two distinct metamorphoses, first with the development of an integrated company 1955 - 1962 and secondly with the Enfield merger in 1963, Delta may well be in a third metamorphosis at present. Since the 1967 problems and the subsequent rationalisation and recovery, it may be true to say that a change in orientation has taken place and the tripartite business scope of "Building Products, Electricals and General Engineering" which has recently emerged may be evidence of this.

1.31 The basic questions which lay behind this research were:-

- (i) Having recovered and reached a 'cross-roads' where does the Company go from there?
- (ii) Will the detached view-point and planning methodology act as a 'cross-check', or throw light upon problems or opportunities hitherto ignored?

1.32 It was upon those two questions that this research was largely based, but for the sake of clarity it must also be noted that the author had been loosely attached to the Delta Metal Company for several years previously, in the role of a sponsored undergraduate. It must also be recorded that it was the author who originally asked if the project could be undertaken and not the Company, although the result of the approach was a favourable one.

1.33 These points are made because:-

- (i) as an 'internalised' body the author was perhaps permitted to carry out the research with a greater degree of freedom.
- (ii) that Delta's open approach to the project greatly helps in adding weight to the validity of the data collected. This open and fully co-operative attitude was evidenced by the formal backing of the Group Chairman together with the explicit frankness and assistance afforded to the study throughout the Group by all involved.

1.34 It may also be reasonable to record that the organisational climate predominating within the Group is one of freedom of expression and relative democracy in top decision-making. The value of autonomy and the subsequent delegation of responsibility is also emphasised.

CHAPTER II

Contents

Review of the relevant literature - the short-comings of micro-economic theory - the development of approaches to strategic planning - the apparent problems with the conventional approaches - special areas of interest in 'ecological' methodologies, strategic value-systems, and action-research.

Abstract

The overall chapter seeks to outline the reasons for the development of approaches to the strategic problem and offers a typology and a chronology of their evolution. It discusses the apparent problems encountered in the practical application of these approaches. Certain areas of special interest to the research are also discussed. These are the use of total-systems type approaches to strategic planning; the role of values and their influence on strategy; and the dimensions of the broad field of action-research.

For a schematic diagram outlining the structure of the total review see Figure (5).

A SCHEMATIC OF THE OVERALL LITERATURE REVIEW

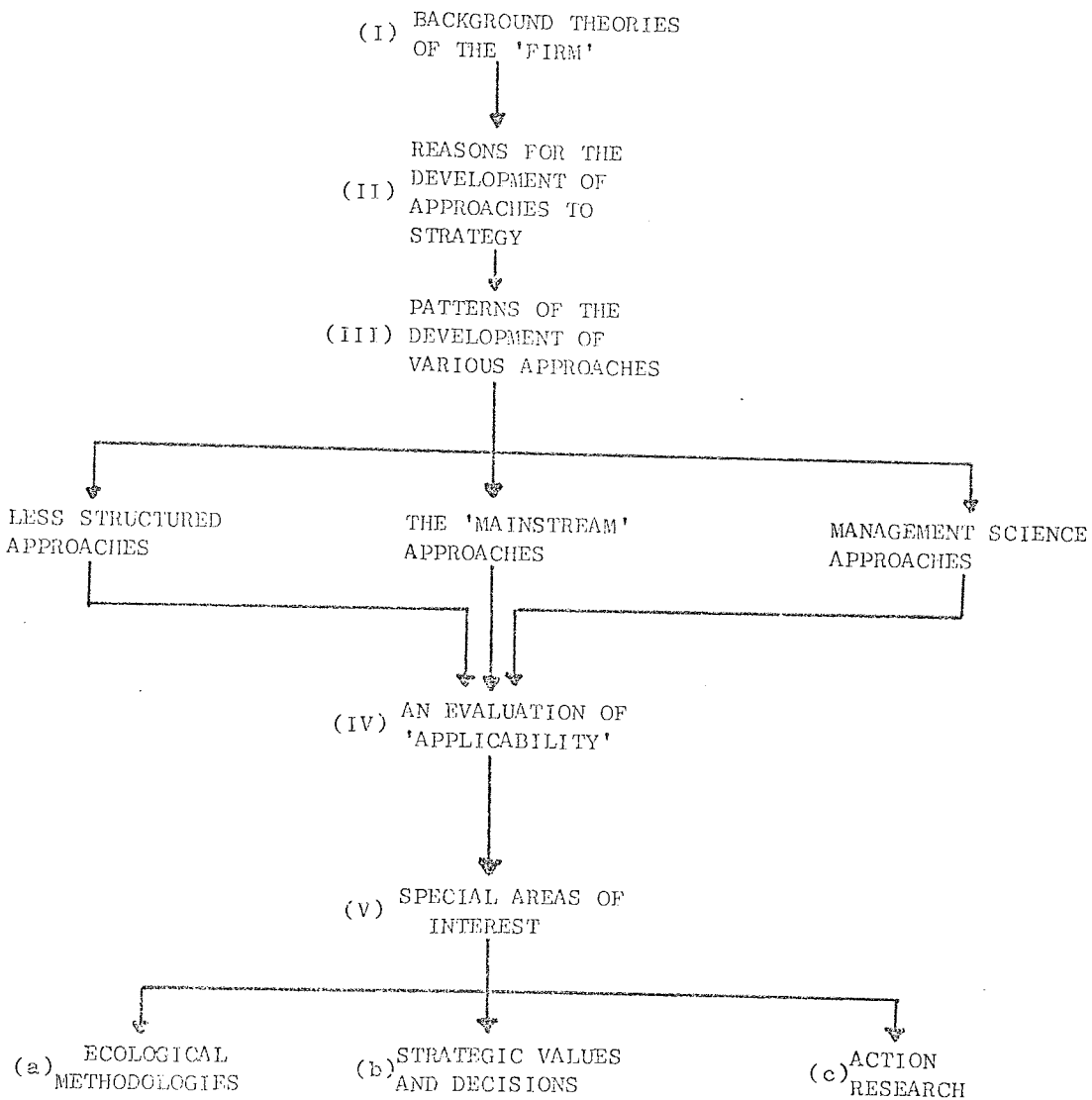


FIGURE (5)

CHAPTER II: REVIEW OF THE LITERATURE

(I) A PERSPECTIVE: BACKGROUND THEORIES OF THE FIRM (see Figure 6)

2.1 The classical micro-economic theory of the firm has been steadily evolving for some considerable period of time. Such a theory generally accommodates an underlying concept of some industry demand function upon which is based a production function established to meet that demand. The production function itself relates a series of input factors (labour, raw materials, capital etc.) to a series of outputs - or products. And the fundamental aim of the theory is to optimise this resource conversion process in such a way as to maximise profit, within the environment of a competitive market.

2.2 The micro-economic theory of the firm (for example Marshall (1)) has been severely criticised on several counts. Firstly, the theory fails to explain the behaviour of real firms, with special reference to the profit maximisation assumptions. Secondly, it does not fully appreciate or account for variables other than those which are controllable and operational. Thus whilst these operational variables can be explicitly manipulated towards attaining some optimum, the actual relationship between them and their relevant environment is largely ignored. Because of this, micro-economic theory is not fully equipped to deal with the strategic problems. Both Ansoff (2) and Shubik (3) have already made these criticisms, and have pointed out the 'black-box' nature of the theory.

2.3 The obvious exclusion of behavioural variables from micro-economic theory, and the assumptions of profit-maximising behaviour were both accounted for to a considerable degree by the researches of Cyert and March (4) who took social and psychological influences into account. However, their work primarily observed operating

BACKGROUND THEORIES OF THE FIRM

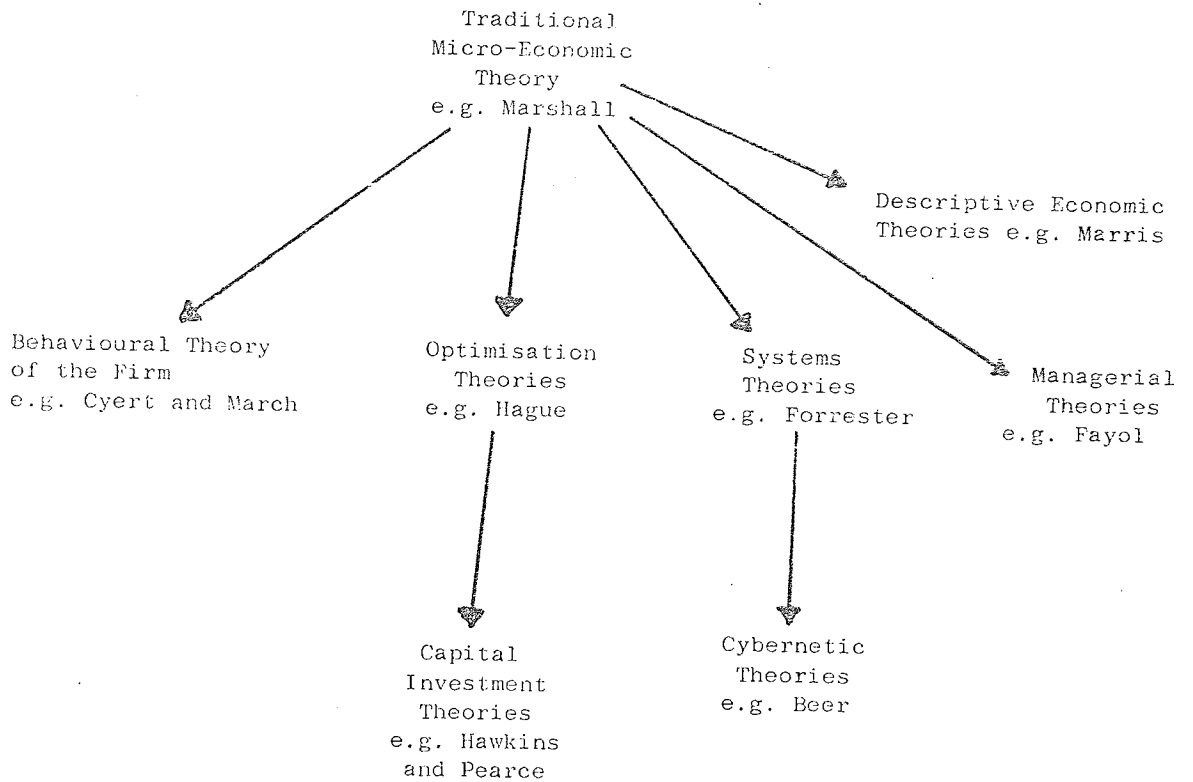


FIGURE (6)

variables and tended to assume a static strategic posture for the firm. Nevertheless, the behavioural theory of the firm is specifically orientated towards empirical findings and allows a range of goals, learning, expectations and adaptation to enter the arena of decision processes; even though the decisions studied were generally outside the strategic problem area.

2.4 The second major outgrowth of classical micro-economic theory is that of the application of a variety of mathematical techniques with the aim of attempting some optimisation of the 'production function' in a broader context. This development is explicitly useful to the management of the 'real' firm but normally applies itself only to sub-systems within the total enterprise. Thus, in this sense, these disciplines (such as decision-theory and operational research) although closer, perhaps, to the strategic problem, do not fully encompass it as yet. Modern managerial economists (for example Hague (5)) recognise these short-comings.

2.5 A third major development in the theory of the firm is that of holistic or systemic approach, which treats 'the firm' as an organism adapting to and interacting with some environment. This systems approach has been comprehensively developed by Beer (6) in a theoretical context. However, a significant piece of empirical research was also conducted by Forrester (7) who carried out a detailed computer based analysis of the inter-linkages between the operational variables of real firms. In this way, Forrester demonstrated that anticipation (and thus internally adapting optimisation) to the time-lags and influences of feedback throughout the resource-conversion process was possible. However, these variables were once again operational rather than strategic. Even Forrester (8) has stated that - "... strategic problems are perhaps of the 100th order of complexity while the most sophisticated computers are presently capable of only the 10th order."

2.6 The fourth significant outgrowth of micro-economics has been the development of capital investment theory, which attempts to assess the desirability of a series of alternative investments in terms of computed profitabilities over their lifetimes. Such approaches (for example Hawkins and Pearce (9)) would appear to be closest to the strategic area in that they often deal with strategic decisions. However, CIT has some severe limitations, especially in the sense that it has no mechanism for monitoring the firm's environment or searching for alternatives. Neither does the theory treat the firm as a whole entity by taking into account some of the broader implications of 'synergy' or non-economic influencing variables. Ansoff (10) has already made these criticisms.

2.7 Several other classes of theories of the firm have also evolved. Fayol (11), for example, in essence founded a 'managerial' theory of the firm which stressed 'organisation' and division of labour. Another notable contribution has come from Marris (12) who has proposed what might be termed a 'descriptive' theory. Marris has constructed his approach along empirical lines, thus accounting for managerial behaviour within the body of more traditional economic theory. However, neither of these explicitly deal with the strategic problem.

(II) MAJOR REASONS FOR THE DEVELOPMENT OF APPROACHES TO STRATEGY

2.8 Thus the inability of both the traditional and more recent economic theories to accommodate the strategic problem eventually led to the business community to attempt to systematically deal with the increasing rates and characteristics of change to which firms were exposed throughout the 1950's. To quote Ansoff (13) - "It became increasingly clear that the solution to the firm's problem through managerial address to the traditional variables was no longer effective, that it was not the problem of optimising the currently

controllable variables, but rather one of changing the set of variables which the firm chooses to control and, more specifically, changing the products, the markets, and, sometimes, the technology of the firm."

2.9 Steiner (14) has postulated that in fact planning, as such, had been taking place for some considerable time. But what Steiner states is different is the formal and systematised approach to planning which evolved in the late 1950's. He proposed that before the Second World War the prime intellectual pre-occupation of management was in dealing with the business cycle, and with short-term operational problems. He then postulated that the increasing environmental changes, especially in technology and societal consumption, and the rapid growth of organisations, brought about a need for more comprehensive strategies. However, the importance of the business cycle and shorter term considerations is obviously still significant.

2.10 Steiner's assessment of this mode of evolution tends to be confirmed by the management writings of the mid 1950's. Drucker (15), for example, clearly demonstrated, at the time, the apparent lack of explicit awareness of the strategic problem, and instead focused on the short term considerations and overall 'efficiency' of the logistic processes. Only a few years later, Drucker's (16) primary concern was explicitly with the problems of strategy and long range planning.

2.11 Thus the need for some mechanism with which to deal with these new characteristics of 'change' was perceived primarily by the business community. Smith and Christensen (17), in their collection of early cases, demonstrate the beginnings of a business policy framework though, at the time, it lacked formalisation or systematisation. Similarly, Bursk and Fenn (18), in reviewing what was perhaps the first Business Planning Conference to be held at Harvard, have also clearly outlined the origins of a formal planning approach, especially in the context of the growing trend towards 'Divisionalisation'.

2.12 The actual 'mechanics' which spurred on the development of formalised approaches to strategy formulation are also worth mentioning. Bowman (19) proposed that a variety of techniques helped to produce greater cohesion of a body of relevant knowledge. Especially mentioned by him was the advanced work being done in the military planning fields such as the Planning-Programming - Budgeting System. He also postulated that the development of economic theories, the institutional activities searching for ways in which to deal with change, the research into cybernetics and theoretical constructs, and systems analysis all contributed significantly to the overall advancement. The overall hierarchy and consequently the broad development of these strategic planning techniques has been comprehensively analysed by Mintzberg (20).

(III) PATTERNS OF DEVELOPMENT IN STRATEGIC PLANNING APPROACHES (see Figure 7)

(i) The Genesis

2.13 Perhaps the Genesis of many of the more recent developments in the broad field of policy-making can be attributed in part to Lindblom (21) who proposed two discrete approaches to this kind of complex problem-solving. These views in many ways reflect the difference between the micro-economic and behavioural theories of the firm for whilst one is, in abstract, a rational method, the other predominates in practice. In other words, Simon's (22) concept of man's "bounded rationality" and essentially "satisficing" behaviour is apparent.

2.14 Lindblom (23) has called these two approaches the "root-comprehensive" and "branch-successive limited comparisons" methods of problem solving. They are distinguished from each other essentially by the 'objectives' and analysis each employs. In the former (root) case, goals and objectives are stable and distinct and the analysis is a fully comprehensive one. Thus the policy is 'means-ends' orientated. However, in the latter (branch) case, goals and

APPROACHES TO STRATEGIC PLANNING

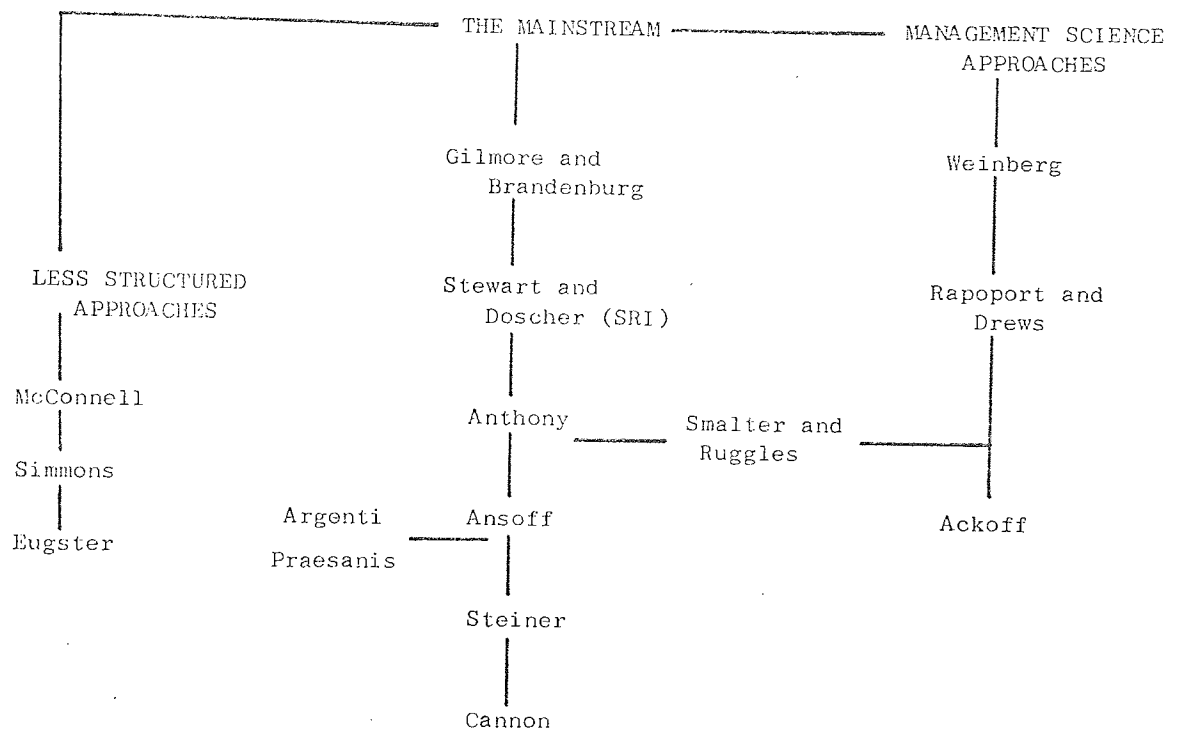


FIGURE (7)

objectives are indistinct, inter-twined, and often unstable (because they are value-based) and the analysis is severely limited to a series of comparisons with previous policies. Thus the final choice tends to be one seeking marginal increment or marginal achievement of objectives.

2.15 The distinctive value of Lindblom's contribution is that he contrasted the commonly accepted and objective approach to policy (or strategy) formulation with the methods actually practised. Having thus performed his analysis on the decision-processes which are actually used in complex and unstructured problem-solving, Lindblom then stated that a comprehensive approach is impossible because of the complexity of the variables to be accounted for. Ansoff (24), however, disagreed and his own and other 'root methods' are used to substantiate his view. It is nevertheless probable that indeed neither is correct for the areas of public policy must surely maintain more complex a system than that of a single firm.

2.16 More recently, Lindblom (25) has suggested that the 'rational' decision process is subjected to various specific limitations. The first, he postulates, is in actually defining the problem, with special references to 'symptoms' and possible 'cause and effect' relationships. The second limitation is, he suggests, the absence of complete information: and thirdly, the difficulties of organising the goals and values relevant to the problem. Finally, he additionally postulates a certain resistance to analysis. Although once again Lindblom's comments are drawn primarily from the fields of public policy and administration, they seem to be also applicable to the business strategy formulation process.

(ii) The Concept of 'Planning'

2.17 The concept of planning is obviously 'future-orientated'. Fayol (26), for example, as one of the earliest to propose a business planning framework, emphasised not only forecasting as such but also "thinking in the future". The concept of planning as an activity not only dealing with uncontrollable change but also actively

anticipating it, is widespread. For example, Ackoff (27) has called planning .."anticipatory decision-making" and has stressed the interdependence of one decision on another. Dror (28) has also stressed this, calling planning decision-making which concerns future action, but stating that ".. its specific characteristic in this respect is its dealing with a set of decisions, that is a matrix of interdependent and sequential series of systematically related decisions". (p.107)

2.18 More specifically, planning the future development of a complex organisation has generally implied a relationship between three distinct classes of decisions. The normal 'resource-conversion' process of the firm is controlled by what are usually called 'operational' decisions akin to traditional micro-economic variables in an extended form. The decisions relating several 'resource-conversion' processes to each other are commonly known as 'tactical'. And decisions relating the whole firm to its total environment are normally termed 'strategic'. A simplified outline of this hierarchy is represented by Figure (8). Thus, conceptually, "planning" may be accepted as some attempt to 'optimise' the development of the organisation in the context of both internal and external environments, and their respective interdependences and changes. Beaufre (29) has demonstrated the enormous complexity of such a task, especially with regard to the dynamism of environments and their interactive natures - ".. We are dealing with a problem of dialectics; for every action proposed, therefore, the possible enemy reactions must be calculated and provision made to guard against them." (p.25) However, the common sequence of steps within 'planning' are the perception of a need, the generation of alternative solutions, the evaluation of alternatives, the choice, and finally the review. Whilst this schema is over-simplified, it still characterises most approaches to the planning problem.

THE OVERALL CONCEPT OF PLANNING
(Information Flows)

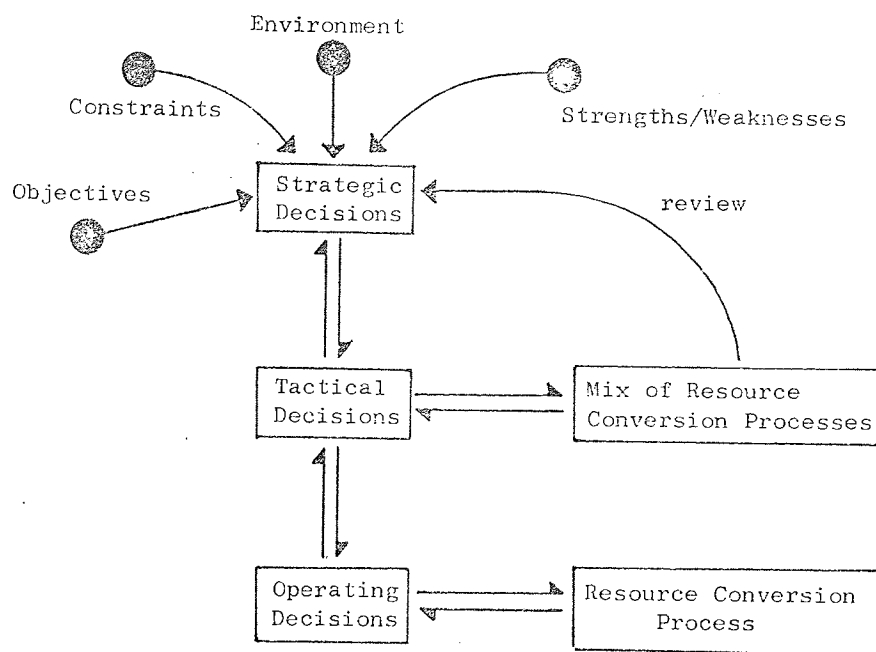


FIGURE (8)

(iii) The 'Mainstream' Development (see Figures 9a and 9b)

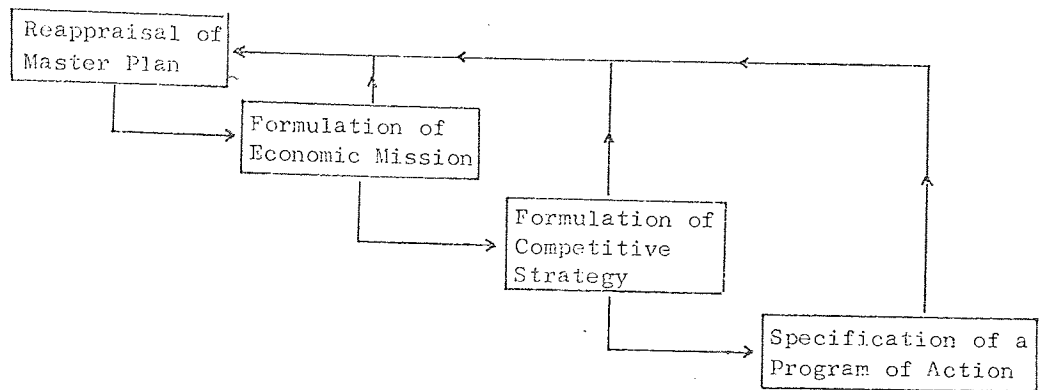
2.19 Perhaps the first significant attempt at synthesising a comprehensive ('root') approach to the problem of an organisation's strategy formulation was made by Gilmore and Brandenburg (30). Developed largely from military origins, their business planning model introduced the concept of 'synergy' and embodied a 'master plan' for the firm which was made up of a configuration of integrated sub-plans. The components of the model's master plan were an 'economic mission' for the firm, (i.e. its business scope and performance objectives) a 'competitive strategy', (a product-market posture) a 'programme of action' to find effective ways of implementation, and a 'reappraisal phase' to afford any feedback necessary for overall modification of the 'master plan'.

2.20 This 'cascade' approach to strategic planning offered a positive advance but also, perhaps, failed to maintain true comprehensiveness. Firstly, the objectives of the firm, which should embody the underlying fundamentals of any planning rationale, were not specifically discussed or identified but rather remained implicit. Secondly, the model failed to make an adequate distinction between expansion strategy and diversification strategy but was rather orientated towards the former. Nevertheless, several of the concepts introduced by Gilmore and Brandenburg became integral structures in later developments.

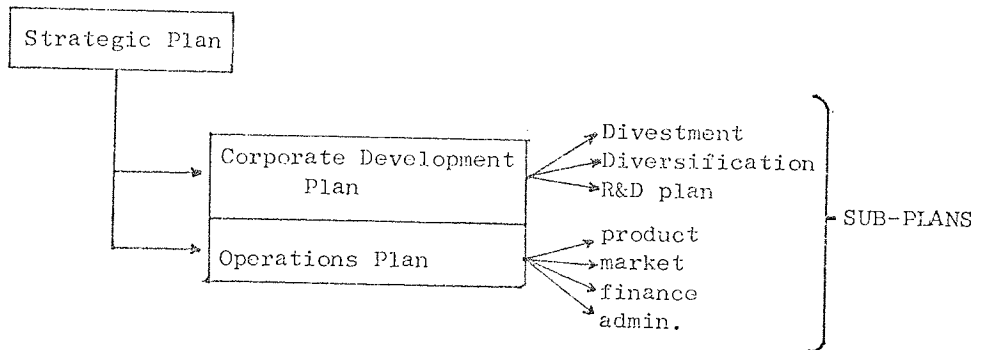
2.21 The second major contribution to what might be termed the 'mainstream' of strategic planning was that proposed by Stewart and Doscher (31). Their model was once again a fairly comprehensive one and it tended to consist mostly of a hierarchy of plans which were integrated and related by a 'cascade' structure. However, the approach can be criticised on three counts. Firstly, it placed emphasis on the plans but not the actual process by which they were derived. Secondly, the dynamic re-iterative feature of feedback was not included. Finally, the model contained no explicit facility for a process of environmental search. The concept was further developed by Anthony (32) who distinguished between 'internally'

VARIOUS 'MAINSTREAM' MODELS

(a) Gilmore and Brandenburg



(b) Stewart and Doscher



(c) Anthony

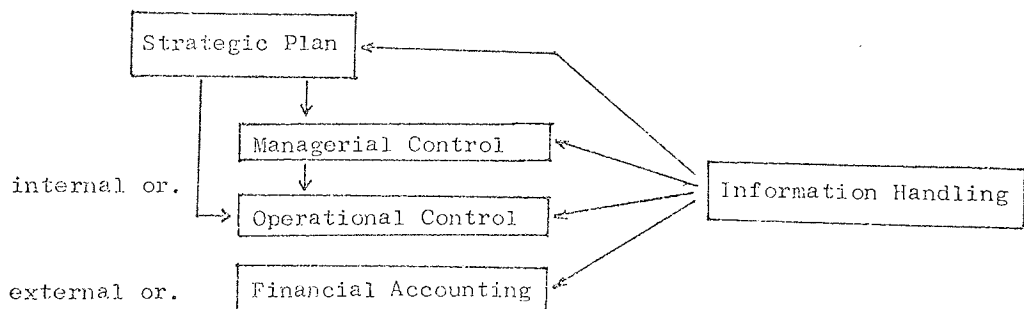
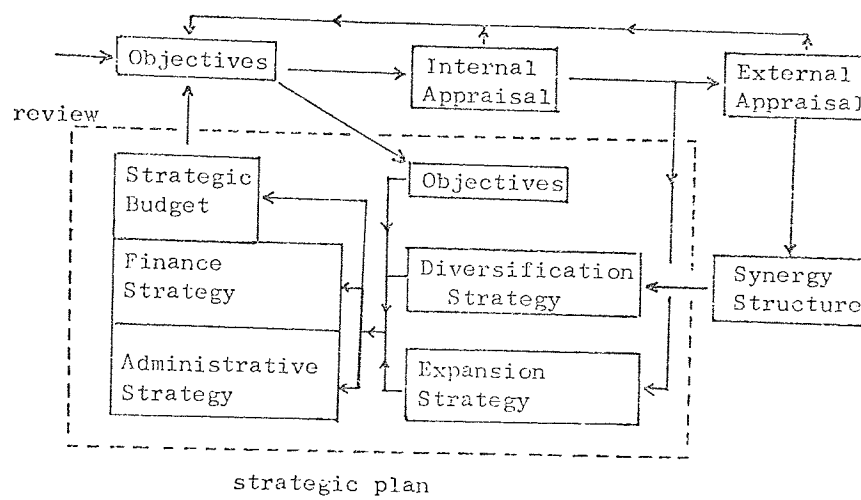


FIGURE (9)a

(d) Ansoff



(e) Steiner

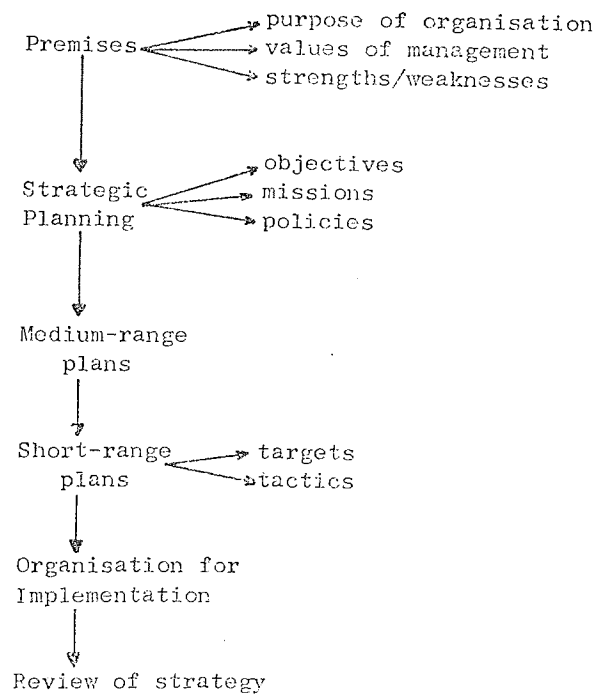


FIGURE (9)b

and 'externally' orientated processes. Whilst Anthony continued to stress the interdependence of plans and the hierarchy, he also emphasised the 'controlling' mechanism of his model.

2.22 Ansoff (33) shortly afterwards produced probably the most comprehensive and systematic model yet formulated. His approach accounted for the objectives of the firm, an environmental appraisal, the definition of product-market postures, and methods of evaluating synergy. Interestingly though, Ansoff's approach is 'diversification' orientated as its prime area of attention; although it also explicitly accounts for strategic expansion. Special emphasis was also placed on the model's usefulness to the business community and hence it is comprehensive yet embodies both quantitative and qualitative analysis in a practical context.

2.23 Ansoff's normative approach was characterised by the setting of objectives for the firm, and a subsequent analysis to evaluate the 'gap' between currently forecast performance and the performance required to satisfy the 'objectives'. The 'gap' was then sub-divided into that which could be obtained by strategic expansion of existing activities and that which could only be fulfilled by complete diversification. From this sequence, the model, which is routinised, dynamic, and clearly procedural, then adopted a structure of parallel analysis of the firm's inherent abilities and resources together with a critical evaluation of environmental opportunities in the context of synergistic effects and such factors as market barriers to entry. The analysis implied by the approach is indeed, relatively speaking, comprehensive and is highly detailed. Rhenman (34), however, has criticised Ansoff's approach, suggesting that the highly routinised nature of the procedure actually increases the difficulty of perception for organisations.

2.24 This growing disaggregation in analysis was further demonstrated by Cannon (35) who, in proposing his comprehensive and individual approach to strategy formulation, placed specific emphasis

on the inter-relationship and integration of all strategic factors and relevant sub-plans. Cannon's analytical stance was a highly detailed one which was characterised by a significant degree of complexity. The comprehensive approach he formulated was not explicitly modelled as such but rather distinguished parameters for a clear (and somewhat qualitative) analysis. Once again the "action-orientated" methods he proposed were specifically aimed at 'real world' management.

2.25 Shortly after Cannon's exposition, Steiner (36) followed similar lines but also proposed that the corporate strategy formulation could be, and should be, fully integrated into the sub-plans and into the techniques of management science. However, quite recently Rhenman (37) has also criticised this approach, and postulated that it was unnecessary to stress the hierarchy of plans because organisations perceive and cope with problems as 'independent' events. Several other approaches which are normative, comprehensive, and 'routinised' and therefore come within the 'mainstream' of planning theory, have evolved. Two examples are the approaches of Hilton (38) who places great emphasis on the practical aspects of essentially normative planning, and Gryner (39) who developed a cyclical model much along "Ansoffian" lines.

2.26 Thus from Lindblom's (40) original 'root-comprehensive' concept, a series of 'mainstream' comprehensive approaches to the problem of strategy formulation have evolved. Most share the common profile of analytical, procedural, systematic and normative natures however, and it may be true to say that perhaps there has been an explicit lack of emphasis as regards the dynamic functionings of the 'real' system they are being applied to. The step by step 'check-list' is relatively easy to understand, logical, and simple to carry out. Thus these normative approaches which embody the underlying assumption of rationality and the decision-processes of 'economic man' have high utility-values as regards applicability. On the other hand, they may underestimate many of the real 'descriptive'

influences which perpetrate themselves in the strategic planning arena. There may be dangers in applying a detailed analysis to a system whose functionings are not fully appreciated or accommodated within that methodology.

(iv) Hybrid Approaches

2.27 From this 'hard-core' or 'mainstream' of planning approaches, several hybrids have also evolved. Two of these - Argenti (41) and Praesnis (42) - reflect the common approaches to strategy formulation employed by most British companies. Both are essentially normative and quasi-comprehensive but are heavily orientated towards financial criteria. It may be true to postulate that in both cases the methodologies as proposed almost purposefully ignore many of the broader issues which confront strategic planners today. However, this consistency of approach is marked in the U.K. and is evidenced by many of the papers presented in, for example, the Journal of the Society of Long Range Planners.

2.28 The second significant outgrowth is the approach proposed by Smalter and Ruggles (43). Drawn from their experiences in the U.S. Department of Defence, their methodology for planning largely consisted of a variety of operational research and systems analysis techniques. They placed great emphasis on the 'allocation of resources macro-problem' and employed a complex matrix analysis in attempting some sort of optimization. However, their approach remains a quasi-comprehensive one and falls neatly between the 'mainstream' and the purer 'management science' contributions to the strategy problem. Thus, although similar in many ways to Ansoff's (44) model, Smalter and Ruggles accentuated the importance of the planning cycle, of optimum allocation of resources and of an integrated package of sub-plans and routines for implementation of selected strategy.

(v) O.R. and Management Science Approaches

2.29 Away from the 'mainstream' literature lies a second body of approaches to strategic planning which is explicitly different. These can be termed the 'management science' approaches for they attempt to embody scientific method and quantification in their analysis, selection and implementation of strategy. Indeed, many of the techniques which have been applied have been very successful, but usually at a lower order level or problem. An early exposition of the possibilities of quantitative techniques was made by Weinberg (45) whose analysis of a strategic problem was a highly detailed and scientific one. It was clear, however, that such an analysis could not accommodate broader qualitative analysis adequately.

2.30 Later, specific approaches to the optimization of a firm's resource-conversion process at a strategic level were explored. Rapoport and Drews (46), for example, demonstrated just such a procedure in the context of a major oil company, and subsequent methods as exemplified by Whitting (47) and Wagle (48) have developed and broadened the stance. Hence the use of operational research techniques in the field of strategic planning has been of significant value. However, they tend to be applicable only in the case of single product/process firms, such as oil companies or electricity corporations where integration is unique and relatively simple. In firms which are essentially multi-product/process, there is much evidence to suggest that operational research approaches have serious short-comings, and this is well demonstrated by the fact that some management scientists have adopted 'mainstream' approaches to the strategy problem - (for example see Cantley (49)).

2.31 The apparent inability of operational research to fully, as yet, contribute to the macro-problem solving area of strategy formulation has been outlined by Hitch (50) who stated that " .. operations research is the art of sub-optimising, that is, of solving some lower-level problems, and difficulties increase and our special competence diminishes by an order of magnitude with every level of

decision-making we attempt to ascend."

2.32 Perhaps by far the most significant contribution from this area has come from Ackoff (51). In his essentially descriptive and somewhat philosophical approach to the problem, he concentrated on the fundamental and underlying rationale of strategy. In examining the firm from a systemic pathway, Ackoff acknowledges three major categories of planning which he calls 'satisficing', (after Simon) 'optimising' and 'adaptivising'. The first, he postulates, is that which is most commonly employed and is characterised by a 'planner' setting his targets in accordance with what 'will do' and what is achievable. Often, such targets are not strongly inter-related. This concept of 'satisficing' strategic planning has also been called "disjointed incrementalism". In the second case of 'optimising' planning, Ackoff specifically refers to the programming-O.R. approach to strategy formulation and also accepts the fact that such approaches are usually only operable at a lower level. He states - "... an optimal comprehensive strategic plan is currently beyond our capabilities." (p.15).

2.33 Ackoff's third category, that of 'adaptivising', is, he maintains, the most rare and yet potentially the most valuable approach to the problem. He postulated that the value of strategic planning lies not in the outcomes it generates but rather in the process of derivation; in that the exploration entailed could provide the stimulus to the firm to adapt to changes more readily. Ackoff also argued that a considerable amount of time was spent on what he called 'retrospective planning' or extracting the firm from present difficulties resulting from past decisions. Thus he proposed that organisational design ought to seek to minimise this need. In addition, Ackoff outlined a variety of sub-concepts relating to 'adaptivising' planning such as 'commitment' to events and the 'responsiveness' of the organism to unforeseen events.

2.34 Thus the total approach philosophy outlined by Ackoff appeared to be a rich one, for he coherently introduced some of the 'essence' of strategy formulation hitherto largely ignored by many of the 'mainstream' contributors. However, his book subsequently tended

to break down into broadened versions of many of the sub-optimising routines common to operational research and thus a significant gap was exposed between philosophy and application. Nevertheless, Ackoff stated - "The key to both creating and evaluating courses of action and policies lies in the understanding of the system involved; that is, in the ability to explain its behaviour, not merely predict it." (p.43). This appeared to be a specific advance for, implicit in the statement, was that simply applying a systematic comprehensive and procedural analysis, or attempting some lower-order optimisation in the strategic context, was perhaps not enough. The firm and its corresponding environment form a unique dynamic system of such complexity that a broad in-depth examination into its normal functionings seems to be an important pre-requisite to successful strategy formulation and implementation.

2.35 In the broader context of Management Science (for example see Churchman (52)), one other recent contribution to the problem of the firm adapting to a constantly changing environment and the implications for organisational design is worth mention. Beer (53) has proposed a cybernetic structure for the firm akin to information systems which have evolved in higher biological organisms. Such an analogy appears to present an exploitable opportunity to scientific approach and to the body of strategic planning knowledge for it, in a sense, integrates well with Ackoff's (54) concept of 'adaptivising' in promoting the view that flexibility, control and responsiveness to change may become fundamentally more important to organisations than many of the normative and comprehensive approaches to the strategic problem presently employed.

(vi) Less Structured Approaches

2.36 The third major category of strategic planning approaches is that which can be termed 'flexible' and has begun to evolve in more recent times. Perhaps concerned at the increasing rigidity and complexity of the normative 'mainstream' approaches, certain 'exploratory' planning designs have been suggested. This attempt in many ways characterises the need felt by some to continue to employ

one of the most successful generators in the business world - 'entrepreneurship'. These various ideas are as yet fairly diverse and perhaps the most notable is that being researched by the Stanford Research Institute as demonstrated by McConnell (55). This approach revolves around the concept of "organised entrepreneurship" and is essentially flexible, catering for creativity. Thus planning is explicitly an open-ended process unconstrained by the rigours of procedure of normative models.

2.37 Another example which might be categorised as flexible is the approach to strategic planning currently employed by IBM. Termed "exploratory planning", - (for example Simmons (56)) - the approach is once again essentially unstructured and flexible and utilises some of the techniques of futures - research (for example Kahn and Weiner (57)). Thus scenarios are built, technological forecasting methods such as those outlined by Jantch (58) are employed and the temporal horizons tend to be longer than conventional designs. This trend towards an almost philosophical body of planning approaches has been further exemplified by Eugster (59). Hence these 'less structured' approaches to the strategic problem complete the trichotomy of recent directions of development. The 'mainstream' is obviously by far the most significant but is balanced to some degree by the 'management science' approaches. The more 'flexible' developments have been more recent and are as yet minor in comparison, but their influence appears to be growing (for example see Shank et al (60)).

(IV) AN EVALUATION OF APPLICABILITY

(i) Empirical Studies

2.38 Thus a variety of approaches to strategic planning have successfully evolved over the last decade or so but it is of critical importance to establish their usefulness in application. Some evaluation of strategic methodologies in a practical context is therefore required. Fairly early in the phases of evolution, Steiner (61) postulated that American companies exhibiting high rates of

growth were more likely to be 'planners' than 'non-planners' and he quoted research at the Stanford Research Institute as evidence. Steiner also proposed that 'non-planners' were more likely to become bankrupt. At the same time, however, he stated the need to maintain a balance between the 'seat of the pants' decision-making and the highly structured 'analysis-paralysis' approach to strategy formulation.

2.39 More recently, Ansoff et al (62) performed a detailed and sophisticated statistical analysis embracing a large number of American companies and concluded that, for almost all relevant financial criteria, 'planners' outperformed 'non-planners'. Ironically, perhaps, the study also indicated that this distinction was not fully appreciated in the stock-market, for investors failed to reflect any preference between the two categories via price-earnings multiples. In addition, 'planners' were found to generally behave more predictably and with a greater certainty as regards acquisitional growth, but subjective evaluations made by management within companies did not uncover any marked differentiation.

2.40 Another study, carried out by House and Thune (63), tended to substantiate these previous findings and also concluded that companies which were formal long-range planners outperformed those which were not, over a given period of time. Thus, from the fairly small sample of studies which have been carried out in this area, it would appear that, statistically at any rate, some formalised strategic planning structure for firms is advantageous in so far that their financial performance is more likely to be superior to those without formal planning. However, it is impossible to distinguish between the effect of an advanced management team (who might naturally employ planning techniques) and that which specifically results from formal planning itself. Hence some sort of evaluation in 'phantom-reference'* terms seems to be desirable.

* "phantom reference" means 'what would have happened had this (x) not been done?' - as compared to what did happen. Thus, how would performances compare - with and without 'planning' - in the same organisation?

2.41 Other studies examining the extent to which formal planning is carried out indicate some confusion. The BIM Survey carried out by Hewkin and Kempner (64) pointed to a very hazy appreciation of formal planning within the U.K. One of the most interesting contrasts appeared to be the way in which British companies tended to make gross assumptions about 'purpose' and 'objectives' and the resistance to corporate self-appraisal. Tilles (65), for example, has consistently proposed that coherence and consistency within purpose and relevant strategy is fundamental to success. But Hewkin and Kempner (66) stated -

"Many companies do not consider it necessary to write anything down in this context. They believe that such things as the general purpose of the company and the kind of business it is in is clear enough by implication."

Much of the survey, however, dealt with the 'mechanics' of planning and failed to explore whether formal planning postures had been fully assimilated and 'internalised' by a proportion of the sample.

2.42 Ringbaak (67), on the other side of the Atlantic, also concluded that formal planning was not widely appreciated -

"Organised corporate long-range planning is neither as well accepted nor as well practised as suggested by the literature on the subject. Although much planning is done, the effort is often sporadic, it is lacking in co-ordination and it is less formalised and sophisticated than much of the literature suggests." Thus the implication seems to be that whilst some formal approach to strategy formulation is conceptually accepted, it is in some way resisted and perhaps inhibited in practice. (for example see Mainer (68)).

2.43 Indeed these findings were substantiated once again in the U.K. more recently by the researches of Irving - (see Taylor and Irving (69)). They concluded - "corporate planning in major U.K. companies is neither as well developed nor as fully accepted as one might expect."

Several interesting points were illuminated by the study. One was the apparent significance of management style impeding the introduction or use of a formal planning system. It was stressed that in many cases the introduction of 'planning' required a re-orientation of management philosophy. This point has also been made by von Allmen (70). Another point to emerge was the overall resistance to application in that, without the explicit backing of the Chief Executive, formal planning was often unsuccessful.

(ii) Problems with Formal Planning

2.44 Thus one must conclude that although there is some apparent correlation between formal planning approaches and superior company performance, there is also significant disquiet with regard to practical application. This was explicitly proposed recently by Pennington (71) who stated -

"Planning should be making a vast and continuing contribution to more effective business management. In practice, planning has been a resounding and expensive failure."

Pennington suggested that formal planning has failed because it had not changed "the way things get done" and had not satisfied the needs and desires of top management. Thus 'planners' were unable to employ top-management co-operation in fulfilling their task. Pennington subsequently stated that where planning had been successful, it had been carefully integrated into other normal management activities and in addition - "... appropriate attention has been given to the interpersonal relationships that affect the flow of work and information in the organisation."

2.45 The importance of constructing a planning system which operates in sympathy with normal managerial functionings has also been emphasised by Wilson (72) -

"Finally, it is extremely important to repeat one of the cardinal rules of Corporate Planning: namely that the system must be tailor-made to suit the management-style of the company."

More recently, Knoepfel (73) extended this train of thought and postulated that 'planning' was not just a routine procedure but more a frame of mind and an approach of attitude. He also stressed 'workability' of planning with special reference to the characteristics of the top-management. Knoepfel stated -

"Unless the corporate planner is freely consorting with these people and gets to know them intimately: their judgments, their attitudes, their values and beliefs, their emotions, their likes and dislikes, briefly, what makes them tick, he will be unaware of the subtle, intangible elements that may be, in reality, the key inputs for a successful corporate plan."

2.46 Gross (74) has criticised a comprehensive and normative approach to the strategic problem by postulating that a passion for detail, by either the organisation or its sub-systems, may result in a lack of selectivity. In addition, he proposed that comprehensive analysis often produced a loss of perspective, an overloading of channels of communication, a waste of valuable resources and a move away from the essential action orientation of business. Many of these points were echoed by Ewing (75) but he extended the argument by emphasising that normative approaches to planning dealt only with "bloodless-criteria" and were too abstract to be applicable in practice. He stated -

"The fact that the physical side of planning has been pursued so vigorously and efficiently, and the fact that the human side has not been aggressively pursued, have combined to produce a 'lop-sided' emphasis in practice" (p28).

Ewing also described a concept of "anti-planning" analogous to Newton's third law of motion (action and re-action ...).

2.47 Finally, an interesting experiment evaluating alternative planning methodologies has been recently described by Wheelwright (76). By distinguishing between 'synoptic' (considering the whole problem) and 'incremental' (considering only sub-problems in the macro-problem solving context), Wheelwright performed a scientific analysis of the simulation of performances. The analysis employed

quasi-subjective evaluations, however, in the form of a panel of independent judges. Nevertheless, using Tilles' (77) criteria for the 'evaluation' of strategy it transpired that in the experimental situation, although the 'synoptic' approach generated more strategic alternatives, the 'incremental' approach led to better agreement between executives in strategy-making and to better overall strategies.

2.48 Thus one may conclude that, generally speaking, the majority of approaches to the problem of strategy formulation have not yet conclusively proved their validity for, whilst many satisfy all the abstracted criteria, they are being significantly inhibited in practice. It would also appear that the 'stumbling block' revolves around problems which are essentially 'behavioural' in character and which are often, as yet, unaccommodated by planning theory. Indeed it might well be suggested that the evolution of business knowledge in the strategic context has in fact resulted from an ill-founded point of departure and that emphasis should have been placed on 'workability' from the outset.

(V) SPECIAL AREAS OF INTEREST - (A): ECOLOGICAL METHODOLOGIES

(i) Systems Approaches in a Broader Context

2.49 The concept of a 'total systems' or 'holistic' approach to the problem of strategy formulation is commonly referred to in the literature. In practice, however, there appear to be few systematic planning procedures which operate along 'holistic' lines although, of course, systems analysis techniques are available and fairly widely used in a lower-order quasi-strategic problem level. The use of computer based simulation models is also widespread. In terms of the basic concept of the functionings of the firm, such works as those of von Bertalanffy (78) and Feibleman and Friend (79) have paved the way for the development of various systems theories. In addition, Emery and Trist (80) further aided the process by identifying explicit types of operating environments for organisations and introduced a 'turbulent' field akin to the normal environment of the firm.

2.50 Firstly, however, it may be helpful to examine the application of 'holistic' models in a broader context. There have been, to date, two major areas of investigation where 'total systems' type approaches have been used to model complex "organisms". The first (and perhaps most notably successful) has been in the case of urban systems where such models have greatly contributed to planning and development through the means of simulation. It may also, perhaps, be true to say that the 'mechanical' criteria which have been accounted for within such models (for example see Catenese and Steiss (81) and McLaughlin (82)), generate a fairly accurate though over-simplified picture of reality. The second major area where systems approaches have been applied, but with perhaps less success, is in the case of 'macro-economic' modelling and planning. This is especially true of East European economies such as that described by Porwit (83).

(ii) Cybernetic models: operational and conceptual

2.51 In the context of 'the firm', the operational characteristics have been modelled along systemic lines by Forrester (84), who examined the various interlinkages and time-lags in feedback between such functional variables. At perhaps a higher though less specific level, Beer (85) has further extended these approaches towards true cybernetic mechanisms analogous to natural functionings of biological organisms. Beer proposed the firm as existing within an 'ecosystem', comprising at the most fundamental level, a firm and a market. He also postulated 'preferred sets of states' for each and problems of constant adaptation to an equilibrium position - otherwise known as 'homeostasis'. In a later work, Beer (86) synthesised a design for the 'firm' based on the information flows of a higher order 'nervous system' implying, perhaps, that perception, control and response was more important for the firm than simple 'strategic planning'.

(iii) Informational Variables

2.25 In his analysis of informational variables relevant to the 'firm' Aguilar (87) adopted a systemic posture, modelling the firm as existing within both internal and external environments. Aguilar also examined the systemic mechanisms by which the 'firm' obtained information and filtered it, and the resulting strategic implications. Ansoff (88) also adopted informational variables and the firm's adaptation to its environment. Discussing the characteristics required for firms in the future, he referred to it having "windows of perception" and that some organisational development should be implemented in order to reduce response-times to change. Ansoff speculated -

"Not only will the successful firm be able to perceive opportunities, it will also know how to anticipate them A typical firm of today is static rather than dynamic. Its basic structure is designed to maximise internal efficiency and is hostile to change." Ansoff then mentioned a major area which needed attention; namely the development of techniques for searching the environment and anticipating environmental change.

2.53 In the context of strategy formulation and its eventual implementation, perhaps Drucker (89) made one of the best cases for some systemic approach to planning the evolution of an organisation - "We need an integrated decision-structure for the business as a whole. There are really no isolated decisions on a product, or on markets, or on people. Each major risk-taking decision has impact throughout the whole; and no decision is isolated in time."

(iv) Systems analysis in planning

2.54 In the specific context of strategic planning, systems analysis procedures have been widely employed in a lower level decision-area or in the case of integrated single product/process firms. Rudwick (90) has outlined most of the facets of the application of systems analysis techniques to a variety of individual strategic

problems. A variety of other approaches have also attempted to embrace computer-based company models with the intention of simulating the total system in order to evaluate and generate suitable strategies. Examples of this are offered by Bell (91) who proposed a model emphasising modification of integrated product-mixes, and Greer (92) who outlined I.C.L.'s own company model for generating five year forward plans.

(v) 'Ecological' concepts

2.55 If the scope is widened slightly, and the 'firm' is perceived in a slightly more qualitative light, it is apparent that the broad concept of strategic 'ecology' for organisations is nothing new. For example, Young's (93) analysis of corporate growth used an ecological analogy and Smith (94) discussed the common 'lag-response' exhibited by firms in dealing with environmental change.

2.56 However, in terms of practical application it would appear that strategic planning approaches embodying an 'ecological' model of the firm are rare (as distinct from system analysis 'optimising' procedures). Ward (95) has described marketing strategies from the viewpoint of systems dynamics, implying 'ecology' and more recently Coyle (96) has examined the integrated dynamics for policy formulation in a firm, assuming a limited perspective. Champion (97) has outlined what is claimed to be a successfully applied 'total systems' approach to strategic planning where emphasis was placed on the integration of plans and sub-plans relating resources, objectives and programmes. Champion also noted-"A planning system is a custom-made tool which must be closely adapted, if it is to be effective, to the philosophy and style of the managers that use it."

2.57 Perhaps an approach more orientated towards 'ecological' concepts was proposed by Farmer (98), explicitly with reference to controlling and accounting for the supply-markets of the firm. Such a methodology obviously accounts for only a single part of the total environment but nevertheless Farmer's postulates were interesting ones.

Platt and Maines (99) opened up yet another dimension of 'ecological' methodology by proposing that relevant scenario-building would be an effective way of pre-testing long range plans.

2.58 Wileman and Hulett (100) have also recently proposed an interesting applicable methodology for planning corporate development. Their approach is almost specifically 'ecological' in nature for it attempts to detect and anticipate change and effect adaptation. The major premise was that the organisation must be specifically structured so as to cope with environmental changes and control adaptation. Hence, in this light, they proposed the setting up of a separate unit specifically to deal with new business development, and, in addition, postulated that it would soon be of great importance to assimilate adaptive mechanisms with respect to each characteristic of the firm's business.

2.59 Ackoff's (101) philosophy of corporate planning also assumes a 'holistic' posture in that he defines planning as an "anticipatory decision-making" process where the decisions are inter-dependent. Ackoff stated -

"The dynamics of the environment must be understood and forecast in order to plan effectively. The economic, social, political and technological aspects of the environment (i.e. the larger system that contains the firm) should be also taken into account" (p46). Ackoff also laid stress on the importance of fully understanding the system being planned for and thus what he appears to envisage is the fundamental relationship between firm and its environment which forms the basis of any 'ecological' model.

2.60 Ackoff's systemic pathway is later developed into the implementary phase of planning when he states:-

"Even small corrective measures cannot be evaluated effectively unless one has a conception of what the organisation should be like as a whole and ideally. An idealised conception of an organisation should consist of more than a set of unrelated or loosely related ideas; the ideas should be completely related into a cohesive system. -

Equipped with the idealised concept we can systematically plan the transition of an existing organisation toward the one we want." (p60).

However, Ackoff's ecological model, in totality, subsequently tends to become a series of sub-interactions and sub-unit systems routines. Thus its applicability appears, as yet, to be limited.

2.61 With the emphasis on the ecology of firms and its relevance to the planning problem, Denning (102) has stated:-
 "Few business executives today would argue seriously with the proposition that certain events which take place outside the business may have a far more important effect on the year's results than anything which takes place inside the business."

Thus, implicitly, Denning was describing events which lay outside the control of firms, and outside the realms of its normal functionings; thus forming some sort of 'secondary' environment.

2.62 Ewing (103) contrasted the 'ecological' approach to strategic planning with a more 'entrepreneurial' posture when he described it as follows:-

"The logic of this approach - let us call it the 'outside-in' philosophy because it puts analysis of external conditions ahead of internal appraisal - has naturally impressed many people."

However, Ewing criticised this 'ecological' approach because of its dependence on market and other forecasts, and because such forecasts seemed always to be so inaccurate. The alternative method (the 'inside-out' approach) had, Ewing stated, been much more successful in practice in that firms had assessed their abilities and had aggressively chased a specific market niche, ignoring environmental dynamics. Such references are indeed interesting, and Ewing subsequently outlined various cases as evidence. However, the examples he gave appeared each to have a very specific and dominant strength, such as a new invention or an exclusive expertise, hence perhaps the contrast between the two approaches is, in fact, not quite so clear-cut.

2.63 In certain respects this view is reflected by Branch (104) when he stated:-

"The basic task of corporate planning is rational. The basic task of corporate planning is to visualise the enterprise as it could be in five to ten years hence. To this end the business organism is extrapolated into successive stages in future time..." (p218).

Thus Branch, implicitly at least, places emphasis on the 'organism' rather than its environment, and, in the extreme, a business is thus obliged to 'invent its future'. However, Branch also states - "Corporate planning must cope with all significant elements and aspects of the organism and situation at hand, intangible as well as quantifiable." (p214).

Hence the firm's ecology is not wholly ignored; neither is the concept dismissed.

2.64 In focussing more closely on the importance of effecting a comprehensive analysis of the firm's environment, Learned et al (105) proposed a 'multi-vector' approach, so that apart from the more basic analysis reflecting market forecasts and supply projections, some of the broader aspects of the environment, such as technological, social and political changes would be also accounted for. Denning (106) has also made similar statements, defining strategic planning as "an approach which reviews the business as a whole in relation to its environment." (p6).

2.65 Katz (107) comprehensively sums up a qualitative holistic approach to strategy formulation which is essentially 'ecological' in promoting detailed external analysis with relevance to the total system. Katz proposed - "The combination of these environmental characteristics determines, within broad limits, what the enterprise must do in order to survive and prosper, and what it must not do except at great peril. Thus the environment places certain requirements and constraints upon what the enterprise must and must not do. The resources available to the enterprise put further limits upon what the enterprise can do. Within these limits, the

pattern of value commitments, competences and personal influence among the key members determines what the enterprise will do." (p21).

The underlying assumption, of course, and one which may indeed be empirically falacious, is that such an analysis of the selection of strategy conforms to the above procedure. Nevertheless, normatively, Katz's concepts are helpful and embracing.

2.66 It is interesting to find that despite the vast literature which has been generated by the evolution of the concept of strategic planning, so few companies (on an international scale) really employ any advanced and successful planning systems; and that within that sample even fewer utilize the 'ecological' concept in their approaches to strategy. Scott (108) for example, after discussing 'holistic' approaches stated -

"However, the 'total entity' approach has been explored largely by companies doing pioneering work in the strategic long-range planning." (p79).

2.67 It is also interesting that Ansoff (109), the founder of the comprehensive analytic routinised approach to strategy formulation, has recently moved towards a broader 'holistic' framework by distinguishing between 'incremental' and 'strategic' management controls. Ansoff postulates that 'incremental' management, which he defines as one resisting change and reacting to it on a local basis in order to "maintain homeostasis", should be employed for operational problems; whilst 'entrepreneurial' or strategic management ought to be employed in a 'global' role, actively seeking change and anticipating potential exploitation.

2.68 Finally, Rhenman (110) has entered the 'ecological' arena from another direction. He has criticised Ansoff for maintaining a belief in 'routinisation', stating that such procedures often make it more difficult to actually observe and deal with change. Rhenman additionally postulates that integrated strategic planning is seldom necessary as organisations react to changes as though they were

independent. Such a statement seems to reflect Lindblom's (111) concept of "disjointed incrementalism". Rhenman also proposes that whereas it is commonly believed that such aspects as technology and markets are the most important components of a firm's environment, in fact organisational values and their effects really cause most problems. Thus Rhenman's approach to the problem is one of promoting adaptation within the firm, and maximising its efficiency by establishing 'consonance' between the firm and its processing, informational and value environments. This 'ecological' methodology is in many ways an attractive one except that its acceptance in the context of practical application may be limited. Nevertheless, Rhenman's postulates may well be embraced by a 'workable' hybrid approach to strategy formulation.

(VI) SPECIAL AREAS OF INTEREST: (B) STRATEGIC VALUE-SYSTEMS

(i) Organisational Character and Values

2.69 The literature relating to the cases of failure within strategic approaches commonly implicates behavioural variables. Indeed many have asserted that personal and organisational values and style exert influence on strategic development. However, in very few cases have such influences been actually examined or illuminated in situ. In the case of 'management style', several writers have continually emphasised the importance of an organisation maintaining a strategic planning system which operates in full sympathy with normal managerial functionings. For example, Burgess (112) stated that management science has required the adoption of behavioural techniques in order to "modify man to fit the system". However he proposed that as such a tactic had been unsuccessful, " ... this implies that the planner accepts the guidelines, traditions and management style which have evolved and works within this frame to stimulate forward thinking and preparedness." Similar proposals have been offered by von Allmen (113).

2.70 In their empirical survey of corporate planning in the U.K., Taylor and Irving (114) also concluded that its success in practical application depended significantly on the management style of the organisation. Ackoff (115) has developed the line a little further for he suggested that management style ought to be identified by presenting decision-makers with a series of scenarios for the firm and judging their responses. Ackoff also quoted a company which apparently rejected a series of logical expansion strategies for their hand-tools because they wanted more 'fun' in a higher-technology field, eventually choosing valves and couplings for diversification. Ackoff concluded:-

"Style is to a large extent a matter of esthetics and is as important to organisations as it is to men and women." (p25)

2.71 More recently Ansoff (116) has also proposed that

"... organisations have individual behavioural styles and management cultures." If this is indeed so then individual organisations will have tended to synthesise individual values and value-systems appropriate to 'style' and 'culture'. Selznick (117) has proposed the concept of 'organisational character', and defined it as a 'historical product' which could be repetitively observed, which was integrated, functional and yet dynamic. Selznick postulated that such a character was distinct from those of its members, and was a result of initial interaction between the original organisational members which had subsequently become "patterned". Thus he asserted a homeostatic situation.

2.72 Similar views were outlined earlier by Newman (118) who stated that firms did have individual characters. "... every company develops its own traditions, habits and reputation which give it individuality. This body of habits and attitudes endows a company with a character or personality quite beyond the people who work for it at any given time." The broad influence which such 'characters' might have on the strategic development of firms has been discussed by Andrews (119) who postulated, "... the basic determinants of organisational character would tend to prevent sharp discontinuity." (p30) Andrews went on to discuss the actual

choice of strategy and commented " ...Personal values, aspirations and ideals do, and in our judgment quite properly should, influence the final choice of purposes." (p38) He also quoted various cases where he considered values had affected strategic development, observing that the criteria for the perception and selection of strategy referred to those which were consistent with the personal values of the decision-makers.

2.73 Chamberlain (120) has also discussed the relevance of organisational values. He proposed that the 'personality' of firms gave rise to a 'strategy set' which pre-determined the firm's growth patterns. Thus Chamberlain speculated that once a 'strategy set' was established, the firm would tend to attract and hold individuals who " ... feel comfortable in such an environment." (p48) Chamberlain then described the relevance of the influence of a firm's 'personality' not only in terms of mere choice but also with regard to informational variables entering the firm. "This disposition towards certain kinds of activities and ways of going about them determines the kind of information that gets a hearing within the company and the kind which is sought. Incompatible ideas will be screened out at the intake positions and information networks will be established to provide the flow of ideas that are most likely to be rewarded with acceptance." (p49)

(ii) Personal values and strategic choice

2.74 Many writers have been more specific with relation to the influence of personal values on strategic choice, as against some overall organisation ethos. Kakar (121) has recently outlined a contrast between accepted rationality and practical irrationality in leadership; Ferber (122) has proposed that the 'sub-conscious' of management exerts powerful influence on choice; McMurray (123), Learned, Dooley and Katz (124) and Bernthal (125) have all examined the problems of conflicting personal values and the importance of identifying them in the context of decision-making. In addition,

Kempner, Hawkins and MacMillan (126) have proposed that the personal views of the 'chief executive' are wrongly depersonalised and ignored in business policy, and Charles (127) has discussed the individual 'self-concept' of management in an operational decision context.

2.75 Returning to the more specific context of strategy formulation and strategic choice, Scott (128) has suggested that it is indeed important to account for the 'texture' of the top-management structure. In discussing the corporate self-appraisal Scott states:-

" ... It is the need of any corporate self-appraisal undertaken in connection with the strategic long-range planning to include not only an examination of the products being produced and the markets being served but also a consideration of the attitudes and interests of the company's top-management executives. That is to say, the self-appraisal needs to take account of the aspirations of these executives, their values, predispositions, prejudices and pre-occupations. These considerations are significant in making an appropriate final choice of strategy." (p80)

2.76 Katz (129) has suggested that such a personal value analysis should be done by a critical examination of historical evolution and performance. He also proposed that values ought to be explicitly accounted for otherwise strategies will go the way of the "loudest shouter." Knoepfel (130) also illustrated this need but postulated that a more direct observatory assessment of values should be made, speculating that unless the 'planner' could gain the co-operation of top management, his task would be futile. Perhaps in contrast, Ewing (131) has suggested that the long-range planning process is itself useful because it actually allows managers to think, in abstract, of things which would otherwise be non-viable due to the pressures of current politics, personalities and values. However, whilst the process may be individually 'value-free' in relative terms, it is improbable that this would be the case at the actual selection stage.

2.77 Branch (132) has also described examples of value-influenced strategic choice and proposed that planning should not be accepted as rational. Branch stated ...

"The best planning utilises the results of rational analysis to the fullest extent consistent with a realistic understanding of the psychological limitations and advantages." (p63) Tilles (133) tends to agree with this for, in his framework for the evaluation of corporate strategy, he suggested that internal consistency with other policies and goals was a prime consideration. Mace (134) has also described the influence of hidden values and goals and argues that such factors should be made explicit.

2.78 In accounting for the total organisational influence of values on strategic development, Salveson (135) has explored what he termed a "self-image" of the firm. He stated ... "The summation of the collection of self-images is the corporate self-image. This latter is one of the most powerful determinants of corporate flexibility, both because it reigns and operates through the unconscious and, hence, cannot be reasoned or reckoned with (except in analysis) and because it is self-reinforcing." Salveson's remarks appear to be salient, except, perhaps, in his original assumption of the 'summation of the collection of self-images'. A direct transference between individual and organisational values seems unlikely. Nevertheless, Salveson quoted the example of a firm of copper hardware manufacturers who saw themselves as 'engineers' and thus failed to compete commercially.

2.79 In the context of strategy formulation, Glueck (136) has also asserted that every organisation has a specific and individual character. Glueck suggested that personal values ought to be explicitly accounted for in selecting strategies but proposed no specific methodology for doing so. Reddin (137), however, has formulated a methodology for quantifying the 'dimensions' of management style and has related such analyses to the effectiveness of organisations. But Reddin does not frame his work in a strategic

context but rather in an essentially operational one, and his proposals do not appear to be explicitly meaningful for planning purposes.

2.80 A number of researchers have also developed a variety of methodologies for measuring individual manager's value-profiles, and several have attempted to establish relationships between their analysis and the strategic development of organisations. Perhaps the most directly relevant approach was that of Guth and Tagiuri (138) who analysed, in situ, the value-profiles of four senior executives and observed a strategic choice process involving the four. Guth and Tagiuri concluded that the preferences exhibited by each executive were directly explained by his value-profile as analysed. The research methodology involved a battery of questionnaires and the use of six major value classifications - namely economic, social, theoretical, political, religious and aesthetic. However, such psychological testing techniques can be criticised on several counts. Firstly, testing of this sort often outlines somewhat superficial features rather than the true essence behind behaviour. but, perhaps more importantly, such procedures would not be normally acceptable to the top-management of organisations and hence, fails to be entirely meaningful in a practical strategy formulation context. However, Guth and Tagiuri stated that "... personal values are important determinants in the choice of corporate strategy". Tagiuri (139) has also used his technique to profile the expected and projected values of 'scientists' and other job categories in industry.

2.81 Rhenman (140) has suggested that the value-system of an organisation can be assessed by examining 'company policy'. This is defined by Rhenman as a set of ideas and attitudes embodying notions of good and bad and has important functions in the unification of decision-making whilst additionally satisfying certain psychological needs with regard to 'conformity'. However, Rhenman's essentially indirect approach perhaps only accounts for a small

part of what such an examination should ideally be. England (141), (142) and (143) has conducted wide surveys, characterised again by questionnaires, and has attempted to profile value-systems of culturally differing managers by examining their concepts of business goals. He distinguished between 'operative' values which are actually used and 'adopted' values which are professed but not used. England also postulated that the 'values' caused "behaviour channelling" (i.e. consistent behaviour patterns) and "perceptual screening" (i.e. the filtering of information). Although England's studies were once again not explicitly formulated in the context of 'strategy', he did conclude that - "personal values appear to operate at the level of corporate strategy as well as at the level of day to day decisions."

2.82 Two other special dimensions of organisational value systems merit recognition. The first is that which relates explicitly to alternative disciplines within organisations generating differing perspectives and filtering priorities. Ewing (144) describes the 'myopia' of the 'engineer' and the 'management scientist' in the context of strategic planning. Each, Ewing proposes, recognises quite different priorities and hence selection criteria. The problems of division of labour were also pointed out by Dearborn and Simon (145) who stated:-

"Thus perceptions of the environment are biased even before they experience the filtering action of the frame of reference to the receiver. Salesmen live in an environment of customers: company treasurers in an environment of bankers; each sees a quite distinct part of the world."

The second is the special problem of sub-systems within a decentralised structure developing individual values. Berg (146), for example, has asked - "why are the conflicts of interest and viewpoint between division managers and headquarters in diversified firms far more basic than they are in single-business firms?"

And Denning (147) has stated -

"Implicit in the argument so far has been the assumption that top

management has a special responsibility in its strategic planning to concentrate on the interests and future of the whole company rather than on any one of its parts In practice, however, it may be less easy to separate the whole from its parts, possibly because the parts contain strong groups with interests which do not totally coincide with the interests of the whole. The easiest example of this phenomenon is a company organised into several product groups deliberately granted a substantial degree of autonomy." (p27)

2.83 Finally Katz and Kahn (148) have comprehensively outlined many of the basic behavioural characteristics of organisations. They made the following observations:-

"The organisational context is by definition a set of restrictions for focusing attention upon certain content areas and for narrowing the cognitive style to certain types of procedures. This is an inherent constraint." (p277) Thus Katz and Kahn postulated that organisations become captive to their scope of operation, and patterned in their behaviour. At a more individual level they continued -

"The goals of the group become incorporated as part of the individual's value-system or as a part of his conception of himself. As a result, satisfactions accrue to the person from the expression of attitudes of behaviour reflecting his cherished beliefs and self-image. The reward is not so much a matter of social recognition or monetary advantage as of establishing his self-identity, confirming his notion of the sort of person he sees himself to be, and expressing values appropriate to this self-concept." (p346)

(iii) Strategic Decision Processes

2.84 Thus from these broad aspects of organisational behaviour and the generation of value-systems both organisationally and individually, one may now approach the explicit medium through which such intangibles can exert influence as strategy; namely decision-making. Edwards (149) has outlined the development of decision theory in the context of more simple behavioural decision-making. However, the area of decision-making which is of special

interest in the strategic context is that which is possibly most complex and lies within what has been termed "non-programmed" decision-making by Simon (150). "Programmed" decision-making (for example Ackoff and Sasieni (151)) is accepted as outside the strategic decision area.

2.85 Drucker (152) illuminated the texture of strategic decision-making when he stated - "Every decision is thus a value-judgment - it is not 'the facts that decide'; people have to choose between imperfect alternatives on the basis of their uncertain knowledge and only fragmentary understanding." Nevertheless a great variety of normative decision-making and problem-solving models exist. Figure (10), for example, outlines one which is used in the Chemical Engineering Department of this University. The reiterative nature of the model is obvious but, in a sense, so is its "black-box" nature and over-simplification.

2.86 There have been few studies which have proposed to analyse or observe a strategic decision. Certainly the normative approaches to planning such as that of Ansoff (153) have identified strategic decisions and have attempted to set out the criteria for such processes. But it is highly probable that real decision-making is relevant to those frameworks only in a limited sense. This has in fact been adequately demonstrated by literature previously referred to. Soelberg (154) has discussed the evolution of decision goal-structures. He outlined the original assumptions concerning 'economic man'; the 'neo-classical' assumptions that goals equate with some individual consensus; the behavioural theory's postulates concerning departmental sub-goals; and the views of organisational goals acting as constraints on organisational role. Soelberg subsequently expressed the view that decision-makers implicitly select alternatives which are consistent to personal 'favourites' and then retrospectively construct some decision-rationale to explain their choice.

2.87 Katz and Kahn (156) have expressed similar sentiments - "We must recognise here the implications of a general social-psychological law. Men act first and then rationalise their actions,..."

AN EXAMPLE OF COMMON PROBLEM-SOLVING PROCEDURE

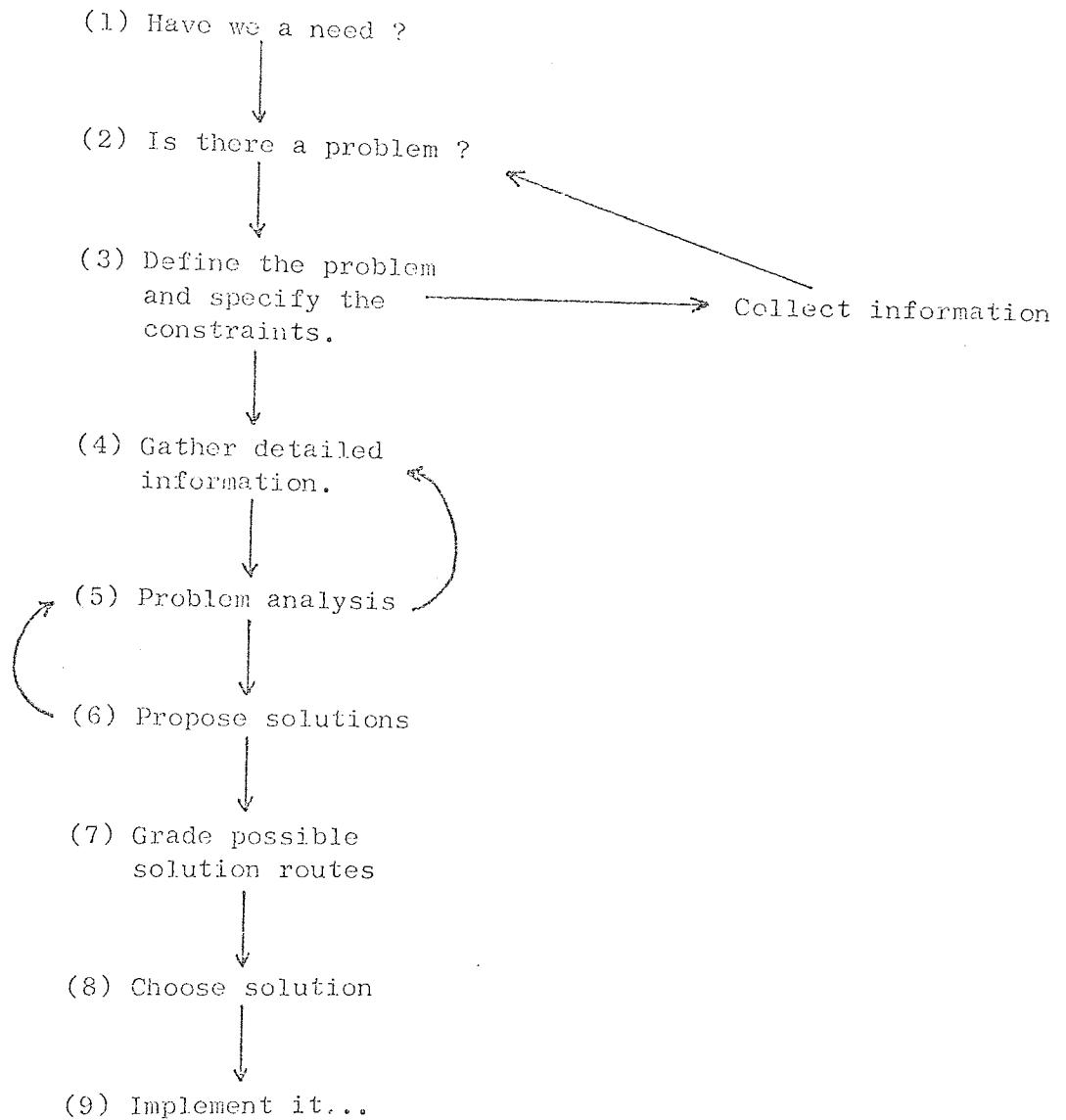


FIGURE (10)

2.88 Simon's (156) principles of man's 'bounded rationality' and resulting 'satisficing' decision-making are salient characteristics of the strategic decision area. Simon (157) also proposed that individuals joining an organisation assimilated organisational values and operated them on the basis of internal consistency. Hence in the context of a strategic decision, organisational 'ethos' may be introduced as an influential component.

Learned et al (158) have also speculated about the role of the chief executive's value-systems in the context of strategic choice, and the subsequent effects of such behaviour on the organisation as a whole. Bross (159) has explicitly pointed out the gross assumption between normative models for a decision structure in that they pre-suppose that the user knows what set of criteria or value-system he wishes to employ. However, they neither provide nor identify such a system.

2.89 Cyert, Simon and Trow (160) have provided one of the few empirical analyses of complex 'non-programmed' decisions. Although the decision in question - relating to the proposal to set up a computer department within a firm - is perhaps just on the edge of the strategic area, certain specific conclusions provide insight into the process. The dominant theme of their analysis is the manner in which the simple proposal breaks down into a series of sub-problems which are attended to more or less sequentially, and indeed the instability of the criteria by which choices are made. Cyert et al's analysis markedly contrasts the 'rational' and the 'descriptive' decision processes, and also exhibits considerable evidence of 'filtering' of information in the search for alternative solutions. Cyert, Dill and March (161) have also provided an analysis of business decisions and have emphasised the role of 'expectations' of outcomes. Their studies have apparently uncovered the bias which is exerted, perhaps unconsciously, on decision-making as a result of personal expectations. There was also some evidence for more conscious manipulation of expectations.

2.90 Pettigrew (162) has recently demonstrated the very significant effect of 'filtering' information and the consequences for decision-making. In Pettigrew's analysis, it is clearly demonstrated how effective the 'gatekeeper' (i.e. a person at the junction of information channels) can be in influencing choice by manipulating informational variables. Gore and Dyson (163) have also outlined the role of the individual or sub-system in organisational decision-making - "... an organisation is not completely organised and that much of what takes place within an organisation is essentially independent or atomistic activity oriented towards the needs of individuals and only tacitly recognised as legitimate by the collective." (p7) Cumulatively, and in terms of strategic decision-making, this all tends to illuminate the overall complexity of such decision processes. In the first place the goals, the values and the future contexts relating to strategic decisions are usually influential and unstable. In the second, the information, which is severely limited anyway, is subject to distortion through filtering and selective perception and is also imposed upon by values at the final selection stage.

2.91 Katz and Kahn (164) have proposed a modified anatomy of decision-making which includes the influence of immediate pressures on the decision-maker; the analysis of the types of problem and its dimensions; the search for alternatives and their evaluation; and final choice. This schema is similar to the normative model adopted by Ansoff (165) and originally proposed by Simon (166). Katz and Kahn (167) have also postulated that the first selection-decision filter is 'will it work'? - "... and this question does not mean: 'Is this the best solution', nor even, 'is this a desirable solution', but 'can we put it into acceptable operation easily?'" (pp 279-280) Hence they assert that many good ideas fail to be explored because of perceived practical difficulties. Katz and Kahn also recognised the ill-structured character of decision processes - "Policy-makers are human; it is difficult for them to divorce their own fate from the fate of the organisation and there is more than a grain of truth in their equating individual and

organisational interests. Both personal and organisational factors enter into the judgmental processes and they tend to become fused." (p281) Other factors (of a behavioural nature) which enter the picture, according to Katz and Kahn, are the determinants of thought resulting from position in social space; identification with outside reference groups; the projection of attitudes and values; and the gross over-simplifications which occur in the perception of cause and effect relationships. Additionally, a number of personality determinants which affect decision-making are also referred to.

(VII) SPECIAL AREAS OF INTEREST: (C) ACTION-RESEARCH

(i) The Nature of Action Research

2.92 The explicit inherent value of action-research has been outlined by Glaser and Strauss (168) who express the view that the qualitative observation and collection of data eventually offers theories which are applicable to 'substantive areas'. Hence, they believe, the construction of qualitative theories relating to one or more organisations can be translated and applied to other organisations existing in the same 'substantive area' - (i.e. exhibiting similar modes of functioning). Such a stance seems important to accept if action-research is to show clear and logical evolution.

2.93 A typology of research into organisations has been given by Wilson, Mitchell and Cherno (169) who differentiated four types of research - namely "basic research, basic objective research, operational research and action-research." (p26) Their definitions have been further explored and developed by Clark (170), who re-termed operational research (in a behavioural context) "evaluation research" and added an additional category of "applied research." In terms of areas of interest, it suffices to describe only the essential differences between 'applied' and 'action' research categories as illustrated by Clark. Fundamentally, he specified

that 'applied' research dealt with a practical problem, and that data was diffused through the sponsoring enterprise to an audience of sponsors. 'Action' research, on the other hand, was considered to be involved with a practical problem with theoretical relevance and that findings would thus be diffused through reports to the sponsor and professional journals. Additionally, the audience would therefore be a mixed one of scientists and practitioners.

2.94 In essence the definition which Clark adopts is the following - "Action research aims to contribute both to the practical concerns of people in an immediate problematic situation and to the goals of social science by joint collaboration within a mutually acceptable ethical framework. Action research is a type of applied social research differing from other varieties in the immediacy of the researcher's involvement in the action process - ... and the intention of the parties is to be involved in change which must be change involving the properties of the system itself." (p23) Perhaps it may be true to say, however, that such a definition narrows the context of action-research too tightly by placing undue emphasis on "change".

(ii) Participant Observations

2.95 It would appear that perhaps the most important component of action-research is 'observation' and not change. The importance of explicitly understanding, by participative observation, the normal functionings of an organisation is surely an essential pre-requisite to any attempted change process. For blindly observing 'change' in some exploratory manner, and effecting re-orientation where desirable, implies that the actual change cannot be mapped since the original state of the organisation becomes vague. Whilst problems are often solved by 'change', ignoring a full diagnosis of why the problem exists is hardly going to help to keep the organisation out of a similar 'trap' in future. Malinowski (171) is, perhaps, the father of participative observation, since his highly scientific anthropological study of Western Pacific societies took an important step forward in

offering boundaries to this kind of research. Indeed, many of the problems which he originally encountered, such as the phases of initial frustration before acceptance and eventual assimilation, are now commonplace in the broader fields of action-research. He also proposed the importance of presenting full data as well as inferences in the quest of scientific 'rigour'. However, Malinowski also aimed to introduce as little change as possible.

2.96 Cicourel (172), when discussing his field research methodologies, defined participative observation as - "... a process in which the observer's presence in a social situation is maintained for the purposes of scientific investigation." (p37) He has also described the problems of acceptance into the situation and the observer's role. Cicourel postulated that there was some sort of 'natural evolution' of the research, in that it always appeared to evolve through these various phases; but that unexpected events often occurred. Thus he implied that participative observation should remain unstructured and open-ended. Cicourel also discussed the problems of recording and interpreting data and the need to observe via both formal and informal communication channels in order to validate findings. Schwartz and Schwartz (173) have been more specific in their definition of participative observation for they state "... The observer is in a face to face relationship with the observed and, by participating with them in their natural setting, he gathers data. Thus the observer is part of the context being observed and he both modifies and is influenced by this context."

2.97 However, there are always some significant problems with this kind of research. Shipman (174), for example, has described what he calls 'perceptual colouring' - in that observation is always influenced by the experimental 'set' of the observer, and that the degrees of detachment and the constant risk of upsetting the equilibrium of the situation under observation, also cumulatively add up to questionable scientific 'rigour'. Webb (175) has also discussed these shortcomings and he quotes the

'noise' of the scientific instrument - the human ear. Webb maintains that as a recording device, its selective perception changes and is variable with response 'sets'; and that data is often subject to decay. He also distinguishes between 'active' and 'passive' observation. Sjoberg and Nutt (176) make this distinction as well, calling it 'participant' and 'non-participant' observation. However, these categories must surely be 'relative' rather than absolute. Also discussed were the merits of the structured in-depth interview as a research technique.

2.98 Becker and Geer (177) have, in fact, distinguished three types of participant observation. The first, they state, is where the observer is actually an integral member of the group he is studying. The second is in the case where the observer poses as a member although he is not; and the final category is where the 'observer' is simply a passive observer. Such a differentiation is a useful one for it additionally embraces a quasi-active research posture. However, once again, such descriptions have to be relative. Bryun (178), for example, has been more explicit in defining the boundaries of participant observation. He proposed that it was important to establish that the participant observer shared the life activities and sentiments of people in face to face relationships and was in no way "a detached scientist". Secondly, Bryun observed that the researcher's role required both detachment and involvement, and that social 'role' would be determined by research design and the cultural framework. Thirdly, he postulated that the scientific interest was generally inter-dependent with the cultural framework of those studied, and that his 'role' was a natural part of the cultural life being observed.

(iii) Change-Agents

2.99 The second component of action-research is that of planned organisational change and the change agent. This has recently been termed "intervention activity" by Argyris (179), and usually involves the introduction of a 'consultant' into the organisation in order to effect change which will release some disequilibrium. Argyris emphasises that the basic requirements

for intervention activity are the generation of valid information, the ability to exercise free, informed choice, and commitment by the 'client' to choices made. He also stresses that in his view "change", per se, is not the primary task, but rather it is the generation of valid information and to help the client make good choices. However, Argyris' fundamental orientation is towards the top management structures, and this, he maintains, is because only top management have the necessary influence to effect a change in the organisation. Hence Argyris (180) has stated ... "The higher one goes up the chain of command the more the individual has control over his work environment and the more important it becomes to change the interpersonal (and then policy) environment." (pp3-4)

2.100 This approach to change processes contrasts sharply with many other action-researchers who work at lower levels in the organisation. Whyte (181), for example, essentially aims to produce changes in the work environment, thus effecting systemic change in the context of the 'shop-floor'. This reflects the two schools of thought - behaviour modification by environmental change, on the one hand, and by changing behavioural values on the other. Other writers have outlined organisational change resulting from intervention activity. Sofer (182), for example, has illuminated the dialectics of interaction with organisations in the mode of a consultant, and Sadler and Barry (183) have described the processes of organisational development strategies within the printing industry, by increasing organisational effectiveness (internally) and coping with environmental change more efficiently.

2.101 Perhaps, Lewin (184) can be regarded as the founder of the 'change-agents' who manipulate organisational variables in order to generate greater effectiveness. Lewin always maintained that diagnosis through surveys was never adequate and that 'changes' should be attempted in order to resolve group conflicts. His methodology was characterised by a process of diagnosis, prescriptive change, evaluation and feedback. In this way, he sought

to fuse social laws with specific situations. Perhaps his most successful techniques were 'changing values' and 'changing perspectives' as means of conflict resolution. Bennis et al (185) have defined planned organisational change as - "... a deliberate and collective process involving change-agent and client systems. These systems are brought together to solve a problem or, more generally, to plan and attain an improved state of functioning in the client system by utilising and applying valid knowledge." (p11). They also offered a typology of change processes and distinguished 'interactional change' where there was mutual goal setting and where the change was deliberate, from 'natural change' where there were no goals and where the change was merely coincidental to the researcher.

2.102 Thurley (186) has emphasised the importance of the consultant evaluating 'changes' and in this way utilising results in broader contexts. Thurley also maintained that some of the unpredicted outcomes of action-research were of great value. Bain (187), in describing a case-study of his research in a large industrial plant, found that his perceived role changed quite considerably through the research, from initial 'novelty' evoking good humoured responses, to the establishment of links and to his eventual identification with one specific group as opposed to another. Trice (188), on the other hand, found that there were significant advantages in having a 'detached' role in that informants appeared willing to offer explicitly more frank views in such a situation.

2.103 Finally, Revans (189) has been a strong proponent of action-research in higher-education business studies programmes. Revans takes the view that objective knowledge and expertise is invalid unless it is implementable and hence has practical application. Additionally, Revans maintains that the observation and subsequent analysis of the changes which result from practical application of knowledge adds further validity in terms of orientation. The knowledge, the application and the understanding of that

application and its consequences, are all integral parts of scientific investigation. Such views provide a useful context for an action-study.

(VIII) EPILOGUE

2.104 In conclusion, it seems appropriate to refer to an early statement of Branch's (190), -

"The psychological, social and political aspects almost always involved in planning are illustrative. I would like to emphasise parenthetically that because certain factors in comprehensive planning cannot be treated numerically so as to fulfil the requirements of so called 'scientific method' it does not mean that they cannot be treated successfully or there do not exist preferable methods of dealing with these less tangible aspects."

Such a view seems relevant in the context of strategic planning as it has evolved.

2.105 Secondly, Ansoff and Brandenburg (191), in a more recent article proposing desirable areas for management research, proposed - "Further work is needed on what determines organisational acceptance of plans and the effectiveness of compliance with plans" and - "Research is needed on the way firms relate to their environment; specifically the manner (by which) the environment is searched for threats, opportunities and other relevant information and the manner by which it is filtered and used by the firm."

Chapter Summary

In the overall context of the development of strategic planning, the following appear to be the major issues suggested by the literature.

- (1) The traditional and more modern theories of the firm do not appear to be well developed enough to deal with the strategic problem. The basic difficulty of establishing real objectives for the firm's strategic development is apparent.

- The environmental surveillance mechanisms so necessary in strategic planning are, generally, inadequate. In many senses, the theory of the firm is oversimplified and fails to reflect its relevance in the context of real behaviour.
- (2) The development of approaches to the strategic problem was largely a result of the perceived increases in the rate of change in the environment of firms. Additionally, the growth of firms and the subsequent divisionalisation made it necessary to have a comprehensive co-ordinating and control mechanism with which to direct growth.
 - (3) The actual approaches themselves tend to fall into three major categories. The first (the 'mainstream') of these implicates highly detailed analysis, is quasi-comprehensive and is both 'routinised' and procedural in nature. This category tends to be most common. The second (the 'management science' approaches) has developed through the O.R. - programming phase of attempting total 'optimisation' for the firm towards a more conceptual framework. In certain respects, it has become closer to the 'mainstream'. The third (the 'less structured' approaches) offers a novel, flexible and creative character in opposition, perhaps, to the 'routinised' mainstream.
 - (4) In practical application, strategic planning approaches have not been markedly successful. Most of the problems appear to stem from 'behavioural' origins, in that both organisational and personal values are not easily accommodated within methodologies. Hence it appears that these "bloodless" criteria have created considerable dissonance.

CHAPTER III

Contents

Overall research hypothesis and methodology - the implications offered by the literature - the various components of the hypothesis - the value-free overview and method - the analysis of values influencing broad strategy - the process-action study posture.

Abstract

The chapter outlines the overall research hypothesis and methodology and proposes the reasons for its adoption. The components of the hypothesis and the procedures implied by it are discussed. The distinction between process-action research and more conventional action-research is made.

CHAPTER III: RESEARCH HYPOTHESIS AND OVERALL METHODOLOGY

3.1 The fundamental task of this research was to examine whether the formulation of long-term strategy for a group of companies could be aided by planning studies which were conducted from a detached viewpoint. Thus it was proposed that a specific methodology would be tested by implementation and evaluation and that the research should seek to contribute to the broad field of policy determination and strategy by a careful recording and analysis of results.

3.2 The literature suggests that much of the apparent disenchantment with strategic planning in application stems from two quite distinct problem areas. Both are essentially of a 'behavioural' rather than 'mechanical' nature. Thus it seems that although the commonly employed comprehensive and 'routinised' approach to strategy formulation has satisfied, by evolutionary refinement, most of the relevant theoretical considerations, it is often being significantly inhibited in practice. The following categories of problems tend to be most frequently mentioned:-

- (i) The management style of the organisation maintaining a state of dissonance with newly applied planning procedures, and finally rejecting or ignoring them (for example, see Taylor and Irving ref: 69).
- (ii) The significance of both personal and organisational values exerting influences on the evaluation and choice of strategy, thus introducing 'inconsistencies' into rational analysis. (for example, see Guth and Tagiuri ref: 139 and Salveson ref: 135).

3.3 In the former case it would appear that the implications revolve around the importance of an organisation being allowed to evolve a planning system which operates specifically in sympathy with its normal managerial functionings and structures. Hence these organisational functionings should be comprehensively examined and fully understood before the deployment of conceptual frameworks for

the planning processes. In addition, these requirements tend to indicate that the use of ready-made 'package systems' is unwise, especially since it could be strongly postulated that each individual organisation possesses unique characteristics.

3.4 In the latter case, the inference to be drawn is that the intangibles which may generate distortion in 'rational analysis' should be specifically accommodated within the planning process. Thus such value-systems, their inter-linkages, mode of operation and eventual influence ought to be identified and made explicit before the application of the comprehensive planning techniques. The underlying rationale is that 'validity' is equivalent to 'workability'. Unless theoretical constructs can be successfully applied and prove to be helpful in strategy formulation and implementation, they are not entirely valid.

3.5 Consequently, the overall research hypothesis which formed the embryo for this study was that a 'value-free' analysis of a 'global' overview of Delta's operations from a detached viewpoint, together with an examination of organisational value-systems and their influences, would provide a useful pre-requisite and complementary foundation to the normal detailed planning procedures currently employed by the Group. Such an analysis, it was postulated, might increase the probability of successful planning.

3.6 In this sense, the aim of the approach was to promote 'workability' of the existing planning system used by Delta, as well as producing a detached analytical study of possible long-term strategies. Thus there were two major components of the research:-

- (i) A detached 'global' overview of the future possible operating environments of the Delta Group and a holistic analysis of relevant strategies. This would be an essentially value-free approach.
- (ii) An in-depth analysis of the values percolating through the company with special reference to their possible influences on strategy.

3.7 Within the hierarchy of the research objectives, it was subsequently postulated that the holistic analysis of Delta's possible future operating environments might prove to be helpful in several ways. Firstly, from its unique perspective, it would act as a complementary 'cross-check' to strategic policies generated by existing procedures from within the Group. Secondly, it was selected as most appropriate since a more 'value-free' analysis of the total system's environmental trends would hopefully outline a series of future scenarios to which the firm must adapt by necessity; rather than a more conventional extrapolation of what might be considered as 'desirable' for the company. It was considered that this would produce more realistic planning targets by removing value-influenced 'wishful-thinking'. Thirdly, it was proposed that attempts should be made to account for and appreciate the inter-linkages between the various environmental variables so that integrated future environments were generated. And finally, it was considered that the study should be conducted in the context of longer-term perspectives and should not necessarily suffer from any specific 'cut-off' point in time.

3.8 Implicit in this component of the research hypothesis was that the approach would adopt an operationally passive approach to strategy. That is, that the emphasis was explicitly placed on the firm 'optimising' its adaptation to a changing environment, in the long-term. Hence the sheer opportunism often perceived as 'aggressive strategy' would be displaced in preference to directing the whole system towards areas of high probabilities of success and withdrawing it from parts of the environment characterising low probabilities. This apparent imbalance between short-term opportunism and longer-term evolution would, however, be redressed quite significantly by the fact that many internally generated strategic proposals (via Delta's existing system) were already of an 'offensive' character. Thus the two perspectives naturally complement each other well.

3.9 Also accepted in the chosen approach were the relatively severe limitations imposed upon the analysis by specific time constraints. As a consequence, only the most salient subject areas of the total overview could be examined and then only essentially qualitatively. In addition, the analysis, although systematic and fundamentalist in nature, would have to rely heavily upon the findings of other researchers, on informed opinion and relevant published information. Hence it was essentially of a macro-orientation.

3.10 The second component of the research hypothesis, namely the analysis of organisational value-systems and their influence, was carried out because it was believed that these might pre-determine acceptable methods and directions for strategic development. Hence value-free policies could be profiled against this hypothetical filter of acceptability, thus introducing some concept of 'viability' to the planning approach. It was considered that the identification and appreciation of these values and their possible influences might be of importance not only with reference to the 'viability' of strategies, but also as regards a consistent overall approach to strategic evolution within a quasi-autonomous decentralised Group structure like Delta's. Consequently, it was postulated that explicit awareness of these intangibles would be helpful in the formulation, evaluation, selection and final implementation of strategic policies in the context of seeking maximum benefit for the whole Group.

3.11 It was subsequently proposed that such an analysis should be carried out by means of a series of scientifically structured in-depth interviews with all the top-management of Delta. In addition, it was considered important to attempt to validate the apparent findings by observation and examination of real strategic outcomes. It was, however, considered impracticable to observe actual decision-processes within the top-management group since this would breach stringent undertakings given with regard to confidentiality.

3.12 Hence this second component of the research was obliged to deal with substantial amounts of essentially 'soft' evidence, even though the final conclusions would not be reached until a complex series of circumstantial data sources had been examined and integrated. Nevertheless, it was postulated that the insights generated by such an analysis, coupled with the objective and holistic examination of Delta's functionings, would provide a useful basis from which to promote greater degrees of coherence and soundness to existing planning approaches and the implementation of strategic policies. At the same time, it was hoped to make a useful contribution to planning theory in a broader context.

3.13 As a broad methodology, the total research adopted a 'process-action'* study posture. And the perspective for the work could be succinctly described as a 'worm's-eye' view. In this way, it was proposed that a continual process of observation and evaluation would be maintained and any relevant changes in the perceived attitude and behaviour of the top-management would be recorded. Implicit in the 'process-action' posture was that the research sought to identify and examine the normal functionings of a single 'real' firm in situ.

By the same token, however, the sample size as regards scientific method would obviously be limited. Nevertheless, it was considered that there might be potential value in an in-depth analysis of a specific yet probably unique organisation, and that by obtaining a dynamic and detailed insight into some of the underlying strategic processes, one might be able to explain and understand strategic behaviour more directly.

* (e.g. Clark ref: 170) 'process-action' research may be so called because of the growing emphasis which is being placed on 'change' in conventional action-research. In this study, no planned change was attempted although certain changes did take place. Thus both the normal process and the induced changes were observed and analysed.

3.14 The research findings throughout the study would, it was proposed, be sequentially presented to Delta's top-management and any feedback or further interaction would be recorded and analysed. It was considered that such observation would be of significant value in the context of final validation of the conclusions and the evaluation of the overall approach. And it would also serve a useful function in formulating an additional dimension of evidence.

3.15 Thus it was hoped that by implementation of the approach and by a critical analysis of feedback, interaction and perceived changes, some broadly based evidence relating to the evaluation of the total concept implied by the research hypothesis could be collected. Naturally enough, true evaluation by the introduction of some controlled experiment was impracticable. Hence it was proposed that these assessments should be conducted from as many perspectives as was possible and that a comprehensive picture would be sought.

3.16 It was subsequently considered relevant to examine the implications generated by the study so that some estimation of the viability of the approach embodied in the hypothesis might take place in a broader context. It was hoped that these postulates, if successfully translated into practical application, would prove to be flexible enough to be used by other organisations dealing with the problem of strategy formulation and implementation.

3.17 With reference to these ultimate goals, it was considered that the evaluation of the research hypothesis should be carried out by the following methods:-

- (i) Subjective judgments made by top-management as regards research findings.
- (ii) A critical comparison between the findings of the study and those generated by Delta's existing planning processes.

- (iii) Evaluation of Delta's acceptance of the approach or any of its procedures.
- (iv) An examination of the degrees of coherence, consistency and broad realism of the findings.
- (v) Personal observations concerning the possible utility of the hypothetical constructs.
- (vi) Any significant changes in behaviour or attitude brought about as a result of the investigation.

3.18 Thus it was proposed that by working within this framework, the broad approach could be implemented, validated and evaluated before any conclusions about its operational viability and desirability in a broader context could be reached. It was also considered important to examine and evaluate the research perspective itself, since the 'worm's-eye' view, as a vantage point for the observation of normal organisational functionings, appeared to provide a rich, if delicate, source of research data.

3.19 However, it must be emphasised that the research hypothesis, in proposing an approach which might increase the probability of sound strategic planning, was perceived as a complementary and supportive process to Delta's existing planning system rather than an explicit alternative. In addition, the perspective implied by the 'worm's-eye' view may be likened to that of many 'planners' in 'real-life' organisations. Hence an implicit postulate was that a methodology generated to assess and evaluate strategic behavioural acceptability from a distance, might be of considerable value to 'planners' in the real world.

CHAPTER IV

Contents

The conceptual model of the firm's ecology - the methodology implied by it and description of the practical consequences of the approach to planning - the areas researched - the salient conclusions reached through the analysis - the strategic implications for Delta - proposals for business development and re-structuring.

Abstract

The chapter outlines the proposed 'ecological' methodology for planning and conceptually models the company on this basis. The methodology for the value-free assessment of Delta's environment is demonstrated. The salient conclusions of the analysis, the strategic implications, and proposals for Delta's business development are summarised.

CHAPTER IV: THE STRATEGIC 'ECOLOGICAL' OVERVIEW

(I) Introduction

4.1 The point of departure for the initial phase of the overall programme of research was to gather, in some detached and fairly objective way, the background data relevant to the company's strategic posture. It was decided that a sound methodology for doing this could be generated by the use of an 'ecological' approach to strategy formulation, with explicit emphasis placed on projecting the possible future operating conditions of the company. The results of this investigation are contained in the original management report which now forms Appendix (A) to this thesis. It must be recorded that because of the confidential nature of internal planning data, the examination of the Delta Group through the application of the 'ecological' model was thus essentially directed towards its broad operating environment. This is also relevant to the 'detached viewpoint' character of the study since the exclusion of internal and existing planning data would, it was considered, tend to decrease the chance of pre-conceptions about strategy in the research.

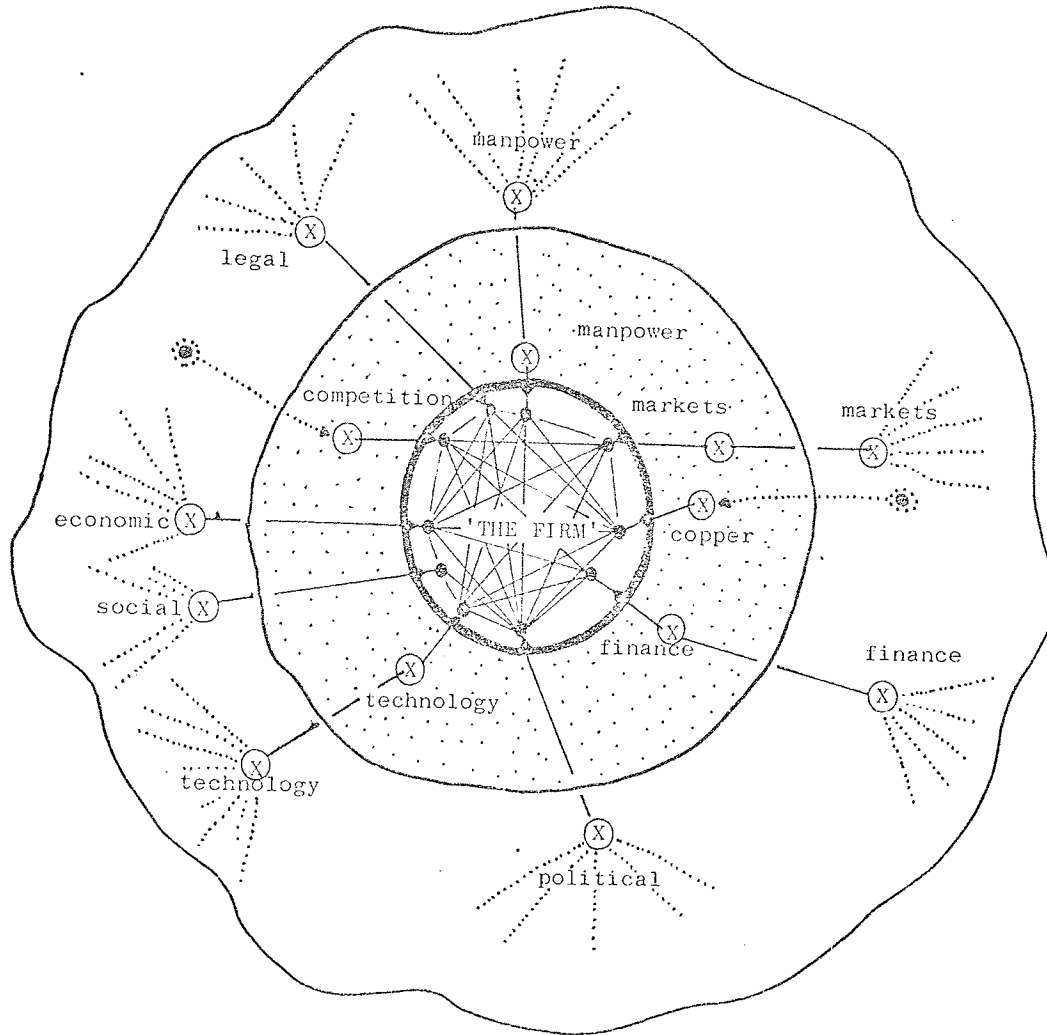
(II) Theoretical Constructs

4.2 Hence, conceptually, the company was modelled as an 'organism' adapting to and interacting with a dynamic operating environment. It would do so in order to maximise its advantages and minimise its disadvantages - the difference between the two being some measure (in the broadest possible sense) of "profit". The 'organism' would also have the ability to store 'fat' (in the form of expertise, ability, or resources) which it could use should its input or 'profit' dwindle. From within, the organism would burn a major proportion of its incoming 'profit' through a series of internal obligations - such as dividend payments and replacement of capital equipment - but the remainder would then be destined to fulfil survival first and growth second, as its major proximate objectives.

4.3 The broad environment within which such a model would be expected to function, could be systematically disaggregated into a number of distinct influential components. These components were conceptualised as 'constraints' for, although the model generated 'profit' through a process of continual adaptation and interaction, it could exercise little control over their nature or configuration. Thus the 'organism' was essentially captive to its 'ecology'. These 'constraints' (or variables) were also conceptualised as environmental pressures rather than rigid limitations. Hence any dissonance between the 'organism' and any of its 'constraints' would result in a gradual drain on its inputs (i.e. its 'profit'), as well as on its existing resources (or 'fat'). In this manner, the environment would thus exert its influences of conformity. Hence, in the strategic context, the 'holism' of the Delta Group would seek to both anticipate and adapt to changes in its environmental configuration in such a way as to maximise its 'well-being' or, conversely, to optimise its long-term development. The broad mechanism for bringing this about would be to direct the whole of the firm towards those areas of the environment characterising high probabilities of success whilst withdrawing it from areas of low probability.

4.4 Since every company (or indeed organisation) is probably unique in its own right, its operating environment may also be separated into two discrete aspects. The first, which could be called the 'primary environment', would contain those environmental variables which largely affect most companies - such as the domestic economy for example. The second, which could be called the 'unique environment', would contain those elements which specifically affect the firm under examination, (together with some of its competitors perhaps) even though they too are influenced by the primary environment to some degree. Figure (11) outlines such a composition, on a two-dimensional basis. Although it is implicit that these distinctions are not always firm ones, the 'unique' environment is nevertheless actually chosen by the firm whilst the primary environment is not. Thus it is useful to distinguish those constraints where the firm can alter the configuration, from those it cannot.

THE 'ECOLOGICAL' MODEL OF DELTA



....dotted area denotes
'unique' environment..

FIGURE (11)

(III) Methodology of the Approach

4.5 For the Delta Metal Group as a totality, and for the purposes of the research, seven major constraints were chosen for examination. Three of these were 'primary' and the remainder 'unique'. There is little doubt that the list could be easily extended and that each 'constraint' could be sub-divided into many smaller parts*. However, because of the limitations of time, only the most salient areas were chosen. Whilst this may imply reductionism, the final outcomes of this part of the work were perhaps coherent enough to suggest that this 'pilot run' demonstrated at least the majority of the main characteristics of the 'real thing'. This was evidenced by the fact that, upon examination of the integrated outcomes of the analysis, no major external features had, apparently, been overlooked. In addition, top management within Delta tended to recognise the strategic overview as a fairly comprehensive and diagnostic study of the actual, if long-term, functionings of the Group.

4.6 The basic environmental 'constraints' selected as of most relevance to Delta were the following:-

- (i) Availability and prices of raw materials. - (U)
 - (ii) Aspects of technological change affecting the methods of production of, or demand for, the company's products. - (U)
 - (iii) The market demand for the Group's products in the long-term. - (U)
 - (iv) Politico-economic and legal considerations. - (P)
 - (v) Availability of necessary finance. - (P)
 - (vi) Competition. - (U)
 - (vii) Manpower. - (P)
- U = 'unique'
P = 'primary'

* for a good example of extreme disaggregation of environmental variables see Cannon ref: (134).

In addition, the list could have also included some of the broader social and moral considerations which are becoming so important today. But, in a sense, the very complexity of that one area alone precluded it from any serious attempt at examination. It is also true that many of the above areas interact with each other, and contain 'overlap'. However, for the sake of a systematic and logical analysis, some sort of structure is important.

4.7 From within each of these 'constraints', specific and salient areas of research were selected in order to give the maximum depth to the analysis as time would allow, whilst also satisfying the criterion of some sort of overview in totality. Thus the specific subjects chosen for analysis were the following:-

- (i) The future availability and price of copper.
- (ii) The technological aspects of substitution of copper by other competing materials.
- (iii) The long-term demand for copper and copper alloy semi-manufactures.
- (iv) The long-term demand for the company's building products.
- (v) The long-term demand for the company's electrical products.
- (vi) The politico-economic aspects of the E.E.C. with regard to Delta's operations; and for expansion overseas.
- (vii) The future trends in manpower which would affect the company's operations.
- (viii) The future trends in the availability, methods and costs of finance for Delta.
- (ix) Aspects of competition and prominent trends of competitor's patterns of strategic development.

4.8 From these selected areas, a fundamental approach to the analysis developed. The aim was to project the long-term evolution of the strategic environment of Delta, having no distinct 'cut-off' point but giving most weighting to the proximate period. Ideally, each of the 'constraints' within which the Group was forced to operate, would be divided into the various influencing components.

Those in turn would be sub-divided once again. In this way, a series of models could be constructed and projections made under varying assumptions and for different periods. The subsequent integration of these projections would then indicate possible future sets of operating environments and at the same time imply logical and 'optimal' patterns of development for the Group as a whole. Figure (12) denotes a simplified disaggregation of one single constraint - the price (and availability) of copper.

4.9 Unfortunately, an analysis of such complexity which accounted for Delta's total environment was simply not possible given the time and manpower considerations. It could be argued that indeed any single area could readily lend itself to a three year examination in its own right. However, the subjects selected for the study were perhaps some of the most relevant and on this basis they were analysed and projected qualitatively. The research made no pretences towards a highly quantitative scientific structure but nevertheless maintained credibility in assessment. It is felt, however, that a sound qualitative set of conclusions - in 'totality' - is significantly more preferable an option to a fragmented but highly scientific presentation. In the strategic context, a proposition that market 'x' is expected to grow at about 5% p.a. is almost as meaningful as an explicit figure of 5.32% p.a. Additionally, because of the high levels of uncertainty in making such projections, it may well be that the effort involved in proper scientific estimation becomes redundant. In ideal circumstances, of course, such quantification should obviously be attempted given adequate amounts of time and suitable resources.

4.10 In order to deal with each area as coherently as possible, the fullest use was made of informed opinion and other relevant published studies. Whenever possible, these channels of information were also supplemented by a fundamental analysis carried out from basic principles. Once each subject-area had been analysed and projected upon, the immediate strategic implications for Delta pertaining to that specific area, were then formulated. After any area had been systematically dealt with, a paper describing the analysis, making conclusions and formulating strategic implications, was circulated to the Group Planning Committee for comment. Each paper

*
A SIMPLIFIED DISAGGREGATION OF ONE ENVIRONMENTAL CONSTRAINT

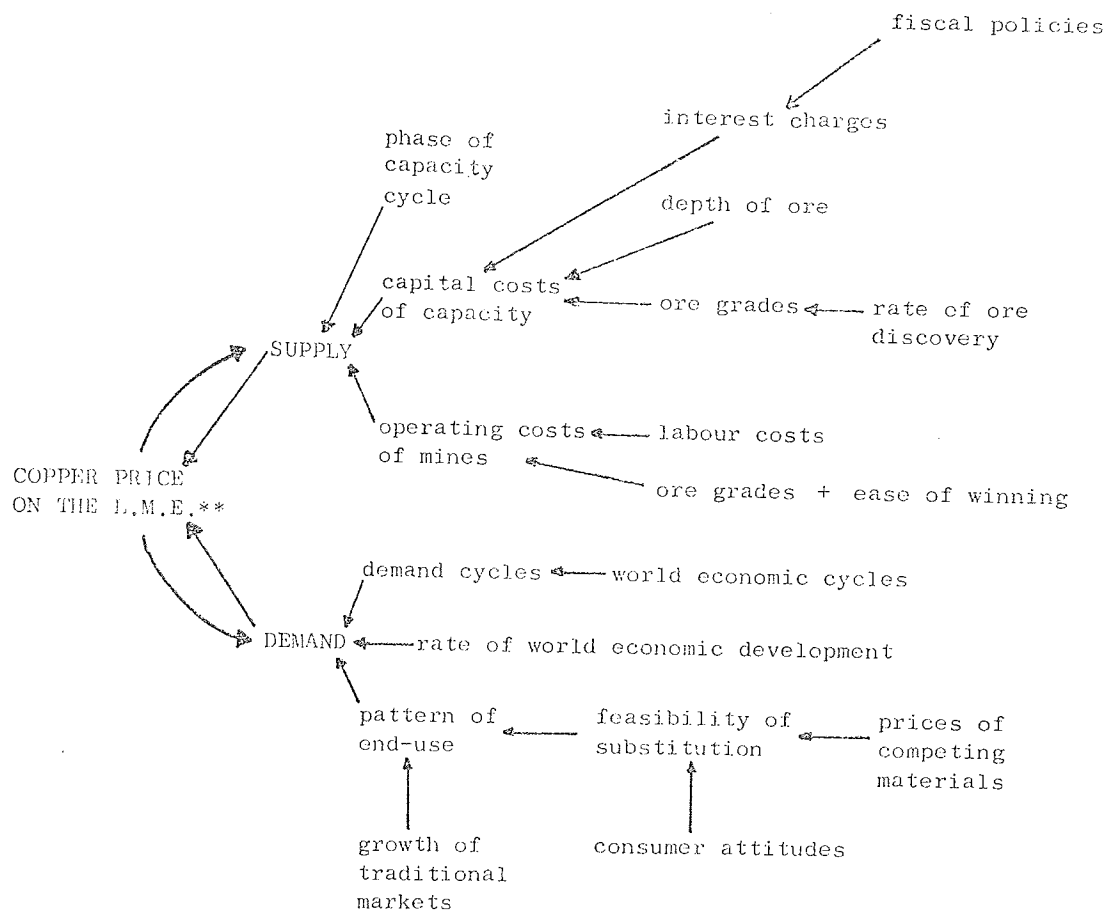


FIGURE (12)

* many other feedback-loops and interlinkages have been omitted.

** London Metal Exchange is the World market against which most copper pricing takes place, even though it accounts for only a small proportion of the actual copper traded.

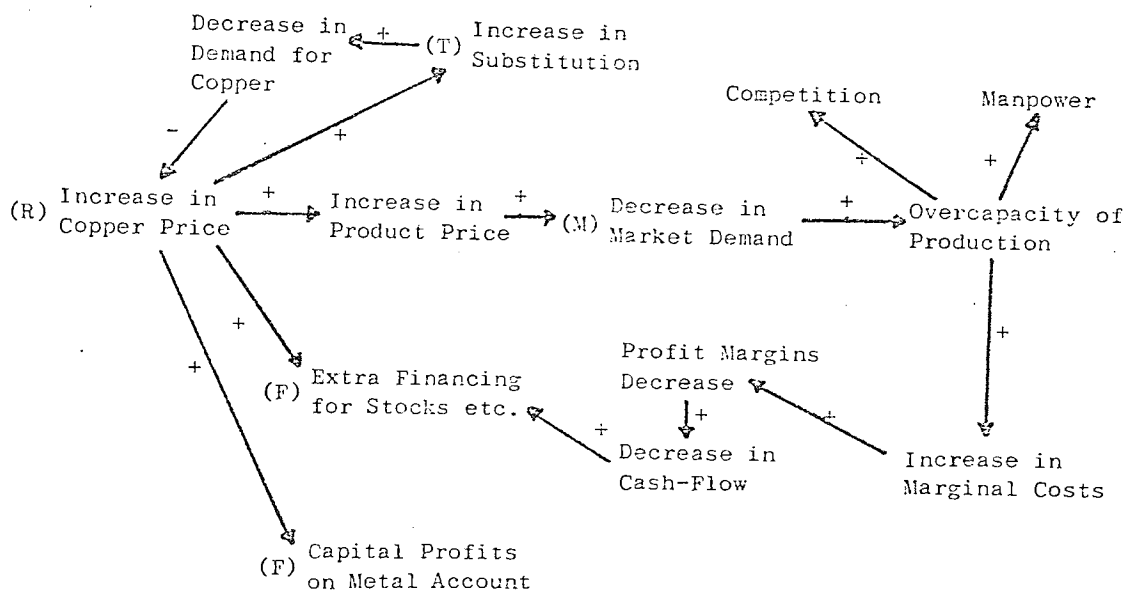
was discussed in detail with one (or sometimes more) member(s) of that Committee. In this way, the research was validated with respect to consistency and coherence. Where necessary some slight reorientation was effected.

4.11 When all the basic areas had finally been analysed and discussed, a process of integration was attempted. Naturally, the potential cause and effect relationships between the strategic implications offered by the 'constraint' areas are complex. However, the most obvious were examined and many of the secondary ones also taken into account in the formulation of a series of recommendations for Delta's future development, in policy form. Figure (13) outlines an example of the potential interlinkages between various constraints. Thus the 'ecological' model exhibits aspects of a comprehensive and systematic analysis and, in addition perhaps, maintains an approach of greater objectivity than might be obtained internally. The examination of trends in the operating environment of the firm, and various projections of that environment, immediately indicate the possible changes which the firm might have to undergo if it is to survive. Implicit in this analysis is also a process of 'optimal' development, however theoretical and abstract a concept this might be.

4.12 The final component of the 'ecological' methodology used in basic analysis was that of the case of adaptation of the 'firm' to rapid unforeseen changes in its environment. This can be called its "refractory period"* and is defined as the minimum and maximum time phases between detection of the need to adapt and adaptation to new normal operating levels. In Delta's case, for example, its maximum 'refractory period' for the heavy and capital intensive end of its business is estimated to be eighteen to twenty-four months for a radical adaptation. For Delta's lighter end, however, the 'refractory period' would be about six months. This concept is useful in

* In certain respects this concept is similar to Ansoff's "organisational time-constant". See Ansoff, H.I. "Management on the Threshold of the Post-Industrial Era" - unpublished paper May 1972.

AN EXAMPLE OF INTERLINKAGES BETWEEN 'CONSTRAINTS'



(R)= raw materials
 (T)= technology
 (M)= market demand
 (F)= finance
 + = positive influence
 - = negative influence

FIGURE (13)

programming patterns of adaptation with reference to environmental changes and for assessing the vulnerability of the 'organism' to certain specific possibilities (i.e. in contingency planning).

4.13 Thus, in this manner, the basic background strategic research was systematically carried out and the final original summary report prepared for the top-management of Delta forms Appendix (A) to this thesis. Through this methodology, a strategic and (hopefully) relatively objective 'over-view' of the Delta Group was formulated. This summary report was distributed in early June 1973 and subsequently many of Delta's top-management were visited to collect and discuss their reactions. In addition, several of those concerned sent documentary evaluations of the study and its findings, and these were subsequently analysed.

(IV) A Summary of the Salient Conclusions

4.14 The strategic 'ecological' overview of the Delta Group thus produced a series of salient implications which, in turn, gave rise to rational and relatively objective policies concerning business development. The most important environmental changes indicated by the study are now briefly described. However, for further detail and evidence the original management report which now forms Appendix (A) should be consulted.

4.15 The first conclusion was that Delta's major operating material - namely copper - was probably going to continue to rise in price. Because of the drop in ore grades, producing countries' fiscal policies and increasing operating costs, it was estimated that a price rise of some 60% in real terms seems likely over the next decade (discounting cyclical variations). In the relative context, copper's major competing materials (aluminium, plastics, and stainless steels) do not appear to have the same obvious conditions for similar price increases; although a significant question mark hangs over the dependence of plastics on oil supplies and prices. Thus, whilst certain assumptions about the relative prices of substitutes have to be made, nevertheless, some very specific probabilities become apparent. (For greater detail see Appendix (A) pp 2-7).

4.16 Apart from the obvious (but still fairly minor) problems of financing stocks and accounting for the opportunity cost* of investments, a significant increase in the relative price of copper may tend to bring about a steady evolution in its pattern of end-usage. The conceptual role of the metal and its alloys has, until fairly recently, been that of a widely used corrosion resistant all-purpose material. However, subtle changes have been taking place and copper and its alloys are becoming more and more selectively used in applications only where their unique properties demonstrate significant advantages on a cost/benefit basis. (Copper alloys are now rarely used for door furniture for example). The expected increases in the price of copper tends to imply that these trends will continue; thus copper may well become more of a 'precision' material.

4.17 This change could well necessitate a re-orientation of the historical business philosophy of Delta which has been one of developing or acquiring businesses which utilise copper and copper alloys; and especially businesses which further process the Group's original semi-manufactures. In addition, Delta's basic manufacturing activity has been one of producing products with relatively low technological content and this may present an inconsistency with the deduced (if hypothetical) role of a 'precision' metal.

4.18 Should the price of copper follow the foreseen pattern, then there is a variety of substitute materials which could take its place. The most common competitors are aluminium, plastics and stainless steels. It is immediately apparent that these materials are all corrosion resistant and fairly easily worked. In addition, aluminium is a good conductor of thermo-electrical energies (For detail see Appendix (A) pp 9-14).

* 'opportunity cost' is used here in the sense of the 'cost' incurred by the investment (in say, copper stocks) not earning a return elsewhere.

4.19 In terms of price, it is important to bear in mind that aluminium, on a per unit volume basis, is more than eight times cheaper than copper at the moment (based on average prices) since it is three times lighter. And even allowing for differences in conductivity, aluminium is still five times cheaper when used as a conductor. Thus unit cost rises in copper are amplified. Naturally enough, such statistics fail to tell the whole story because many other criteria, both technical and traditional, have to be accounted for. Nevertheless, under economic pressure these changes, once made, are often irreversible. It is also understood that stainless steel production still has potential economies of scale and thus it is possible to envisage lower unit costs and thus, perhaps, price. The cost of production of plastics depends heavily on the world oil prices. The historical cost curve for most plastics appears to have "bottomed out" and thus it is expected that prices can only tend to increase. But, because of the present political problems of oil production, there is a great deal of uncertainty about possible trends in prices for these polymers.

4.20 An examination of the viability of substitution across the present patterns of end-usage of copper and its alloys, tends to suggest that a significant proportion is threatened. Thus the potential of a steady but severe contraction in the rate of copper consumption in the U.K. appears to be a realistic one, especially since the consumption per capita is significantly higher than most other developed economies. Should such substitution and rationalisation of copper usage occur, then the Group would indeed be affected. It was estimated that, in the extreme, around 78% of the Group's products (on a turnover basis) could be threatened by substitutes. (For detail see Appendix (A) pp 15-19).

4.21 However, individual companies engaged in the production of finished articles could fairly easily adapt to using alternative materials, should the market dictate the demand. Unfortunately, the same cannot be said of the operations which form the component parts

of the integrated manufacturing processes. In these cases the relatively inflexible capital equipment might tend to become obsolete, assuming that manufacturing capacity remained fairly constant.

4.22 Around 36% of Delta's total capital employed is engaged in the production of semi-manufactures, whose demand is cyclical. These plants are sensitive to throughput. Thus there is amplification of the cyclical patterns and obvious implications about the irregularity of earnings streams from this sector of Delta's business. The next downturn in the U.K. economy, which is expected to occur in 1975, may thus present a problem to the Group's efforts to maintain a strong and progressive growth in earnings per share. For, although earnings per share targets might well be met, it could be at the expense of a variety of other budgeted provisions. (Research expenditure for example) Such a policy would obviously prove to be disruptive to the natural evolution of the company.

4.23 In the longer term, the demand for all semi-manufactures (on a tonnage basis) is expected to decline. (For detail see Appendix (A) pp 20-25) As well as the threat of straight-forward substitution, there may also be a further degree of rationalisation of end-usage and, possibly, also the growth of alternative methods of production which produce finished articles without all the intervening manufacturing processes. A good example of this is the production of water taps by casting methods rather than stamping them from extruded brass rod.

4.24 Apart from the fundamentalist approach, however, extrapolations of demand trend-lines and analyses of the relationships between various semi-manufactures and G.D.P. provide further evidence that a long-term decline is probable. In the case of brass-rod, (Delta's major semi-manufacture), the decline is expected to be gradual and longer-term because of the enormous diversity of end-use and because the price rises for copper are to some extent dampened in alloy form. The other major semi-manufactures (copper and copper alloy sheet and strip) are much more vulnerable and the decline in demand for this sector is expected to be fairly marked.

4.25 Undoubtedly, a decline in demand for a product does not explicitly mean that profitability will fall as well. But, because of the full capacity situation existing in the U.K. and in Europe, there are obvious implications. Capacity could, however, be engineered so as to contract and price margins could also be adjusted so as to offer a more reasonable return on lower throughput. Both are usually difficult to bring about and this is probably especially true in a European context.

4.26 The study also examined the long-term potential of the building and construction industry which accounts for around 40% of Delta's total output, by far the Group's largest single customer industry. It was concluded that because of population trends and the rate of construction of dwellings, this area provided Delta with no significant growth opportunity but rather presented a solid and stable foundation as a market. At the same time, the majority of Delta's sales in this sector are directly attributed to the addition and replacement of basic amenities to existing dwellings. A significant proportion of this is dependent on the improvement grant system which has recently experienced rapid growth. The study indicated that the improvement grant sector of the market could be vulnerable to political influence and that, in addition, there was a point of saturation which could occur as early as 1976. Thus expansion in line with improvement grant demand seems unwise. However, the study also indicated that there was opportunity in Europe and that the long term potential of a replacement market for the Group's building products was good. (For detail see Appendix (A) pp 28-36)

4.27 An examination of the potential demand for Delta's electricals and cables concluded that, in absolute terms, the energy requirements of Europe make the outlook promising. The estimates of a continuing exponential U.K. demand trend indicate that the broad product area is an expansionary one. Perhaps the one problem is 'competition'. In many respects the electricals and cables sector is dominated by large multi-national companies. Thus there may well be a limiting

factor which would preclude Delta's development from entering a wide variety of related activities. Nevertheless, as a broad product market, it was considered that this area should be offered investment priority. (For detail see Appendix (A) pp 36-41)

4.28 As regards Europe, the indications were that, because of the difficulties of investment and the apparently lower returns, Delta should not explicitly invest in manufacturing activities. The capacity of semi-manufacturing activities within the E.E.C. also seemed to be full, with a tendency towards over-capacity at times of economic slump. Another significant factor is that copper consumption per capita in most European countries is much lower than that of the U.K. and this is especially true in the case of France which is much more orientated towards aluminium usage. It was also concluded that there was little chance of Delta benefitting from any trade diversion as a result of Britain's entry into E.E.C. except, perhaps, in the case of some electrical control apparatus and telecommunication equipment. (For detail see Appendix (A) pp 42-49)

(V) Strategic Policies Implied by the Overview

4.29 On the evidence of these and a variety of other considerations, a series of 'quasi-objective' policies for Delta's strategic development were formulated. It is important to stress that these policies, given the framework of the methodology, had still to be evaluated as to their feasibility in practice. (For greater detail of the policies and subsequent proposals see Appendix (A) pp 69-93)

4.30 Firstly, the conclusions surrounding the semi-manufacturing operations in Delta implied that this was a significant area for consideration. The potential profit per capital employed indicated that some of the heavy capital equipment could be incurring a significant opportunity cost in the not too distant future. On the other hand, it is also possible that the market could be restructured in order to accommodate the foreseen decline. However, Delta's major semi-manufacturing process - the production of brass-rod - is also an important component in the chain of vertical integration since

a high proportion of its output is further processed within the Group. As well as this, the expected decline in demand for brass-rod will probably tend to be relatively long-term and gradual in nature. The manufacture of sheet and strip, however, appears to demonstrate quite different characteristics. In the face of a severe medium and long-term contraction in demand, together with a resultant over-capacity in Europe, it was thought that divestment should be considered. On the basis of the economic "sunk cost" principle*, these activities should, perhaps, either be broken up in order to release some of the capital or sold off as a 'going-concern'.

4.31 However, businesses tend to reject the 'sunk-cost' principle and, since Delta has some £7m invested in the rolling mill plant alone, it is not difficult to see why. Thus, if such is the case, then some sort of true integration ought to be attempted. At the moment the degree of integration of sheet and strip with other activities within the Group is fairly limited. Hence it was proposed that the present ERM Division ought to accommodate a major heat-exchanger business and ought, subsequently, to become the nucleus of a Metals Division in Delta; and accordingly expanded along related philosophies.

4.32 Similar reasoning led to the conclusion that a policy of integration would also be suitable for Rod Division, in that it ought to fully accommodate both Astonia and Components Divisions, its two major internal customers. This could produce the basis of an Engineering Division for Delta which could then be expanded along relevant lines. Alternatively, it is also possible to visualise an aggregation of both the heavy semis Divisions (incurring some rationalisation probably) to form a single semi-

* the 'sunk-cost' principle postulates that a divestment decision should be based only on the future prospects of the business and not the size of the investment nor the loss incurred by a write-off. Implicit in the view is that "time is money" - hence the earlier the capital is switched to a new business the better. However the concept is not without controversy.

processing unit; and the unification of Astonia and Components Divisions at the same time.

4.33 The second major policy formulated by the strategic overview was that the Delta Group ought to aim at developing a comprehensive system of distribution for its products. A significant proportion of Delta's products are presently sold through builders' merchants, electrical wholesalers and semis-stockists. Because distribution is historically a profitable business in its own right, and because certain specific competitor companies have been developing into Delta's distribution areas, it was proposed that a Service and Distribution Division might be set up to handle the Group's products. This Division would also form Delta's investment priority in Europe, in order to make use of any economies of scale possible within U.K. manufacturing units and because of the apparent lack of potential for Delta's development of manufacturing activities in the E.E.C.

4.34 The third major policy proposed that Delta ought to establish a Plastics Division to carry out sub-contracting work for all other Divisions and to produce a range of finished components of its own. This was suggested because of the probability of various engineering and other polymers becoming substitutes for copper and copper alloys. At present, Delta has only a limited interest in the use of plastics in certain of the Divisions.

4.35 The implication that the outlooks for the Group's electricals and cables manufacturing activities were promising gave birth to the policy that these two Divisions ought to be given priority for development; and expanded on a broader and deeper basis on an international scale. The opportunity for Delta to become securely established in the broad electricals arena, with world wide manufacturing bases and markets, seems to be present.

4.36 It was then proposed that the Building Products Division, which contributes a significant proportion of the Group's total profits, ought to become very much more broadly based but that it should

not be developed in depth. This was indicated by the apparently stable but limited market potential foreseen. Hence it was considered that this segment of the Group's business ought to be treated as an area of consolidation rather than expansion.

4.37 Finally, the last major policy suggested that Delta might be wise to develop a fourth distinct area of activity - perhaps into consumer durables. This was proposed because of the expectation of a continuing problem as regards cyclical profits generated by a large portion of the Group. Whilst development into higher-value added products tends to dilute the cyclical influence of the semi-manufactures on the total earnings stream, it still only dampens it. Thus it was suggested that a somewhat counter-cyclical activity (like the manufacture of consumer durables) might be employed to balance the variation. Such an area might also have synergistic possibilities with the electrical and cables sectors.

4.38 These policies provided the basic framework for an 'objectively' based strategy for the Delta Group. However, they had not been evaluated. Nevertheless, they were translated into a crude overall 'blue-print' and scenario for the Group, within a time-series of about a decade. Such things as probable growth rates and changes in capital employed were implicitly accounted for. A further account of the policies, the strategic alternatives and 'blue-print' are contained in the management summary report which was circulated and which now forms Appendix (A) to this thesis. Thus the original 'ecological' model was at least successfully translated into an explicit methodology and this was, in turn, implemented. However, the full evaluation of its usefulness and realism (and hence its true validity) had yet to be carried out.

Chapter Summary

The chapter introduced an 'ecological' approach to the problem of strategic planning, by placing emphasis on the analysis of Delta's strategic environment. It was considered that such an analysis would provide a value-free assessment of the possible future environments of the firm and imply a series of policies for the company's business development. The salient conclusions of the analysis, together with the strategic policies formulated by the process, were presented. The proposals relating to a restructuring of the overall Group were also outlined.

CHAPTER V

Contents

Action-perspective of the early part of the research - reactions to early research papers
- interaction between company and researcher
- reactions to eventual management report -
typology of counter-arguments - anatomy of
a strategic decision process - inferences.

Abstract

The chapter outlines the action-observation and interaction during the first major research phase. It analyses the firm's reactions to the research papers, and certain specific instances involving a strategic decision sequence. Broad inferences are then drawn.

CHAPTER V: ACTION PERSPECTIVE ONE

(1) Introduction

5.1 This analysis of action-observation deals with the interaction resulting from the implementation of the first major research phase (i.e. the 'ecological' model and the strategic proposals generated by this approach). The summarising management report of the process (which forms the Appendix (A) of this thesis) was circulated in early June 1973 to all Divisional Chairmen and the Group Planning Committee.

5.2 It must be recalled, however, that a variety of papers had already been sequentially prepared throughout the analysis of Delta's possible future operating conditions, and had been circulated to the Group Planning Committee (hereafter referred to as the G.P.C.) and, occasionally, to certain Divisional Chairmen. Additionally, the researcher maintained close relations with the Group Market Research Department throughout this phase of the study in order to acquire information and gather opinion relevant to any conclusions reached.

(II) Some Reactions to Early Papers

5.3 Perhaps one of the interesting points to emerge from the 'holistic' phase of the study was that most of Delta's management both understood and appreciated the rationale of a 'total-systems' type of approach to strategic planning. They perceived the outcomes as coherent, if not always (in the initial stages) entirely credible. However, one specific early paper did generate significant interest. It referred rather philosophically to a logical structuring of Delta's existing business and, upon that basis, went on to propose a series of criteria for the company's future development. The actual series is reproduced below:-

- (i) That the directions be in the building products and ancillaries, low voltage electrical equipment and general engineering fields.

- (ii) That there be a common material (copper and its alloys), common function (plastic tubes or copper tubes), common scope (brass taps and basins), or common expertise and skills.
- (iii) That any new field offers a specified threshold of return on investment.
- (iv) That it is preferable if small units in the field are intrinsically competitive with large ones, (since this was implicit company policy).
- (v) That if possible existing capital equipment is utilised by the new production processes. (i.e. that integration be maintained).
- (vi) That the new output is higher-value added (in selling manpower skill rather than material).
- (vii) That it is low-key technology requiring little R & D expenditure, (in accordance with Delta's other traditional business).

5.4 Perhaps unexpectedly, several of Delta's management responded very favourably to this type of structuring and commented that it produced an explicit and compact picture - "of what Delta should be all about". It was even suggested that such a reference ought to be used for setting out the basis of the year's senior management conference. These symptoms, perhaps, reflected, in those early times, a need felt by some of Delta's management for clearer Group policies with regard to strategic expansion. For although the autonomy of Divisions was (and still is) jealously guarded, the need to identify with the total Group was apparent and so was the subsequent need for guidance and cohesion. It appeared that 'autonomy' had gone too far, even though one Divisional Chairman did remark that there was a significant cyclical nature (as regards centralisation-decentralisation) in the policy-message emanating from Group Headquarters.

5.5 Another interesting feature of responses to the early 'holistic' papers was the apparent unwillingness to criticise. A multitude of both Divisional Chairmen and Group Planning Committee members often responded by a rather stereotyped - "Yes - I quite liked it but I hear that not everybody did." Or alternatively - "I do think there are some good points here which could be followed up but I'm sure not everybody will agree with you." However, everybody apparently did agree, except the 'phantom' constantly referred to. Conversely, of course, it might simply have been the result of recurrent misconceptions about other manager's attitudes to such proposals. In certain instances, these various proposals were simply never really taken seriously - especially in the context of longer-term considerations. Individual temporal horizons were often fairly short and 'credibility' tended to be judged in that context.

5.6 The researcher's role in those early days was also an indistinct one and often, in moving around the Group, common misconceptions were encountered and, perhaps, some suspicion. The academic approach to the strategic problem was not always seen as trustworthy but had, rather, to be tolerated. There was a repeated and common rejection of even the mildest hint of "jargon" and the researcher was informed that he-"shouldn't mention the word 'philosophy' to management." The reaction did not, however, last long and soon mutual and stable relationships evolved.

5.7 An interesting contrast existed between the role of the researcher as perceived by the G.P.C. and that perceived by Divisional Chairmen. Common to both was the misconception that the research was backed up by the substantial power of the 'academic machine'. Visions of large numbers of Professors of Business Administration pouring over Delta's problems were commonplace. In fact the work was carried out quite alone, although closely supervised. Nevertheless, in many cases this misconception was, perhaps, useful in establishing credibility more quickly than might otherwise have been the case. However, the work was essentially viewed by the G.P.C. as a training exercise which, because of its independence, might reveal certain strategic factors hitherto ignored. It may also be

reasonable to record that as time went on the study became perceptibly less of just a 'training exercise'. The Divisional Chairmen, on the other hand, viewed the researcher in much more of a 'consultative' light. The reactions to proposals on the part of Divisions were often significantly more intense and the researcher was perceived as a 'quasi-Group body' with the formal backing of the G.P.C. This was of course only true in certain limited aspects.

(III) Reactions to Final Management Report

5.8 The reactions to the final management report (Appendix (A)) of the first phase of the research were mixed. In many instances the researcher received favourable comment, especially with regard to the diagnostic content of the strategic overview. Others thought that the strategic proposals would make a significant contribution to specific areas of the planning effort. In one instance, it in fact caused a flurry of memos between one Division and the Group Headquarters and, in another, a Divisional Chairman quoted the report as a reference to substantiate a particular aspect of his preferred strategy. All considered, it did appear that the final report maintained credibility.

5.9 Certain specific aspects were, however, hotly contested. In particular, the conclusions concerning the expected increase in the price of copper and the subsequent prospects for substitution were attacked. The counter-arguments against these conclusions took a variety of forms, but they might be categorised as follows:-

- (a) Qualitative macro-systemic counter-arguments.
- (b) Inductively reasoned counter-arguments.
- (c) Null-credibility counter-arguments.
- (d) Norm-conformity counter-arguments.

5.10 (a) 'Qualitatively macro-systemic' counter-arguments were characterised by the employment of systemic logic at the highest level. That is, that specific assumptions were placed on the normal workings of market forces. These assumptions subsequently 'programmed' the economic system to produce a 'conclusive' answer, aiming to disprove the researcher's original assertion. For example, the counter-argument attempting to disprove the conclusion that copper was expected to increase in price approximated to the following:-

"If the price of copper increases like this, it is obvious that there would be a marked reduction in demand, and therefore the price would drop on the London Metal Exchange."

Or as regards substitution:-

"If substitution by aluminium increases, then the demand and thus the price of copper would fall whilst at the same time the price of aluminium would increase and substitution would stop."

Or as regards the increasing costs of copper mining -

"Ultimately if demand and consumption even out then there could be total recycling of copper in the U.K. and the only copper needing to be imported would be to replace furnace losses on remelting."

5.11 Thus all exhibit an implicit assumption, followed by inflexible solid logic. The employment of such a macro-system (usually an economic one) on a qualitative basis was an interesting component of counter-arguments. However, of course, the fault lies not in the qualitative workings of the system nor certainly in its logic. Rather, it lies in the implicit assumptions placed upon it. For example, the first counter-argument assumed that the market forces operable within the London Metal Exchange were the same as those for the U.K. market. However, they are not. For whilst the former is a free-world market, the latter is a domestic economy accounting for less than 9% of total free-world copper consumption. Thus, the two are nearly independent systems. Similar assumptions had also been applied to the second counter-argument, as well as the added complication that it also assumed equal cost-equivalents. As in fact aluminium is three times lighter than copper, a single ton is

three times the volume. Similar (though not so marked) conditions apply in the context of conductivity. The third counter-argument also employed a false assumption in that total re-cycling, even theoretically, can never (apparently) take place. There is some rigid limit*, as calculated by the percentages of copper which cannot be re-cycled (i.e. contaminated metal) and current rates of obsolescence for most copper products.

5.11 (b) The 'Inductively reasoned' counter-arguments are harder to fault because their origins lie in intense subjectivity. Nevertheless, specific proposals relating to 'potential substitution' were met with - "it hasn't happened yet so why should it happen?" - and - "similar conditions occurred in 1963 but not much substitution took place then."

The answer to such assertions has to be equally subjective. Salient responses should point out that, philosophically, if a 'non-event history' guaranteed future non-events, then nothing would ever happen - in the sense that there would never be an original or novel event. Alternatively, it could be postulated that the conditions ruling in 1963 were certainly not the same as those in 1973, with special reference to the fact that copper is much more expensive now (in real terms) and that technological advance has been maintained with reference to substitutes. Additionally, a significant degree of substitution did in fact take place shortly after 1963.

5.12 (c) The 'Null-credibility' counter-arguments were experienced fairly often throughout the research, as well as during the interactive period after the circulation of the overall management report. Unfortunately, however, one has to admit that these arguments are valid - but only in a limited sense. They usually took the form of two types:-

- (i) - where the researcher's 'inexperience' in the business world is repeatedly referred to.

* secondary scrap currently accounts for only some 22% of total consumption and under present rates of obsolescence the Commodities Research Unit calculate that an upper limit would be around 31%. Increasing obsolescence rates threefold still only indicates an upper limit of some 68%.

- (ii) - where the scrutineer sought out a single fault and brandished it as proof of a 'null-hypothesis'.

Both types essentially aimed to introduce a lack of credibility into the picture which would eventually undermine the original postulates. Thus in a confrontation situation, in proposing an argument which could not, for some reason, be adequately accommodated by the recipient, it was usually the case that the 'macro-systemic' and 'inductive' counter-arguments were first tried and thence the 'null-credibility' type. The last was almost always conclusive.

5.13 (d) Finally the 'norm-conformity' type of counter argument was that which was based substantially on the behaviour and attitudes of other organisations. This category tended to be the most rare and was employed in 'difficult' situations. Examples of this type are similar to:-

"Well all I can say is that the 'Widget' Group have no desire to invest there and I presume they have competent analysts."

Once again, they are extremely difficult to invalidate except in so far as one could point out that perhaps 'Widget' were really wrong or even using similar arguments with reference to 'Delta'.

(IV) An Anatomy of a Strategic Decision Process

5.14 In one specific instance, the researcher was present at a meeting which was called to examine the future potential market for a specific product. This product was an 'assembly' which accounted for a significant, though fairly minor, proportion of the business of a single Sub-Divisional unit. It was, however, important enough to be termed strategic and the meeting involved not only executives from the relevant company but also from its Divisional parent. The problem revolved around the deduced forecasts for the total unit sales of the assembly in the U.K. market. The demand for the product had, historically, grown rapidly (a "mushroom" in the trade) but growth in the trend line had apparently slowed down considerably and had reached some plateau. The issue was also clouded by the fact that demand for these assemblies was dominated by the engineering cycle.

5.15 It had been requested that the researcher should independently deduce a forecast trend-line for future U.K. sales and this was done both by fundamental analysis of the causes for the slowing in demand and an extrapolation of the demand trend curve as correlated with specific indices. The basic problem arose because the company in question had forecast a continued growth in total market and had calculated its projected budget figures on that basis. This component of the relevant Divisional Plan had subsequently been questioned by the G.P.C., with back-up evidence from the Market Research Department. The data indicated a plateau and a 'zero-growth' situation. The conclusions of the researcher, in fact, indicated the beginnings of a probable decline in total demand and this fitted well into the theoretical concept of the product life-cycle.

5.16 The meeting took place in the company's Divisional Headquarters and the researcher accompanied a senior executive from Group Market Research. The meeting seemed to evolve through four fairly distinct phases:-

- (i) Confrontation and compromise.
- (ii) Introspective confidence.
- (iii) Premature agreement.
- (iv) Attacking credibility.

5.17 (i) Confrontation and compromise

It was immediately apparent that both sides entered the situation from a stance of confrontation (although a friendly one of course). The 'home' side made implicit suggestions about unnecessary interference and the irrelevance of the issue. There was much inductively reasoned counter-argument and, when it was pointed out that the researcher considered that the total market for assemblies would soon begin to contract, one 'home' executive said - "Well it's always nice to hear that one again; I've heard it so many times over the last few years and our sales are still going up." Another, however, intent on keeping the peace immediately cut in saying - "No, no, that's a good point and thank you for making it.

A detached view, you know, away from the emotional involvement, is sometimes better for seeing these things."

However, it was obvious that he discounted the possibility of a decline as well. Thus the evidence for 'anti-planning' (See Ewing ref: 75) was fairly strong.

5.18 The meeting then got down to bare facts and the 'visitors' were surprised to be handed a series of tables indicating that a revised estimate of the growth in demand for assemblies was, in fact, less than half the original. The reason for this was, it was stated, a miscalculation in the original figures a long time ago. However, neither the company nor the Division would change their budget forecasts for - " ... we estimated our sales on a very conservative basis viz our prospective market share. So, to maintain our sales forecast, we are now increasing this estimate in order to counter the drop in total market forecast." Such was the compromise. The real problem of the discrepancy between the company's and the Group's estimates of total U.K. market was now more or less satisfied, whilst the company could maintain its budget by advancing a 'greater market share' theory - something which the 'visitors' were not entirely qualified to comment on.

5.19 Then something happened which perhaps the 'home' side had not accounted for. The 'visitors' stepped out of line and asked how such an increase in market share was going to be brought about. Surely if all the competitors manufacturing 'assemblies' had been following the rapid 'mushrooming' of demand, then a slow-down in growth due to market saturation would result in an increase in total capacity. Under such conditions, wouldn't it be difficult to effect an increase in market share? (especially since the total production of this 'assembly' is a very fragmented one, with a host of smaller companies operating in the field) The position reversed from compromise back to one of confrontation, and the anti-planning slogans once again appeared.

5.20 (ii) Introspective Confidence

In order to counter this resurgence, the 'home' side withdrew into areas beyond the expertise of the 'visitors'. The confidence they had in their production and marketing skill; their superiority with regard to competition; their inherent ability to export whereas others could not; their wide portfolio of business channels; were all mentioned. This monologue was maintained for some considerable time and there were recurrent over-estimations of the "healthiness" of specific areas of the market to which the company sold. There was frequent reference to the negotiations of various sales contracts, the way in which " ... look, we have had so many people enquiring after our assembly. Our product is just superior to that of our competitors because we've got better production equipment. And even if we can't meet our market share targets, we can always export. There's always a way."

5.21 The problem was that these examples of 'healthiness' were minor with regard to the total market. A specific type of 'assembly' had indeed demonstrated good growth rates over the past year, because of its select function. But the impact of all these special categories was over-estimated. In fact the market scenario painted by the 'home' side was very brightly coloured. In reality, this was only true of certain specific small areas. Nevertheless, ignorant of the technological and highly specific market characteristics constantly being referred to, the 'visitors' remained silent, though perhaps still looking doubtful. Such withdrawal was in no way a purposive ploy in the strategy of argument on the part of the 'home' side; rather, they wanted, once and for all, to convince the scrutineers that:-

- (a) - they knew their business and the visitors did not.
- (b) - they had really thought it out well and it wasn't just nebulous reasoning.
- (c) - to impart a degree of confidence in the whole situation.

5.22 (iii) Premature agreement

Thence, when the 'home' side perceived that they had the advantage, they pushed home the attack in order to close the discussion in their favour. A succession of pre-empted agreement tactics were introduced, with the senior executive in the 'home' side repeating at various intervals - "Well we do agree now do we? Good, I'm glad we've got this settled otherwise it would have hounded us right through to the next budget." However, the visitors, slowly recovering from the impression, had maintained enough strength to continue to look dubious and to murmur "Well just hold on a minute, we're still not quite sure of ..."

5.23 This was followed by a series of confident statements designed to put the 'visitors' minds at rest and the meeting essentially behind them. Such statements as - "... of course don't think we're complacent about the position. We think you are wrong, but we shall continue to watch the situation very closely" - were frequent. Thence the 'home' side once again moved towards a conclusion of the business with a looking at watches and a moving of the morning's coffee cups and a "... what we need of course is to steer a sensible compromise policy."

5.24 The 'visitors', however, had by now fully recovered and reacted against yet another pre-empted agreement tactic by continuing to express doubt and stating that they would like to take all the papers home and study them a little more closely. They maintained their position that if the total market did not experience any growth at all, wouldn't it be difficult, in such a competitive situation, to push up market shares to such an extent? And in times of domestic slump in the cycle, isn't it the case that everybody would then try to export - assuming of course that the slump wasn't international (which would be, under present conditions, unlikely)?

5.25 (iv) Attacking credibility

The discussion then entered its final phase when the 'home' side, perceiving that no compromise or agreement would be reached that day, began to assert a lack of credibility in the independent analysis to the effect that it was 'lop-sided' and "... only showed

one side of the coin."

There were, it was stated, a variety of alternative arguments which could be made. However, subsequently none were. It was implied that the researcher's analysis was an "interesting intellectual exercise" but was not relevant to the present day problem; that such analyses couldn't be made without knowing the business and without "... having got your hands dirty." Thence the meeting closed and all the participants went for lunch the best of friends.

5.26 (v) Epilogue

Several days later, the Group Market Research executive drafted a memo to the company involved pointing out a variety of possible problems where doubt continued to linger. The memo was nearly two pages long. A few days afterwards, a reply was received which was composed of a few lines - "...we all thought that the meeting was a useful and helpful one and are glad to have finally reached an agreement." Clearly, the dialogue continues.

(V) Some Overall Inferences

5.27 Thus, in these earlier days of the study, it was clear that 'autonomy' was heavily ingrained in the Group and that a variety of 'supportive-mechanisms' were employed to maintain that condition. The meetings with central staff (for example the Market Research Department) were often perceived by Divisions or companies as mildly threatening and 'interfering'. Thus confrontation-type postures were almost inevitable. It is interesting to note, however, that when the researcher visited Divisions alone no such posture was ever adopted, save once. It was indeed apparent that the researcher was often treated as a 'buffer' between the Divisional and Group systems. And indeed, in specific instances, the various research papers became a medium through which controversial topics were discussed and views made known.

5.28 This was evidenced by the strange way in which the researcher was often implicitly instructed to pass on certain opinions to the 'Group'. This was, of course, in no way the object of the

visits. Additionally, throughout this first phase of the research, Divisional Chairmen often explicitly complained of a "lack of guidance" as regards strategic development and even in one instance " ... I always get the feeling that we're (Divisional Chairmen) not always consulted. They don't mean to, of course, but sometimes things get done at Kingsway (Group Headquarters) almost behind our backs." In addition, it was interesting to perceive that the 'Group' was always careful not to upset or worry the Divisional Chairmen. In many ways it later became apparent that these degrees of sensitivity, and indeed the types of 'sensitive topics', were not always accurately recognised by the Group. Instead, it tended to be over-cautious in principle.

5.29 However, it is also interesting to note that the Divisional Chairmen all appeared to positively enjoy discussions with the researcher. It was originally considered that such meetings might be - "a bit of a bind" - but this, in fact, proved not to be the case. All enjoyed stepping from the 'coal-face' of reality (as has been proposed by Ewing ref: 131) and were, apparently, interested in thinking and arguing about broader issues with a 'body' representing no possibility of conflict. This greatly improved the quality of feedback and empirical data, whilst also 'oiling' the mechanics of the research approach.

Chapter Summary

This action-perspective demonstrates some of the behavioural reactions to the research reports relating to the 'ecological' model of Delta. It indicates that the researcher was perceived differently by different parts of the Group. Certain interesting problems were also illuminated. Underlying these appeared to be the 'schizoid' approach to the 'centralised - decentralised' issue. Divisions vigorously worked to protect their autonomy, whilst at the same time complaining of a lack of guidance. The chapter also provided

a typology of the most common counter-arguments used by the top-management of Delta to refute the conclusions of the research; and an analysis of one specific and interesting strategic decision process. There was also evidence to suggest that the research was used as some sort of 'buffer' between the Group-Division interface, in the context of certain sensitive topics. The experience of the 'worm' becoming the 'arbiter' was certainly an unusual one.

CHAPTER VI

Contents

Analysis of values and planning objectives -
methodology for data collection - presentation
and analysis of empirical evidence - conclusions
and implications.

Abstract

The chapter presents and analyses the results of the first series of in-depth interviews with Delta's top-management. Conclusions relating to the apparent inconsistencies between planning objectives and real organisational values and the short-comings of the planning system are discussed. Proposals are made.

CHAPTER VI: ANALYSIS OF VALUES AND OBJECTIVES

(1) Introduction

6.1 The second component of the research hypothesis suggested that the exploration of the value-systems operational within Delta, and their subsequent influence on strategy formulation, would be useful. This was proposed because it was considered important to identify these influences and make them explicit, thus accommodating them within the strategic planning process. Indeed both of these points relate directly to the postulates of Knoepfel (ref: 73) and Tilles (Ref: 65).

6.2 It was considered that an in-depth examination of these value-systems and, perhaps, the generation of some theoretical construct which could be applicable in a wider context, would contribute to planning practice. The premise was that planning objectives, as normatively suggested by most approaches, tend to be too 'abstract'. For they purposefully ignore many of the value-systems which may impose real influence on strategic development. Hence, as these 'planning objectives' should form the very basis and rationale for all logically planned growth, it can be safely postulated that their determination (even only qualitatively) is an essential pre-requisite to sound planning. It was hoped that, by making real values explicit and by examining their relationship to 'planning objectives', one might be able to construct a mechanism which would increase the probability of successful strategic development.

6.3 Two major problem areas were explored. The first revolved around the theoretical abstraction of planning objectives from the value-systems of the organisation. If 'planning objectives' do not accurately reflect the organisation's values, are they then still applicable or even viable? Do 'objectives', in fact, only operate within the often abstract and limited framework of how the

organisation is expected to behave by the outside world? (i.e. its shareholders and the "City" generally). In addition, are there significant variations in the value-system profiles within parts of the organisation itself? The second problem area concerned the question of whether the actual methods of planning influenced the strategic choice or the organisation. For if differing goals could be generated by using different systems or different perspectives, then various problems of relativity and viewpoint might tend to emerge. In the context of planning strategic development, it would seem important to use a comprehensive, commonly accepted and agreed set of 'objectives' which reflect real values as well as expected behaviour.

6.4 With these issues in mind, the research focussed on the question of whether Delta's strategic 'planning objectives' were meaningful to the Divisions which had to use them. Thus the aim was to explore the values and attitudes of the Divisional Chairmen and the central Group staff to see whether there was any contrast; and to deduce the 'usefulness' (and thus 'viability') of the planning objectives.

(II) Methodology

6.5 The methodology employed to explore these areas was broadly characterised by the application of a series of structured "in-depth" interviews*. In certain instances the "soft" data was quantified and the interview was structured in such a way as to show up inconsistency of response, or the influence of any role-play. These interviews were carried out with almost all the top-management of Delta - (i.e. executive main-board directors and additional Divisional Chairmen). It was considered that any

* Similar to the research approaches of Collins, Moore and Unwalla - "The Enterprising Man and the Business Executive" - MSU Business Topics Winter 1964

attempt to improve the quantification or substantiation of the data, either by the use of detailed questionnaires or tape-recordings, would have caused significant distortion. This was because of the confidential and often personal nature of the information. Nevertheless, given this freedom, the majority of respondents appeared to be exceptionally frank and subsequent discussion has tended to validate the initial data collected.

6.6 For the broad purposes of establishing a 'scientific method' within the research approach, the salient responses were immediately recorded ad verbatim. In addition, the interviews were conducted along tightly structured (and common) lines, with a minimum of participation on the part of the researcher. However, in certain instances a significant amount of probing also took place although, generally speaking, this was often quite unnecessary. The subsequent analysis took a conventional form and the findings and inferences were prepared in the form of a research paper. This was circulated to the respondents who were asked for their comments. Whenever feasible, the researcher also undertook a secondary visit, in order to establish some criteria for the validation and evaluation of the conclusions and to collect more direct feedback.

(III) Analysis of Results

6.7 The following represents an analysis of the actual interviews which, apart from merely exploring the values and objectives throughout the top-management of the company, additionally sought to evaluate Delta's present planning system. Before the detailed analysis, however, it is important to describe the methods by which Delta generates its strategic plans. It must be emphasised that the Group is constructed of several quasi-autonomous Divisions, each of which has a substantial degree of freedom. Furthermore, the Group Planning Committee is, with one exception, made up of executive directors who are centrally based. In broad terms, the initiative for planning is given to the Divisions and thus the

plans are a result of a "company to Division to Group" process. This aims to carry out planning with a small central staff and at the same time involve many of the line-managers who are eventually responsible for the implementation of outcomes.

6.8 The Group Planning Committee's first task is to set out the specific planning objectives for the Group. These are then discussed with the Divisional Chairmen and subsequently modified if necessary. The agreed planning objectives are then sent out to the Divisions and, at the same time, each individual company is requested to prepare forecasts, budgets and plans for a five year period. These are eventually presented to the Division and are examined and modified, where necessary, before being integrated into a Divisional Plan. The process then involves Divisional plans being presented to the Group Planning Committee where they are examined, integrated and modified in the light of any discrepancy between objectives and probable results. Should the Group objectives appear to be unrealistic, then they are also modified and a new series of criteria, against which the integrated Divisional Plans can be evaluated, evolves. A flow-chart broadly outlining the procedure is represented by Figure (14). Thus, basically, the Delta Planning System is characterised by a "build-up" process from the Sub-Divisional to Group level, with a sequence of adaptive searches, negotiations and modifications also present in order to allow re-orientation where desirable. Hence the origins of the perspective are specifically based on the individual company's (rather than a "global") viewpoint. The following represents the analysis of responses given to each question. The sample has been split into the Divisional Chairmen (referred to as D/C) and the Group Planning Committee members (referred to as G.P.C.).

A FLOW-CHART OF THE PLANNING SYSTEM

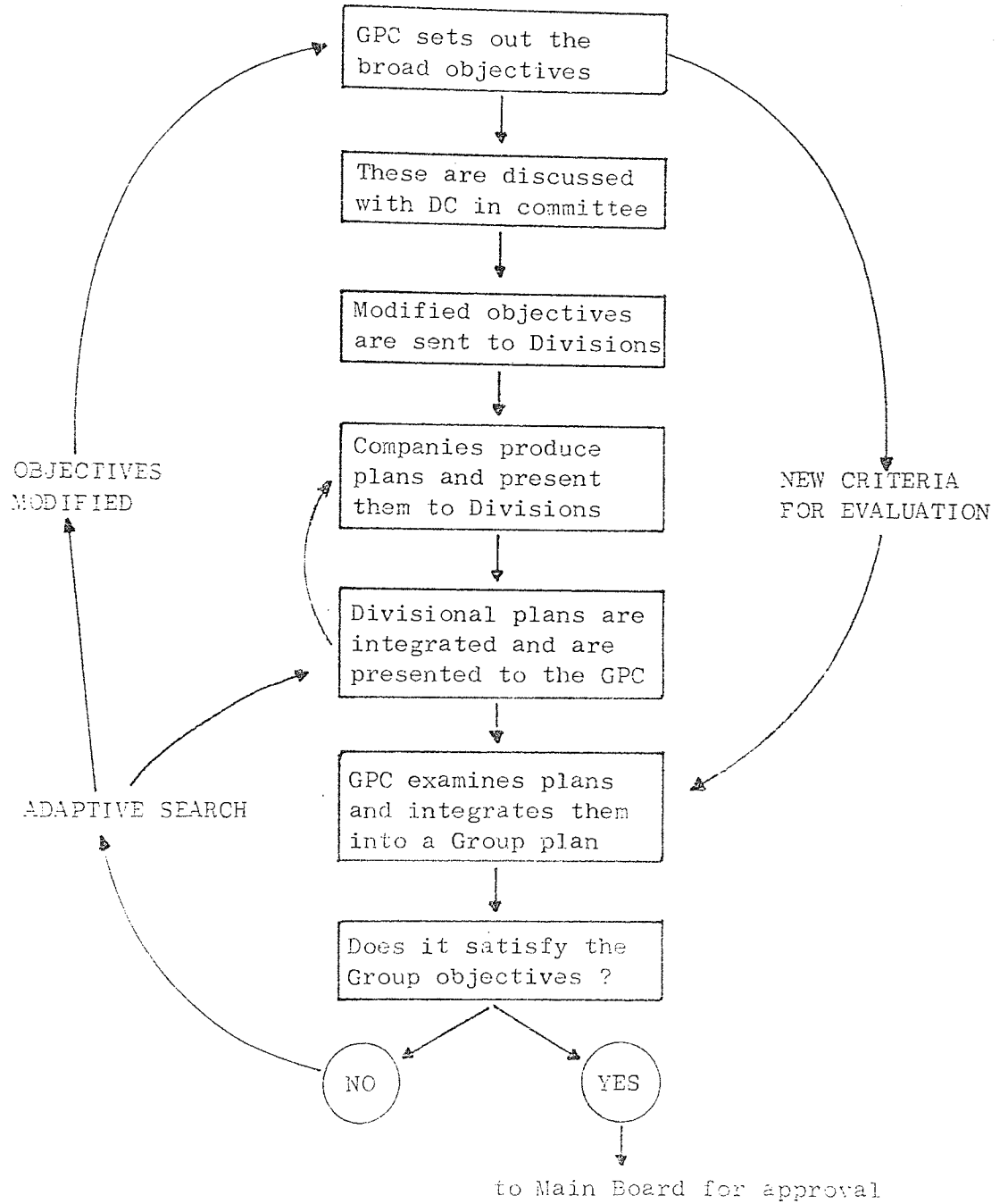


FIGURE (14)

6.9 Q1 - Do you think Corporate Planning should be carried out in Delta and if so why?

(A) Responses here were very positively in favour of planning from all, but D/C naturally expressed a desire to maintain autonomy in planning. They thought that previously Delta had just drifted in its development, but that it was now vital to pin-point exactly where it wanted to be in (say) five years, as it took a long time to change the direction of a large group. The dangers of short-term horizons were emphasised and co-ordination at the centre was felt to be an important issue.

(B) The GPC members were also in firm agreement with planning. They tended to differ only in that they felt there was no alternative. It was also believed that Delta, especially, needed good strategic planning since it had come close to danger in 1967, and its historical growth base of 'semis' was seen perhaps as a burden, the balance of which needed a rapid redress. It was in some instances felt that, for a company of Delta's size and diversity, existence without formal planning was inconceivable.

6.10 Q2 - Do you think planning has been successful in Delta? How do you evaluate success?

(A) D/C mostly felt that it was really too early for corporate planning to have shown any fruits, but they were confident that it would. There was also a hint that, perhaps, the 'success' was taking rather too long to show itself. In terms of the evaluation of 'success' there was a wide variety of opinions. Mention was made of the fact that planning had shown up "things which required doing", and the direction of Delta's growth into higher-value added areas was the most common evaluator used. D/C would be looking for improvement in profits in 'phantom reference' terms (that is, what would have been the position had planning not been implemented?). But there were some interesting alternatives. The classical expected response of a 'successful' plan - "achieving the objectives upon which it was based, and which were democratically agreed as being good for Delta" - was used only twice. 'Success' was also seen as - "developing the importance and growth

of the Group" - as - "the acceleration in innovation (generally) and not simply acquisitional growth" - and as - "fulfilment of objectives when compared to other companies." It is interesting that, throughout the interviews, no mention was made of the potential improvements in decision-making and communication that formal planning could offer.

(B) The GPC members, on the other hand, tended to feel that planning had, in the main, been quite successful to date. Mention was made of the fact that a better approach had now been evolved, since planning origins lay initially with the emphasis on forecasting - which was wrong. The dangerous position of 1967 was again mentioned but it was thought that the initial progress was really a result of "the same thinking" which gave birth to formal planning. The GPC's ideas of 'success' also tended to be more uniform. Growth in earnings per share and return on capital were quoted widely. It was again suggested that problem areas had been identified and also that the Electricals Division was a concrete result of the overall process. In one case, the 'success' was simply quoted as being "the opposite of failure". But it was also pointed out that the planning for overseas expansion had not developed as well as expected, and that perhaps this was the one black spot.

6.11 Q3 - Would you welcome any changes in the present planning system?

(A) This question seemed to be a stimulating one for it produced a wide range of responses, each with differing degrees of emphasis. Of the D/C, only two were satisfied that the procedure was sound and sensible. Whilst autonomy was again a key issue, a salient point which was repeatedly illuminated was the problem of the GPC setting out priorities for the funding of Divisional proposals. It was felt that the D/C themselves were not properly qualified to evaluate projects since they tended to be both subjective and operational. It was thus suggested that a number of professionals were needed at a Group function to analyse, assess and set out priorities. The GPC examination of

of plans was also thought to be "too superficial". And it was pointed out that perhaps the D/C ought to be more involved because GPC planning without consultation often threw up plans which were impractical. The sentiment was expressed that the corporate objectives required "an overhaul". Too much emphasis had been placed on purely financial objectives when there were much wider issues that warranted close consideration. Finally, mention was also made of the fact that it was important to have an independent functional planning system operating in parallel, so that broader horizons might be looked at in some depth.

(B) The responses from the GPC to this question were no less emphatic. It was suggested that much more detailed historical analyses and forecast projections were needed. Better examination of synergy, of cash flow and more strategic long-term studies were all highlighted. It was proposed that there should be greater "Divisional-Group interface" and that Divisions should attempt to think in the Group context, even though they were essentially autonomous. There was also mention of the idea of having a full-time central planning function because it was "such a critical area". The value of this function would be to act as a stimulant to Divisions, to closely analyse Divisional proposals, to examine new areas and to assign priorities for funding proposals. It was suggested that, perhaps, a board member ought to take on this corporate planning function. Finally, there was a proposal that Divisions ought to do more to produce good plans and "do something about it". More strategic Group studies were again thought to be necessary as a lot of present studies, which ought to be done Divisionally, were being done centrally and that, perhaps, this was wasting effort.

6.12 Q4 - Do you think there are difficulties for corporate planning in decentralised Groups like Delta?

(A) All D/C, naturally, once again stressed the importance of autonomy, and of building up plans from company level. It was felt that difficulties primarily arose because of diversity and once again the assessment of priorities for funding proposals was

mentioned. It was also stated that resolution of Divisional conflict in development was an important issue. The 'semis' Divisions, especially, had no clear path for expansion. And perhaps it was implied that other Divisions were favoured in terms of effort and funds for development, whilst the older 'semis' Divisions were left stranded on a sinking base. Some sort of central control over inter-Divisional conflict was felt to be appropriate. The GPC were accused, at one point, of failing to think out some of their ideas properly and having "got themselves in a knot with some ill thought out guidelines". It was also implied that there was a lack of co-ordination. In one instance, it was proposed that the role of the GPC as an advisory function was unworkable because some Divisions simply failed to produce adequate plans. Inter-Divisional conflict in trading and duplication of plant were mentioned as problems resulting from the inability to co-ordinate. It was felt that, in such a case, tighter control and the power to issue directives were the best methods for finding a solution. The importance of planning for a Division, in the context of the overall Group Plan, was also stressed. Another weakness pointed out was that it was not until all the Divisional Plans had been finally put together that areas of conflict or poor objectives showed up. Hence there was a lot of wasted effort involved.

(B) Interestingly enough, the responses from the GPC were largely similar. It was thought that whereas Divisions ought to maintain autonomy, companies should certainly not. Mention was also made of the "lopsided quality" of Divisional growth and proposals, implying that the funding of priorities was difficult to assess because of the type of proposals. Thus, as a result, certain Divisions needed stimulation. It was also suggested that Divisions were evaluated relatively, and not absolutely. And because of this, certain Divisions might not be realising their full potential. The importance of reconciling Divisional differences and the problems of 'favoured versus unfavoured' Divisions were mirrored here as well. The 'semis' end of Delta, especially,

was thought to need substantial encouragement. It was widely felt that a slightly tighter control was necessary, although the dangers of centralised planning were strongly emphasised. But it was added that a clear central framework was essential. Finally, the problem of priorities was again put forward as a major matter, and that business scope demarcations for Divisions needed to be defined.

6.13 Q5 - What do you think should be the central objectives for planning in Delta now?

(A) There was a considerable spectrum of responses to this question by D/C. As an open-ended question, it gathered only one initial response mentioning growth in earnings per share. Very wide mention was made of the objectives concerning employees and also of consideration for customers, shareholders and the community at large. Survival and growth were both suggested. It was stated that, whilst profit was fundamentally important, it ought to be only used to satisfy the shareholders and City, and not as a maximising objective. The satisfaction of the interests of participating groups was thought to be more important once the profit requirement had been satisfied; and that, because of this, the present planning objectives needed to be broadened. Corporate image was also mentioned, as well as "expansion overseas and in Europe." It was proposed that Delta ought to diversify as "broadly as possible" whilst maintaining some logical thread. The present direction for development, towards higher-value added products and away from semis, was agreed by all to be still a major guide-line. Finally, this was qualified in that Delta should be "vertically integrated" on the broadest of markets and within the tripartite business scope. However, it needed "increased penetration" and should be "nearer the market place".

(B) The replies from the GPC were much more uniform and even perhaps a little stereotyped. Growth in earnings per share, growth in profits, growth in size and return on capital were all quoted initially. Subsequent probing drew out other objectives

however. The most common of these was that Delta needed to be internationally based, with more exports from the U.K.; and that it should be "in Europe in a big way to compete". It was suggested that if Delta failed to grow quickly enough it would fail to exist. A "brilliant corporate image" and the "maintenance of stability" were also proposed. In only one instance was "continued growth into higher-value added areas" mentioned, but it was also stated that Delta's base ought to be significantly broadened.

6.14 Q6 - Please evaluate the following (score out of 10) with respect to their importance as central objectives for planning in Delta

(A) The 'objectives' presented here were fairly orthodox and were as follows:- profits growth, growth in earnings per share, return on capital, growth in dividends, share price appreciation, growth in size, advances in product design, to be superior to competition in both profits and products and social and moral considerations. The scores for each were then processed and a mean value calculated. Using the mean value, the objectives arrived at the following "rank of importance" for all respondents interviewed.

Table I

Rank	Objective	Mean Score
1	Growth in EPS	9.1
2	Return on Capital	8.2
3	Superior to Competition	7.5
4	Profits Growth	7.4
5	Social and Moral Objectives	7.4
6	Advance in Products	7.0
7	Share Price Appreciation	6.7
8	Growth in Size	6.5
9	Dividends Growth	6.4

It must be pointed out that, within these ratings, there are no pretensions of tests of statistical significance because the sample was so small. But the crude ranking nevertheless shows up some interesting points. 'Dividends' being ranked lowest is illuminating in itself. But the low ratings given to the importance of 'growth' is very interesting in the light of previous statements about Delta needing to be "big" and "international". The high ratings given to the importance of overhauling 'competitors' is also illuminating, as is the position given to 'social and moral' objectives. (It must also be recorded for reasons of fairness that these interviews took place not too long after the Distillers publicity). However, there is reason to believe that great importance was attached to such ideas and this was confirmed by the interviews. 'Share price appreciation' was also ranked disappointingly low, especially after the emphasis on corporate image.

(B) We can however, now compare the scores given to these objectives by each separate group (D/C vs. GPC). The column showing the range of scores illuminates the situation and helps to identify solid consensus as against wide disparity in attitude.

Table II

Objectives	n = 5 DIVISIONAL CHAIRMEN		n = 4 GROUP PLANNING		Average both
	Range of scores	Average	Range of scores	Average	
Growth in EPS	7 - 10	8.40	10	10.00	9.11
Return on Capital	7 - 9	8.20	7 - 10	8.25	8.23
Superior to Competit.	6 - 7	6.80	6 - 10	8.50	7.56
Profits Growth	6 - 9	7.40	5 - 10	7.50	7.44
Social & Moral Obj.	6 - 10	7.40	1 - 10	7.50	7.44
Advance in Products	4 - 10	6.40	6 - 9	7.75	7.00
Share Price Apprec.	2 - 9	5.60	7 - 10	8.00	6.67
Growth in Size	6 - 9	7.00	05 - 9	5.87	6.50
Dividend Growth	3 - 9	6.20	6 - 7	6.75	6.44

$\mu = 7.43$

$\mu = 8.37$

$\mu = 7.70$

This table helps to clarify the position quite considerably. Firstly, the average scores for the D/C were below those of the GPC (7.43 vs. 8.37). This is, perhaps, because these 'objectives' simply maintain greater sympathy with the GPC. However, 'growth in earnings per share,' voted unanimously as the number one by the GPC, did not reap such acclaim from D/C. Scores for 'return on capital' were, however, almost identical. The differences in attitudes towards 'competition' also seem to be interesting, since D/C have given a rating which is significantly lower, despite similar variation between scores. 'Profits growth' produced no real conflict, but there certainly was in the case of attitudes towards 'social and moral' objectives. For although the two groups offered similar final scores, the range for the GPC varied between 1 and 10. It is interesting to perceive that members of the same committee can apparently disagree to such an extent in their assessments. It is also interesting to note that whilst D/C previously emphasised the importance of wider social and moral objectives, when faced with an orthodox GPC series of objectives, some of them offered scores which appear to have been in conflict with their previously stated opinions. The importance of advance in 'product design' also proved to be controversial since D/C, whom one might have expected to rate such an objective highly, gave a much lower score than did the GPC. However, their range was very wide indeed. 'Share price appreciation' also produced contrast, as it was considered to be relatively unimportant by D/C whilst the GPC tended to disagree. However, once again there was a considerable degree of variation in the D/C responses (2-9) which would account for this. In the case of 'growth in size' as an objective, the D/C were in reasonable agreement whereas GPC ratings ranged from 0.5 to 9. And, paradoxically, it had been previously emphasised that Delta had to be "big". Finally, dividend growth was not considered to be very important, but the D/C tended to be less enthusiastic than the GPC.

6.15 Q7 - Evaluate (by scoring out of 10) the importance you attach to Delta's responsibility to the following:

(A) In this question, the four groups of shareholders, management, employees and society at large were presented. Deliberately, 'commercial relationships' (e.g. customers) was omitted to see if there was any objection to this, and a hypothetical distinction was made between 'management' and 'employees' in order to stimulate disagreement. Of all those interviewed, two thirds objected to this distinction. But in only one case was there any objection to the omission of 'customers'. The overall opinion of all respondents implied a ranking as follows:-

Table III

Rank	Group	Mean Score
1	Employees	9.0
2	Shareholders	8.8
3	Management	8.7
4	Society	7.0

Clearly, there is very little difference between the scores given to 'employees' as a whole and 'shareholders'. But 'society at large' trails, relatively speaking. It is still interesting to see that 'employees' have, however, a marginally higher rating as against 'shareholders'.

	DIVISIONAL CHAIRMEN		GROUP PLANNING C.		Average both
	Range of scores	Average	Range of scores	Average	
Employees	7 - 10	9.00	8 - 10	9.0	9.0
Shareholders	5 - 10	8.10	9 - 10	9.75	8.83
Management	7 - 10	8.80	8 - 10	8.75	8.78
Society at large	5 - 9½	7.30	2 - 9	6.75	7.00

Both D/C and GPC had very similar attitudes towards the importance of Delta's responsibility to all 'employees' (including management). However, in the case of 'shareholders' there was clear disagreement. The GPC proposed that this group was all important, but the D/C rated it lower, with a wide variation as well. In the case of 'society at large', D/C generally considered this responsibility to be more important than the GPC, although in both cases there was a scatter of scores. (Especially in the case of the GPC (2 - 9)). It is difficult to base any firm conclusions on such a superficial examination. But it was previously expressed that the importance of having wider corporate objectives, covering things other than simply financial targets, was of relevance. And yet, from the results of the above scores, there is clearly a wide range of differing opinion on this subject.

6.16 Q8 - What would you like Delta to be in, say, ten years time?

This question was asked primarily to ascertain what attitudes were dominant as far as Delta's future development was concerned. It was also used, however, to cross-check the corporate objectives and goals already expressed. For, if a profile of the likely Delta in 1980 could be built up, then the objectives which would have to be used to get there could be logically determined. In other words, the responses to this question illuminated the real objectives which were considered important. The question now is, 'are they the same objectives as those presently used for planning?' For if not, then clearly it is important to understand why.

(A) Divisional Chairmen's responses mostly fell into two categories. The first were those which concentrated on company structure. It was suggested, for example, that Delta should be an integrated group of companies, selling higher-value added products in the building, electrical and general engineering sectors, but with a broad base. A fourth area for development,

it was considered, would be a mistake; but that certain specialised areas, in "mechanical-cum-general engineering," could be exploited. The second category was dominated by evaluations of quality. It was felt, for example, that Delta should be very well known and respected - "from the City to the pages of the Daily Mirror"; that it should remain democratic, autonomous and maintain an organisation which was easily and professionally manageable, through small operating units. It was felt that it should be a company "to be proud of"; that it should be significant and aggressive, on a broad international base. One point which was emphasised was that Delta should be "big" and even "the most profitable Group in the world".

(B) The GPC tended to be more specific in their answers. But, once again, it was emphasised that Delta had to be "really big in Europe" and that it should also be a "major international company". This was even quantified in one case where a turnover of "at least £1000m per annum" was envisaged. Mention was made of the necessity to improve Delta's corporate image, to push up the P/E ratio. And that the Group should be integrated within the tripartite manufacturing and distribution framework, throughout Europe. It was thought important for the company to have a high reputation for technical ability and customer service and to move more into technological, metal, engineering and plastics fields. A good earnings per share growth record was also mentioned, and that Delta should keep to comparatively low gearing (circa 20%). Finally, it was thought that clearly defined roles and functions for companies was also important.

(IV) Conclusions

6.17 Perhaps the most important conclusion indicated by the study was that there appeared to be a distinct difference between the value-systems of the central planning staff and the Divisional top-management. This was evidenced by the attitudes of each group to the variety of suggested corporate objectives and to the company's responsibility to its various 'stakeholders'. When asked during the interview to quantify the importance of a series of proposed

objectives for planning in Delta, the Divisional Chairmen tended to place greater value on intrinsic criteria, whereas members of the Group Planning Committee appeared to be more concerned with the expectations and evaluations relevant to the "City". It was also implicit that the Divisional Chairmen found some difficulty in fully "empathising" with Group objectives ; and in this sense tended, perhaps, also found them less helpful than might be desirable in the context of a concerted approach to the strategic problem.

6.18 In many senses these anomalies are readily explained. Delta's recovery from its 1967 profits slip has been a strong and progressive one. However, in certain respects the Group's price-earnings ratio implies that the "City" has not yet completely forgotten this slip. Hence the Group Planning Committee's apparent concern with essentially "City" orientated planning objectives is logical. Divisional Chairmen, on the other hand, who would be expected to be pre-occupied with operational rather than strategic problems, would not ordinarily interact with the "City" as such. As well as this, autonomy might promote individual value-systems and a specifically "Divisional" perspective, both of which would not necessarily complement planning objectives at a "Group" level. They are two quite distinct operating systems. (for example see Beer ref: 53)

6.19 A second major finding was that there was an apparent inconsistency between the values placed on the suggested corporate objectives and the future scenario thought of as most desirable for Delta as a whole. This introduces a second dimension to the problem of formulating a commonly agreed and realistic set of objectives. The anomaly might be the result of the recent change in status of the Group due to its "recovery phase" having been completed. But it seems more likely that the "goal" as specified by the respondents more accurately reflects the real objectives considered desirable, and this would indeed tend to imply abstract planning "objectives". The debate concerning the usefulness of abstracted and perhaps artificial objectives for planning, is

undoubtedly a complex one. For, on the one hand, a public company has to operate within the framework of the "City" if it is to survive. But at the same time, natural evolutionary progression as a result of the real organisational values may be greatly inhibited by a narrow set of objectives. It seems important to in some way resolve the obvious dichotomy.

6.20 In addition, there was considerable evidence to suggest that Delta's system of planning was failing to realise its full potential. Structured as it is into autonomous Divisions, the Group fully appreciates the importance of using a system which operates in sympathy with normal managerial functionings. Thus the 'build-up' planning process is naturally important if viability is to be maintained. By the same token, however, the continual modification of data may cause distortion and the initial perspective is, in itself, limited. (for example see Cyert et al ref: 160)

6.21 Hence it may be the case that the value-systems which predominate within the Divisions influence the perception and processing of the planning data. If this is the case, then a degree of incompatibility may exist. Within the Divisional system, the company plans are naturally integrated and agreed on a basis of some sort of Divisional 'optimisation'. However, it is almost certainly the case that Divisional optimisation is unrealistic within the Group context and thus a series of compromises are necessary. Apart from the probability that individual Divisions maintain individual value-systems which differ, (and may thus each have a specific concept of 'optimisation'), attempts to 'optimise' total Group development is perhaps less likely to be viable given the "build-up" approach. Implicit in this assertion is that 'optimisation' is an abstract concept rather than a practical feasibility.

6.22 On the basis of these major conclusions, it was proposed that it would be important for Delta to attempt to resolve the dissonance between central and peripheral value-systems. It was suggested that the ability to 'overview' the total system from some sort of 'global' viewpoint, as a fully complementary activity, might provide some of the balance to perspective and 'optimality' so badly needed. It was additionally postulated that the actual 'value-dissonance' and its resulting effect on the perception and relevance of strategic planning objectives, might be diluted quite significantly by a greater degree of interaction between Divisions, and across the Division-Group 'membrane'. The importance of each sub-system understanding the logic and language of the whole system (and other sub-systems) was emphasised. Implicit in this prescription was the maxim that there would be clear advantages in attempting to account for real organisational values within the planning 'objectives'.

6.23 A paper (called the 'Purple' paper and as reported in this chapter) describing the analysis and conclusions was circulated throughout the top-management of Delta. It produced a substantial, and often vigorous, feedback. In specific cases, it became apparent that, as regards a 'global-overviewer', some Divisional Chairmen jealously guarded their autonomy, even within the strategic area. However, there was, in general, a considerable degree of interest generated and the majority of responses offered favourable support to the identified problems of conflict of perspective and value-systems unaccounted for by planning objectives. It was subsequently requested that a short paper proposing the author's personal views of improvements to the planning system might be written.

6.24 This short paper (entitled 'Green') was produced and circulated and now forms Appendix (B) to this thesis. The paper concerned itself with three main issues:-

- (a) - the problems of 'neg-empathy' of value-systems between Divisions and Group.

- (b) - the problems of the planning process maintaining a limited perspective with, perhaps, distorted data and sub-optimality.
- (c) - the problems of the inconsistencies of organisational goal, values and planning objectives.

6.25 It was first proposed that the fundamental differences of perspective and value-systems between 'the Division' and 'the Group' arose because of the autonomy fostered within Delta for the sake of innovation, initiative and control. This autonomy naturally gives rise to the separation of sub-systems within the whole system and the resultant evolution of individual methods and values. Thus increased interaction between Divisions and across the Group-Division interface appears to be a partial solution. In addition, the maintenance of operational autonomy, as well as strategic cohesion, seems possible. This in no way rules out the possibility of a successful coalition of companies. Structured along 'Federal' lines, it seems feasible that a series of Divisional units could mutually co-exist within a specific framework. However, in Delta's case it would appear that the Group needs to be brought closer together before such ground-rules could be established anyway.

6.26 However, the problem of planning objectives is a little more complex. It seemed clear that Divisional Chairmen were generally unable to use Group objectives in any meaningful way, within a Divisional context. In the first place, the objectives were logically incompatible with the Division as a system and in the second, they failed to accurately reflect organisational values.

6.27 It would appear that an accurate and embracing translation of Group planning objectives into the logic and language of the sub-systems would greatly help in comprehension. It is fair to say that this was done for financial criteria (e.g. earnings per share targets can be translated into returns on capital employed) but not explicitly for non-financial criteria and, at

the time, there were no specific Divisional targets. But increasing comprehension of Group activities within sub-systems does not in itself overcome the apparent incompatibility between 'objectives' on the one hand and organisational 'values' on the other.

6.28 In order to counter this problem, it was proposed that some sort of hybrid system of objectives be introduced. The "City" criteria so important for a company are not perhaps real 'objectives'. It may be more helpful to consider them as 'constraints'. Thus it was suggested that the major financial constraint, within the planning context, would be that Delta should produce a normal (or little more than normal) return to shareholders (or rate of growth of earnings per share) when compared with publicly quoted companies. Implicit in this sort of quantification would be that Delta would also loosely conform with regard to risk of investment as well. Thus a concept of 'conformity' for these financial constraints was introduced and expanded to embrace some sort of 'band'* of acceptable performance in steady-state form. This concept is favoured by Galbraith,** amongst others, as a descriptive goal in capitalist economies. For example, figure (15) shows the deflated norms for the trends of growth of earnings per share. Delta's historical performance is profiled against it. It is clear that the Group's earnings trend has been a volatile one.

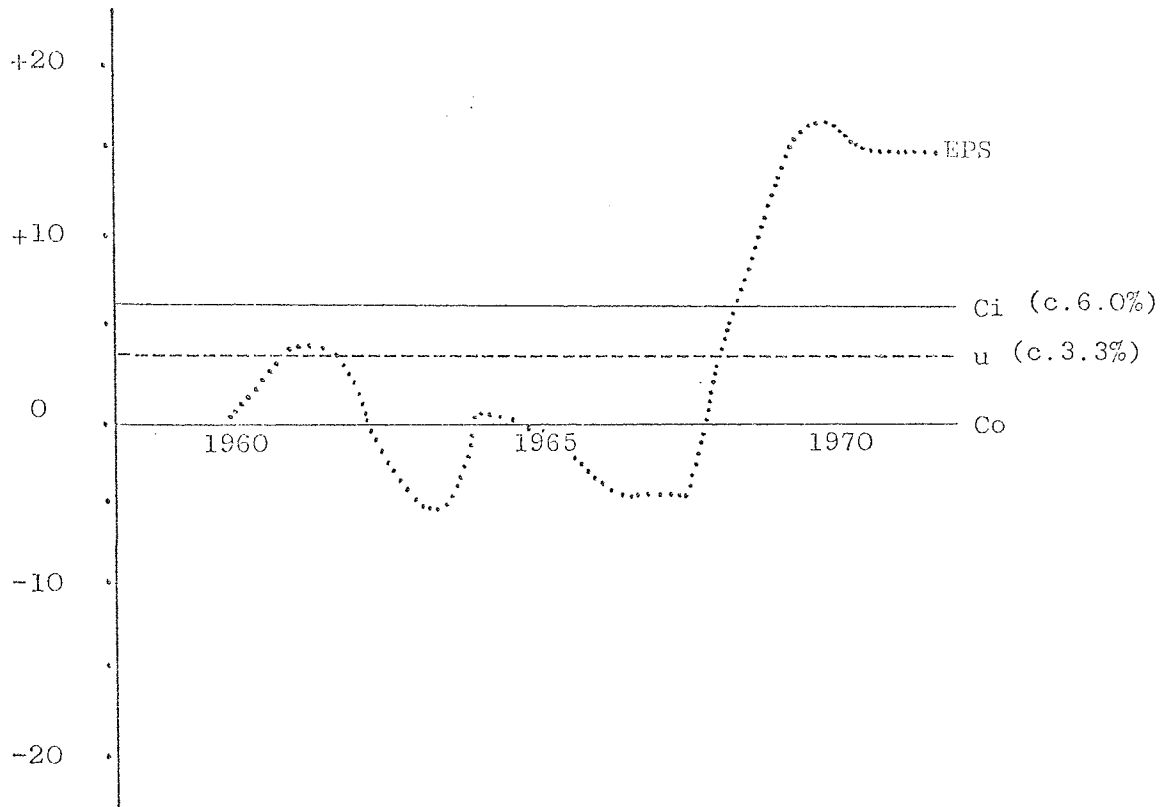
* conceptually, this idea is similar to Eilon's 'interval programming' - see Eilon S. "Goals and Constraints in Decision Making" O.R. Quarterly vol. 23 No. 1 March 1972.

** see for example Galbraith J.K. New Industrial State Houghton Mifflin 1968

PLANNING OBJECTIVES AND 'CONFORMITY'

(growth in earnings per share)

Change % p.a. (trend)



Ci = 'high' constraint

u = average growth

Co = 'low' constraint

FIGURE(15)

6.29 Having then quantified these 'constraints', the first task for strategic planning would be to ensure their satisfaction. But, once having achieved that, it was envisaged that a series of real objectives relating to true organisational values could then be determined. It was also stressed that these 'objectives' would be relevant to some sort of common 'goal'. Thus the strategic overview giving rise to a 'goal' in scenario form, and subsequently to real objectives, could embrace value-systems and at the same time fulfil the requirements of the "City" and shareholders.

6.30 This second 'Green' paper (Appendix B) again received interested feedback. And in discussion, several of Delta's top-management agreed with this new proposal to deal with planning objectives. It was also expressed that the nebulous type of 'goal' for Delta as it stood was not helpful in co-ordinating proper strategic development. It was generally felt that some kind of scenario, giving rise to logical planning objectives, would certainly improve the situation. About the same time as the research was being processed and reported upon, the Divisional Chairmen and other Group executives expressed a desire to meet in conference to discuss Delta's future. This is due to take place in April 1974. In addition, the planning 'objectives' are now translated into explicit and individual targets for each Division.

6.31 Thus in broad terms, the generally favourable comment which resulted from this part of the research helps to validate the initial analysis. And perhaps the following quoted evaluations by three top executives may illustrate this:-

- (1) "I really would like to congratulate you on both the thoroughness and objectiveness of your investigation. I think that it will make a significant contribution to aligning our views on goals, objectives, and planning."

- (2) "... I think you have produced a most excellent and stimulating paper on planning in Delta. I particularly feel you have tuned in very well to the 'conflict' between Group and Divisions. I also note that you have sensed the difference between the Group objectives and the 'needs' and priorities of some of the Divisional Chairmen. I think this is all good controversial stuff and congratulate you on highlighting the situation."
- (3) "It is crucial to the future of Delta to solve the implications of 2.7 (too narrowly "City" based objectives) and to take on board also the implications of 3.5, 3.6 and 3.7 (the Divisional/Group conflict of perspective, values and optimality)."

6.32 Thus it may be safely concluded that the implications for strategic planning in Delta which emerged from the examination were fairly realistically based. It is also fairly safe to assume that these issues do specifically affect the planning of strategy and its implementation. Indeed, several top-executive interviewees, revisited after the issue of the research papers, said as much. Thus the importance of identifying and dealing with the very essence of objectives, goals and value-systems when planning strategic development, seems paramount.

Chapter Summary

The chapter reported the results of a series of in-depth interviews with most of the top-management of Delta. The interviews sought to explore the viability of Delta's existing strategic planning process and the apparent 'utility' of planning objectives. It concluded that there were significant difficulties which resulted from Delta's divisionalised and quasi-autonomous structure. The chapter went on to discuss the probable reasons for this and prepared a series of modifications aimed at helping to resolve the situation.

C H A P T E R VII

Contents

Action-perspective two - an anatomy of Delta - the Chairman's Committee, the bargaining zone - the "ripples" after the research reports - some broad conclusions.

Abstract

The chapter outlines the action observation which was collected as a result of the second major phase of the research. It provides an analysis of the anatomy of the Group as regards Divisional values and traces the interaction between researcher and the company after certain papers had been circulated.

CHAPTER VII: ACTION PERSPECTIVE TWO(I) Introduction

7.1 This action-observation analysis accounts for the second major phase of the research; namely the exploration of Delta's value-systems and its methods of planning. It represents an analysis of the nature of the interaction between the researcher, the Divisional Chairmen, and the Group H.Q. which resulted from the formulation and circulation of the two research reports. (i.e. the 'Purple' and 'Green' papers as described in Chapter VI).

7.2 Firstly a resumé of the major conclusions reached through the examination may be helpful. These were:-

- (i) That the Divisions did not fully "empathise" with the planning objectives formulated by the GPC, even though there was always interaction between the two at the formulation stage. This implies that the objectives, as structured, were not consonant with the real values and value-structures maintained within Divisions. Also implied, is the problem of Divisions not finding Group objectives meaningful in the planning context.
- (ii) That the future scenario (for the Group as a whole), considered as desirable, did not apparently offer characteristics which were entirely congruent with operational planning objectives. Thus, in a total sense, real values were not successfully accommodated by planning objectives.
- (iii) That because of this, each Division might be perceiving relative importances of strategic alternatives in differing ways, thus evaluating and selecting them by different criteria.

- (iv) That the planning system, being of an 'anabolic'* nature, attempted implicit 'optimisation' of Sub-Divisional unit, Divisional unit, and subsequently the Group, hence provoking a series of compromises which would almost certainly cause less than 'optimal' states within each of the three systems.

(II) Relative Context: an Anatomy of Delta

7.3 The findings concerning the differences between the attitudes and values predominating within the Divisions and those within the Group are not entirely surprising. In the first place, each has quite a different task - one specifically an operational resource-conversion task, the other a co-ordinating role. Each also survives in essentially different environments. However, it is, perhaps, more interesting to perceive that there appears to be a distinct difference between the Divisional values as well.

7.4 During the research this was certainly noticeable; although, on a scientific basis, it was difficult to measure without much greater effort and resources than were at hand. Nevertheless, it was apparent that within a relatively short period since divisionalisation took place in 1968, each of the sub-systems has tended to form a unique character (and thus value-structure) of its own. Each has additionally learned how to cope with autonomy and indeed foster it. So strong is the desire to maintain autonomy now, that in specific instances a series of 'supportive mechanisms' have emerged. The most common of these is to promote vigorous reaction to any central 'intervention', no matter how casual it may be.

7.5 In one case the distinction between the value-structures of a Division and those of the 'Group' is very marked. In fact,

* 'anabolic', as used here, is borrowed from physiology and means a 'building-up' process or aggregation. (Opposite of 'catabolic' or 'breaking-down' process).

in many respects, the particular Division in question could be termed 'quasi-institutionalised'. For it not only fosters autonomy and maintenance systems, but indeed even seeks 'value-supportive systems' outside the Group structure*; (similar to those suggested by Rhenman ref: 34). It is even more interesting to observe the 'internalisation' process which new members joining this organisation have apparently experienced. It is probably true to say that there is no necessary pre-disposition towards joining on the part of new members, but it is apparent that their acceptance of the dominant values occurs very rapidly. And in certain cases this has had a marked effect on their pattern of behaviour. The indications are that the strategic development of this particular unit has been explicitly governed by its broad value-structure and that operatively, if not descriptively, the relevant values have a significant influence on the strategic decision-process.

7.6 Another Division also portrays an individual and distinct set of value-structures which sharply contrasts with the former, and also the 'Group'. In this specific case, no 'institutionalisation' is apparent and the values reflect a pure business orientation. However, this Division promotes its autonomy almost to within the very core of the strategic area and has developed a battery of autonomy supportive mechanisms, which were observed to be very effective in operation. Needless to say, both of these sub-systems exhibit goals which do not appear to be consistent with Group planning 'objectives'; but not only is there simple divergence but also potential conflict. The development of individual 'goal-systems' within specific parts of an organisation has been well documented by Cyert and March (ref: 4). However, a decentralised structure is a marginally

* Hence certain 'reference groups' have been maintained outside the Group structure and it would appear that this is especially relevant in the case of those values which produce Division-Group dissonance. Thus if a Division holds values which are not consonant with those of the Group, then it will seek 'maintenance systems' externally.

different situation because such parts of the organisation have the ability to maintain individual strategic goals, as well as the more commonly referred to 'operational goals' relevant to 'departmental' sub-systems. Similar decentralised conflicts have been recorded by Brooke* in the context of multi-national companies, and by Berg (ref: 146) as regards conglomerate structures.

7.7 It is also apparent that the explicit personality of the Divisional Chairman is a supreme variable in determining value-structures. This is natural, for the introduction of new evaluative criteria, (with a new Divisional Chairman) concerning purpose and mode of operation of an individual Division, automatically proposes a reward sequence and a promotion/power sequence relevant to those values. In addition, strategic development and specific organisational climates become self-reinforcing mechanisms, thus strengthening the value-structures. It is interesting to identify those Divisions which constantly repeat the same strategic 'tricks' in growth and maintain this posture even where, perhaps, it is inappropriate. Additionally, it is apparent that strategic alternatives generated within certain Divisions are predictably related to individual intangible criteria.

7.8 Another interesting facet of Delta's divisionalised structure is that inter-Divisional dissonance is apparently generated between those Divisions which inter-trade most. Hence a 'semis' Division, selling internally, is forced to share the spoils of its product with another Division if the second further processes the semi-manufacture by producing finished components. Interestingly, this rule also applies to some extent at a company level. It is the case that most intra-Divisional dissonance, perhaps as would be expected, is generated within those Divisions which promote sub-Divisional unit autonomy.

* see, for example, Brooke M.Z. The Formulation of Business Policy in Multi-National Companies Ph.D. Thesis University of Manchester 1967.

7.9 A second factor which influences the situation considerably relates to Chandler's* analysis; for Delta's strategy has indeed, in part, been determined by its structure. That is, that each Division's attempts to grow have been coloured by a 'concentric' approach. Thus where two Divisions interact because of some integrated production process, there has been, in some instances, potential infringement on each other's strategic area. Naturally enough, such rules of territoriality have then to be rationally defined if conflict is to be avoided.

7.10 In the context of the above, and accepting the probability that increase in dissonance implies decrease in efficiency, (as postulated by Rhenman ref: 34) it would seem that there is indeed a strong case for some sort of attempt to decrease dissonance, either through physical integration of specific Divisions or through some organisational development exercise. Interestingly enough, however, Delta's previous organisational structure (which was composed of Copper and Brass "Wings") gave rise to considerable dissonance at the very highest level. Indeed, one top-executive recollected that a marked degree of polarisation existed at board level at the time. Hence physical integration may not be the complete answer, but perhaps more effective control mechanisms might help.

(II) The Bargaining-Zone**: Chairman's Committee

7.11 Thus, in the context of strategy formulation, one would expect certain specific characteristics to emerge during the actual decision-processes. The Chairman's Committee is the executive body controlling Delta and consists of Executive Main-Board Directors and additional Divisional Chairmen. It meets monthly and,

* see Chandler A.D. Strategy and Structure MIT Press 1962

** This terminology has been borrowed from Abell's work on decision-making, power and influence. See Abell P. "Organisations as Bargaining and Influence Systems: Measuring Intra-Organisational Power and Influence" Imperial College London - working paper 1973 (unpublished).

apart from other things, is responsible for discussing strategic proposals which have already been examined by the Group Planning Committee. Thus it is the major debating arena and its recommendations to the Main Board have considerable strength. This implies that it is at these meetings where the important central decisions are made, even though subsequent confirmation or rejection is still the Main Board's responsibility.

7.12 It was quite impracticable to observe these actual decision processes directly, but indirect data with the backing of actual strategic choices does throw considerable light on the nature of the Chairman's Committee as a decision-making body. If, as has been indicated, each Division maintains an individual value-system which is different from that of any other Division and different from the 'Group', then strategic choice would be expected to be specifically hazy. For this situation reflects, on a limited scale, many of Lindblom's (refs: 19, 21) original postulates: such as, for example, normatively speaking, planning objectives are stable. However, the individual value-structures may colour their perception and indeed infuse differing degrees of perceived importance into those objectives. But that occurs at the most simple end of the continuum for, in the context of a complicated strategic choice, many alternatives which reach the Committee will already satisfy straightforward planning objectives. Thus they will now be evaluated against a host of both unstable and stable intangible criteria, of which value-structures play an integral part.

7.13 In such a potential bargaining situation, interchange can have two major dimensions. The first is between the Divisions and the Group. The second is between Divisions themselves. The Chairman's Committee is a fund-competitive situation where there is a limited supply of funds. Much of the criticism made about Delta's strategic planning stemmed from the apparent inability of the Group Planning Committee "... to set out the priorities."

Thus, implicitly at least, there appeared to be discontent with the strategic decision-process. And a need was felt for some sort of independent 'arbiter', in the sense that these issues ought to be clarified for decision, rather than in the actual decision-making itself. When asked about the decision-processes in the Chairman's Committee, one Divisional Chairman said - "It is always the loudest and most persuasive voices which get the funds; really the people who can make the best case. Because the G.P.C. fails to assess priorities properly, we get this 'horse-trading'."

7.14 Another Divisional Chairman said - "You say in your report that we compromise. That's quite true but these compromises at the Chairman's Committee are really very rough; very ragged at the edges." Additionally, he went on to discuss the actual natures of the interchange and pointed out that although some Divisions differed quite substantially in attitude, there were not too many instances where one Division actually inhibited another's case. This was because, he stated, "... there is perhaps the feeling that if I argue against your case, what will you do with my proposal?"

7.15 Thus it appears that a certain implicit collusion exists between Divisions, and it is necessary because of a lack of any stable decision structure. Divisional Chairmen appeared to believe that the Group Planning Committee superficially examined their proposals. This may be true but only in a limited sense, for many proposals are in fact examined in detail by the G.P.C. However, at the same time it is only a 'part-time' body without the resources for effective and comprehensive analysis and it is probably this short-coming that effects an unstable decision structure.

7.16 Hence interchange at the Chairman's Committee between Divisions and Group appears to be significantly greater than between Divisions themselves. This is also evidenced by the statement of another top-executive who said - "If a Divisional Chairman tries to push a proposal through, you know a 'bulldozing' job, some of the

Group members of the Committee quite often over-react unrealistically and in antithesis just to stop the proposal. This is quite unnecessary because all we have to say is 'show us your evidence' and the proposal is shelved for a later and more realistic decision." Thus, this appears to be the dichotomy. The Divisions, because of a lack of stable decision structure, in that priorities are not afforded to proposals (perhaps because of an aim to maintain 'democracy'), are forced into a bargaining situation which operates fundamentally between Divisions and Group. The Divisions, therefore, agree to a mutual co-existence in the decision-making process and instead aim to convince the 'Group' members of the value of their individual strategies.

7.17 A member of the Chairman's Committee did say however - "Once the decision is made, we cold-bloodedly carry it out. There is no emotive influence after the final decision in Delta's case, unlike some I've seen in other companies." This implies that if the strict finality of a decision is the norm, then such circumstances would tend to make the decision-process even more critical; hence the pressures within the debating arena would be increased. However, the statement is not entirely borne out by other members who believed that there was indeed some retrospective lobbying and that certain decisions continued to be emotive. This position must depend on the degree to which the Main Board exercises its powers of modification and debate. The Main Board, of course, differs in that several non-executive directors, with external perspectives, are introduced onto the scene. However, several members appeared to hold differing views about what the board did, or indeed should do, to the Committee's recommendations.

(II) The Ripples after the 'Purple' Research Report*

7.18 As a result of the research into 'objectives' and 'planning' a ("Purple") Research Report, of considerable detail,, was circulated to all Divisional Chairmen and Group Planning Committee members in February 1973. It contained an introductory discussion concerning the role of 'objectives', an analysis of the research data and drew conclusions. The researcher was careful to back up each inference by one or more quoted views offered by the respondents.

7.19 The immediate and vigorous reaction which occurred as a result, almost automatically validated the findings of the study. The first acknowledgement of the report came from the Group H.Q. and stated - "Firstly, the paper has created considerable interest here at Kingsway; obviously it is somewhat controversial but I am sure it is proving most helpful and stimulating to everyone concerned with planning."

7.20 However, almost immediately afterwards, it was followed by a series of letters from Divisional Chairmen. Of these, the majority were favourable and one mentioned the "...controversial nature" of the conclusions. Another found it "...thought provoking and stimulating" - and yet another considered that the study would make a "significant contribution". Thus, at that time, although 'controversy' had been mentioned several times, the researcher was unable to explicitly identify the sensitive topic.

7.21 Several days later, another letter was received from a Divisional Chairman; it began ... "I have read your paper with very great interest but I do not suppose you will be surprised to learn that there are some important parts of it with which I do not agree." After some specific points the letter went on ...

* This 'Purple' paper is the one embodied in Chapter VI.

"You will not expect me to list the arguments in favour of divisionalisation of a Group that comprises several quite distinct businesses, each of which requires different considerations. But if a Group decides that its best organisational structure is to divisionalise, then the planning must follow that structure. The alternative is to centralise everything and then no doubt planning could be centralised as well. This is an alternative I reject. A further important point is that I believe that plans are more effective and will be carried out better with the enthusiasm of the officers and N.C.O.'s if they start from the bottom and grow upwards, rather than if they are imposed from the top."

7.22 Copies of this letter were also sent to members of the G.P.C. Interestingly enough, the original "Purple" paper certainly had not argued for any centralisation, either structurally or as regards planning. Instead, it had pointed out some shortcomings in decentralised processes and had proposed some fairly minor modifications. Thus the strength of this particular response appeared, to the researcher, to be unwarranted. In this light, the researcher attempted to clarify his proposals and responded with a fairly lengthy letter, offering to visit and discuss these issues with the Divisional Chairman concerned. Several days later a reply was received declining the offer of a visit, but also maintaining a posture of much less apparent forcefulness. It also contained the following paragraph ...

"I agree with your final paragraph that your report has, quite rightly, created considerable interest and reaction and you will be pleased to know that I understand it will be the basis of a debate between Divisional Chairmen. I am sure this debate will be full of interest and is likely to be more productive because it will be based on your paper."

7.23 This offers a clue to what the researcher took to be an over-reaction to his paper; for the Divisional Chairman concerned was mistaken in his deduction that the newly proposed Chairman's Conference, (which is due to take place in April 1974 and is to discuss the future of Delta) was a result of the research study or paper, or would be based on it. The conference was indeed proposed at about the same time as the paper was circulated and the paper may or may not have influenced the acceptance of the idea. But the Divisional Chairman's original and vigorous reaction to the paper (copied as it was and circulated) was perhaps more of a response aimed at the 'Group' than the researcher. Thus it transpired that this might have been an action-example of an 'autonomy supportive mechanism', in promoting vigorous and wide-spread reaction to any hint of Group intervention or consideration of the 'centralised-decentralised' issue.

7.24 Indeed, it was also apparent that the 'Group', in a sense, over-reacted to the perceived or expected Divisional reaction, for a long silence was maintained about any of the issues raised by the paper. In later discussions, it seemed as though the Group faction was being over-cautious and thus over-estimating Divisional responses. This discrepancy of perception was in fact finally proven by the researcher's second round of visits to discuss the paper and its implications. Fundamentally, no anti-reaction whatsoever was experienced, and indeed the truth appeared to be quite to the contrary.

7.25 Eventually, the researcher was invited to go down to Group H.Q. to discuss the paper with the Group Marketing Director and the Deputy Group Chairman. The meeting displaced some doubts and clarified some of the issues raised by the research. Subsequently, the researcher was asked to write an appendix to the paper setting out his personal views and making recommendations. This "Green" paper forms Appendix (B) to this thesis. The paper received favourable response from several of the Group Planning Committee and the Group Chairman and several of the points raised

in it were further followed up. The suggestion that specific targets be set for each individual Division in order to attempt total Group 'optimisation' was particularly well received and in fact the G.P.C. now carry out this procedure as part of the annual planning cycle. However, it was also interesting to note that this "Green" paper was not circulated to the Divisions.

(V) Conclusions

7.26 Thus the total process of reaction and interaction may be split into several discrete phases as schematically shown by Figure (16).

- (i) Circulation of the research paper by researcher to both 'Group' and 'Divisions'.
- (ii) Divisional reaction, and Group acknowledgement.
- (iii) Interaction between Group and researcher, and response by researcher to Divisions.
- (iv) Interaction between researcher and Divisions, and the researcher's response to Group feedback.

7.27 It is interesting to note that the flow of information between Division and Group was apparently slight. Indeed in many instances it could be argued that the relevant communication passed through the researcher as a channel. This tends to reinforce the inference that there was some misinterpretation of the initial data, of subsequent responses, and indeed relevant expectations, on the part of both sides. It also demonstrates the effectiveness of 'autonomy supportive mechanisms'.

7.28 Finally, as regards the visits to Divisional Chairmen, it was apparent that there was a degree of shifting of stances on certain issues. Whether because of unstable goal structures or sheer pragmatism, certain attitudes fostered by individuals perceptively changed from one visit to another. Some of these topics, it must be pointed out, were not necessarily relevant to the research papers hence it cannot be inferred that this phenomenon was the result of the influence of some change-agent. Rather,

PHASES OF INTERACTION

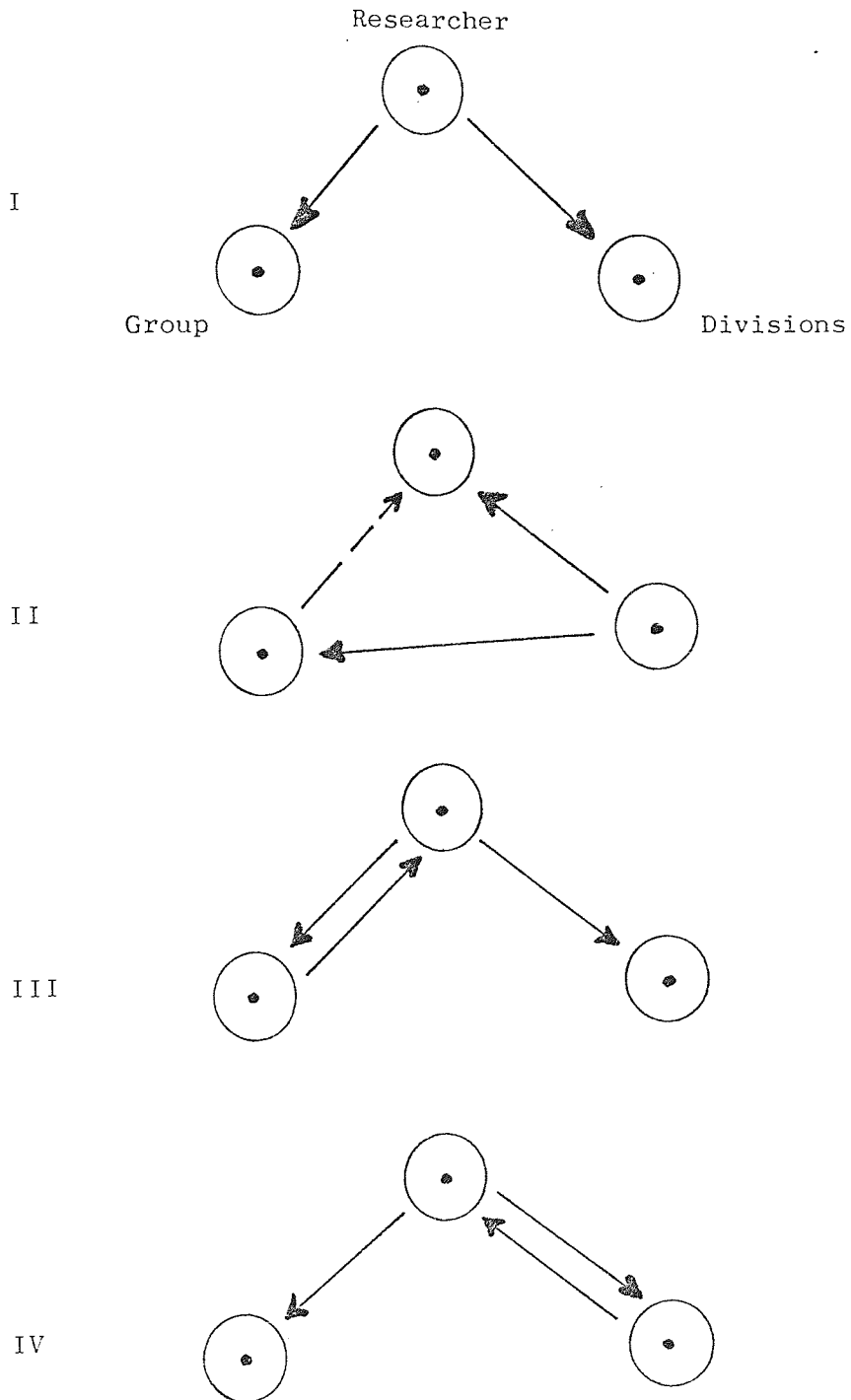


FIGURE (16)

it seemed as though the nature of specific decision-processes which had taken place at the Chairman's Committee had effected a change in attitude. Furthermore, it appeared that these changes were specifically caused by some 'assertation and counter-assertation' mechanism and that having made what might have been considered a balancing gesture, the dissonance created as a result forced a shift in stance. Such turbulence undoubtedly greatly increases the complexity of a strategic decision-process.

Chapter Summary

The chapter analysed the behavioural responses of Delta's top-management to research papers produced in the second major research phase. It provides an 'anatomy' of Delta with respect to values and attitudes within the decentralised structure, and outlines the workings of the strategic choice-process in the context of the Chairman's Committee. The reaction to the research reports and their proposals and the subsequent interaction between the researcher and the company is also analysed.

CHAPTER VIII

Contents

Introduction to the theoretical 'self-concept' of an organisation - methodology for its assessment - analysis of the results - conclusions and validation.

Abstract

The chapter introduces the theoretical 'self-concept' of an organisation and outlines a methodology for its direct assessment and indirect validation. Delta's 'self-concept' is analysed in this way and profiled against strategic development. Some validation of the construct also takes place. Conclusions are drawn.

CHAPTER VIII: ANALYSIS OF THE SELF-CONCEPT

(I) Introduction

8.1 Because of the apparent influence on strategic choice of the value-systems percolating through Delta, it was proposed that an attempt should be made to establish some theoretical construct relevant to value-influenced decisions. The promising results of the exploration into organisational values and corporate objectives implied that a closer investigation of the origins of these value-systems might be further illuminating.

8.2 When examining the feasibility of various alternative patterns of development for Delta, it was considered important to take full account of the possible influence of what may be called the "Self-Concept"* of the organisation (similar to Chamberlain's 'Strategy-Set' - see ref: 120). Top management within an organisation appear to have quite distinct views about what sort of business they would or would not like to be in and its methods of operation. Even if a chosen strategy fully satisfies all the objective planning criteria, it may still be rejected by top executives because it is neither acceptable to, nor consistent with, the concept of the organisation as they view it. Indeed, there is absolutely nothing wrong with such constraints being imposed since strategic development might only be successful if, apart from the more orthodox aspects of physical synergy, there is also the belief and enthusiasm present to carry such growth through to maturation.

8.3 Hence the organisational 'Self-Concept' can be accepted as a theoretical structure representing some value-continuum which is essentially over and above the actual personal values of its members. Naturally enough, in the context of strategic choice, the 'Self-Concept' of the organisation as exhibited by the top-management structure will tend to determine many of the intangible criteria affecting selection.

* This is analogous to the well-known theory of 'self-consistency' as proposed by Leckey in the context of individual personality. See, for example, Leckey P. Self-Consistency: A Theory of Personality Doubleday Anchor 1969 (first published 1945)

The underlying premise, therefore, is that by identifying such influences and by making them explicit, one may introduce a more stable decision-structure to the process. Implicit in this statement is that one should not purposefully ignore these unquantifiables, (as has been the case with most normative planning approaches) but should instead actively and positively pursue them in order to establish a basis for more successful strategy formulation. For, on the one hand, identifying the criteria will limit the range of acceptable strategic choice and, on the other, it will theoretically select those alternatives which can expect to receive total and concerted support through their development.

8.4 Hence, as has been implied by Selznick (ref: 117), each individual joining the top-management structure would tend to conform to and assimilate some of the historical 'character' of the company; whilst by infusion of his values, simultaneously effect some slight modification to that 'character'. The ways in which top-management perceive the company's 'character' is therefore the 'Self-Concept' of the organisation. Hence such a construct becomes the medium through which value-influenced strategic choice is made. Strategic development has, theoretically, to be consistent with the organisational 'Self-Concept' if dissonance is to be avoided. Thus this concept is considered to be quite distinct from economic or synergic choice criteria, although perhaps retrospective rationalisation of a decision may enshroud it in many ways.

8.5 It would appear that in many cases analytically viable strategic plans have been apparently 'irrationally' rejected or heavily modified by a board of directors.* Thus it can be postulated that the determination of limits of 'acceptability' of plans generated within the strategic framework could be an important pre-requisite to a

* An excellent example of this phenomenon has been provided by Hall, in the context of the use of computer-based corporate planning models. It seems clear that these models are often rejected or ignored by top-management. Perhaps this distinguishes the relevance of those selection criteria which are not 'programmable'. See Hall, W.K. "Strategic Planning Models: Are Managers really finding them Useful?" Journal of Business Policy Winter 1972/73

soundly based system. In other words, strategic plans must be developed in sympathy with the final filter for those plans. Naturally enough, the area of investigation is full of difficulties. The 'Self-Concept' may perpetrate its influence in unconscious as well as conscious ways and the clues to its configuration are likely to be quite intangible. Thus any attempt to explore these criteria must tend to be circumstantially orientated and should, ideally, be tested against actual decision-making processes and their outcomes.

(II) Methodology

8.6 In terms of a methodology there are two immediate variables which, in theory, ought to form the basis for an investigation. The first is an analytical examination of the historical evolution of the company and the various 'metamorphoses' through which it has developed. In this way, a steady evolution of 'Self-Concept' in operational form (i.e. the final influence it has brought to bear during actual decision-processes) may be mapped. The second is the relevant changes in top-management structure, as members join and leave the company. It may also be important to investigate the previous frames of reference of joining members since, for example, their original industrial sector and style of operation may well continue to influence their views.

8.7 However, these are only two minor paths of investigation. A methodology is still required to assess the 'Self-Concept' in a more direct and less circumstantial context. For what is really being analysed is the 'viability' of strategic development. This filter of acceptance in a sense probably decreases the complexity of the orthodox evaluative task, as it may allow a greater depth to the examination of chosen policies. The true 'optimum' policy for strategic development of the firm is thus taken to be that which maximises 'viability', within both subjective and objective contexts. If no such optimum is found, then the firm will either fail to satisfy its obligations (i.e. financial constraints) of existence, or its 'Self-Concept' will have to undergo a fundamental re-orientation.

8.8 The methodology chosen for the direct assessment of the profile of Delta's organisational 'Self-Concept' was once again characterised by a series of structured in-depth interviews. The previous success of this research posture obviously influenced the choice. Respondents were not explicitly aware of the theoretical construct under test in order to preclude, as far as was possible, the influences of experimental 'set'. Hence Divisional Chairmen and Group Planning Committee members were asked for their general views on the future of Delta and their personal attitudes concerning a series of strategic proposals. In this way, the research, in certain respects, simulated a decision and choice of strategy situation; but without a group context and without the pressures of information about such a decision.

8.9 This second interview was structured into open-ended response questions and closed response questions. In addition, each respondent was exposed to an orientating sequence of coincidental questions about Delta so as to offer a common background and degree of awareness for the sample. This took place between the two major phases. The important phases of the interview were as follows:-

- (1) The top-executives were all asked for their personal opinions about what Delta ought to become and how they would like to see the Group develop. This open-ended part thus allowed each of the decision-makers to express the perspectives, tasks or goals seen as most relevant to him. (This section acted as something of a 'follow-on' from the previous set of interviews).
- (2) The second important section asked top management to evaluate (on a five-point scale) a series of possible strategic paths of development for Delta and to give reasons for their ratings. In this way, the acceptability of specific alternatives, after the orientating sequence, could be evaluated in loosely quantitative terms; and on a common basis.

(III) Results

8.10 The overall results of the analysis tended to imply that the top-management 'Self-Concept' in Delta was, in fact, mildly polarised. This might well have been expected since in recent years a change in the top-management structure has taken place with the influx of a number of executives new to the company. Thus, when the data was analysed in the context of these two groupings, certain relatively significant factors appeared. In developing the broad picture of a 'Self-Concept' determining the acceptability of strategic development, it may, however, first be helpful to consider it to be constructed of two distinct components:-

- (a) Organisational style
- (b) Business consistency

8.11 'Organisational style' can be defined as the acceptable 'methods' of development. Thus a company which sees itself to characterise the reliable solid institution would probably assimilate an 'organisational style' which would preclude asset-stripping, for example. A firm which saw itself as a small financially dynamic organisation, on the other hand, might not be thus constrained. The postulate, therefore, is that organisations tend to behave in ways which are consistent with the 'organisational style' component of their 'Self-Concept'. Inconsistent behaviour would produce a degree of dissonance, resulting in discomfort. 'Business consistency' on the other hand can be defined as the acceptability of the actual development itself. A company which regards itself as a sugar producer may not sympathise with the view that it ought to manufacture confectionery, despite obvious possible advantages of integration. This lack of sympathy, it is postulated, arises from an apparent business inconsistency as regards the 'Self-Concept' - (a retail market as against agricultural production; the manufacture of toffees as against rum). Hence logical synergistic opportunities may well be rejected. And perhaps it may be true to say that many sophisticated corporate planning departments employing advanced computer techniques often fail to realise their true potential because they either underestimate, fail to recognise, or ignore many of the intangibles so critical to the acceptance and successful implementation of specific

strategies.*

8.12 The responses relating to the 'organisational style' component of the 'Self-Concept' in Delta did not, in fact, show any marked polarisation. Both the groups apparently strongly identified with similar styles of behaviour and it became clear that Delta saw itself as a reliable, sound, reputable company. Thus, generally speaking, the following parameters outline the methods of development considered as acceptable to Delta:-

- (a) - in manufacturing processes - the importance of being a "thing maker" was apparent.
- (b) - being sound and reputable in operation - such things as asset-stripping or redundancy situations were frowned upon.
- (c) - democracy in the implementation of policies and managerial control was considered to be important.
- (d) - active and reputable interaction with external 'stakeholder' groups and a generally open approach were both seen to be desirable.
- (e) - a belief in internal organic development and innovation was present.
- (f) - some long-term considerations concerning the company's high standards of behaviour and contribution to society in general were also illustrated.

8.13 Hence these parameters indicate commonly acknowledged modes of behaviour for the company and thus essentially place constraints on possible strategic opportunities, if the code had to be infringed as a result. Indeed, it is probable that these constraining factors are, in reality, flexible. But Delta has historically maintained these high standards. Hence one may conclude that they are in fact

* As stated previously, this has been implied by the empirical survey conducted by Hall. See Hall, W.K. "Strategic Planning Models: Are Managers really finding them Useful?" Journal of Business Policy Winter 1972/73.

'operable' rather than just abstract ideology. Interestingly, the references to 'internal innovation' and 'organic growth' contrast sharply with the company's historical record, which is dominated almost entirely by an acquisitional growth pattern. Indeed, this is one criticism which has often been levelled at the Group by the 'City'. Thus, perhaps, the contrast may reflect some slight modification of the 'Self-Concept' due to the influx of new members to the top-management structure.

8.14 As evidence of this analysis of 'organisational style', the following statements, recorded ad verbatim, were some of the responses offered to the open-ended questions concerning the respondent's personal views of what the company should be and how it should develop.

- (i) "... a good employer helping civilisation in the broadest sense."
- (ii) "... producing things and remaining financially viable."
- (iii) "... having City respect, being market leaders with lots of organic growth."
- (iv) "... an efficient company, internally developed."
- (v) "... enterprising, innovative, a reputation for growth and integrity, and a good employer .."
- (vi) "... reliable but also thrusting.."
- (vii) "... people-orientated, with job satisfaction and adaptive."
- (viii) "... a sound company with a good reputation everywhere."
- (ix) "... conformist with a bit of flair."
- (x) "... less conservative, lively, cohesive; and willing to accept more risk."

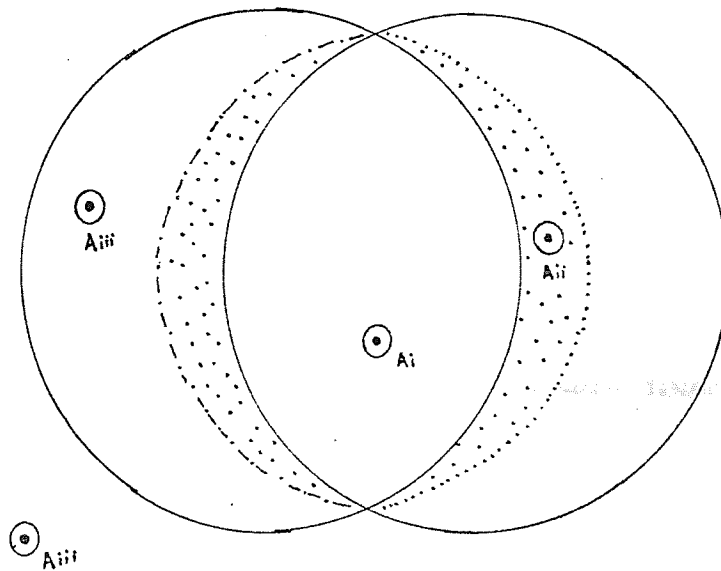
8.15 With reference to the 'business consistency' component of Delta's 'Self-Concept' however, certain differences began to emerge. Within the open-ended phase of the research, the following characteristics were frequently mentioned:-

- (a) Multi-national but non-conglomerate
- (b) Engineering, technology and metals
- (c) Semi-manufactures integrated with logical product-groups.

However, within that structure, original members and new members appeared to lay differing degrees of stress on specific characteristics. And it seemed probable that there were minor differences in attitude. If this is indeed the case, then it can be postulated that the acceptability of strategic alternatives with reference to 'business consistency' would fall into three discrete areas in the context of polarity. The first would be total acceptance because the alternative fell within the area of overlap between two poles. The second would be where the alternative fell in the "grey" area - in the case of one group fully accepting it and having to persuade the other group from partial to full acceptance. The third would be total rejection because the alternative fell into decision-space outside the limits of acceptability of either group, or outside the persuadable limit of one group. These areas are schematically represented by figure (17).

8.16 In the case of the closed question, where respondents were asked to assess the desirability of a series of strategic alternatives (under the conditions of total or partial ignorance), this apparently minor polarisation became clearer. The following table offers a summary of the main findings.

CONCEPTUAL POLARISATION OF THE 'SELF-CONCEPT'



'grey area' is shown by the dotted spaces which, together with the area of overlap, form the total consensus 'self-concept'

FIGURE (17)

Table I

Top management who developed largely within the company	Top management who joined the company from outside
1. Copper based semi-manufactures seen as an important and integral part of Delta - the 'soul' - the 'origins'.	Semi-manufactures seen as only relatively important - much more flexible to suggestions of divestment.
2. Firmly committed to 'engineering' as a broad strategic posture for Delta.	Much less committed to 'engineering'.
3. More entrepreneurial with respect to the really diverse alternatives suggested.	Less entrepreneurial - show the need for consistency in strategic development.
4. 'Copper' orientated - reject aluminium and consider plastics only as a hedge against substitution.	Less 'copper' orientated - more amenable to aluminium and actively interested in plastics.
5. Generally closer and more consistent responses.	Responses more diverse and wider ranging.

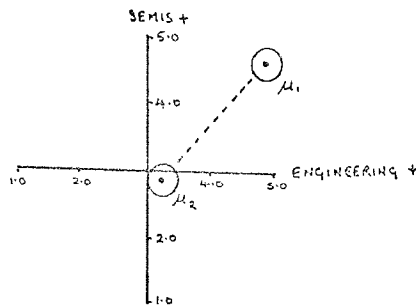
8.17 Basically the top-management structure of Delta can be split into these two equal groups; thus the mild polarisation should be a balanced one. But no allowances can be made for the weightings given to the views of any individual. The 'Self-Concept' apparently dominant within members who had been with the company for some time certainly seemed to relate well to the historical evolution of the Group. This is, in itself, some sort of validation. Delta's strategic policy of expanding by acquiring end-users of semi-manufactures is accurately reflected in the importance afforded to the 'semis' as Delta's origin and the accompanying strong rejection of a suggested divestment. These values also relate well to the apparent need to have manufacturing processes which deal with copper, and the 'engineering' profile.

8.18 In contrast, the newer members of the structure do not seem to be so strongly committed to the semi-manufacturing philosophy, and neither are they to 'copper' as an operating material. The interesting factor that was implied by the data was that the newer members did, at the same time, regard it as important to maintain some 'logical thread' within Delta's expansion; whereas the former group appeared to be actively interested in certain quite diverse proposals. These hints of entrepreneurship, whether real or imaginary, are not, however, necessarily incompatible with the importance attributed to the fairly narrow copper/engineering/semis posture.

8.19 These points can be illustrated by the following detailed analysis of the evaluations made. It must be emphasised, however, that any tests of significance in the statistical sense would be quite meaningless because of the limited sample size. Accepting this, an attempt was made to set out relatively arbitrary thresholds of behavioural 'distinction'* and these were taken as units of 0.5 between the means of the two groups. This would allow 'accidental' ratings of plus or minus one point (out of the five point scale) for at least two members (out of the six per sample) before 'distinction' could be registered. The five point scale contained a "possible" equivalent to '3' and categories of 'good, very good' (4, 5) and 'bad, very bad' (2, 1) either side. The results, as set out in Table II, were also mapped diagrammatically. Figure (18) quite clearly denotes the polarisation. It can be seen that the most 'distinctive' responses were given to the importance of the 'semi-engineering' posture. (top of Figure (18)). However, a multi-vector plot of the mean responses given to all the closed questions also implies a significant polarisation between the two groups.

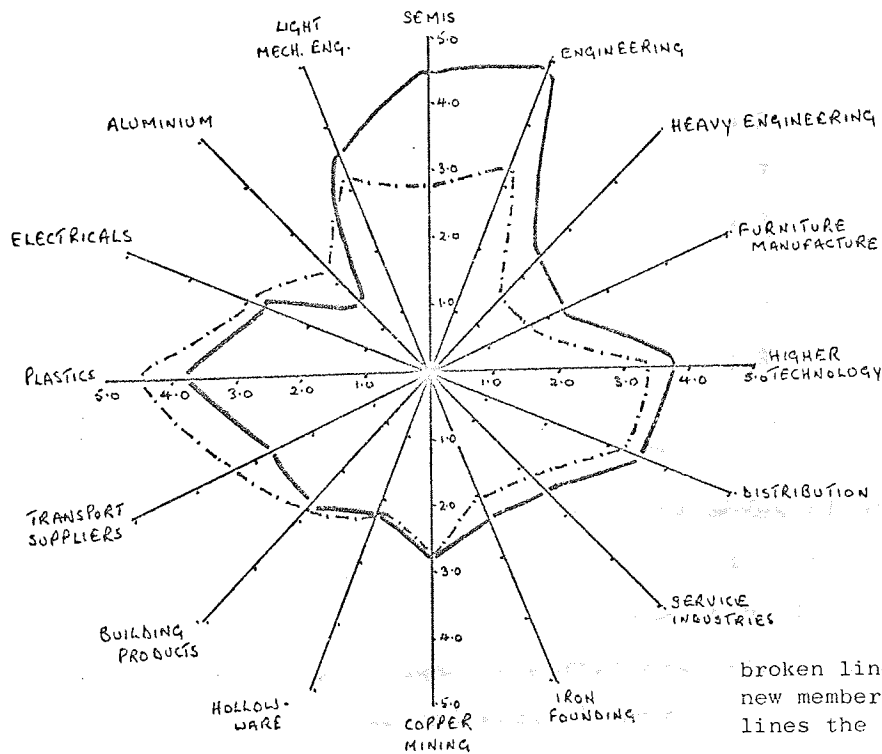
* These are, in certain respects, similar to Argyris' concept of "behavioural significance" - See Argyris C. (ref: 179).

THE 'SELF-CONCEPT: A PROFILE OF POLARITY'



μ_1 = original members

μ_2 = new members



broken lines represent new members group - hard lines the original members.

FIGURE (18)

Table II

Alternative policy suggested	Original members evaluations(mean)	New members evaluations(mean)	Distinction * = 0.5	Mean of total sample
1. divestment of 'semis'	1.5	3.2	***	2.40
2. into heavy engineering	2.3	1.5	*	1.90
3. into light iron-founding	2.3	2.0		2.15
4. into furniture manufacture	2.2	1.7	*	1.95
5. into service industries	2.5	2.2		2.35
6. develop more into distribution	3.5	3.2		3.35
7. manufacture of lamp posts	2.2	1.8		2.00
8. into engineering plastics	3.8	4.5	*	4.15
9. into domestic holloware	2.2	2.2		2.20
10. out of engineering	1.2	2.7	***	1.95
11. priority to electricals	2.8	3.0		2.90
12. priority to building products	2.7	2.8		2.85
13. into higher technology	3.8	3.3	*	3.55
14. supply the transport industries	2.7	3.2	*	2.95
15. into copper mining	2.8	2.7		2.75
16. more aluminium fabrication	1.5	2.2	*	1.85
17. into light mechanical engineering	3.5	3.3		3.40
18. re-equip 'semis' industries	3.5	2.2	**	2.85

8.20 The apparent difference between the means of the two groups with reference to certain of the proposed alternatives, is fairly clear. However, if the analysis of the data is performed on the basis of the most frequent response within each group, (as against mean values) the picture becomes even clearer.

Table III

Alternative policy suggested	Original Members	New Members
1. divestment of 'semis'	1 + 2	4
2. into heavy engineering	2	1
3. into light iron-founding	2	1 + 3
4. into furniture manufacture	1 + 2	1
5. into service industries	3	2
6. develop into distribution	3 + 4	2
7. manufacture of lamp posts	1 + 2	2
8. into engineering plastics	4	5
9. into domestic holloware	2	2
10. out of engineering	1	1
11. priority to electricals	2	2 + 4
12. priority to building products	2	2
13. into higher technology	4	2 + 4
14. supply the transport industries	2	4
15. into copper mining	3 + 4	2 + 3
16. more aluminium fabrication	1 + 2	3
17. into light mechanical engineering	3 + 4	3
18. to re-equip 'semis'	4	1 + 2

The polarisation with regard to the question of divestment or re-equipment of semi-manufacturing processes in Delta becomes, apparently, more marked. Also implied is the disagreement within the total sample about the proposal to enter copper mining. But on many other issues the groups appear to close the gap between their attitudes.

(IV) Conclusions

8.21 Allowing for all the difficulties of semantics, and of differing degrees of awareness (within the sample) and knowledge of the specific proposals made, there are still fairly significant signs which indicate that the profiles of the 'Self-Concept' held by these member groups are slightly different. That is not to say they are conflicting (except on the "semis" issue perhaps), but some difference, nevertheless, apparently exists. Naturally enough, such conditions may produce the significant advantages of a more 'balanced' appraisal of strategic alternatives. But the 'Self-Concept', whether mildly polarised or not, does offer a realistic basis upon which strategy can be evaluated according to its acceptability. Hence it is now possible to investigate the compatibility of the strategic alternatives generated by the ecological 'overview' with the organisational 'Self-Concept' as it stands. In this way, one may avoid any dissonance or organisational disequilibrium which might have resulted, had they been realistically implementable.

8.22 Before that can be done, however, it is important that some sort of validation of the 'Self-Concept' as profiled by the research, be attempted. One method would be to observe actual decision-processes taking place within the context of a real issue, in order to identify the operational influence of these values on strategic choice. What the research performed was really a simulation of a strategic decision-process; on an individual rather than group basis. However, observation of real group decision-processes was impracticable, mostly because of aspects of confidentiality and also because an experimental 'set' (due to the presence of a third party) would be introduced. Hence, unless the observer was a participant, evidence of the operational aspects of the theoretical construct is difficult to collect. Additionally, any attempt to do this would have been inconsistent with the chosen perspective of a hypothetical 'planner' operating at some distance.

8.23 A better, if more indirect, method would be to match the 'Self-Concept' profile - even ignoring any polarisation - with actual strategic development which has taken place. It has already been suggested that the historical evolution of Delta up to 1967 reflects the apparent 'Self-Concept' of the original members' group fairly well. The philosophy of the development of businesses which use semi-manufactures, which were essentially 'engineers', and which also process copper and its alloys, was very marked. It may indeed be true to say that the areas of scanning for acquisitions were exclusively those where copper was used in some way. As one of the newer Divisional Chairmen stated, "They've always called it diversification but looking back on Delta's growth it's always been copper and more copper. Why, even the acquisition of the Electricals Division really started because the industry used copper. It's been chasing tonnages, even though our electricals don't use very much." In addition, a number of small and diverse peripheral companies were acquired and this illustrates the 'entrepreneurship' of the original members' group, as suggested in the 'Self-Concept' analysis, very well.

8.24 However, since the influx of new members to the group from outside, certain specific changes appear to have occurred. A number of acquisitions which might not have been previously considered, have been effected.* But most significantly, the business philosophy of Delta and subsequent self-description has re-orientated itself away from the "semis" base towards a broader range of businesses which are not necessarily vertically integrated. At the same time, it was also apparent during the research that excessive emphasis was placed on Delta being "non-conglomerate", even though with its wide diversity of products such a description could be quite feasible.

* Carter, in an interesting empirical study of a firm's strategic behaviour, indicated that acquisitions especially, reflected (in this instance) the personality of the Chief Executive. See Carter, E.E. "The Behavioural Theory of the Firm and Top-Level Corporate Decisions." Admin. Sc. Q. 16.3 (1971) p413

8.25 Most of this circumstantial evidence, together with even less tangible evidence collected through the research, tends to substantiate the sort of mildly polarised 'Self-Concept' implied by the data. In addition, discussion of these results with some of the top-management of Delta did not produce any significant contradiction. The potential value of self-illumination with regard to a pre-disposition of attitude to certain strategic areas has still to be evaluated. But, in reality, it may well be of some importance. It would also have been interesting to take the research approach and subsequent analysis down to the individual Divisional level. It is, indeed, highly probable that each Division would maintain slightly different 'Self-Concepts' relating to their value-structures. However, because of the limitations of time and resources this was not possible; but such an examination may provide a fruitful "follow-on" as a research area.

Chapter Summary

The chapter introduced the idea of the company having an organisational 'Self-Concept' which determined how it viewed itself, and provided consistency of growth. The 'Self-Concept' therefore denoted the acceptability of strategic plans (i.e. the 'viability' of plans) and related to value-structures within the top-management area. A methodology for the direct assessment of the 'Self-Concept' and its subsequent validation, was proposed. The results of the analysis of Delta's apparent 'Self-Concept' and the evidence suggesting some polarisation were presented.

CHAPTER IX

Contents

Compatibility of values and policies - strategic
'objective' policies are evaluated against values
- conclusions and selection procedure.

Abstract

The chapter attempts to marry the value-free policies generated by the 'ecological' methodology with the organisational 'self-concept'. A selection procedure which accommodates values as well as other criteria is proposed. Each of the policies is subjected to the procedure and evaluated. Conclusions are drawn.

CHAPTER IX: COMPATIBILITY OF POLICIES AND VALUES

(1) Introduction

6.1 Having researched the organisational values and 'Self-Concept' in Delta, it is now reasonable to examine the real and practical feasibility of the policies generated by the 'objective' (ecological) overview. These policies can be subjected to a sequence of filter mechanisms, as illustrated by the flow chart in figure (19) and the evaluating strata would thus ideally pose the following questions:-

- (i) Can the policy be accommodated within the 'Self-Concept' of the organisation? (i.e. is it acceptable to top-management?)
- (ii) Is the policy feasible in a practical objective context? (i.e. - will it work in the real world?).
- (iii) Will the policy satisfy the planning constraints? (i.e. - will it generate enough earnings to meet the requirements of shareholders and the "City"?)

6.2 The tendency would be for the analysis to become more and more detailed with each stratum until at last the process 'homes-in' on the selected strategies. Within the structure there are also feed-back loops so that if policies failed to be accommodated within the 'Self-Concept' then alternative policies would be generated. Should it become impossible for any strategy to satisfy the filters, then the organisation will either tend to go into a state of decline or the 'Self-Concept' would have to undergo some fairly radical change. It is thus postulated that the organisational 'Self-Concept' is a dominant component within the system and asserts a significant degree of influence. The policies which do pass through would then become central features of some overall planning 'goal', from which logical objectives for strategic development could be deduced. Additionally, it may also be that a dissonant policy offering explicit advantages to the organisation might effect a reorientation of the 'Self-Concept', (should they be perceived as such.)

FLOW-CHART OF SELECTION PROCEDURE

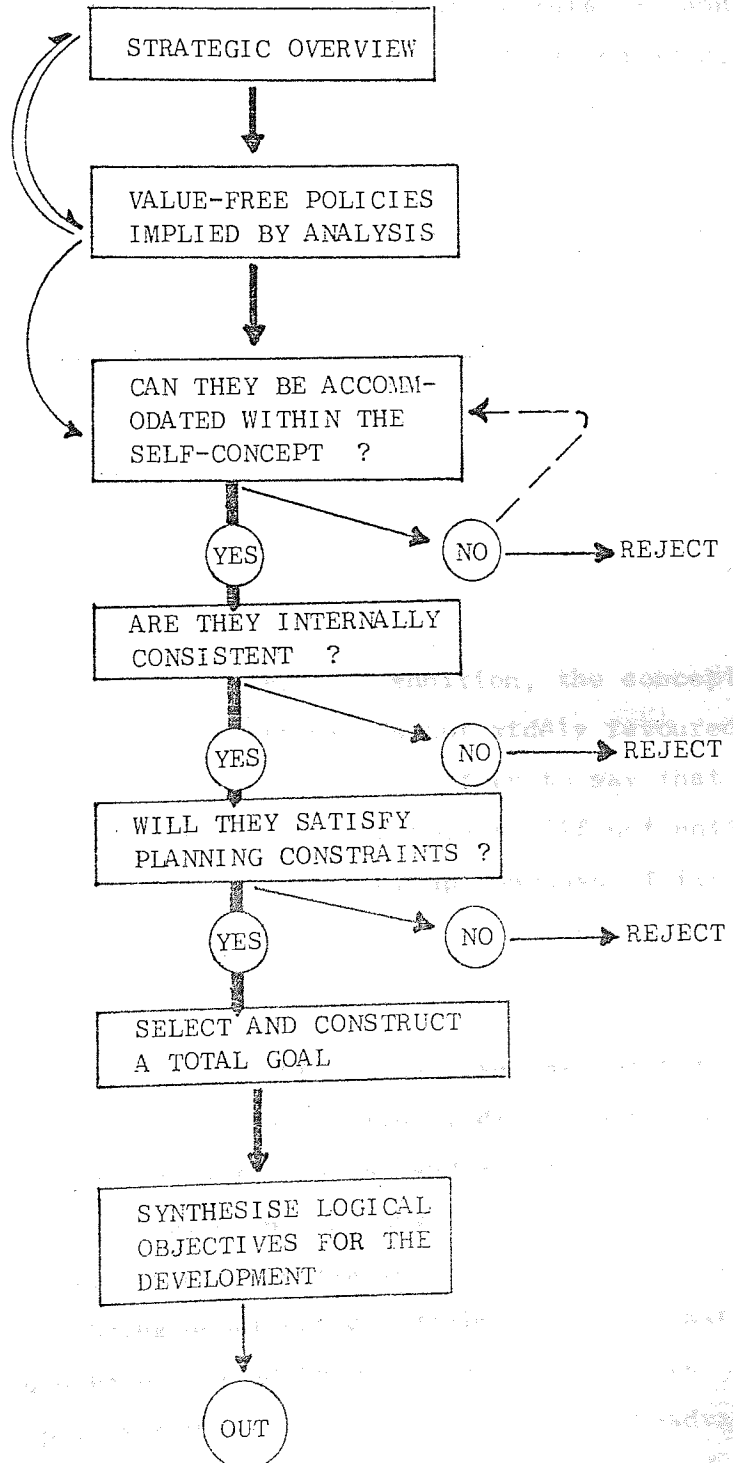


FIGURE (19)

6.3 In this way each of these policies, as previously outlined and as described in detail in Appendix (A), can be followed through the process. However, certain of the specific considerations relating to filter (3) - (the actual planning constraints) - cannot be developed adequately enough within the scope of this research. It is true that, conceptually at least, these constraints have been outlined and illustrated but the detailed analysis relating each of the proposed policies has not been carried out.

(II) Evaluation of Strategic Policies

Policy (1) Development of a Service and Distribution Division

6.4 This policy did not completely satisfy Delta's 'Self-Concept' for, although it was logically deduced and characterised a coherent growth opportunity, certain of Delta's top-management felt that it was - "too near the market place". Thus 'distribution' as such implied some sort of 'trading activity' which was not entirely sympathetic to Delta's ethos. In addition, the concept of Delta entering into service industries was not widely favoured. Nevertheless, considering all, it would still be fair to say that this strategic policy could be broadly acceptable to (if not entirely consistent with) the 'Self-Concept' of the Group, because of its relevance to the company's product-mix. For this reason it shall pass through.

6.5 The practical feasibility of such a move has quite a different texture. Delta's products are widely distributed through electrical wholesalers, builder's merchants and a variety of stockists. These firms are closely associated and in many instances also concentrated. Thus any development by Delta into the sphere of distribution would probably bring about rapid retribution; in that the company's products would be boycotted by member firms. It is estimated that such a policy would probably have as many disadvantages as advantages and thus it is for present rejected on the grounds of practical 'non-feasibility'.

6.6 'Distribution' was also preferentially proposed for Delta's European development. In this instance, the powers of association within the distributive trades are much less obvious and, assuming that a suitable company could be acquired, then the policy is feasible.* It was also stated that Delta ought not to invest in manufacturing activities in Europe except in special circumstances. It seems, however, that in terms of marketing requirements, locally manufactured products do have significant advantages. And as well as this, it can be argued that the company needs early experience in running a comprehensive 'European' business. Thus longer-term considerations favour the acquisition of various manufacturing bases. Under these circumstances it is obvious that the choice of 'distribution' as against 'manufacturing' in Europe - as implied by the strategic overview - is by no means clear-cut.

Policy (2) Development into 'counter-cyclical' consumer durables manufacturing

6.7 As might have been expected this policy was quickly rejected and as such could not apparently be accommodated within the 'Self-Concept'. Whilst the problem of the cyclical earnings trends of the semi-manufacturing activities is well recognised within the Group, top-management proposed that it should be 'dampened' by the development into higher-value added products, rather than actually counter-balanced. It was considered that the manufacture of consumer durables was "... not our business ..." - and discussion indicated that the majority of top-management appeared to be unsympathetic. In analysis, it seemed clear that whilst the 'Self-Concept' could possibly expand its scope of acceptability to sub-contracting work for consumer durables, the actual production and marketing of such products remained firmly outside.

* However, because of the legal structures of most European companies and other inhibiting factors, acquisitional growth in this context is a very difficult operation.

Policy (3) Development into engineering plastics

6.8 This policy perhaps best demonstrated the mild polarisation of the 'Self-Concept' as indicated by the research. To a number of top-management in Delta, the policy was considered sound and sensible and one to be actively pursued. It was not sympathetically received by others but was instead reluctantly accepted as a passive hedge against the potential loss of traditional business. "We will be forced into it" - said one Divisional Chairman; and his views were also reflected by others. Thus it may be postulated that, in this one instance, evidence was available to suggest that some minor re-orientation of one 'pole' of Delta's 'Self-Concept' had taken place; and the firm commitment to 'copper' had at the same time lessened slightly.

6.9 Broadly, one could conclude that this strategic policy had satisfied its first set of evaluative criteria. In terms of practical feasibility, it also appeared to qualify as a policy to be selected; except that plastics products in general have the reputation of being fairly unprofitable due to over-capacity and low barriers to entry. Nevertheless, early experience in the field could help to satisfy some of Delta's longer-term requirements. In addition, it is interesting to note that Delta's "Metal Research Laboratories" have recently become "Materials Research Laboratories", illustrating the continuing modification of 'Self-Concept'.

Policy (4) Broaden Building Products and consolidate

6.10 This policy was automatically accepted because it already forms an integral part of the 'Self-Concept' of Delta and also satisfies many of the other requirements. However, broadening the product-scope implies the manufacture of articles in materials other than copper and consequently development further away from the semi-engineering posture as well. Nevertheless, it appeared to be almost fully accommodated and was also deemed to be practically feasible, assuming acquisitions or internal developments could be effected and that the Group's dependence on the construction industry did not become excessive.

Policy (5) Expand electricals and cables in depth and internationally

6.11 Once again this policy for strategic development was fairly easily accommodated but, it may be noted, perhaps not quite so easily as might have been expected. The rapid growth of the Electricals Division of Delta over the last two years demonstrated a fairly dramatic departure from the original 'Self-Concept' (even though it could be classed as 'engineering' and also used small amounts of copper). Nevertheless, its ethos was perceived to be in some way different and in essence this distinction appears to remain. The reason may simply relate to 'novelty' but it probably reflects some dissonance between the 'poles' as well.

6.12 In terms of practical feasibility, however, certain considerations arise. The most important of these is that in both the broad electricals and cables fields there are large multi-national competitors. Apart from this problem, which delineates the fields for possible expansion quite clearly, there are still a variety of specialised areas for development. Thus the policy becomes 'feasible'.

Policy (6) The integration of each of the heavy 'semis' Divisions with end-user Divisions as a basis for expansion

6.13 This policy is once again automatically acceptable to the 'Self-Concept' as it stands. Indeed the approval expressed by top-management suggests that it could be one which falls within the area of 'overlap' of the polarisation (or total acceptability by both groups.) The reaction, perhaps, also evolved from two distinct sources. The first might have been a result of the importance attributed to the maintenance of a viable 'semis' based integrated 'engineering' structure. The second might have been the apparent need to allow growth into newer and more sophisticated areas without the impedance of having several Divisions attempting to develop in the same direction. It might be postulated that these two sources again accurately reflect the mild polarisation of the 'Self-Concept' even though, in relative terms, there appeared to be a substantial degree of total agreement.

6.14 These developments also seem to be feasible under present conditions. The only possible inhibiting factor is that the 'semis' Divisions might lose outside customers if they proceeded to actually integrate and thus become competitors themselves. However, in reality, this is already the case (in a Group context) even though it may not be subjectively perceived as such.

Policy (7) Develop into more specialised areas of general engineering

6.15 This policy is broadly acceptable though it does not explicitly relate to 'semi-manufactures' nor to the use of 'copper'. However, the sympathy it created seemed to imply that the need for an engineering posture for Delta was strong. This was also reflected in the analysis of 'Self-Concept'. What failed to emerge, (surprisingly perhaps), was the polarisation which appeared to exist as far as "engineering" was concerned. Although it is also fair to state that there appeared to be a significant variation in the degree of enthusiasm for this policy. Nevertheless, such strategic development is certainly viable. Its feasibility, on the other hand, is difficult to assess because of the great variety of activities it could cover. But assuming that the technology related to Delta's present expertise and that the necessary opportunity existed, the potential 'feasibility' could be considered to be a probability.

Policy (8) Develop into commodity trading, re-cycling of metals, and specialised extractive metallurgy

6.16 Finally, this strategic policy was again automatically accepted because it relates so well to the (copper) metals orientation within Delta's 'Self-Concept'. Indeed, the only part which did not entirely promote sympathy was the commodity trading aspect, despite the fact that Delta has to continually deal in copper futures in order to obtain raw material supplies. Perhaps 'commodity trading' tends to be rejected because it fails to satisfy the manufacturing "thing-maker" attitude prevalent within the company. However, backwards integration into special extractive metallurgical fields

has already taken place to some extent and re-cycling activities were also accepted in principle.

6.17 Thus the policy was, broadly speaking, acceptable. It is also broadly feasible although there are specific limiting factors. Since the Group buys significant quantities of scrap metals for its manufacture of brass-rod, it has the ability to negotiate tenders for supply within that industry. Delta would inevitably lose this ability if it developed into the scrap-metals business itself. But the exact balance of advantages as against disadvantages is very difficult to assess.

(III) Conclusions and Implications

6.18 Thus, in this way, each of the strategic policies generated by the 'ecological' overview can be subjected to successive evaluations whose analyses become more detailed. This procedure for selection appears to be a logical and coherent one and, it is postulated, would also be practically workable in the context of full analysis.

6.19 Figure (20) schematically represents the sort of decision-space which can be conceptualised.* In the first place, the strategic overview would tend to denote, in broad and essentially qualitative terms, those areas containing greatest probability for the successful (optimal) growth of the total system. This area would thus promote not 'successful strategy' as such, but rather the view that it contains the best apparent longer-term opportunities. It would aim to place the total system in a position where it could take advantage of them.

* The probable relative sizes and orientations of each decision-space have been indicated but these are certainly only preferred configurations and not firm assertions.

A SCHEMA OF STRATEGIC DECISION-SPACE

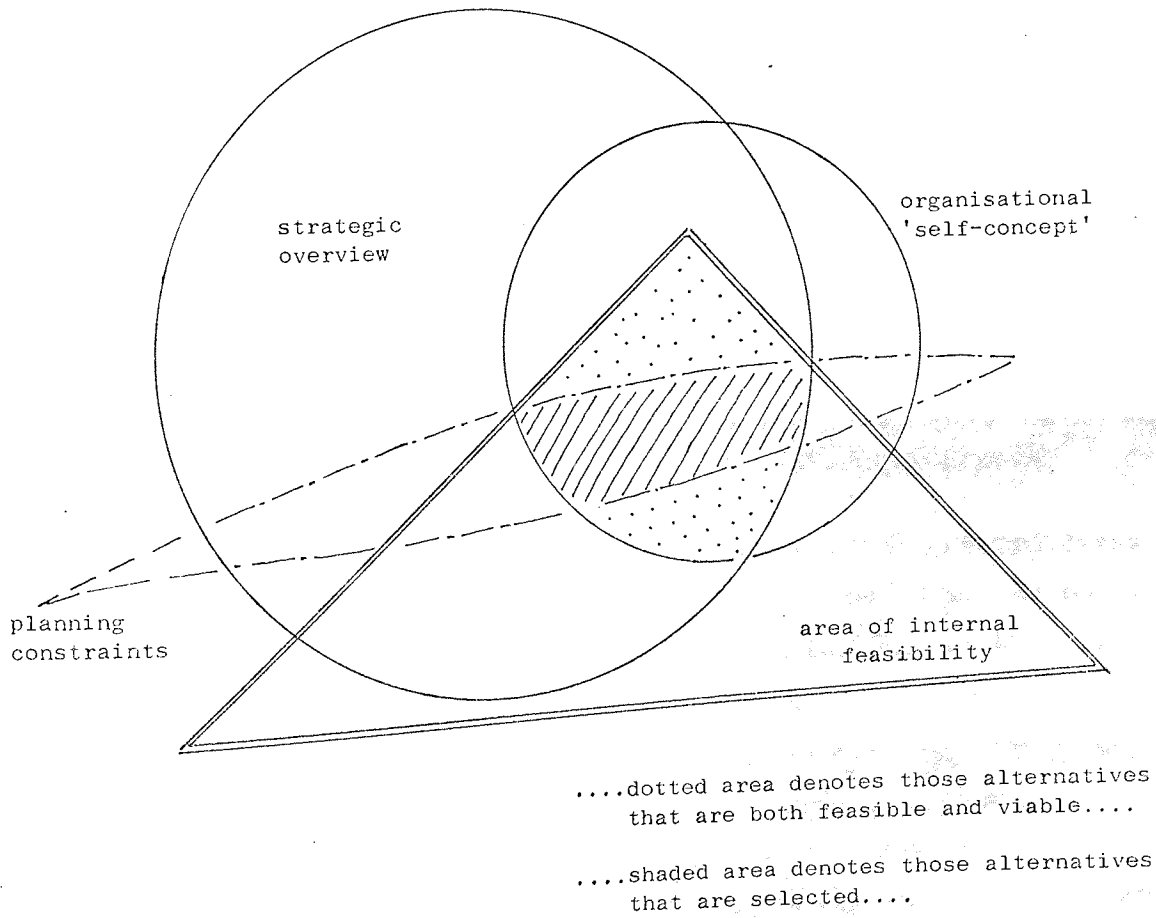


FIGURE (20)

6.20 The second decision-area contains that relating to the 'Self-Concept' (i.e. the area of acceptability of strategic development). The problems of positive or negative synergy have to be purposely ignored at this stage. Thus the area of overlap within the total decision-space so far described can be termed the area of "strategic viability". That is to say, it contains both desirable and acceptable strategic possibilities.

6.21 The third decision-area is that which denotes practical 'feasibility'. It is envisaged that this would be internally determined by the "building-up" planning process. Because of this, the area of practical feasibility (denoting those strategies which would be workable in practice) is heavily orientated towards the organisational 'Self-Concept' itself. Only minor proportions of it would be outside the scope of both the 'Self-Concept' and 'strategic overview' areas. Thus, within the total decision-space, the area of overlap between the three component areas denotes that which is "strategically feasible" - in that a policy falling within that area would have satisfied these three sets of criteria.

6.22 Finally, the last decision-area denotes those policies which will satisfy the financial requirements placed on the total system as 'planning constraints'. To be selected, the policies must be able to demonstrate a likely contribution to earnings which meets or exceeds these limits. Thus the shaded area, where all four decision-areas overlap, conceptually outlines the policies which would, theoretically, be finally selected from the process. These would evolve to form the central character of some 'organisational goal'. From this 'goal' real planning objectives can then be drawn and targets set.

6.23 The compatibility of strategic policies, implied plans and the 'Self-Concept' of the organisation is extremely important. The flexibility of the 'Self-Concept' may also be an important factor in determining the survival potential of a firm. It is

probably correct to assert that the longer a firm has operated with a stable or static 'Self-Concept', the more inflexible it is likely to be in outlook. Indeed the problem is that each consistent strategic choice tends to reinforce the very 'Self-Concept' which originally bore it.

6.24 If this is so, then Delta's mildly polarised organisational 'Self-Concept' has distinct advantages. In the first place, it probably accommodates a much wider decision-space because of its polarisation, even if the area of actual overlap is smaller. In the second, it would probably tend to be subjected to more manipulative pressures and would thus be more flexible in operation. If too flexible, however, the nebulous nature of the decision-space might result in the instability of choice and the selection of incompatible policies, with no clear 'goal'.

6.25 Thus the reactions to the value-free strategic policies generated by the overview tend to substantiate (and hence validate) the 'Self-Concept' as illuminated by the research. But this feedback also tentatively indicated the possible actual operational influence of these values in a real situation and the degrees of flexibility within the structure. Perhaps relative inflexibility of the organisational 'Self-Concept' can be used to explain the analytical deductions described by Smith (ref: 94) where, when some disequilibrium affected the firm, management were likely to first try to effect correction through the logistic process, rather than perceive the origins of such turbulence as 'strategic'. These postulates also relate to a concept of "homeostasis" in organisations.*

* This has been especially well outlined by Rice who explained the resistance to change values in terms of a loss of reference for personal satisfaction. See Rice A.K. The Enterprise and its Environment Tavistock 1963.

6.26 But the selection procedure (as outlined in figure (19)) appears to be approximately similar to the informal processes operable in Delta. The fundamental difference relates to the decentralised nature of the Group and all that it implies. Thus, in the practical context, the selection of strategies is carried out by using two different channels. The first is the 'concentric' type of growth exhibited by the Divisions. Projects would be implicitly chosen if they satisfied the 'Self-Concept' of that Division and were simultaneously feasible. Such proposals would be then pushed up to the Group Planning Committee for comment and subsequently on to the Chairman's Committee for decision. Thus the proposals would, in theory, have to satisfy both Divisional and Group criteria and also show themselves to be feasible and acceptable to the planning constraints. The second channel is demonstrated in the case of pure diversification. In this case the Group is fully responsible for such growth. Naturally, the latter process would be closer to the selection procedure as outlined, but the former also approximates to it.

6.27 Hence one may argue that there might be clear benefits in formalising what is already implicit and informal, by accounting for the three broad areas of decision-space; - the 'ecological' model of the firm producing a value-free analysis of strategic alternatives relevant to the system in totality; the organisational 'Self-Concept' explicitly identifying the acceptability and hence the 'viability' of strategic proposals; and finally the 'planning constraints' and internal 'feasibility' providing practical evaluation for those proposals. The first would objectively identify areas of the strategic environment which indicated high and low probabilities of long-term success. The second would identify subjective probabilities of success and indeed selection. The third would safeguard the system against incompatible growth on the one hand, and against failing in its obligations on the other. Thus such a selection procedure broadens many normative approaches to strategy selection, by explicitly accounting for many of the implicit influential variables.

Chapter Summary

The chapter introduced a theoretical selection procedure for strategic policies, by accounting for value-free analysis, the influence of the organisational 'Self-Concept', the practical feasibility of the policies and the obligations of the firm. The strategic policies generated by the first phase of the research (the 'ecological' model) were then subjected to this selection procedure and thus evaluated. The selection process was compared to Delta's planning approach and it was postulated that perhaps the two were (implicitly at least) similar. Hence this provides a degree of validation for the theoretical construct.

CHAPTER X

Contents

Assessment of total process-action study -
chronology of development - role of the
researcher - some ground rules for this
kind of research - conclusions

Abstract

The chapter presents an account of the total
process-action study. It sets out a chronology
of the different phases of 'internalisation'
and 'credibility'. It offers an analysis of the
perceived role of the researcher and proposes
a set of ground rules for the type of research.

CHAPTER X: ASSESSMENT OF TOTAL PROCESS-ACTION STUDY(I) Introduction

10.1 In essence, process-action research has to operate within the confines of a very small sample (i.e. one unique organisation) and this problem must be clearly recognised. Nevertheless, an observer who becomes fully subsumed and 'internalised' within an organisation has a very special chance to perform an analysis based on data offered to him by a real and relatively undistorted situation. Thus, whilst the findings are not necessarily applicable to a normal distribution of other organisations, the general rules inferred from such research are at least, it is asserted, 'real' ones.

10.2 It has also to be appreciated that the type of data upon which the research often has to base its conclusions is essentially 'soft'. That is to say, that direct responses and observations collected must also be substantiated circumstantially and 'validated' indirectly. Any attempt to constrain the area under examination, either by detailed questionnaires or experimental platforms, is abnormal in the context of the normal functionings of the organisation. Hence the 'scientific method' must be a carefully controlled one if distortion is to be avoided. It is indeed difficult enough to overcome the initial problem of the third party (the researcher) introducing some experimental 'set' anyway.

10.3 Thus the important task of the researcher is to monitor and collect the subtle and often intangible pieces of information which reflect 'normal functioning'; and to piece them together in order to produce an outline of one specific but 'real-life' situation which can be analysed, understood and reported upon. The following offers an analysis of the particular experiences of this project.

(II) Conceptual Problems

10.4 The major problem, as has been hinted, revolves around the period of immediate entry of the researcher upon the scene. The important components of this problem are:-

- (i) credibility
- (ii) internalisation

10.5 'Credibility' is difficult to estimate but it is undoubtedly true that if the researcher lacks 'credibility' in the organisational context then the sort of feedback he will obtain will be tainted and unrealistic. In other words, if the inputs (i.e. research papers and reports) are incredible then there will be no valid feedback. The point at which credibility is established is quite distinct, for suddenly a certain coherence and consistency of feedback emerges and there tends to be a much greater degree of interaction with members of the organisation under study.

10.6 A process of 'internalisation' is, however, quite different. A researcher can probably be 'internalised' without being 'credible' and vice-versa. Once he is accepted as being within the boundary of the organisation then he is 'internalised'. The most significant feature of this process occurs when the researcher suddenly comes and goes unnoticed and when normal functions begin to occur in his presence. That is to say, there is a perceptible change in the manner with which members communicate with one another and a gradual emergence of a greater freedom of expression.

(III) A Chronology

10.7 It may be helpful to first offer a chronology of phases of the overall process. During the first few months of the research, a period of consolidation occurred during which the tentative lines of communication between academic supervisors and members of the company became stronger and a stable coalition eventually evolved. At this point, the research papers were related to the strategic overview of the 'ecological' model of the company. Thus there were no great problems of internal data collection. Once the relationships between the researcher, the company and academic supervisors

became established, the nature of feedback changed in that it tended to become more comprehensive. However, there was at that time no sign of 'credibility' having been established nor had 'internalisation' occurred. It seemed clear that the research papers were not entirely in sympathy with Delta's normal functions. Indeed they were probably perceived as 'credible' in the academic sense, but were simply too far away from the scope of interest of the planning staff. The attitude at this stage tended to be, perhaps, one of toleration on the part of Delta. Thus some sort of 'homing-in' was required. Evidence to support this conclusion came from the fact that where research papers offered pieces of information relevant to topical planning activities, they were greedily pounced upon and tended to be over-emphasised as far as feedback was concerned.

10.8 The 'homing-in' process was a difficult and lengthy one. And the author, in order to obtain the feedback necessary for orientation, found himself making increasingly strong assertions (which he did not necessarily support) for this purpose. This indeed may have been counter-productive for what credibility was present may have, as a result, dissolved. But the orientation and 'internalisation' felt so necessary, seemed as far away as ever.

10.9 Luckily, this first year was spent gathering background planning information for the study and thus real interaction was not yet a necessity. Indeed, it was very fortunate that the programme was structured this way, for the problems which might have arisen, had an empirical search been conducted at the outset, could have been traumatic at that early stage. It seems important to stress that any programme of process-action research should be structured in this way, if possible, in order to attempt to 'optimise' the time and resources available. In addition, it may be postulated that there is some 'minimum entry time' which inevitably has to be dealt with in any case.

10.10 At the end of the first year, a real attempt was made to introduce some element of credibility to the situation. In many respects it was a "do-or-die" attempt for, had it failed and the important empirical searches thus made difficult, then morale would have certainly ebbed to a 'low'. However, the move was remarkably successful and perhaps this was symptomatic of the need Delta also felt to help the project work. Indeed, the author obtained the distinct impression that when the relevant paper was finally circulated, a 'sigh' rippled through parts of the organisation.

10.11 It may be fair to say that perhaps in some ways the paper was in fact a "fix". For it did not accurately reflect the author's real views. Rather, it contained a somewhat artificial slant towards sympathies perceived as predominating within Delta and, in addition, a scattering of assertions relating to sensitive areas. It is, however, also fair to say that this 'bias' was not explicitly recognised by the researcher at the time. Thus the structure of this 'magic' paper owed its origins more to unconscious desires than purposive planning. At any rate it worked well. The paper summarised in a compacted form all the conclusions of the research to date and also made observations about the apparent objectives and policies percolating through Delta. It concluded by making a series of sweeping and rather philosophical statements about the Group's strategic development.

10.12 The Group Chairman at the time responded very favourably and was reported to remark that he could have written the paper himself. Several other members of the top-management structure also expressed interest and kindly offered some of their time for discussion. Thus it appeared that finally some small element of 'credibility' had been established and subsequent progress and co-operation tended to confirm this.

10.13 Not long after this event, the first phase of direct empirical search was carried out and with a surprising degree of assistance. The majority of the Group functional executives and Divisional Chairmen were visited and interviewed about their views on Delta's organisational goal, values, and planning objectives and procedures. It was suddenly clear that the author was perceived (by Divisional Chairmen especially) as 'internalised'. Thus most were explicitly frank and honest. Apart from this, however, it was also apparent that many positively enjoyed the opportunity to express, (and subsequently to discuss) their strategic problems. The detached freedom offered by these interviews, together with the fact that the researcher became a 'buffer' as regards conflicting views, produced in essence what can only be described as a period of 'self-illumination' for the interviewees.

10.14 From that point onwards, despite the author accidentally raising certain controversial and sensitive issues, these tendencies of 'credibility' and 'internalisation' continued. Apart from the fact that the "homing-in" process had been, generally speaking, accomplished, it was also probably the case that 'internalisation' was greatly assisted by the dissonance which was apparently generated by an 'outside' researcher potentially having access to internal and confidential information. To reduce this uncomfortable dissonance, the 'outsider' thus became more of an 'insider', even though the information could not really be classed as 'highly' confidential.

10.15 The lessons to be learned, perhaps, by these gradual and subtle changes is that the process-action researcher should make it a first priority to identify the organisation's broad concept of "relevance". Information which is soundly based and which relates to a topical (but not sensitive) issue would form a good initial series of inputs from which credibility might be gradually synthesised. In addition, the use by the researcher of some confidential information (even if it is outside the scope of his study) may promote 'internalisation' as a result of the dissonance such a situation clearly creates.

Given that these two major criteria have been satisfied, the process-action study can then be carried out on a viable basis.

(IV) Researcher's Role

10.16 But what of the role of the researcher? During this study, the author initially perceived his role to be that of a detached 'stimulator'. In this way, issues would be analysed and strategic conclusions relating to Delta's development could be offered to the Group Planning Committee for discussion. But it soon transpired that Delta's perception of the author's task did not exactly match this but, instead, tended to be one of supervising the researches of one of their 'management-trainees' with as little inconvenience as possible. That is not to say that the company was not interested in the possible findings; quite the contrary. However, in a temporal context, those findings were still a long way off and the emphasis was on "training".

10.17 Having established this to be the situation ruling at the time, the author's conception of his role underwent a re-orientation. For a period, the importance of the research was perceived in an academic rather than practical light. This shift in perspective helped to develop and crystallise some of the underlying and conceptual assumptions of the study. At the same time, however, the change of emphasis may have caused some alienation and the utility-value of the research papers probably decreased. Perhaps sensing this, and having completed a stable and workable set of academic constructs, the research approach was once again re-directed along firmly functional lines and the effort was made to offer Delta "utility". The result was the original summary paper which led to some credibility being established. The author was also always conscious of his inability to fully grasp all the practical problems which would be generated by his proposals. In this sense 'naivety' was a firm assumption.

10.18 Interestingly enough, the 'lack of experience' syndrome was continually impressed on the researcher. Nevertheless, the role of the 'stimulant' with a detached and therefore different perspective, was accepted in the operational sense. The task thus became one of openly expressing objective data and personal views about Delta's possible strategies whilst fully realising and accounting for ignorance about their true feasibility. In certain circumstances, it may be true to say that some members of Delta's top-management failed to appreciate this. As a result (with certain exceptions), they were not, perhaps, critical enough of certain specific proposals. The author continued for some time to be uncomfortable about the apparent lack of critical feedback because these conditions implied nothing less than a significant dichotomy - either all the proposals were infallible, or they were so far from the mark that Delta felt unable to respond because of common courtesy.

10.19 However, after the period of 'internalisation' many of these issues became clarified. By using comments about the work from as many sources as possible, some fairly realistic pictures evolved. A cardinal rule of process-action research seems to be - 'don't believe anything you are told about your perceived role unless it can be quoted from both direct and indirect sources'. It may be true to say that after that process had initially taken place, the role of the researcher became fairly firmly established as that of a person performing a preliminary and acquainting analysis of Delta before eventually going on to do similar work in an actual planning appointment. This was certainly of enormous benefit, for the 'internalisation' process was now almost complete. Thus these circumstances offered fruitful conditions for the research as well as allowing much more frank feedback concerning the various research papers.

10.20 Throughout the research it is also true to say that the 'gap' between the academic and business dimensions of the work was not entirely bridged. There were (and probably still are) the inevitable difficulties of communication and the problems of having

to translate academic 'jargon' into business 'jargon' with neither side recognising the process as such. (An executive once asked - "What's it like to be bi-lingual?") In certain instances, what was recognised as a subject of great interest within the academic context was perceived as sometimes quite irrelevant in the real world of 'business'.* In fact, during the middle phase of the research, after the point of 'credibility' but before full 'internalisation', the researcher tended to live an almost schizoid existence; assimilating, in a sequential manner, two quite different sets of parameters according to whether researching in an academic or business environment.

(V) Conclusions

10.21 In conclusion, a personal but hopefully fairly objective assessment of the profile of this process-action study would lead the author to the opinion that, perhaps more as a result of luck than judgment, the structure of the study, mode of operation, and perceived role greatly contributed to the real 'strength' of the data collected; and thus also to the inferences which can be drawn as a result. Such a validation of 'soft' data, although in absolute terms a subjective one, is still nevertheless of extreme importance. For it enshrouds the total perspective of the research in an 'ether' of coherence and consistency which is vital when operating from within a 'real-life' situation of which the researcher is an integral part.

10.22 Having said that, however, certain issues concerning process-action research must be raised. The first concerns the place of the 'role' of the researcher. Whether intending to be a pure participant observer, some specific interventionist change-agent or an exploratory mix of the two (i.e. process-action researcher), it would appear that 'role stability' is of prime importance. A shifting role implies a resultant inconsistency of feedback and observation.

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The workings of various sub-systems provided several examples. Academics wanted to know 'how it worked' whilst executives wanted to know 'what it said'.

This would tend to make scientific examination at least 'questionable', (unless, of course, the actual 'role-shift' was the area under study). Thus perhaps it may be true to assert that a cardinal rule is to enter the organisation with a specific 'role-set' and to maintain that 'role-set' right through the study. For example, the systematic 'ecological' analysis was essentially the author's 'role-set', even though one can only speak in relative terms. For whilst many changes took place, and the researcher was perceived differentially 'through time' as well as from various perspectives within Delta, the systematic 'role-set' of practical strategic analysis was maintained as an analytical base.

10.23 Hence, whilst a stable 'role-set' cannot prevent the effects of time and the phases of 'credibility' and 'internalisation', it can dilute some of the problems of perspective. For example, an indistinct role would tend to provoke a certain degree of insecurity within the flux generated by the researcher. The author found that he was repeatedly questioned by Divisional Chairmen about what he was "going to do" after each research phase. These were explicit attempts to define the existence of this "odd-body". In the early phases of the research, top-management tended to be more at ease if the author had personally defined his objectives through a preliminary discussion.

10.24 But within the 'role-set' of - "a management trainee being sponsored by Delta to carry out a strategic planning exercise for his basic training" - it was also apparent that individual parts of the organisation perceived the author's role differently. The most distinct difference and one which has been mentioned previously, is that the 'Group' (which supervised the project) did not ordinarily perceive the researcher as 'internalised' to the same degree as did Divisional Chairmen. For example, visits to Divisions were often characterised by a full and frank discussion of confidential topics normally outside the limits of the researcher's powers of access. Discussions with members of the GPC, on the other hand, were more restrained. However, it was always the 'Group' who interacted with the academic supervisors and hence were constantly reminded of

this 'open gate' into the outside world. It is true to say that members of the GPC always tended to feel a little uncomfortable about an external organisation having such apparent access.

10.25 This study has also tended to be something of a hybrid.* In the first place the researcher with a stable 'role-set' was essentially an observer (who was not always participant) and usually passive. However, occasionally active participation was also called for and these phases produced a fairly dramatic shift of perspective on the part of the observer. Thus there was no basic intention to effect any type of programmed change within Delta, even though, whether coincidentally or as a result of the research, certain specific relevant changes did occur during the study.

10.26 Hence for a process-action researcher attempting to enter a real-life situation (i.e. the worm's-eye view) the author offers the following ground rules which can be inferred from this study:-

- (i) Enter the scene with a well-defined practically orientated 'role-set' or task which can be maintained with relative stability throughout the study, despite the open-ended nature of the actual research.
- (ii) As a preliminary analysis, deduce some concept of 'organisational relevance' and aim for it in an attempt to establish 'credibility' as quickly as possible.
- (iii) Accept the problem that there will probably be some 'minimum entry time' to full 'internalisation' within the organisation and structure the research programme accordingly in order to make the best use of time.
- (iv) Attempt to validate observation by using many different perspectives and indirect as well as direct evidence.
- (v) In the context of process-action research nothing is irrelevant and even the most subtle clues should be recorded and accounted for within the evolving hypothetical construct.

* Hence its tag of 'process-action' research: in that both underlying processes and changes were observed, recorded and, perhaps, caused.

10.27 There is, however, one important drawback which must also be outlined. In seeking all the advantages of 'internalisation' it may also be the case that the researcher assimilates some of the very subtle values and attitudes which he is trying to study and which percolate through the organisation. The rather stark dichotomy is that detached in-depth observation of "real functionings" may not be feasible without 'internalisation'. By the same token, the 'internalisation' process itself implies a gradual decrease in 'detachment'. The two are conceptually reciprocal. Thus one must gauge 'detachment' on a relative basis and accept the fact that it is impossible to distinguish between organisational flux, on the one hand, and 'noise' on the other.

10.28 This tendency to lose the fully 'detached viewpoint' was in fact experienced by the author in apparently reaching certain conclusions without performing a completely logical sequence of reasoning. On reflection, it emerged that specific organisational assumptions, so subtle that he had been quite unaware of them, had crept into the proceedings. Subsequently, more care was taken in the rationalisation process. But it is still probable that some of these intangibles remain and have exerted influence.

10.29 Nevertheless, considering the broad spectrum of events, it still seems possible to state that this potential distortion was indeed a small price to pay for the vantage point offered. The "worm's-eye" view of the more or less normal strategic functionings of a large industrial complex, such as Delta, continues to hold some rich prizes. Thus, however delicate the situation may be, this type of posture for process-action research appears to be a viable and indeed an extremely fruitful one.

Chapter Summary

The chapter offered an overview of the total process-action study. It outlined a chronology of the 'credibility' and 'internalisation' processes experienced by the author and an analysis of his role. Inferences were drawn and a series of relevant 'ground-rules' were proposed for similar types of research.

CHAPTER XI

Contents

Overall evaluation of the approach - evidence
for the evaluations - 'ecological' model -
analysis of values - conclusions.

Abstract

The chapter presents the evidence relating to
the evaluation of the procedures implied by
the research hypothesis. It examines the
'ecological' model and its conclusions. It also
looks at the analysis of values and the
strategic planning context. Conclusions are drawn.

CHAPTER XI: EVALUATION OF OVERALL APPROACH

(I) Introduction

11.1 The evaluation of a piece of management research is certainly an important component of the total structure of a study. True 'evaluation', it might be argued, can only really take place in the context of some controlled experiment. But, in the case of approaches to strategic planning, it seems impracticable to set up and oversee a test of this sort. Thus one must instead resort to a wide spectrum of quasi-evaluations and accept a commonly agreed conclusion based on circumstantial evidence as well as more direct methods of assessment.

11.2 The total concept of the approach which was implemented (on a limited basis) during this process-action study owes its origins to the perceived difficulties apparently arising from the application of 'routinised' comprehensive approaches to strategy. An intermediate postulate was that perhaps these difficulties arose because the 'nitty-gritty' routines were not always based on the normal functionings and characteristics of the organisation they were being applied to. Thus Delta offered a good opportunity for the formulation and testing of a preliminary and orientating methodology. This would serve as a pre-requisite to strategic planning as such.

11.3 For the purposes of evaluation, the following questions may be asked. Did the detached (ecological) overview offer a coherent and realistic value-free assessment of the strategic posture of Delta? Did it generate strategic policies which were useful in providing orientation for the Group? Did the examination of 'goals' and 'objectives' help to align planning emphasis more realistically? And is the analysis of the 'Self-Concept' helpful in promoting self-illumination, thus aiding 'behavioural' rationality in the context of strategic selection procedures?

(II) Ecological methodology

11.4 In the context of the 'ecological' overview of Delta's strategic area, it is probably fair to say that both the broad 'diagnosis' and subsequent inferences were fundamentally validated. The conclusions raised no significant contradiction from top-management except in one specific area where the position, although not wholly resolved, has still not provided sufficient evidence to indicate that the 'holistic' view was not a well-founded one. As far as 'evaluation' is concerned, then it is fair to say that the methodology, even though it was implemented on only a limited basis, was generally perceived by most top-management as coherent and realistic. Above all, perhaps, they understood and appreciated the underlying theme of the approach (i.e. the 'ecology') easily and accepted the rationale.

11.5 The 'credibility' of the outcomes was also relatively strong. In specific instances memos were sent from Group to Divisions and from Divisions to Group quoting parts of the 'diagnosis'. And certain more detailed studies were carried out as a result. Visits to Divisional Chairmen by the researcher showed that many of the points reached through the independent analysis were indeed salient. And throughout this phase of the research, a significant amount of time was spent with certain members of the G.P.C. and with some Divisional Chairmen in discussing these findings. Hence, 'diagnostically', the research outcomes were generally well received. And although some remain controversial, credibility remained fairly high.

11.6 However, did the 'ecological' approach to strategic analysis and policy formulation show up aspects of Delta's posture hitherto ignored by the company's existing planning procedures? It is probably true to say that indeed it did. Naturally, one has to make the very substantial assumption that the findings were at least qualitatively accurate. But, having assumed that, it is apparent that the profiles of the two sets of conclusions reveal

contrast. Firstly, it seemed that some of the longer-term considerations and relevant implications were not fully appreciated. The problems of copper prices; the growth or decline of certain markets; the market saturation of certain of the semi-manufactures; all took on a different texture when viewed in the long-term. Secondly, the inter-linkages between parts of the total system were (naturally enough) also not fully appreciated. Certain strategic implications suddenly appeared when Delta was viewed in 'totality'. Existing planning processes thus have a limited perspective ; but conversely, so does the overview. For it failed to account for many lower level variables. As complementary processes, however, there seems to be potential strength in the partnership.

11.7 Hence 'diagnostically', the ecological approach appeared to provide a perspective and an assessment of 'totality' hitherto missing in Delta's existing planning system. It may be also reasonable to record that specific shorter-term conclusions formulated by the study have in fact since proved to have been quite accurate. However, with regard to the strategic policies generated by the overview, the position is not so clear. It may indeed be true to state that the policies were logically derived from the ecological scenarios which evolved during the research. But, in the context of practical feasibility (the perspective more akin to Delta's "anabolic" planning process) several of the policies proved to be short-lived. As one Divisional Chairman said - "Firstly, I would like to say that I thought your report was really very good indeed but, if I may say so, I thought it was far stronger in diagnosis than in suggesting suitable remedies."

11.8 Quite apart from this, however, it also seemed as though few of the strategic policies were explicitly new. In other words, whether formally or informally derived, top-management within the company had considered some of them before. That is not to say

that they failed to stimulate interest and comment. But rather than, whether because of a limited implementation or a lack of access to a lower-level perspective, the 'ecological' methodology provided a good total systemic diagnosis whilst being unable, in this case, to generate many implementable strategic policies. Nevertheless, the broad policies were still logical and in that sense the approach was successful. The real question is whether one attempts to search for what is practically feasible as a primary filter or whether one first examines the 'holism' from a long-term ecological perspective. It would seem that a mix of the two approaches is desirable.

11.9 Personal judgment would lead the author to conclude that the strategic overview, even in its severely limited context, produced a scenario of Delta's strategic area which characterised degrees of coherence and realism perhaps greater than expected. But the feedback obtained from top-management in Delta also tended to indicate perceived coherence, consistency and credibility within the study. Thus it would appear that some sort of 'global' overview in a strategic context might serve a useful purpose as a complementary process to the normal internal planning procedures within Delta. It may also be reasonable to record that the Group Chairman recently suggested that the author might be of some help to Delta's planning effort in continuing to effect a 'global' view on a more permanent basis.

11.10 It is, however, extremely difficult to fully differentiate between evaluations made about the research methodology itself and those made about the researcher. The two are naturally closely inter-twined. Nevertheless, in the specific context, a significant proportion of 'illumination' occurred as an explicit result of increasing the temporal horizon of the planning process. The natural pre-occupation of most top-management with proximate issues initially tended to impress a degree of incredibility on longer-term possibilities. However, the overview perhaps redressed the

balance. For it demonstrated not only the underlying logic and mechanics of the environmental variables relevant to Delta, but also some of the inter-relationships between them. Thus significant interest was generated. It was also interesting to note that certain Divisional Chairmen, having perceived and understood the background linkages between some of the holistic variables, began to make observations about possibilities hitherto ignored by the researcher.

(III) Analysis of values

11.11 The second major segment of the research, which was concerned with accounting for real organisational values and a 'Self-Concept' in Delta, is much more difficult to evaluate. The work, which contrasted 'planning objectives' with the 'real objectives' predominating in the Group, produced a great deal of vigorous feedback, most of which was significantly favourable. Many of Delta's top-management clearly felt that it was important to take real objectives into consideration as far as strategy was concerned. It also seemed that the relevant 'Purple' paper had indeed sparked off a certain amount of re-assessment of planning objectives on the part of some Divisional Chairmen. And much thought was apparently given to the problem of operational autonomy extending itself into the strategic area, with the resultant variety of value-systems.

11.12 Whether coincidentally or not, certain changes have also taken place. The Group Chairman is planning to hold a top-management conference to discuss the future of Delta Group in April 1974 and it was implied by two Divisional Chairmen that one of the research papers had contributed to the "same thinking which bore it". In addition, the proposals which were made in order to effect a compromise between these various problems of perspective and value-systems were also favourably received. It seemed that the suggestions relating to the re-emphasis of certain planning objectives becoming

instead 'constraints' found a significant degree of sympathy within both the central planning staff and Divisional Chairmen.

The proposals relating to a certain degree of re-orientation of the planning processes also provoked interest. In addition, some of the proposals which was formulated by the research - namely the setting of specific Divisional planning targets in attempting a closer 'optimisation' of the total Group - has now in fact been implemented, and the Group Chairman remarked that it was "... with the help of your thinking".

11.13 The analysis of the 'Self-Concept', however, provided a much more complex problem for evaluation. For whilst the conclusions were, broadly speaking, validated, it was not clear whether an analysis of this sort was perceived to be helpful to planning or not. During the actual research programme, it was apparent that the interviews caused a significant amount of self-illumination on the part of some respondents. Various inconsistencies of attitude and selection criteria were realised. And to this end it may be argued that a critical re-appraisal of selection rules had been helpful. One Divisional Chairman, for example, after discussing a specific point, turned to the researcher and remarked - "So what you're really hinting at is that I'm talking a load of tripe?" The researcher naturally swiftly replied that this was certainly not the case; whereupon the Divisional Chairman looked wistfully at the ceiling and firmly concluded - "Well I am."

11.14 It should, however, be emphasised that such a study is an analysis of "strengths" rather than "weaknesses". The organisational 'Self-Concept' quite realistically outlines what is, or is not, viable as far as strategic development is concerned. A 'detached' observer might feel that an examination of 'Self-Concept' (thus evolving a series of decision-rules for strategic development) is a useful tool in determining those strategic plans having perhaps

greater than normal probabilities of success. It might also be argued that a greater appreciation of some of the more subtle and intangible criteria which affect selection would be of considerable assistance to top decision-makers. However, this point was not picked up by any of Delta's top-management who may have felt a little uncomfortable at the thought of attempting to formalise these selection criteria in this way. It seems true to say, however, that most recognised the 'Self-Concept' as both logical and operational in reality. Indeed, most had very distinct ideas about each other's attitudes to specific aspects of strategy and could thus gauge the 'acceptability' of proposals. However, making such an implicit process explicit was clearly perceived as a somewhat radical shift in stance.

11.15 At the level of the hypothetical 'planner', however, - away from the final decision-makers but having to formulate strategies - such a methodology might well be of much greater salience and value. But there may also be some ethical considerations such as whether it is for a hypothetical 'planner' to attempt to "lead" top decision-makers as against merely supplying them with all the information they require. In the original development of corporate planning, functional staff perhaps attempted to adopt a "leading" posture. Strategic decisions were often evaluated against some pre-selected 'optimisation' criteria. Thus the filtering of alternatives was carried out and the results presented to top-management for a decision. The natural evolution towards an analytical and comprehensive presentation of all the alternatives resulted from the corporate failures of the 'ideal' process. Thus top decision-makers were (and still are) subsequently exposed to as much illumination of the situation as possible, whilst being allowed both to select and decide upon the most suitable alternative themselves. On the other hand, such comprehensive and complex analysis probably increases the difficulties of decision-making.* In the context

* This has been pointed out by Denning (ref: 106) and has also been implied by Rhenman (ref: 34).

of being unable, in absolute terms, to fully evaluate strategic alternatives, would it therefore not be advantageous to pre-select those areas of development which may expect full 'behavioural' support (assuming that other economic criteria were also satisfied)?

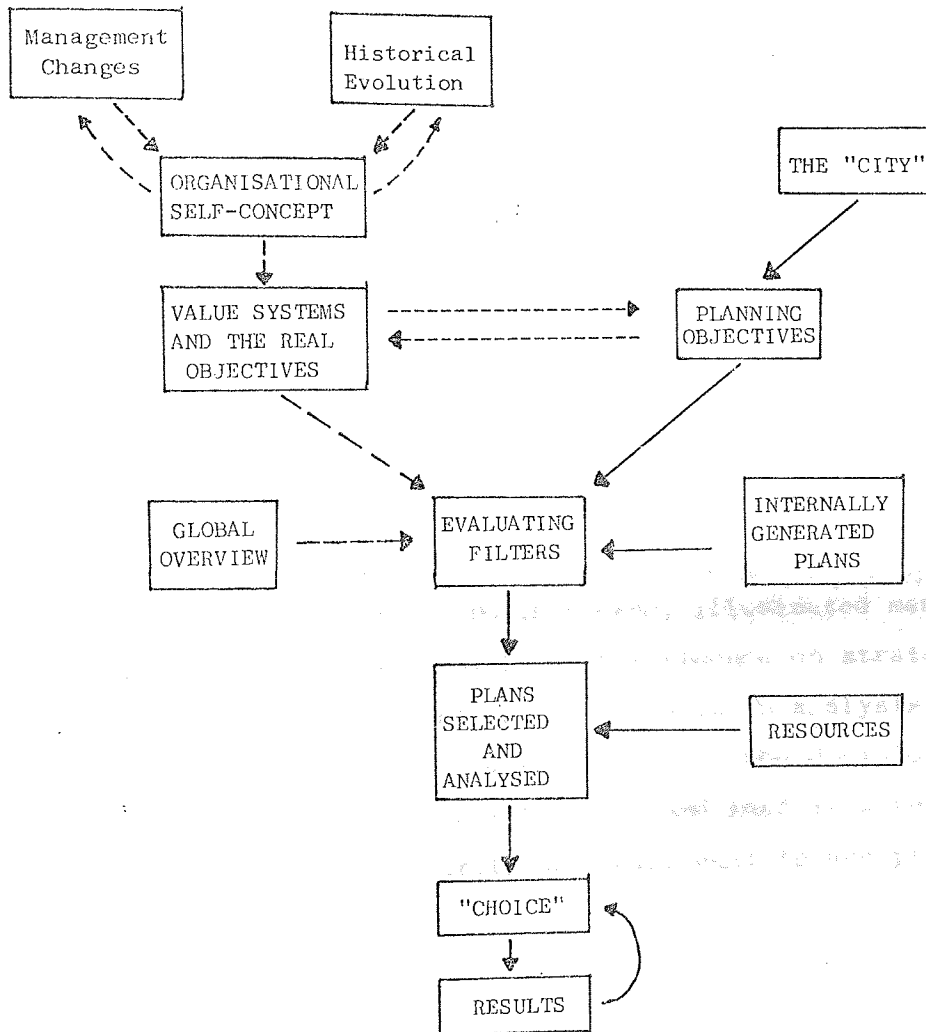
11.16 It is also questionable whether the proposal to analyse real decision-space through the use of a 'Self-Concept' for strategic development is really a re-establishment of a "leading" rather than "illuminating" posture on the part of the 'planner'. It could be argued that one is simply formalising what may already take place informally and intuitively. It could also be argued that by constructing and employing this preliminary filter, one is thus allowing a more detailed analysis to be performed on each alternative which satisfies that filter.

(IV) Conclusions

11.17 Figure (21) diagrammatically represents a simplified pattern of information flows relating to the planning process in Delta. The basic and existing process is denoted by the 'hard lines' and arrows. It can be seen that planning objectives (which are mostly 'City' orientated), together with internally generated plans from companies and Divisions, are processed in a central filter. The plans which are allowed to pass through as being most suitable are then exposed to an analysis (as to their practical feasibility) upon which basis a choice is made. There are various feedback loops operating within the system.

11.18 The additional processes, as implemented throughout this research, are indicated by the 'dotted' lines and arrows. It can be seen that an analysis of the 'Self-Concept' gives rise to a series of organisational values and real objectives. These values would thus interact with planning objectives so that the central filter has access to a compromise solution. The filter also receives the conclusions of the 'global' overview and from these four components

INFORMATION FLOWS OF THE PROPOSED PLANNING PROCESS



..dotted lines denote the additional procedures..

FIGURE (21)

(Self-Concept, organisational values, planning objectives/constraints, global overview) synthesises a set of decision-rules reflecting 'viability'. The internally generated plans are then subjected to these criteria before the detailed analysis of 'practical feasibility' is performed.

11.19 It may be true to say that the majority of Delta's top-management recognises the value of and explicitly accepts the strategic overview as a potentially useful complementary construct to existing procedures. It may also be true to say that, implicitly anyway, many appreciate and to some degree accept the need to cater for real value-systems in planning. Thus, in the context of evaluation, the majority of evidence both direct and indirect, implies that diagnostically the 'ecological' methodology has been a sound procedure for analysing Delta's strategic posture. However, because of its perspective, it failed to pick enough practically feasible policies. It would also appear that a critical analysis of organisational values has, in Delta's case, illuminated many of the hitherto implicit criteria which exert influence on strategic selection. For the hypothetical 'planner', such an analysis seems feasible and indeed helpful in orientation. For the decision-makers, making what is now informal formal; and what is already implicit, explicit: may be a little more difficult to accept and indeed evaluate.

Chapter Summary

The chapter sought to evaluate the overall research approach and the procedures implied by the hypothesis. It attempted to analyse the value of the 'ecological' methodology, in providing a value-free assessment of an organisation's strategic posture. It also attempted to evaluate the practical utility of accounting for real values and the organisational 'Self-Concept' in strategic planning. A schematic diagram representing the total research space in the context of Delta's existing planning methods was presented and described.

CHAPTER XII

Contents

Overall conclusions reached through the research - broader implications of the approach - areas for further research.

Abstract

The chapter attempts to draw salient conclusions from the overall research. It examines the viability of the proposed planning approach in a broader context and suggests a variety of areas for future research.

CHAPTER XII: CONCLUSIONS AND BROADER IMPLICATIONS(I) Introduction

12.1 Effecting a retrospective analysis of a total and complex piece of research is never easy. There is so much which could be said and so many sub-structures which could be probed. However, in drawing overall conclusions it is important to maintain a total perspective. Broadly speaking, it seems fair to state that, in this specific instance, the procedures implied by the research hypothesis were successfully proven and, in the process, meaningful outcomes were formulated. Undoubtedly, a significant amount of this 'success' is directly attributable to Delta's open and generous approach in allowing a project to be carried out in such a critical and confidential area. The research implemented an 'ecological' method for obtaining a value-free assessment of Delta's strategic posture. From this analysis, strategic conclusions and policies evolved and these were validated and evaluated. The research also attempted to explicitly account for real organisational values within the planning process and formulated and assessed Delta's 'Self-Concept'.

12.2 However, it can also be concluded that, framed as it was as a pre-requisite procedure for sounder planning, the research hypothesis was successfully translated into a rational and viable approach to what is a most complex problem-area. In the first place, the 'ecological' methodology did produce a series of environmental scenarios which exhibited coherence, totality and above all relevance in the "real world". However, its diagnostic character appears to be much stronger than its actual selection of implementable strategic policies. Hence one cannot consider it to exist on its own but to be also supported by the more normal internally orientated planning procedures.

12.3 Thus the 'overview' may be described as a component of a passive posture to strategy. That is, that the organisation is equipped with a value-free sensor and a suitable effector for dealing

with longer-term change. However, it must also be appreciated that the 'internally generated plans' would tend to characterise a more active and opportunist posture for strategy. Clearly, the two complement each other well without necessarily conflicting. In addition, it might be postulated that it may soon transpire that the strategic value of having a flexible and adaptive organisation far exceeds that of having a comprehensive planning process. The apparent uncertainty about the configuration of future environments tends to support this view. If this is so, then the potential value of the overview, coupled with 'Self-Concept' analysis and a relating programme for broad organisational development, may well increase significantly.

(II) Broader Implications

12.4 However, in a wider context, any organisation could feasibly supplement its existing planning procedures by some quasi-independent analysis of its 'ecology'. In this way, value-free projections and inferences may explicitly formulate broad strategic policies for the future phases of adaptation of the firm to its environment. This additional broadening of stance may reveal potential danger as well as opportunity, within the operating environment of the firm. More importantly, it may also reveal important considerations hitherto missed by normal planning procedures. Perhaps the 'ecological' model's most significant attributes revolve around two specific aspects. The first is its relatively value-free analysis. It seems fair to say that the inferences which were drawn from the strategic overview of Delta appeared to be distinctly different in character from those generated within the Group. This can, in part, be obviously attributed to 'perspective'. But there was evidence to suggest that some of the internal deductions were significantly 'value-influenced' and hence contrasted with the 'holistic' analysis. Secondly, the examination of the potential interdependence of a variety of environmental trends gave rise to specific conclusions which had not been formulated by internal planning methods as they stood.

12.5 The second component of the research hypothesis, namely the analysis of value-systems influencing strategy in Delta and the subsequent construction of the organisational 'Self-Concept', tended to illuminate some of the 'rationale' behind strategy-making. But whether it is useful for what is implicit to be made explicit, in the context of the decision-makers themselves, is perhaps open to question. However, in the context of a hypothetical 'planner' operating at some distance, such an analysis may indeed be revealing and helpful. It did appear, for example, that one specific acquisitional proposal was brought into controversy directly as a result of the influence of the polarised 'Self-Concept'. And additionally, in this study, value-systems appeared to affect the perceived "desirability" of the strategic proposals generated by the 'global' overview. (As described in Chapter IX).

12.6 Hence it would seem fair to state that the hypothetical 'Self-Concept' not only validated itself, but also demonstrated its influence in a direct operational situation. Such a methodology may thus be of considerable assistance in defining 'viability' in the strategic planning of any specific organisation; in accounting for one of the important and apparently influential areas hitherto ignored by normative and 'routinised' approaches to strategy. It must be emphasised, however, that as a conclusion such value-systems should not be ignored but instead explicitly accounted for in strategic development. For they exhibit perhaps the greatest strength of an organisation - namely its very will to succeed with in any specific area.

12.7 In a broader context it may be asserted that such a formal approach to the establishment of criteria for the 'viability' of strategic plans may thus be of value to a wider range of organisations. Indeed, much of the evidence which points to a failure of corporate planning appears to be of a 'behavioural' rather than 'mechanical' nature. Hence one may conclude that the

application of comprehensive and detailed planning approaches is perhaps not enough. Indeed, the problem of having a planning system which is out of sympathy with an organisation's normal functionings is already well recognised.* However, the need for congruence of such a system, with reference to real organisational values and a 'Self-Concept', perhaps, is not.

(III) Research Posture and Changes

12.8 The process-action research posture to such a study also seemed appropriate. It must be recognised, however, that there was no original intention to effect any change process and hence, in terms of the original research hypothesis, any changes which have taken place as a result of the 'intervention', have been "natural". It is almost impossible to explicitly state cause and effect relationships with regard to the study, yet certain relevant changes have occurred and the research may or may not have contributed to them. In the first place, Delta have accepted the need for a full-time planning function to effect a 'global' view of the strategic area (amongst other things). In the context of the autonomy supportive mechanisms as regards Divisions, such a change can be categorised as 'behaviourally significant'.** In point of fact, the researcher has been asked to fill this role.

12.9 A second significant specific change which has occurred is that in an attempt to obtain a more coherent 'Group optimisation', the Divisions are now given unique planning targets appropriate to each - as was suggested in one of the research reports. Undoubtedly, this was also being considered by the G.P.C. however. Perhaps the most important and yet most difficult 'change' to identify, has been a perceptible move on the part of the whole Group towards a state of tighter cohesion. The identity of Delta is growing;

* For example see Wilson (ref: 72).

** 'behavioural significance' is used in the sense as defined by Argiris (ref: 179).

the need for a concerted and total approach to growth is being recognised; the degrees of mutual interaction across the various 'membranes' is apparently increasing. Hence, whilst Divisional autonomy remains strong, 'strategic' unity has increased markedly.

12.10 It would be both bold and pretentious of the researcher to specify that the research has contributed directly to this trend. But, in an indirect sense, discussions with Divisional Chairmen appear to have had illuminating effects. Hence the process may just have been helpful in some small way. Additionally, the "worm's-eye" view, with regard to a research perspective for 'action' observation, has been remarkably successful. This was especially relevant in the case of Divisional Chairmen, who positively grasped the opportunity to talk frankly to a humble, quasi-detached but interested body; whence there was no chance of conflict and yet where, because of the circulation of research papers, such opinions were relevant.

(IV) Practical Implications

12.11 Finally, what of the practical requirements of such additions to the planning process? Clearly, a comprehensive examination and analysis of all the relevant environmental variables, together with an integrative procedure, would be a task of enormous complexity. Crude estimates imply that, in Delta's case, each of the ten major areas could absorb perhaps two 'man-years' of analysis. If this is so then it would be an expensive addition. However, it is also probably true that the most salient features of the passive environment could be examined in detail without such effort on a qualitative basis.

12.12 In contrast, the analysis of organisational values and the 'Self-Concept' would require much expertise but would not be anything like as time consuming or expensive. Indeed, such a study could be carried out with comparative ease assuming, of course, that full co-operation was afforded. The value of such analysis

cannot be empirically quantified, but this is the case for the majority of factors relating to strategic planning. However, a personal view which is based as 'objectively' as possible, is that a thorough comprehension of the underlying values through which an organisation is almost always orientated, might be of very significant value to planners and top decision-makers alike. It might promote a total and concerted approach to the solving of what is probably the ultimate business problem - the strategic development of the firm.

(V) Areas of Future Research

12.13 There is a multitude of dimensions for future research within this area. The following are some of the more obvious ones which appear to be potentially fruitful.

- (i) Does the explicit awareness of an organisational 'Self-Concept' really help top decision-makers? How can the construct be further developed towards a more scientific decision-structure for such complex issues?
- (ii) What are the dimensions of the decision-spaces as suggested in figure (20) - Chapter IX? How flexible is the 'Self-Concept'; how is it changed and why?
- (iii) Can a more quantitative methodology be developed for mapping organisational 'Self-Concept' with reference to strategy?
- (iv) How does the 'Self-Concept' actually perpetrate itself in the actual decision-process? Empirical observations and analyses of undistorted strategic choice processes would be valuable.
- (v) Can an operational computer-based 'ecological' model of a firm be constructed and how does one ensure a truly value-free assessment of strategic posture?
- (vi) How can strategic planning, organisational values and broader organisational development programmes be formed into an integrated co-ordinating structure?

- (vii) Is it possible to carry out international comparisons of mapped organisational value systems by analysing such things as Annual Reports, Chairman's Statements and actual behaviour?
- (viii) How can process-action research approaches be developed in order to observe and record normal organisational functionings and changes so that clearer rules concerning the 'workability' of theoretical constructs can be generated?

The above offer only a sample of the possible 'follow-on' research areas. In essence, all promote the view that 'validity' is 'workability'. Academic research ought to be firmly orientated towards solving 'real' problems in a 'real world'.

"The Plans are Man's,
The Odds are God's."

Kuan Fei
3rd Century

A P P E N D I X (A)

ORIGINAL SUMMARY REPORT PREPARED FOR DELTA

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CORPORATE PLANNING AND STRATEGY FOR DELTA : A SUMMARY REPORT

Robert Easton June 1973

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Summary of strategy concluded as best for Delta.

1. Delta should give high priority to the establishment of a comprehensive network of distribution for its products - both in the United Kingdom and in Europe. This would eventually become a Service and Distribution Division in its own right.
2. Delta should establish more of a toe-hold in the plastics field, eventually forming a small Plastics Division as a subcontractor to other Divisions as well as a producer of its own finished components.
3. Delta ought to establish itself in a fourth and completely new area, namely consumer durables. A new Division manufacturing hollow-ware and/or electrical appliances is a possibility.
4. Delta should not expand the Building Products Division in depth but should broaden it, with a view to controlling more of the replacement market, both at home and in Europe. Beware of improvement grant sector.
5. Both Electricals and Cables Divisions have promising long term potential and should be expanded and broadened along existing lines but on an international scale.
6. A long term cyclical decline is foreseen for brass-rod and under these circumstances it may soon be appropriate for Rod Division to become fully integrated with stampers and turned parts manufacturers in an effort to obtain any remaining economies, and in order to construct a firm base for a new Engineering Division. The manufacture of finished equipments and components, together with growth into industrial valves, transport equipment, sinterings,

shell-mouldings and other castings could provide such a Division with a firm operating structure.

7. The decline in demand for copper and brass sheet and strip is expected to be rapid. ERM could become the eventual basis of a new Metals Division with interests in heavy metal processing (all types), heat exchangers, presswork, filtration, extractive metallurgy, recycling and some commodity trading.
8. Overseas investment ought to be directed towards the Pacific Basin area which holds real promise of rapid economic development. Delta ought not to invest in manufacturing units in Europe but should concentrate on distribution there.
9. If this is accepted, by 1980 Delta would have a capital employed of around £185m (c 5% p.a. growth) and a turnover of about £320m. Profits would thus be around £36m p.a. The following outlines the "blue-print".

very broadly based, international
of the present structure, making
entirely, liberal-ownership, etc.
making switches to wall.

very broadly based but not in depth -
in accuracy and lack of fine
castings, etc. etc. and
perhaps better than

already based on strength
structure, more international,
also making provisions, conduct
journalism etc.

Division	C/E	Profit	Activites
Engineering Division	£35m	£5.25m	Based on Rod + Astenia+ Components Divisions manufacturing engineering products, industrial valves, transport equipment, filtration with overseas interests
Metals Division	£35m	£5.25m	Based on ERM + major heat exchanger manufacturer, dealing in most metals, in commodity trading, extractive metallurgy, anti-corrosion, large castings, magnesium, Swedish iron.
Service and Distribution Division	£15m	£4.5m	Builder's merchants, semis and engineering stockists, electrical wholesalers in U.K. and E.E.C. Also responsible for exports and some contracting work. Not tied.
Consumer Durables Division	£10m	£2.0m	Manufacture of hollow-ware and / or domestic appliances
Plastics Division	£10m	£1.5m	Sub-contracting for rest of Group as well as manufacturing finished components and laminates.
Electricals Division	£30m	£7.5m	Very broadly based, international on the present structure, making meters, thermo-couples, relays, sensing switches as well.
Building Products Division	£25m	£5.0m	Broadly based but not in depth - in security and locks, fire extinguishers, ceramics and perhaps heating pumps.
Cables Division	£25m	£5.0m	Broadly based on present structure, more international, also making insulators, conduits, junctions etc.

I Copper - availability and price

1.1 As far as Delta is concerned, the availability and prices of copper are major factors in the category of "raw materials constraints". Bearing this in mind, we are going to briefly describe the salient conclusions which have been reached, as regards the future trends in pricing and availability of the metal.

1.2 Availability

According to the Paley report of 1952, the U.S.A. was going to be short of copper by 1975. Today the U.S.A. remains the largest copper producer. In terms of physical availability, there seems little doubt that there are ample supplies of workable copper ore. Known resources in 1970 were put between 300-350 million tons of copper, whilst recent annual mine production reached only about 6.5 million tons.

1.3 It must be concluded then, that taking the time horizon of this report as 5-15 years, Delta is not likely to be affected by copper drought. However the same cannot necessarily be said about physical supplies of copper to Europe. At the moment some 38% of free world copper is controlled by the CIPEC countries (Zambia, Congo-Kinshasa, Chile and Peru), where political instability is apparant. There seems to be no doubt that copper is a strategic metal, and as such is vulnerable to the politics of international trade. And as we have seen recently, these trends show no signs of disappearing, since 35% of free world mines are government controlled.

1.4 Against this background however, there is also a definite tendency towards a broader geographical pattern of supply since many of the funds previously intended for investment in CIPEC countries, have now been re-directed to more stable areas of the world, such as the Pacific Basin and Iran. The development of these new sources of supply may help to redress some of the vulnerability of copper trade and thereby dampen the volatility of the market.

1.5 Price

Copper price predictions are themselves something of a nonsense, because they are influenced to such a vast degree by both speculation

and apparent threats to physical supply. Time and time again, prices are marked up on the slightest potential shortage, even though stock-piles are at the time still healthy. Taking this into account, it is certainly still possible to analytically get a "feel" of what most probably will happen to the price of copper.

1.6 The case has been circumstantially constructed, and the price projections have been made by different methods and from different angles.

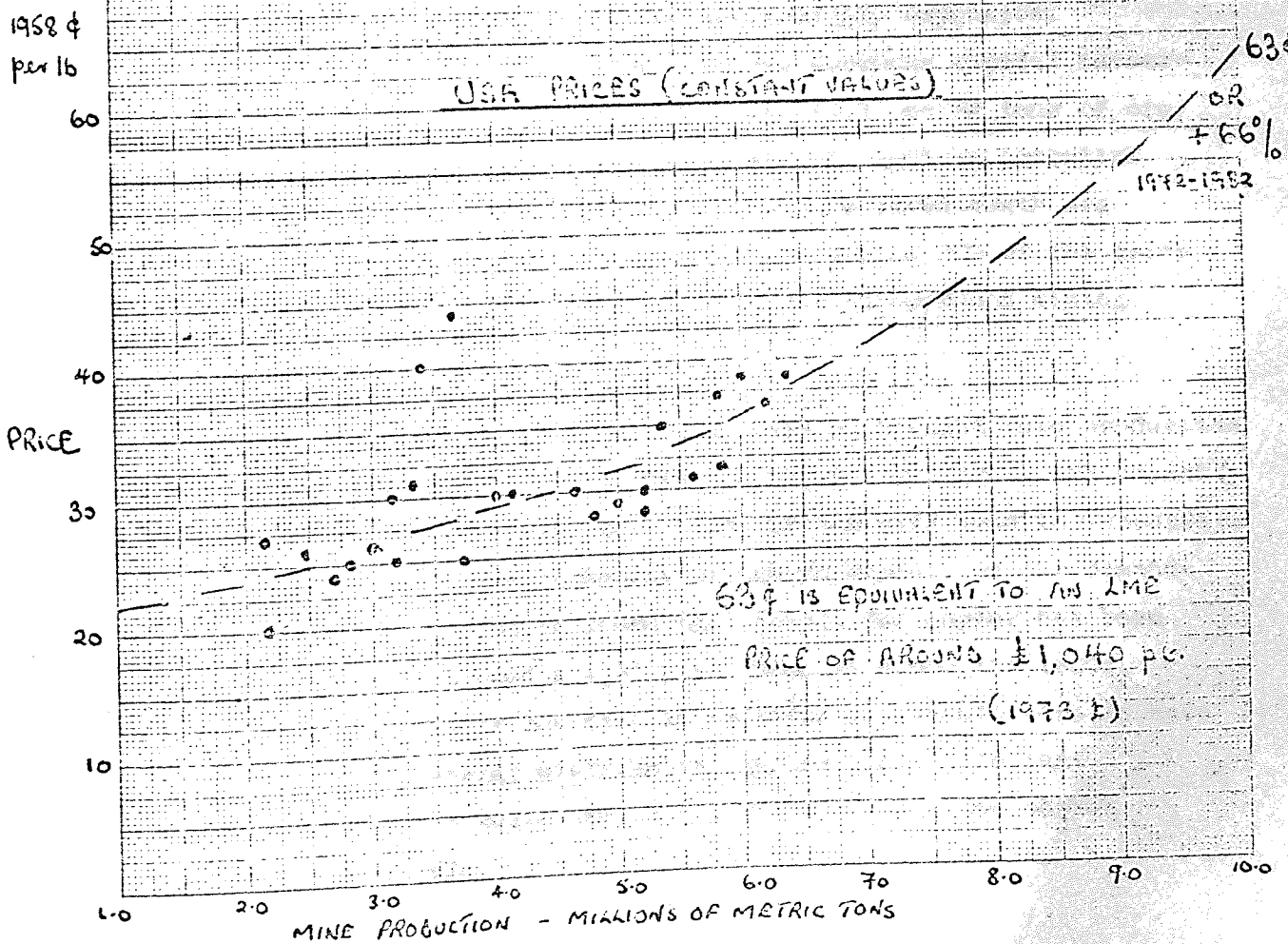
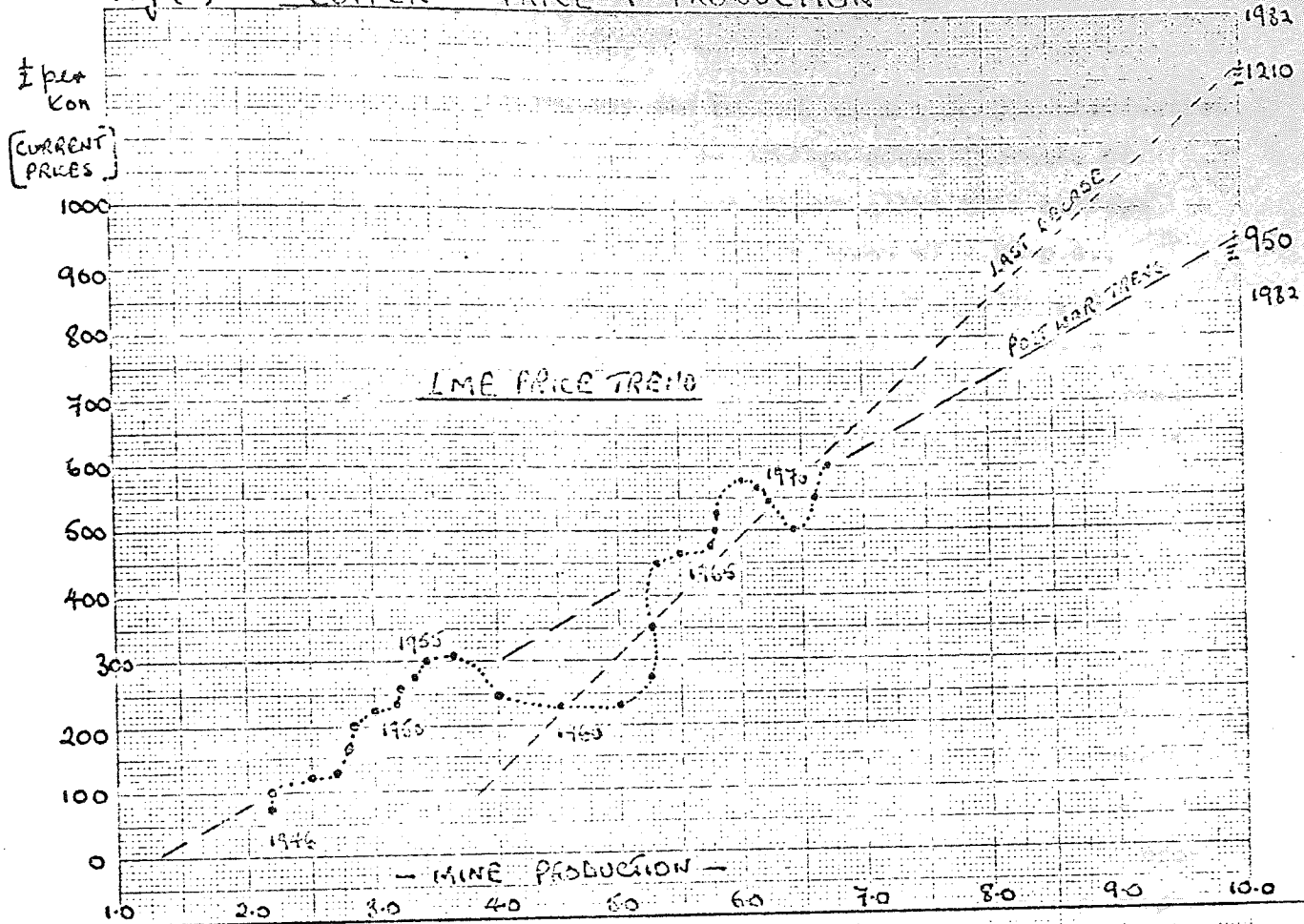
Unfortunately perhaps, they all tend to agree along a broad front, and the indications are that the price of copper is due for a substantial increase between now and 1982. The main conclusions are that the increase will be at least 60% in real terms, and possibly more.

1.7 Before one speaks of price however, it is important to remember that the pound sterling of today is not the same pound which we saw a year ago. In this light it may perhaps be better to use an index and not a currency for analysing prices. Suffice it to say that since March 1972, the value of the pound through currency re-alignments has been devalued by 11.5% - 13% against the currencies of developed countries competing for copper supplies. Hence without any change in demand the price would have risen by around 12%. On top of this increased demand, the political problems of Zambia and Chile, the flight from dollars into metals, and pure speculation on the LME have all cumulatively pushed up the price of copper. By the end of 1973 the average should be around the £635 per ton mark and the reasons for this will be explained later.

1.8 Long term price trends

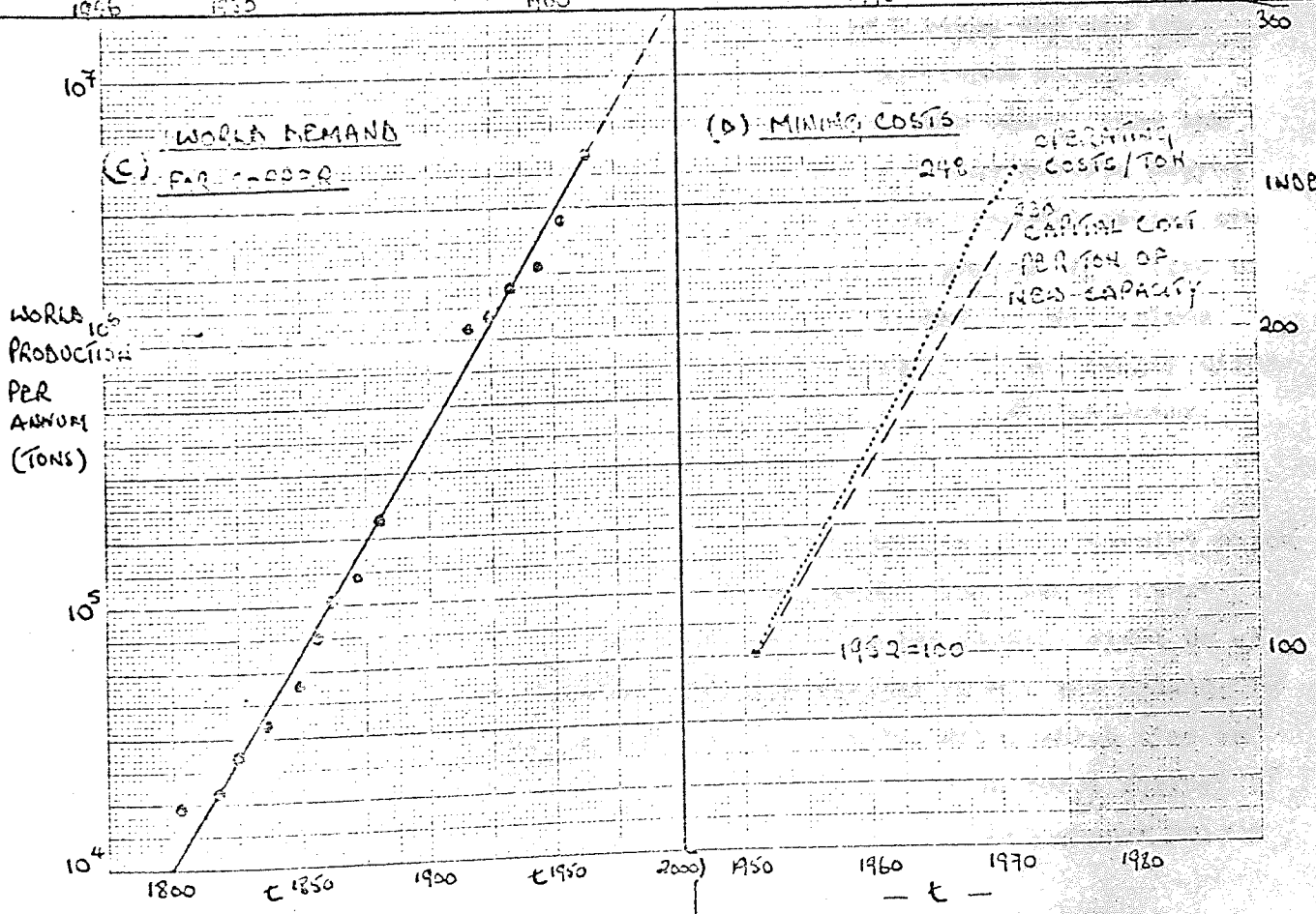
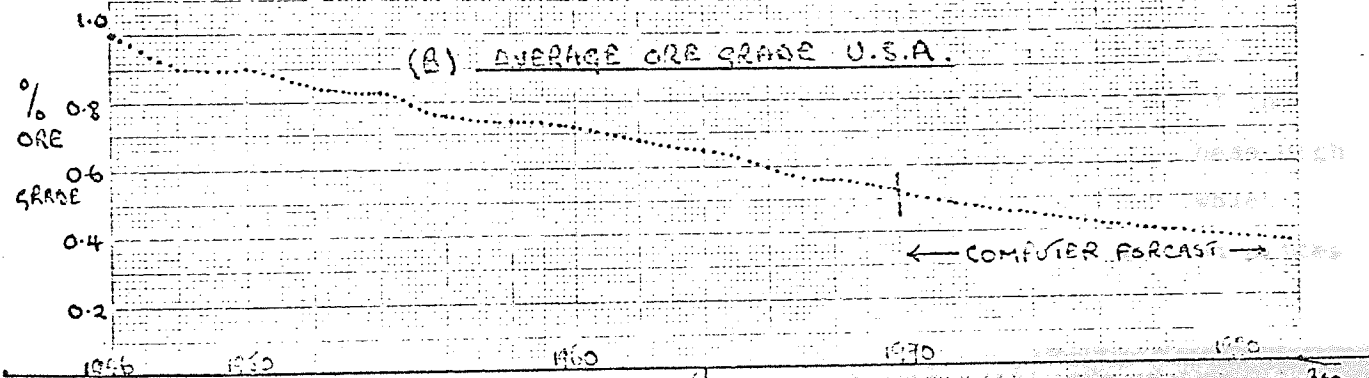
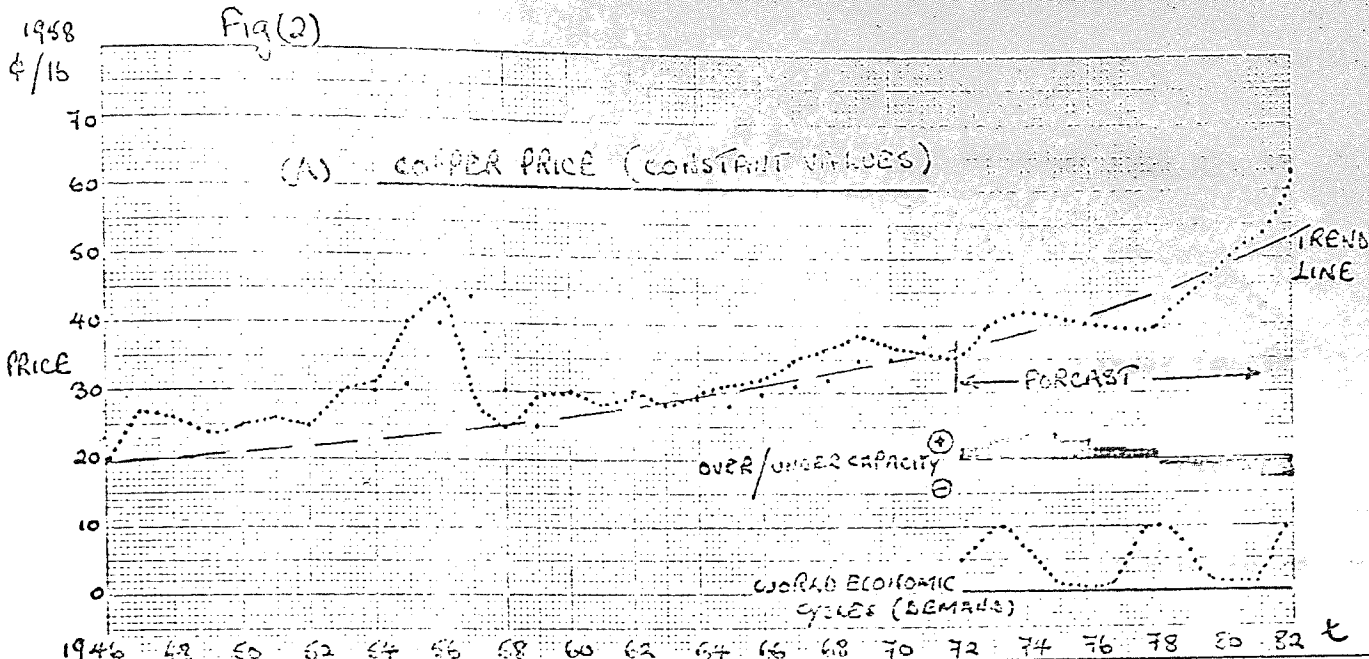
Sir Ronald Prain, speaking at the American Metal Forum in London 1972, made one of his rare quantifications about long term copper price trends. He stated that price has historically been about 173% of production costs, and projecting these costs at an annual increase of 5.25% he speculated that the price of copper could be 96¢ per lb in 1981. Translating this figure into 1973 £p.t. we get a price of £975 p.t. which includes an element of depreciation of money value. However the estimate may prove to be optimistic as the costs of production - (especially labour costs) may well tend to rise a little faster than 5.2% p.a. trend of the last twenty years.

Fig (1) COPPER - PRICE + PRODUCTION



- 1.9 A second extrapolative projection can be made from a simple examination of LME price movements. Since 1945 the average price increase of copper has been 9.2% p.a. Over the last decade alone this average has been 9.7% p.a. Thus using the long term trend of 9.2% p.a., then the current price of copper in 1982/83 would be £1,420 p.t. including depreciation in money value. If we take off a figure even as much as say 4% p.a. for devaluation, then an average increase of 5.2% will give us a price of £980 pt in 1973 £ or an increase of around 60% in real terms.
- 1.10 Figure (1) is a plot of price against the rate of world mine production. The logic behind this is simple. The production of copper (and hence consumption) is exponential against time - and so is price in real terms. That is to say, they are both increasing in rate every year. The world copper industry has to come to a point where most of the easily accessible surface ore deposits of reasonable concentration, here have been used up. The trend is now that one either has to process lower and lower surface ore grades, or to mine deeper and deeper for good grades. Both methods become increasingly expensive. Using poor grades of surface ores requires enormous capital investment in plant and machinery to mine and move millions of tons of ore, and to smelt it. Because of the need to get the maximum potential economies of scale, the interest charges on such investments are extremely large and in some cases perhaps as much as 30% of the price of copper accounts for this. The same goes for underground mining methods.
- 1.11 So if this is the case, new capacity can only be brought into production if copper prices are sufficiently high to pay for it and as new capacity is tending to become more expensive, then prices will tend to increase proportionally. The price mechanism of course depends on the demand-supply balance, but it can be shown that demand for copper has been remarkably steady at around a 4.5% p.a. increase since the 1800s. Indeed it is said that if the African or Asian continents were to have a communication and energy distribution system similar to that in the U.S.A., then it would use up the majority of known copper resources now available.

- 1.12 So an increase in production rate broadly means an increase in price. In figure (1) the first graph is a plot of actual LME prices against world production. The 10m tons per annum rate is expected to be reached around 1982/83. On a long term trend, this would give a current copper price at that time of around £950pt. If the trend of last decade is taken then the current price would be more like £1,210pt. In real terms this tends to imply an increase of around 55% over the next ten years.
- 1.13 The second plot is similar except that U.S.A. prices have been used, and that they are in constant value terms (1958 c per lb). Although our previous projections have been made on fairly linear assumptions (that is that the relationships remain steady), it is perhaps true to say that this rarely happens. Indeed the price trend in constant values appears to be a curve, and this has been duly extrapolated. The trend line cuts the 10m tons per annum mark at 63 c per lb - or an increase of 66% over the next ten years. And even the most optimistic linear projection could not get the increase below about 30% in real terms. Using the curve extrapolation, of 63 c per lb, this gives us an estimated £1,044 p.t. (1973 values) for copper in 1982/83.
- 1.14 The basic reasons for this are shown in Fig (2) parts (B), (C) and (D). The average grades of ore mined in the U.S.A. have fallen from 0.9% in 1950 to 0.5% in 1970. Similar trends are shown on a world wide scale, and it is reported that estimated free world grades have dropped on average by 0.25% over the last ten years. Part (C) shows the world demand of copper since 1800 to have been a steady increase. The scale for production is exponential and hence the average annual increase has been a steady 4.5%. There is no reason to suggest that this rate will suddenly change. Part (D) shows operating costs having risen by 148% over 20 years, and capital costs per ton having risen by 130% over the same period.
- 1.15 Using all these methods, one must conclude that an increase of 60% in real terms is probably an optimistic estimate of copper prices in 1982/83. This simply means that assuming a 1973 price for copper of £600 pt. which is probably a fair price if demand and supply were



in equilibrium, then in 1982/83 the price would be about £960 pt. in 1973 values.

1.16 Trends 1973-1983

But what of the probable trends between now and 1983? Copper (world market) prices depend on two distinct cycles:-

- (a) The cycle of over and under capacity giving rise to a surplus or deficit of copper on the world market.
- (b) The demand cycles on that market which occur with cycles of world economic activity.

1.17 The over or under-capacity cycles last 15 years. They are generated mostly by investment cycles in new mines, once copper prices are pushed up by shortage of supply. For example towards the end of the 60's there was a real shortage, and prices leapt to £800 pt. These high prices encourage the bringing into production of new capacity which was previously uneconomic, and thus an over-capacity ensues and prices fall as a surplus is built up.

1.18 The demand cycles on the other hand last 4 or 5 years and are the result of cycles of economic activity within developed economies throughout the world. As countries trade with each other, then the economy of any single country is dependent to a considerable degree on the economy of its trading partners - and thus economic cycles are more or less synchronised between industrialised nations. At a time of increased activity and hence increased world demand, copper prices naturally increase, but this increase is dependent on the supply situation which is itself dependent on the phase of the over-capacity/under-capacity cycle.

1.19 Since 1971 we have entered a phase of over-capacity (over-supply) which is expected to last for $7\frac{1}{2}$ years - to say 1978. The peak of over-supply is expected to take place in 1974 when the surplus might be as much as 10%. From there onwards the gap between supply and demand will decrease until a balance is met in 1978/79, after which time an over-capacity and under-supply situation will develop for a further $7\frac{1}{2}$ years or so - to 1986. This means quite simply that copper prices

will tend to be abnormally low until 1978, and abnormally high thereafter until 1986 or so.

1.20 On top of this however, we have the world demand cycles. 1973 is expected to be the peak of this present cycle, so higher prices must be expected, and 1977 or 78 is the next probable peak, with lower prices in 1975 or thereabouts. Figure (2) part (A) is a plot of copper price in constant values, against time, and one where these deduced trends are translated into price movements. Also shown are schematic representations of the capacity cycles, and the world economic (demand) cycles. So along the trend line we see a real rise in price for the next two years, followed by a slight fall until 1978 when both the start of the under-supply phase plus the peak of a demand cycle will tend to push the price upwards fairly quickly. Once the under-supply phase is reached, prices will tend to increase or hold steady ground.

1.21 Immediate prospects

Figure (3) shows a plot of the price cycles, demand and capacity cycles for copper. It is clearly seen that price fluctuations occur regularly with world economic activity cycles - and that these in turn relate closely to the GDP cycles of the U.K.. It is also clear that price increases tend to be greater in times of under-capacity and decreases greater in times of over capacity. With these factors in mind and using the historic trends of price increases to look forward, a picture of the probable movements can be outlined. Remember however, that no account is taken of speculation in the market or of disruption of supplies by producer countries. Also, higher prices will tend to increase recycling although there is a rigid theoretical limit to the percentage of scrap in consumption. Nevertheless this factor together with the increasing multi-source nature of supply will probably dampen down some copper's volatility.

1.22 Below is a chronological review of the probable price trends, based on current prices, and these include an element of currency depreciation. Remember too that our previous conclusion of copper being around £960 pt. in 1982, assumes a supply-demand equilibrium, and is in 1973 values.

COPPER PRICE MOVEMENTS (ANNUAL %)

[1945 - 1973]

ANNUAL % CHANGE

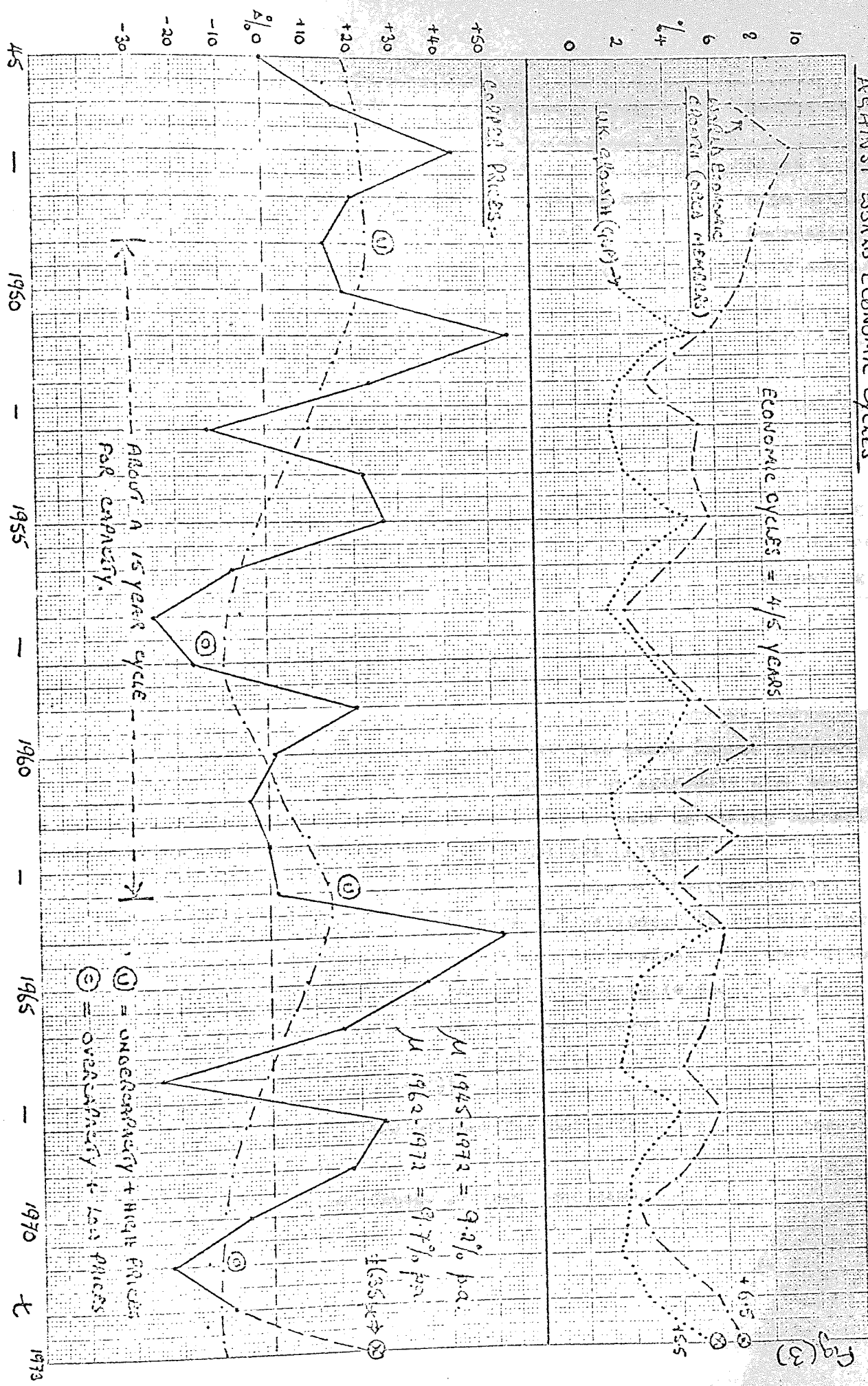


Fig (3)

	Average LME Price £/ton	Capacity cycle	Demand cycle
1972	450	O/C	Slack to steady
1973	635	Increasing O/C	High demand
1974	590	High O/C	Decreasing
1975	500	Decreasing O/C	Weak demand
1976	500	Decreasing O/C	Steady
1977	575	Decreasing O/C	Increasing
1978	720	Balance cap.	High demand
1979	650	U/C	Decreasing
1980	750	Increasing U/C	Weak demand
1981	850	Increasing U/C	Steady
1982	1,200	High U/C	Increasing
1983	1,350	Decreasing U/C	High demand
1984	1,000	Decreasing U/C	Decreasing

U/C = Under-capacity

O/C = Over-capacity

1.23 These conclusions mean that for the next five years copper prices will be reasonable, but that thereafter a period of extremely high prices is likely unless a really major discovery is made or mining technology makes a significant break through. Both are unlikely.

These trends have been confirmed in principle by the Commodities Research Unit who specialise in price estimations. It is felt that they are thus broadly realistic in their conclusions. It must also be stated that 1970/71 was an abnormally long world economic slump, and thus copper prices have been very low indeed.

1.24 Strategic Implication for Delta

Broadly the immediate implications for Delta fall into two categories.

(a) Financing costs.

(b) The effect on end usage patterns and demand.

- 1.25 Firstly costs of finance will obviously be considerably more. Delta's holding investment in copper, both stocks and work in progress will be at least 60% more expensive over the next ten years or so, assuming similar rates of consumption for the group. In this category we are not only concerned with interest charges on the holding investment, but also the opportunity cost of it not earning profits elsewhere. Although perhaps the gradual increase in the worth of copper held could be accepted as capital profit on the investment, the wide fluctuations in price do not in any way ensure this and indeed the opposite is more probable. Increase in consumption (and thus holding investment) comes about at a time of economic activity and high demand - thus prices are high and will subsequently tend to fall as demand falls. In such cases one is more likely on average to see a capital loss or perhaps a break-even with good strategic purchasing. Altogether the cost of the holding investment through interest and opportunity costs could be as much as 20% of capital.
- 1.26 Secondly one must examine the effects of high copper prices on end-usage patterns. One thing is certain though, and that is with higher prices (£1,000 pt) the conceptual role of copper as a material will change. Historically the metal and its chief alloy brass, have been used because of corrosion resistance, conductivity and because of easy working and fabrication. And this role resulted in the enormous diversity of use. The new role, would be one of a metal only used where its special properties were unique in application or showed significant advantage in cost/benefit terms. The best parallel could be drawn from the uses of nickel or in the extreme tin. At £1,000 pt copper would probably play a part similar to that played by nickel today, and that simple conceptual change has obvious implications for the present end-usage pattern and for a significant proportion of Delta's output.

TECHNOLOGY

II Technological Aspects of Substitution

- 2.1 The substitution of copper by other competing materials has been going on for quite a long time. The major pressure to substitute has been mostly economic, and the result has been that copper and its alloys have gradually become more and more selective in application. Thus the present position is that there must be a clear cost/benefit advantage for the continued use of copper despite the fact, that over the last few years its price has been abnormally low.
- 2.2 If, as projected, the price of copper rises by about 60% in real terms over the next ten years, then such a significant increase will undoubtedly have fundamental effects on the present pattern of end-usage and it is on this very pattern that much of Delta's synergy of integration depends.
- 2.3 For although it is clear that companies near the market place can make the changeover to production in new materials fairly easily, the same cannot be said for the semi-manufacturers both light and heavy. And although it is said that perhaps as much as 70% of present plant could be modified to process other materials, this does not begin to solve the problem since in many cases the same final product made in a competing material is more efficiently produced using quite different processes. But if then for example the capital equipment is modified to produce new products to Delta, then there do not appear to be any real opportunities where there will not be an immediately competitive situation, (Aluminium extrusions & sheet and strip are obvious examples), unless a new chain of processes is integrated to produce a relevant final product. Such a strategy is, to say the least, very constricting.
- 2.4 To look at the problem in greater detail, let us first emphasise the probable conceptual change in the role of copper, from a good, useful non-corroding purpose metal, to a material used only in specific applications where it shows real advantages over any competing material. As has been suggested before, a useful analogy here may be that the part which nickel plays today, will be played by copper tomorrow.

- 2.5 Nevertheless remember too that in ten years time one would expect the economic position of developed countries to be significantly greater than it is today, and the richer the country, the easier it is to afford expensive raw materials. In other words economic growth will probably tend to redress the real price increase to some extent, as everything is relative and not in fact absolute.
- 2.6 The use of copper and its alloys revolves around their intrinsic properties. The salient ones are corrosion resistance, electrical and thermal conductivity, good workability and fabricability. It may be true to say that broadly speaking copper alloys have historically been used primarily because of their corrosion resistance. Today this is no longer an exclusive right since anodised aluminium, certain polymers and stainless steels are all highly competitive in this instance. Copper on the other hand, had been used not only for corrosion resistance, but also because of electrical and to a lesser degree thermal conductivity. Today it still stands supreme as far as practical functionability is concerned, but not necessarily as regards costs.
- 2.7 The following tables were prepared by Professor W. O. Alexander of this University and outline the cost per unit function of various materials.

Table I "cost per unit of tensile strength"

Material	Price per tonne £ (1973 January)	Cost per unit of tensile strength
Brass rod	£450	£20.23
Brass stamping	£950	£25.63
Steel stampings	£140-200	£2.06-2.23
Aluminium extrusion HE 30	£460	£4.28
Aluminium casting LM 22	£285-340	£3.08-3.67
Magnesium diecasting	£430	£3.95
Zinc alloy diecasting	£210-260	£5.13-6.36
Titanium alloy rod IMI 318	£3,500	£16.04
PVC piping	£200-300	£4.67-70

It is immediately and painfully obvious that brass is very expensive on a per unit of tensile strength basis - even more so than titanium - but of course this is unfair since in application brass is not used simply for strength but for corrosion resistance and easy working as well. Nevertheless the point has been made.

2.8 A more relevant table is that of cost per unit of electrical conductivity, as below.

Table II "Cost per unit of electrical conductivity"

Material	Cost per tonne £	Cost per unit of conductivity (£)
Copper wire H.C.	£630	£938
Aluminium wire E.C.	£425	£322
Pure Iron wire	£120	£780
Pure zinc wire	£250	£923
- Insulated cable:-		
Aluminium	£550	£417
Sodium	£820	£365
Copper	£700	£1042

Once again, copper the supreme conductor (save silver) is getting on for three times as expensive as aluminium in bare wire form, and about two and a half times more expensive in insulated cable form. This is mostly due to the fact that because of density factors, one ton of aluminium is equivalent to two tons of copper when used as a conductor (i.e. around a quarter of the material price).

2.9 The rate of substitution of copper has tended to depend on four issues.

(a) The first is the fact that substitution may have been inhibited to a degree by the very volatility of the market - that is the attitude that "if an irreversible change to a new material is made, the price may drop tomorrow leaving our products uncompetitive".

(b) The second is the degree to which rationalisation has taken place. Rather than use different materials completely, end-users have tended to use copper or its alloys as sparingly as possible by design changes - so that today little redundant copper remains.

(c) Thirdly the rate at which design obsolescence occurs has tended to

increase and it is obviously easier to substitute at a period of complete re-design and re-tooling. It may be true to say that copper and its alloys have not generally speaking been used in fast moving products where the rates of obsolescence are high. However today a common life-cycle of a product or equipment has fallen to around the 10 year mark, and re-design tends to occur more frequently. (d) Finally, it is probable that a changeover only takes place if competitors change as well. Manufacturers have generally been reluctant to change because they want to protect this capital investment in the current production process, and also because of the risks of being the "first" - with all the technological, production and marketing problems to cope with.

- 2.10 Looking at these requirements it can perhaps be hypothesised that most of the possible rationalisation in the usage of copper and its alloys has already taken place. In other words there is no slack left. Secondly the rates of obsolescence and re-design have tended to increase, offering more frequent opportunities for total substitution. And finally the copper market is expected to be less volatile due to a more multi-source character of supply and to a greater proportion of re-cycled copper in the system. All in all, if an increase of 60% does occur, quite a new pattern of end usage is likely to emerge.
- 2.11 Before analysing specific market areas where this is likely to occur however, a word must be said about the levels of costs to be accounted for.
- (a) The first is the actual basic material cost of a component.
 - (b) The second is the cost of working or fabrication (value-added) to form the final component.
 - (c) The third is the cost of application of that component (i.e. labour in installation).
 - (d) The fourth is the relationship between the component cost and total equipment cost.
 - (e) And finally the method of production of the final equipment is also important.

- 2.12 At the lowest level material cost is self-explanatory. The second is straight-forward. Copper and brass are relatively easy to work, but aluminium, plastics and stainless steels are generally speaking not. Thus one can still find a complex piece of pneumatic equipment which is cheaper in brass than say stainless steel. And increasing labour costs may well continue to tip the balance in favour of brass or copper, as far as value-added costs are concerned.
- 2.13 The third level of cost is that of installation or application. The classic example of this is the installation of steel pipe or copper tube in a dwelling. In the USA especially where plumber's costs are very high, a copper tube system installed is cheaper on balance than a steel tube system installed. And in most developed countries, labour costs continue to increase very rapidly.
- 2.14 The next level of cost is the relationship between the component cost and total equipment cost. For example the cost of a brass handle as against a plastic handle, on the top of a fire extinguisher is a clearly perceived relative cost. But the cost of a £3 brass tap, as against say a £2 plastic tap - in a £10,000 house, becomes negligible in the relative context.
- 2.15 Finally, the highest level of cost is concerned with the method of production of the total final equipment. The production-line for example, produces motor vehicles which tend to have the lowest possible component costs, and these are stringently monitored. The costs of a brass nut as against a steel nut may be apparently irrelevant in the context of a £1,000 car, but on a line assembly, this cost will be perceived in the cumulative terms of perhaps thousands of pounds per annum. The brass nut will be replaced if it is not strictly necessary. The same may be said for the construction industry, where for example a contractor erecting a block of flats may have immediate potential savings on using plastic taps instead of brass ones. However the same is not necessarily true for a contractor building only five new houses, at a single site.
- 2.16 Thus apart from the costs and advantages of basic material usage, we have a series of criteria with which we can identify product lines which are likely to be threatened by substitute materials. Firstly however let us examine in almost purely technological terms, just how the competing materials stand up to copper and brass in specific applications.

2.17 The following table was prepared with the assistance of the Department of Metallurgy at Aston and is used to broadly outline the degree of intrinsic advantage of copper and brass in the major areas of end-usage. Each of the competing materials was given a rating for its individual properties when compared with copper. Then these properties ratings were evaluated against the actual properties used in various applications, and through this method a final score with a maximum of 1.0 and a minimum of 0.0, was reached for each material. It must be stressed however that the initial ratings were awarded on the basis of a "general set of properties" for alloys and plastics since otherwise the analysis would have become extremely complex.

Application	Copper	Brass	Aluminium	Stainless Steel	Plastics
Water, gas, heating tube	<u>.85</u>	.71	.69	.75	.72
Plumbers fittings	.77	<u>.88</u>	.70	.65	.62
Hot water cylinders	<u>.87</u>	.67	.65	.72	.57
Water taps	.77	<u>.85</u>	.70	.65	.62
Masonry fixings	.82	.83	.65	<u>.86</u>	.61
Insulated cables	.90	.70	.71	.62	-
Switchgear & busbars	.95	.73	.65	.45	-
Transformers, motors, generators	<u>.96</u>	.74	.66	.38	-
Heat exchangers	<u>.91</u>	.71	.71	.57	.40
Engineer's valves	.72	.80	.63	<u>.82</u>	.51

2.18 However crude these assessments appear, and however many other variables enter into the argument, it is still fairly apparent that for the majority of the sample of applications copper and brass have intrinsic advantages. But just how important this advantage actually is, becomes the final question.

2.19 To draw broad conclusions however, let us say this. At the high prices for the raw material foreseen, copper and its alloys may not remain competitive if they are used simply because of corrosion resistance. Neither will they be used where there is a production line process operating. Thus the following market sectors may be affected, and these are the possibilities.

(a) Construction - hot-water cylinders and other electric and gas water heaters may tend to favour stainless steel, or simply protected steel. Copper tube may be replaced similarly, as well as the various bits of brass in builders hardware. (door knobs, window frames and fittings etc.) Taps may remain brass as long as the plastic content is maximised, and so many valves for C.H. systems. Plumbers fittings (compression and capillary joints) may also remain intact. Copper sheet for roofing and decoration is replaced by anodised aluminium, stainless steel, or plastic. Plugs, sockets and other wiring accessories probably remain intact or give way to a cladding of some sort. Wiring cables remain as copper for individual houses but give way to aluminium cable (or clad cable) professionally installed and jointed for flats, or high-density housing areas.

(b) Electrical - all low voltage distribution cables remain aluminium, and are joined by a proportion of wiring cable. Some motors, generators and transformers use aluminium winding strip in place of enamelled copper wire, except where there is a severe space-limiting factor (e.g. a small unit which needs to be powerful). Telephone cable is also affected to some degree. Switchgear retains copper and brass as do some busbars.

(c) Transport - motor vehicles use very little copper in electricals, it having been replaced mostly by aluminium, (except for switches). Radiations are aluminium or perhaps even steel with protective coating. Aircraft continue to use copper wiring cables because of safety factors, and railway electrification also retains copper. Many of the traditional bronze fittings in ships replaced by clad components or new stainless steels, except for tubing coils.

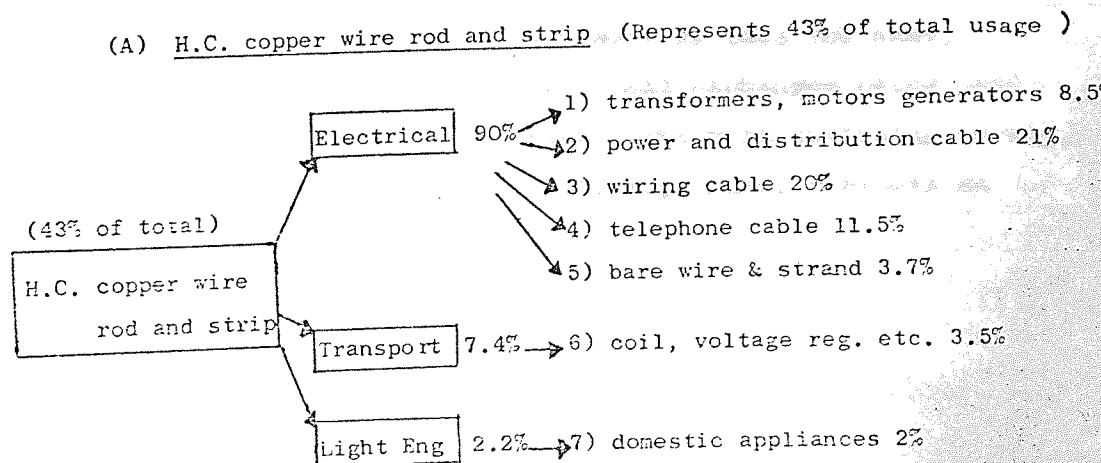
(d) General engineering - many of the brass components may be replaced by clad materials, and by plastics. Heat exchangers continue to use copper or brass, but pumps and the majority of valves use stainless

steel or reinforced plastics instead of brass. Many fasteners replaced by epoxy-resin glues and protected or stainless steel.

2.20 That over-view is by necessity broad and hypothetical but it is the type of end-use configuration one might expect to find if copper does indeed assume its new role, and if the price of competing materials do not change radically. It must also be stressed that there is neither the time nor the space to enter into the complete argument for and against each of the potential substitutions as set out. Suffice it to say that they are presented for discussion as much as anything else. But the real effect on Delta will tend to be felt at the back of the line, in the semis divisions, whose flexibility in no way matches the adaptability of companies which are less capital intensive.

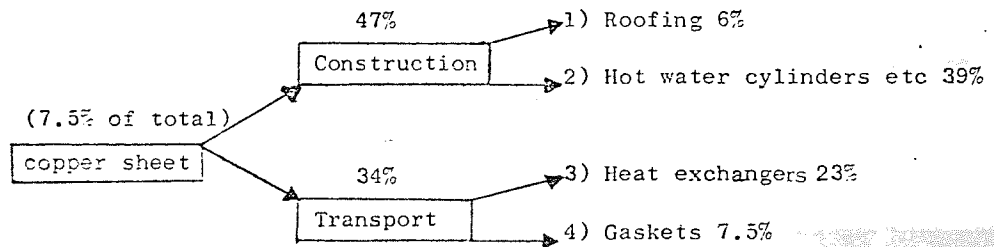
2.21 The potential strongholds for copper and its alloys lie in the regions of electrical and thermal conductivity and in general engineering fields where intricately worked corrosion resistant components are needed. In such cases if the maximum potential use is to be made of existing semis integration once the price of copper goes up for good, then development in these broad areas would be advantageous.

2.22 Now for a critical examination of the effect of these substitutions on the demand for heavy semi-manufacturers. The following diagrams schematically represent the vertical integration of the U.K. copper industry and the proportions of end usages.



Based on the above, if by 1980 aluminium was used in half the motors, generators and transformers, and most of the cables below the 22kv range, plus one third of wiring cable, half the windings, half the telephone cable, all coil and voltage regulator usage and say half the domestic appliances, then the result would be that the potential demand for H.C. copper wire rod and strip would be cut by up to 35% at least, and the figure would be more likely perhaps to be around the 40% mark. However it is true to say the increase in consumption of copper by the electrical industry has been running at around the 2.6% p.a. mark, so that the net effect in this country at least would be perhaps a 5%-10% drop on today's production figures. In 1970 Delta's market share here was 17%.

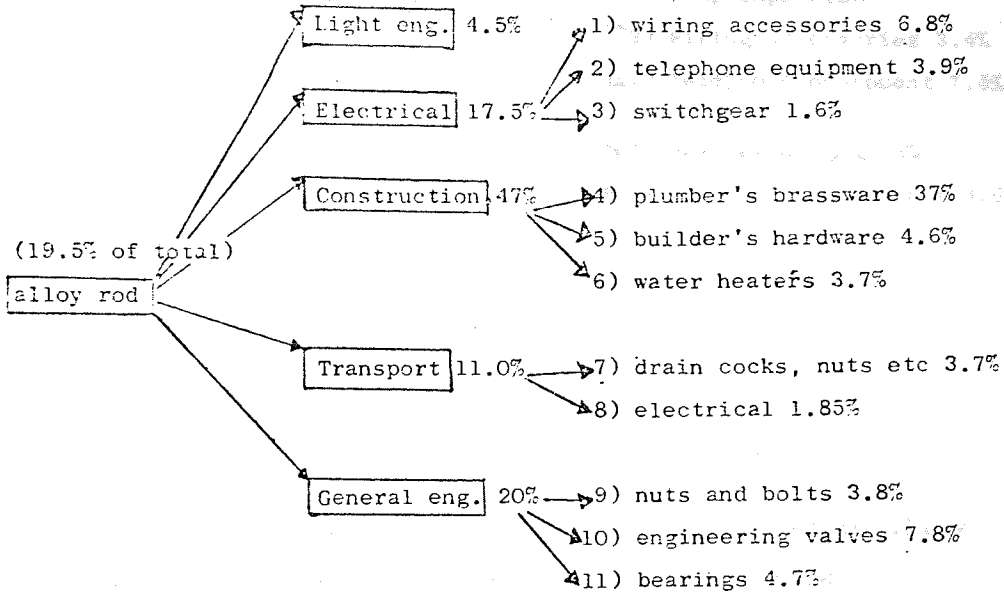
(B) Copper sheet and strip (Represents only 7.5% of total use).



In 1970, Delta's market share here was about 17.5%, and it is copper sheet perhaps, which is the most vulnerable semis group, to substitution. By 1980 we may see almost all the hot-water cylinders and other water heaters in another material, and very little used in roofing. The proportion in transport may well remain more or less the same, except perhaps for special thin-walled brass heat exchangers being used in place of copper. Nevertheless, on a market which is declining anyway, substitution to the rate of around 50% and perhaps more, presents an unhappy picture.

... copper wire rod and strip.

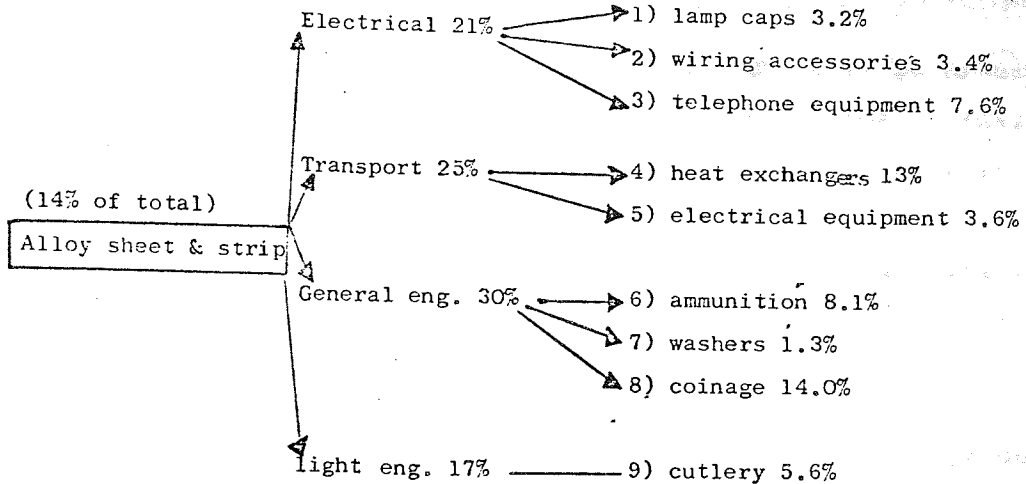
(C) Copper alloy rod (Represents around 19.5% of total use)



Delta's market share of alloy rod is around the 45% mark so that this is an area where there is a significant amount of capital equipment. Remember too that a 60% increase in the price of copper does not increase the price of say brass rod by that much, but by perhaps 40% if a price increase of around 15%-20% is allowed for zinc. If light engineering loses only 1% to other materials, wiring accessories loses half, plumber's brassware loses a quarter builder's hardware loses say half, water heaters half, all transport electrical is lost, nuts and bolts a half, and valves two thirds, then the net decrease in demand for alloy rod would be about 26%, but this may well be quite an optimistic estimate. As there is already a slight decline in this sector, mostly perhaps due to rationalisation and not so much to substitution, then there is no prospect of re-dressing the balance. Nevertheless it is perhaps the most favoured semis group, save H.C. copper wire rod and strip.

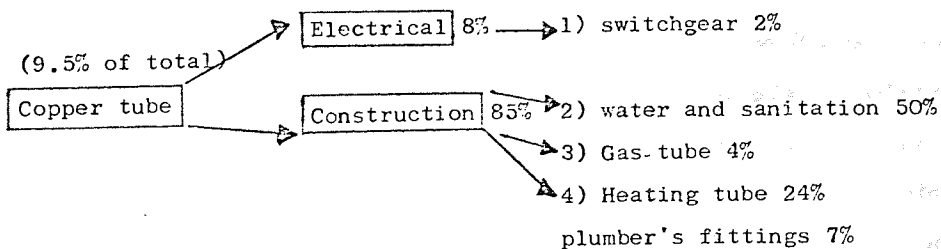
... of around 50% at ...
 ... would be by far the most ...
 ... eventually, despite the ...
 buildings.

(D) Alloy sheet and strip (Represents 14% of total usage)



Once again copper price increases will tend to be dampened in alloy form and so a 40% increase in price might be nearer the mark. Nevertheless it is possible to foresee the potential substitution of lamp caps, half of the wiring accessories, half of the heat exchangers most of the electrical equipment, perhaps 6% of the general engineering sector, and say 7.5% of light engineering. The net result, on a declining market already, would be a drop of at least around the 30% mark, and probably more.

(E) Copper tube (Represents 9.5% of total usage)



Assuming half the electrical usage goes, most of water, sanitation and gas tube, and half the heating tube, then the net result in this sector would be a net reduction of around 65% or so. Thus at a 60% increase in price, copper tubing would be by far the most vulnerable sector to substitution eventually, despite traditional attitudes and its majority use in buildings.

2.23 Immediate Strategic Implication

As far as the techno-economic aspects of substitution pressures are concerned, there is one single major conclusion and that is that although the front-line companies can change to using new materials fairly easily the integrated semis divisions cannot.

2.24 Apart from this, of Delta's total actual output some 78% or so is probably threatened by substitute materials of one sort or another. And of that 78% there must be a reasonably large percentage of products which will eventually be made in another material if the price of copper increases by 60% over the next ten years. Indeed one would expect that substitution would increase gradually until 1978 or 1979, only to accelerate fairly rapidly thereafter.

2.25 The broad implications for the companies at the market-end of the group are that they should be aware of these changes and monitor the variables continually. The actual strategy about when to make the change soon becomes relevant - for market leadership in using alternative materials has its rewards and also its grave risks. The safest point perhaps, is to be in the first 30% but not the first 10% say, (to allow others to iron out the problems).

2.26 At the same time the ideal time to change is also when plant and equipment needs replacement anyway, but it is probably very rare to find the market dictating its demands so conveniently, and thus funds for this modification have to be available.

2.27 But all in all, such a change-over is not too great a problem. As has been suggested already, it is undoubtedly the semis capital equipment which is going to feel the pinch. Already most of the trend lines show a decline and this is especially true of copper and copper alloy sheet and strip. Apart from the short term prospects of economic activity and good demand for these semis, there seems little doubt that they will in the end present serious problems.

2.28 Probably the most immediately vulnerable semis sectors to substitution are indeed copper and copper alloy sheet and strip, which are expected to lose around 50% and 30% respectively, of any potential demand, assuming the copper price rises. One would imagine that overall, the decline would halt

temporarily over the next few years, (leaving aside the effects of the economic cycle) only to accelerate rapidly thereafter.

- 2.29 Copper tube on the other hand, where demand is currently strong, appears to have a fairly sound future until the copper price really does increase (1978 and after) and it is possible that after this point, a very rapid decline in demand will follow. Substitution could take away 65% of the market.
- 2.30 The long term decline in alloy rod however, is expected to be a little less marked, although it will undoubtedly be a steady one. Its end use pattern seems to present a significant element of stability, despite cyclical variations, and one which has been subjected to a lot of rationalisation but not so much actual substitution. However a decline of say 30% of potential demand is expected because of these techno-economic factors.
- 2.31 Finally the most stable sector is expected to be H.C. copper wire rod and strip, which may tend to decline only slightly due to the expected continual demand for good electrical conductors. A net loss of 5-10% of actual present demand is perhaps the best estimate of probable consumption in ten years.
- 2.32 However in a sense all these estimates are irrelevant to the problem. Because of the methods of production and the sensitivity of capital equipment to loading, it doesn't really matter whether the loss is 30% of demand or 60% of present demand. In both cases, and in the over-capacity situation in Europe, there will be very little profit if not a loss. The problem, frankly, is quite insurmountable, but a more detailed analysis will be discussed later.
- 2.33 Finally the last point is this. Delta could make use of specific areas where copper usage was a necessity, and broadly these are concerned with electrical and thermal conductivity, plus certain mechanical engineering applications such as pneumatics and hydraulics. If copper is to become a "precision" metal - only used in specific applications, then researching such possible uses might provide potential. However it is generally felt that metallurgically, there is not much chance of the development of a new family of alloys which would "save the day" so to speak, and thus effort should be given to application if the group is going to continue to use its expertise in copper, in the long term.

MARKET DEMANDMarket Demand for Semi-Manufacturers

- 3.1 It has already been speculated that it is the Semis-Divisions which are primarily going to suffer from the increase in copper price and the subsequent accelerating substitution after 1978. However, quite apart from that, an assessment of the underlying trends can be made by examining the demand for Semis against economic growth in the U.K.
- 3.2 Figure (4) is a plot of growth cycles of GDP, and the demand for the major semis groups, against time. It is clear just how well synchronised these cycles in fact are, and the correlation is that between 80% and 85% of the fluctuation in semis-demand is directly attributable to fluctuations in GDP growth. It is also apparent, that the average growth of the semis market is definitely negative even though not terribly marked at present.
- 3.3 The brass-rod market has declined over the last decade at an average of -0.6% p.a.; that of all copper and copper alloy sheet and strip has declined at -1.19% p.a.; that of copper wire has been steady and that of copper tube has also declined at -0.456% p.a. By far the most serious of all these is obviously the sheet and strip group, which has averaged a decline of nearly 1.2% p.a. over ten years, but today this decline is thought soon to reach an average of nearly 5.0% p.a. over the cycle.
- 3.4 A somewhat clearer picture emerges from figure (6) which is an actual plot of change in semis demand (production) and growth in GDP. Although the scatter of points is apparent (accounted for by the 15% to 20% of fluctuations due to things other than GDP growth) a simple linear relationship can be established. Although the relationship is probably in fact slightly curved, it suffices for our crude and simple long-term estimates, to accept it as linear.

3.5 Firstly brass-rod appears to have a static demand point when growth in GDP = 2.48%. This is an interesting statistic since over the last decade, the average growth rate for GDP in this country has in fact been about 2.6% p.a. (NIESR estimate) and thus one would have expected an average positive growth for brass-rod when it has in fact been slightly negative. Perhaps we may assume that the other factors upon which rod demand depends, may have tended to put a slightly more negative bias on the relationship - in the true curve form. Nevertheless a broad predictor equation for future rod demand can be set out and is

$$\% \Delta \text{ Rod} = [(8.4 \times \text{GDP}) - 22.0] - 0.6 \times (t - 66)$$

on that the percentage change in demand for rod is equal to 8.4 times GDP growth, minus 22.0 and also minus 0.6 times the number of years since 1966.

3.6 In the case of copper and copper alloy sheet and strip however, the static growth point is equal to a GDP growth rate of 3.02% p.a. and thus the decline is quite warranted when seen alongside an average GDP growth of only 2.6% for the last decade. In a similar fashion the predictor equation is:-

$$\% \Delta \text{ Sheet + Strip} = [(7.35 \times \text{GDP}) - 22.4] - 1.19 \times (t - 66)$$

It is thus clear that not only is there a marked decline which will tend to accelerate, but also that a much higher GDP growth rate is needed to sustain any positive growth in this semis group.

3.7 Finally the picture for all copper and copper alloy semi manufacturers (excluding castings) is fairly similar. The static growth point is 2.64% GDP - thus the marginal decline over the decade is reasonable, and the predictor equation is:-

$$\% \Delta \text{ in all semis} = [(6.25 \times \text{GDP}) - 16.5] - 0.535 \times (t - 66)$$

And from these crude relationships, the probable future trends in demand can be tentatively identified, for the proximate period of the next economic cycle and for the probable trend lines.

3.8 Firstly a word must be said about the apparent decline over the last decade. It must be remembered that this was a period of relatively slow growth because of the recurring balance of payments crises and "stop-go" budgets. The average growth rate for this country 1950 - 1968 was in fact 2.87% p.a. against the 2.6% average for 1961 - 1971. Thus demand may have been unusually slack and the decline may not be quite so marked if 2.87% was once again resurrected as a future long term trend. Indeed on that basis only the sheet and strip group would continue to suffer significantly under the present conditions. At the same time the tendency to decline is still certainly there.

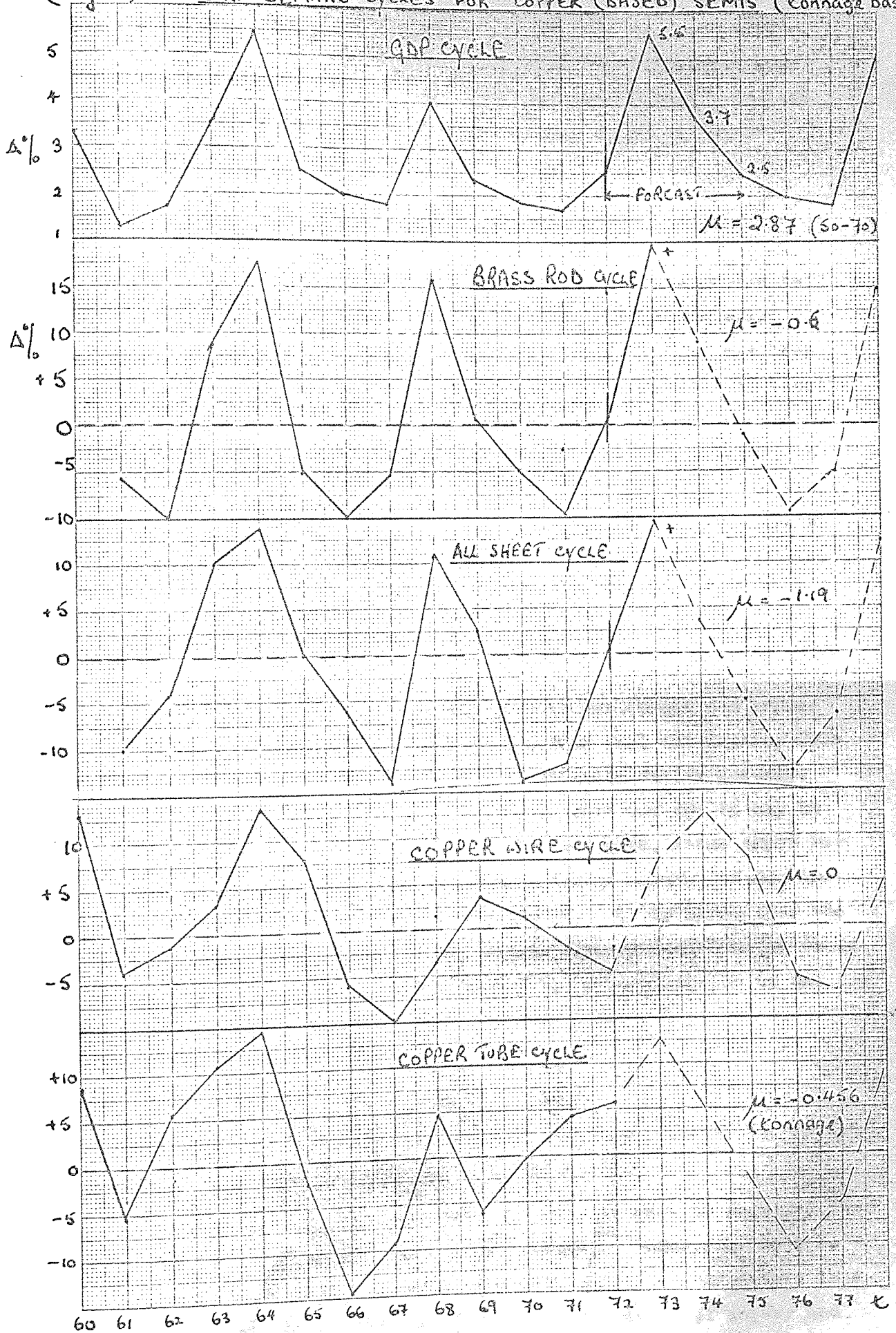
3.9 Figure (6) is a plot of actual and forecast U.K. Market demand for these groups, based on the predictor equation for the next economic cycle (to 1977) and is shown in schematic form thereafter about the probable trend line. The prospects for GDP growth are good for 1973 (5.5%) and for 1974 (3.7%). These estimates are not the official figures or NIESR assessments but have attempted to take into account the problem of no capacity slack in the economy by early 1974 (so that growth must then equal productivity) and the fact that the enormous expected balance of payments deficit due at the end of 1973 will finally pressure the Chancellor into a mini-budget later this year, through which restraints on growth will be brought into effect. If the 3.7% growth projected for 1974 looks a little pessimistic beside alternative published projections, then let us just say that we are being on the "safe-side". Since the U.K. average growth rate over the last twenty years has been only around 2.9% p.a. it really does seem difficult to imagine a 6% and 5% growth for 1973 and 1974 respectively (giving an average for the cycle of 3.5%).

3.10 Thus the projections have been made on the following GDP growth assumptions:-

	1972	1973	1974	1975	1976	
GDP	2.6%	5.5%	3.7%	2.5%	1.6%	(average = 3.18%)

Thereafter, only the probable peaks and troughs of future cycles have been outlined, and estimates were made on a pattern of growth similar to the above.

(Fig 4) U.K. DEMAND CYCLES FOR COPPER (BASED) SEMIS (Konnage basis)



3.11 Taking total semis first, it can be seen that the overall trend of decline will be soon well under way, and this does not explicitly take any account of the expected price rise (and subsequent substitution) of copper after 1978. Thus the medium term projected demand tonnages for all semis except castings is as follows:-

	1973	1974	1975	1976
,000 tons	770	788	706	618

3.12 As far as brass-rod is concerned, the decline is not expected to be quite so rapid, mostly because of a lower zero-growth point. And it must be remembered that since 1966, growth of GDP has been abnormally low, especially when one examines the latest very lengthy slump. However, once again the expected post-1978 decline due to copper prices has not been explicitly included and thus whilst the trend to 1977 seems reasonable, we may be a little optimistic about the trend thereafter. At any rate the projections to 1976 are as follows:-

	1973	1974	1975	1976
,000 tons	167	174	163	140

3.13 Finally we come to the very unhappy picture for copper and copper alloy sheet strip and plate. It is apparent that the decline here is at a mature stage and will tend to accelerate fairly quickly. The zero growth point of over 3% GDP bears this out and it may be true to say that it simply seems a little too late, since there may be only two more years of any reasonable demand before the decline is so rapid that drastic action is required. It is hoped that the picture is not too pessimistic, but at any rate sheet and strip would appear to be the most vulnerable sector to rationalisation of use and substitution, after 1978.

	1973	1974	1975	1976
,000 tons	151	144	123	96

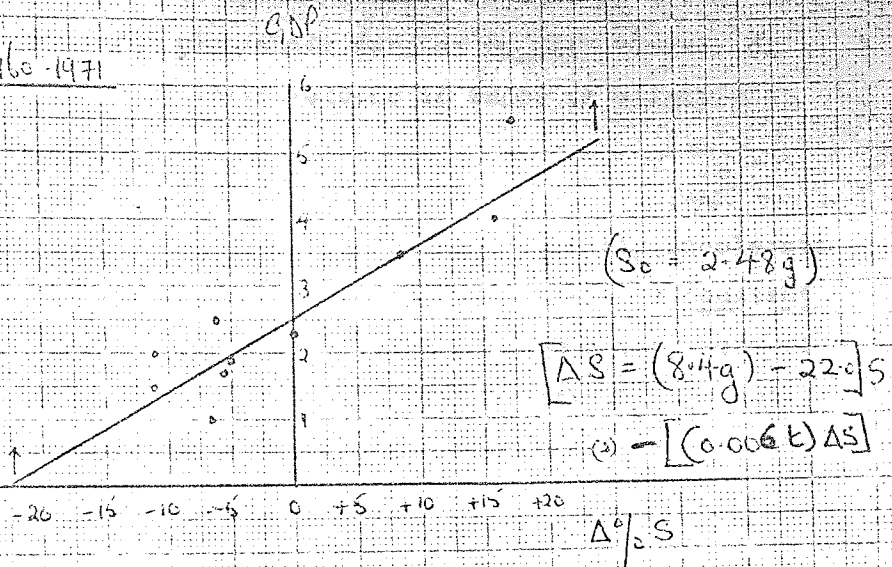
3.14 Immediate strategic implications

To put the semis position into full context, it must be recalled that the relative profitability of capital intensive industries such as these, depends to a great extent upon throughput. Indeed this is a vulnerable position since semis demand is very cyclical anyway and at the same time these Divisions are sensitive (profitability) to even small fluctuations in throughput.

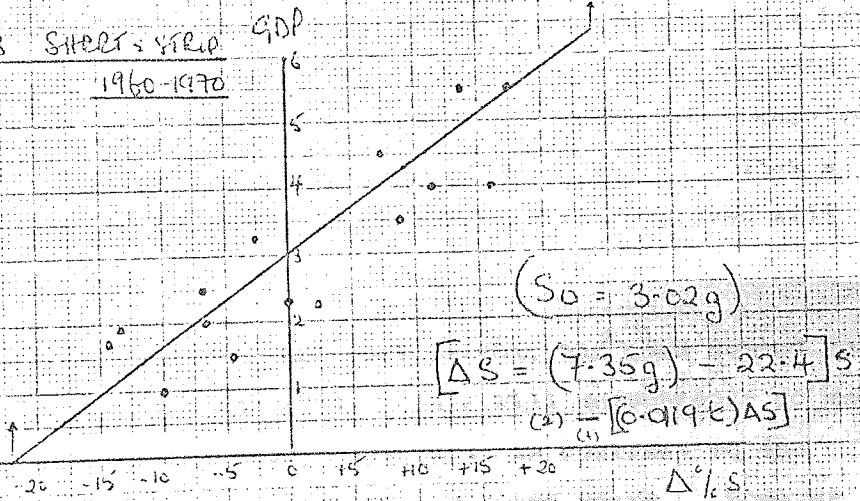
(Fig 5)

RELATIONSHIP BETWEEN SEMIS OUTPUT AND GDP

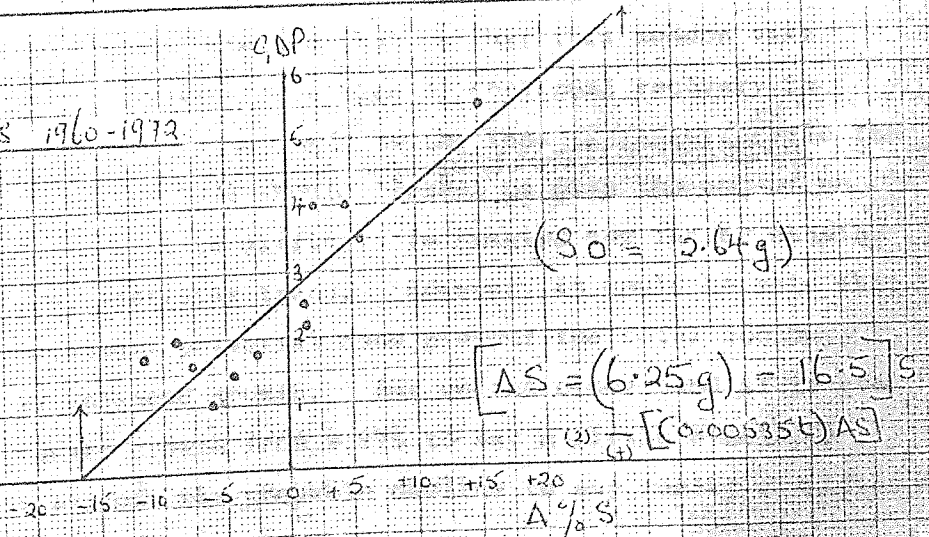
BRASS ROD 1960-1971



COPPER + BRASS SHEETS YIELD 1960-1970

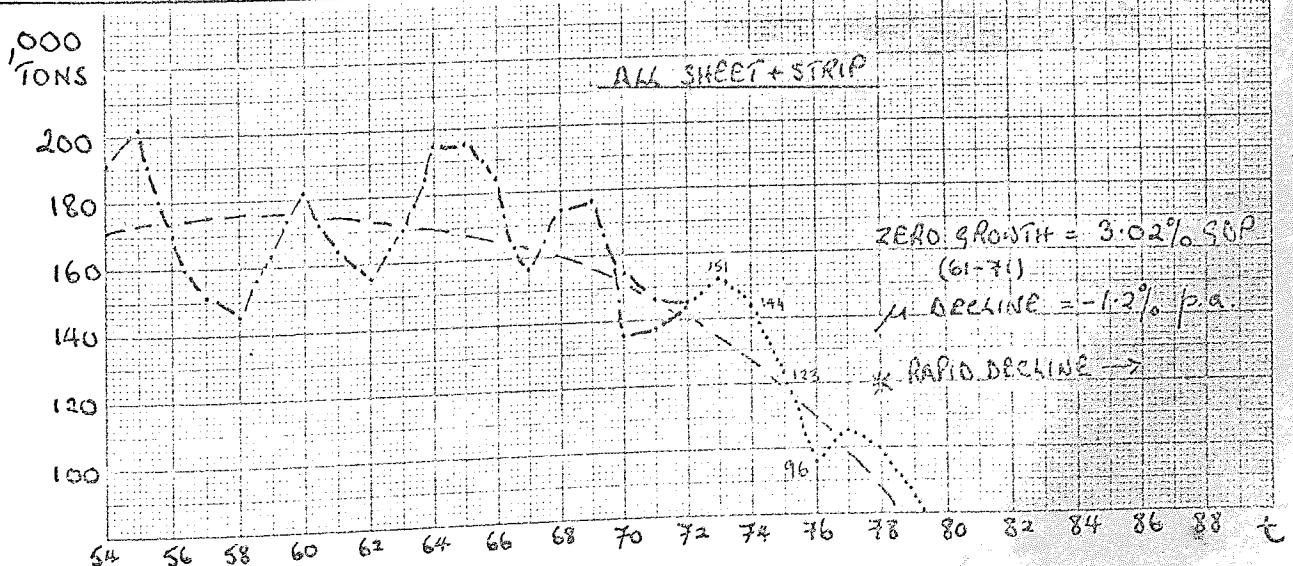
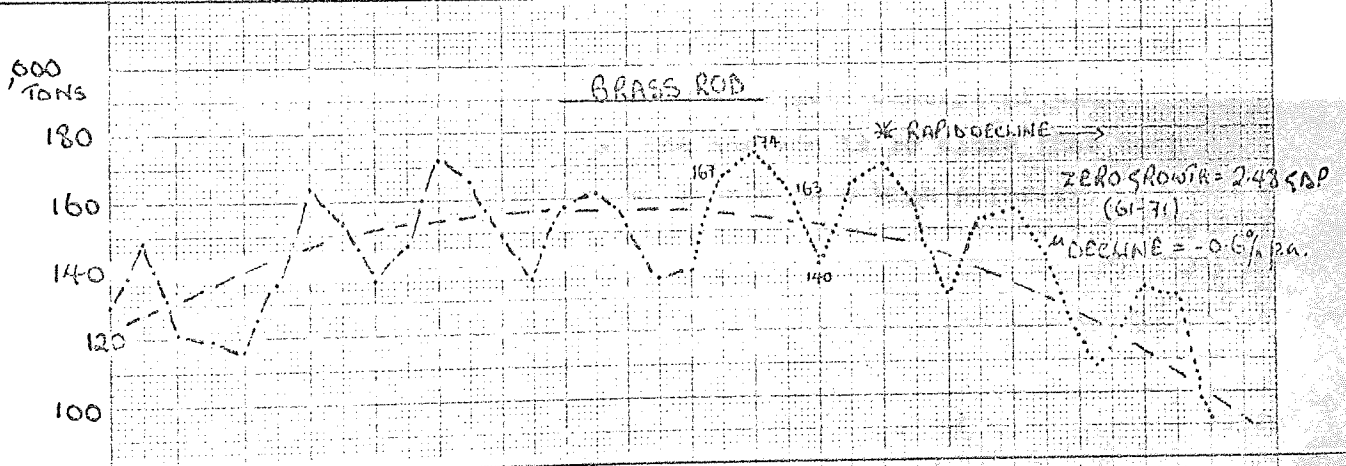
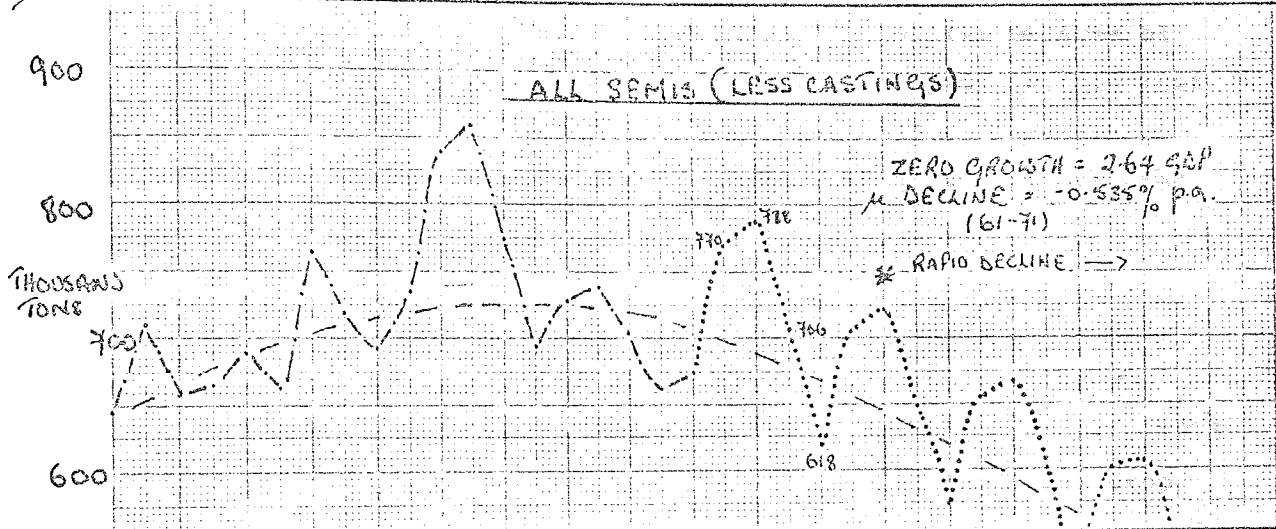
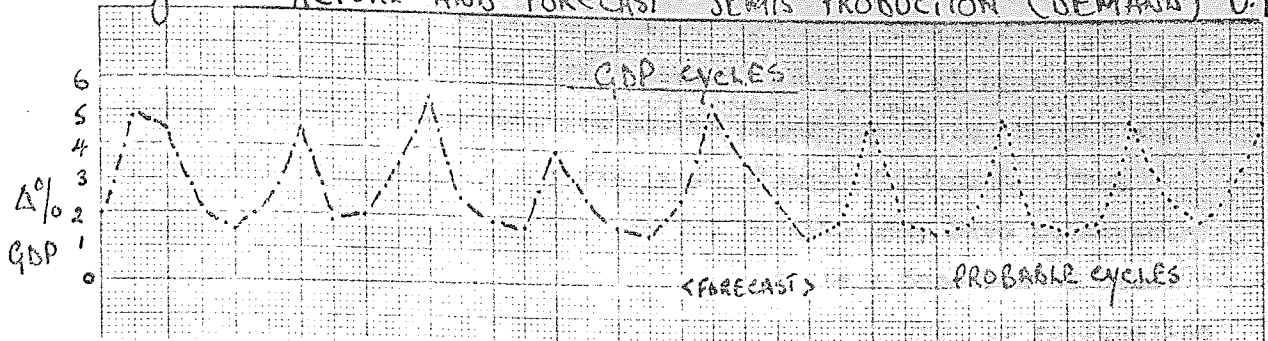


ALL SEMIS 1960-1972



- 3.15 On top of this, there is an over-capacity situation within the industry, both in the U.K. and in Europe, so that at a time of slump, producers tend to fight with their margins to get orders; or in other words they drop their returns in order to maintain a reasonable throughput.
- 3.16 Thus the trend of dropping demand is going to greatly accelerate the problem, since there may come a time when there is constant over-capacity even at peak activity and in such a case many of the privately owned Continental producers who have historically demanded low returns, will have the advantage.
- 3.17 In the case of a public Group like Delta however, the emphasis has to be placed on the opportunity cost factor of capital tied up where it is not producing the desired threshold of return. Today Delta has around £30m employed by semis producers and another £12m employed in secondary semis (stampings and turned parts) which are themselves of course intricately tied up in the integrated process. Thus a total of about £42m or 36% of Delta's total capital employed will probably be affected by the foreseen long-term decline.
- 3.18 Immediate prospects, however, are very bright, and good demand for most semis is expected for 1973 and 1974. This will undoubtedly do much for the profitability of this sector, especially in contrast to the abnormally slack demand of the last two or three years. However, there is one great danger here and that is that this sudden vast improvement must not be taken as a sign of continual recovery in demand. In perspective it may well be the last reasonable cycle for some sectors. The year 1976 should present us with the end of an era in some cases, for it is difficult to imagine any factor causing a reversion of the underlying trend. However, it could be said that the North Sea investment potential does present the total economy with prospects of enhanced growth. But on the other hand if it even increases the average growth from 2.87% to say a little over 3.0% then it will not redress the probable decline to any really significant degree.

Fig (6) ACTUAL AND FORECAST SEMIS PRODUCTION (DEMAND) U.K.



3.19 As far as the capital employed in stampings and turned parts is concerned, the decline in rod should logically approximate to the decline in demand for their products too. They have, however, the advantage in that they are not so sensitive to throughput and may be able to adapt fairly easily to changes in demand. Thus all these production processes suffer because they have no market-place, and because demand for their output is a function of other cost conscious manufacturers who continually attempt to rationalise and substitute. Turned parts themselves also suffer because of severe competition and an "over-capacity" so to speak, within that industry. Once again declining demand will tend to accentuate this, but over the next two years at least the market is expected to be strong and buoyant.

3.20 Finally one must conclude that the outlook for copper and copper alloy sheet and strip really is very serious. And even if we are optimistic and say that relatively low copper prices until 1978 will tend to hold-off the decline to some extent, the final drop is expected to be severe. A thorough analysis of the patterns of trade and capital employed would need to be undertaken before one considers whether to abort or attempt to gain control of user industries, but it is felt that the horizon is so close that such an examination in a Group context should be a high priority.

IV Construction Industry - Market Potential

4.1 The construction industry supplies Delta with the biggest single market outlet for its products. In 1972, approximately 46% of total Delta output went into buildings of one sort or another and the rough breakdown was as follows:-

Electrical equipment	15.0%
Structural materials	1.0%
Builders' hardware	1.0%
Water services	25.0%
Gas services	2.0%
Central heating equipment	2.0%
	<hr/>
	46.0%
	<hr/>

4.2 Of this market sector, the following categories consumed these products.

New Dwellings	36%
Improvement grants	32%
Replacement and addition	28%
Other new buildings	4%
	<hr/>
	100%
	<hr/>

The percentages as outlined are crude estimates, but give a picture of the true situation. It is immediately clear that nearly two thirds of the output is consumed by existing buildings and only slightly more than one third by new buildings. However as we shall see later, the proportion going into new buildings may well tend to rise in the long term.

4.3 Firstly let us look at the probable long term needs for new dwelling construction. Using a simple model which takes into account growth in population, net migration, demolition rates, vacancy rates, and average household size, a projection of the long term needs for the U.K. can be estimated. And using "medium" assumptions for the model, the result is that an average rate of completions of around 360,000 per annum is expected for the period 1973-1980, declining to an annual rate of 330,000 per annum for the period 1980-1985. This simply means that:-

- (a) the construction rates are expected on average to decline slowly.
- (b) that this part of the market is of the "steady-state" type, showing expansion and contraction around a relatively stable mean, through each domestic economic cycle.

4.4 Figure (7) is a plot of the actual and forecast completions rate, and of the cycle of activity. It can be seen that the very high level of activity during the years 1966-1969 is not likely to be repeated, and the overall trend line indicates the expected gradual decline. As far as the proximate period is concerned the following rates are forecast as probable, assuming the economic cycles occur as shown above:-

1972	1973	1974	1975	1976	1977	1978	1979	(Number of thousands)
324	356	367	348	348	372	372	342	

4.5 A great deal of assumptions have to be made here about such things as demolition programmes and "renovation rather than replacement" decisions. However the majority of other comparative studies (NEDO, Greenwell, Holmans, Richardson and Vipond, Buchanan and Partners, NIESR ~~stone~~) tend to confirm these figures, and the average of all their estimates comes to around the 350,000 per annum mark for the period 1970-1980.

4.6 As far as total new construction (non-dwellings) is concerned, this is expected to increase steadily over the years, but is at the moment relatively unimportant to Delta, consuming only about 4% of group output. Perhaps this sector in fact, would be worth emphasising since the rate of investment (especially in private non-dwelling construction) is expected to be fairly strong over the rest of the decade. (NEDO forecast).

4.7 The difference in trends between public and private housing is also probably a salient one for Delta. Local Authorities tend to be more cost conscious, and construction often takes place along "production-line" methods. In such cases the differing costs between products in competing materials (plastic taps for example) are easily perceivable and margins often find themselves under pressure. In recent years, the present Government has reversed Labour's trend and placed a great deal more emphasis on the private sector. However should the Labour party regain office at the next General Election (circa 1974) then the emphasis will probably once again be placed on public housing, to Delta's disadvantage.

4.8 As pointed out before, some of Delta's output in this sector is dependent on the Improvement Grant scheme. The rate of award of these grants has grown very quickly indeed and is expected to do so for some time. Figure (8) contains a plot of the rate of awards in both index number form and value (£m).

The value forecasts are based on the Government White Paper on expenditure and show an expected rapid increase to 1974 and a steady rate thereafter until 1977. For Delta this means that the immediate future here is very rosy indeed, for the value of the awards is expected to nearly double in the next two years, and this component of demand will be strong.

4.9 However a closer examination points to a word of warning. This area is in a sense an artificial market for it depends to a great extent on political factors and as such it must be regarded as vulnerable. But even in physical terms the number of dwellings lacking the basic amenities which Delta can supply will soon tend to decrease, and a rapid phase of expansion immediately followed by a "drying-up" may leave production and marketing facilities in difficulties.

4.10 Examples of this pattern can be taken from a Government analysis undertaken in 1971. It was found that of the total U.K. dwelling stock 8% was without a fixed bath and 12% without an internal w.c. However five years previously these same categories had contained 13% and 19% respectively, thus at that steady rate, there would be no further improvements necessary after 1977/78. At the same time it still points to the fact that between 1.5m and 2.5m dwellings in 1971 were potential consumer's of Delta's building products. However at the rate of increase of grant awards outlined in White Paper, the scheme could run out of customers by 1975/76, (as far as basic amenities are concerned) if the high estimate of 2.5m dwellings is assumed. If the lower 1.5m figure is used however then the market potential here would tend to run out by 1974.

4.11 As far as other new building in the public sector is concerned the White Paper shows only a fairly steady rate of investment.

	72	73	74	75	76	77
Educational £m.	523	575	554	526	526	534
Health etc £m.	251	306	316	309	312	305

Table I

4.12 In an European context, it must first be recalled that consumption of copper in building products is apparently significantly lower than that of the U.K. In fact this country has consumed about two and a half times as much copper per capita in buildings as the EEC and whereas an average British house contains about 112lbs of copper, a French apartment for example contains less than one fifth of that amount. This statistic however excludes wiring cables etc, but nevertheless Delta's building products as they stand (based mostly on copper and copper alloys) may simply not be easily acceptable, or indeed competitive in European markets.

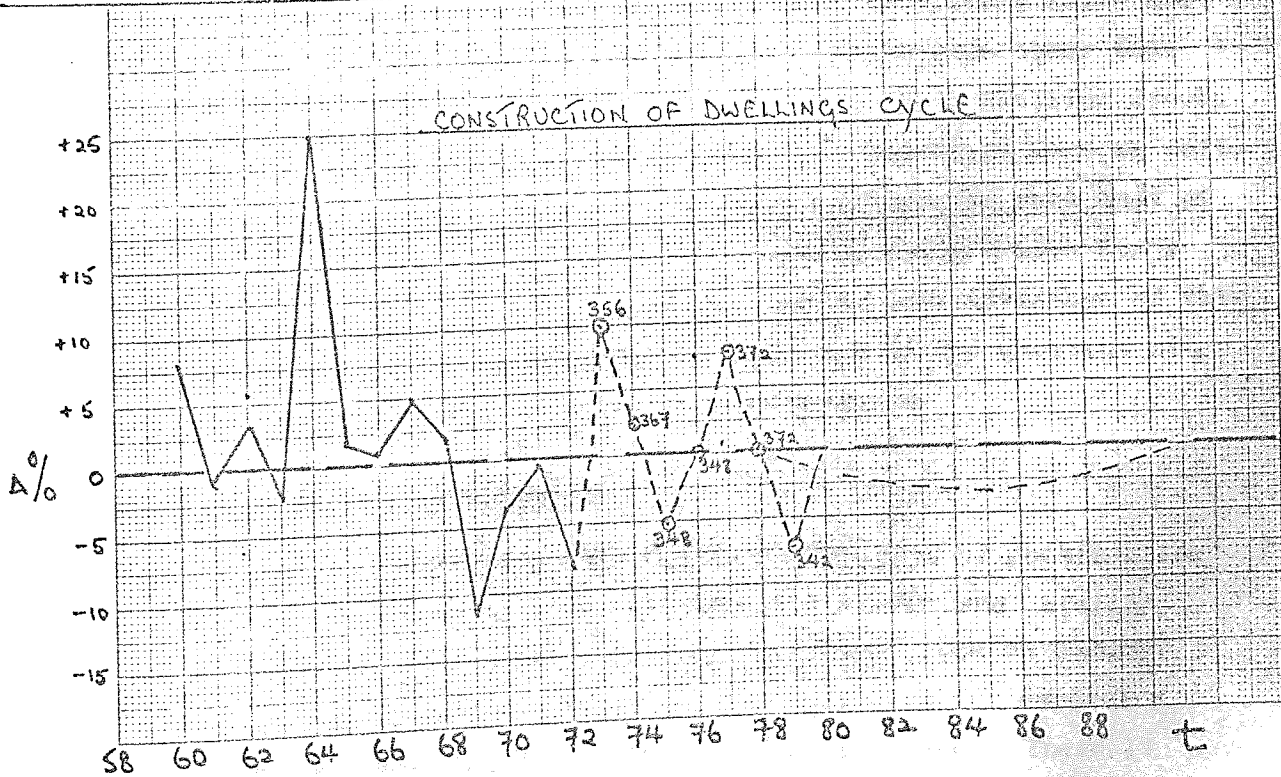
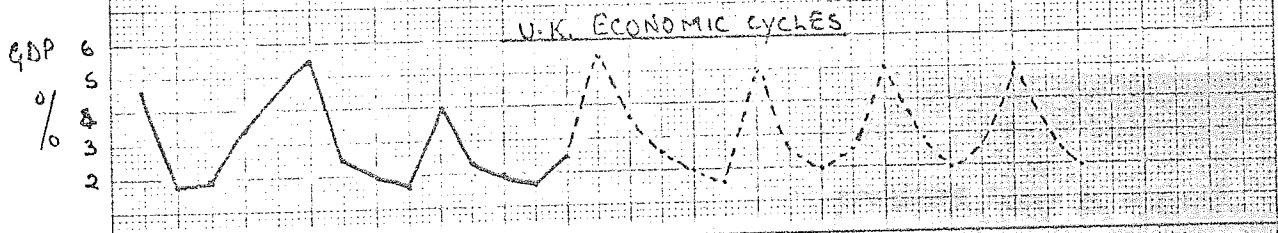
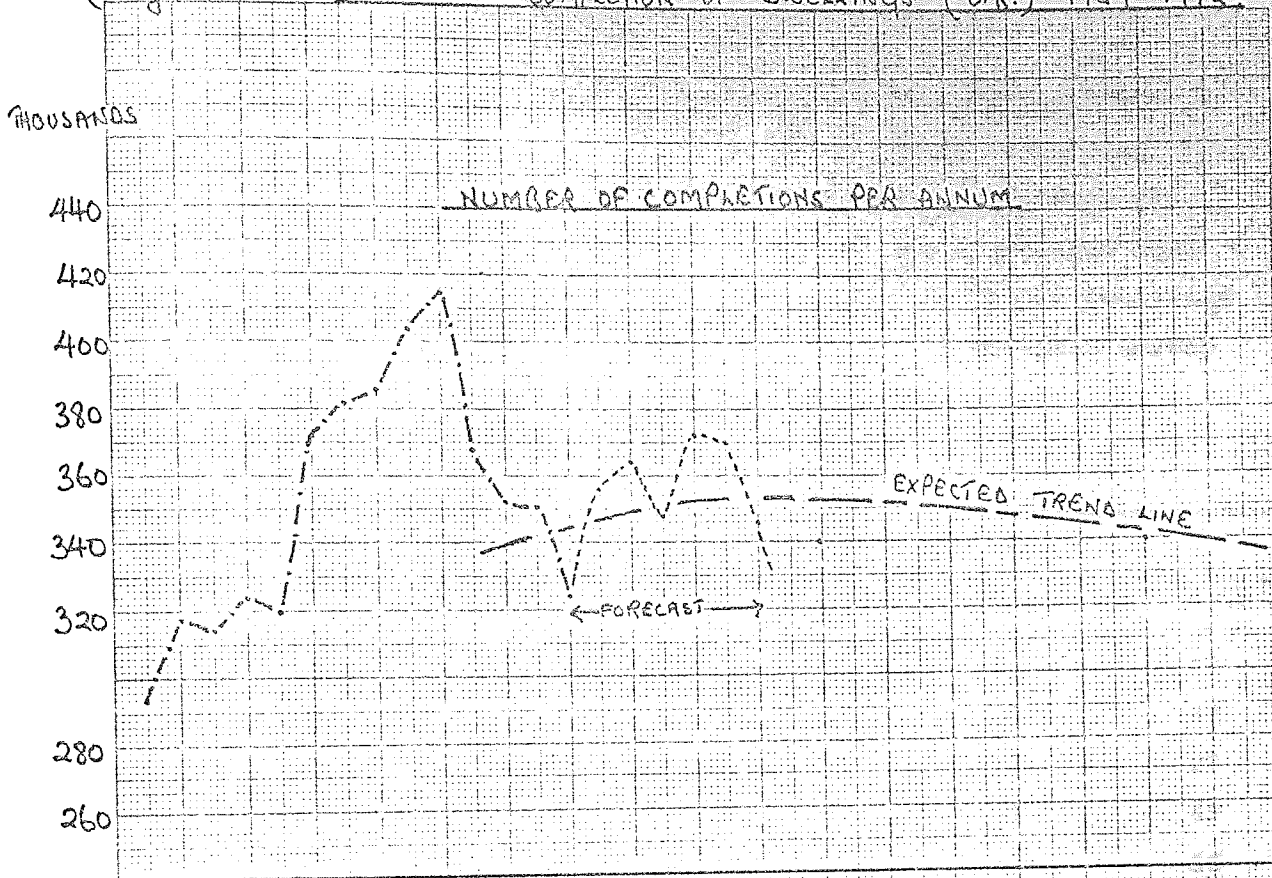
4.13 As far as the rate of dwellings construction (see Fig (9)) is concerned France appears to have the highest at around 575,000 pa but this rate is expected to fall to around the 400,00 p.a. mark by the end of this decade. Germany shows similar trends, but at the moment constructs about 50,000 p.a. fewer and Italy has an erratic record, averaging only around 275,000 p.a.

4.14 As regards types of dwelling, the following table shows that the majority of continental countries have a much higher proportion of flats, and this is reflected in the statistics showing average dwelling size. There is also a definite trend in all countries towards smaller dwellings, and although many of Delta's present unit products will be relatively unaffected by this (e.g. taps, water cylinders fittings, valves, sockets etc) a certain percentage of output will certainly tend to suffer here (e.g. wiring cable, copper tube etc.)

"Sizes of Dwellings"		
Country	Flats %	Houses %
U.K.	13	87
Germany	68	32
France	38	62
Italy	56	44
Belgium	21	79
Netherlands	30	70

Table II

(Fig 7) TRENDS IN COMPLETION OF DWELLINGS (U.K.) 1959-1973



4.15 Finally we can look at the possible position of the addition and replacement market, which consumes about 28% of Delta's building products output. The following table outlines the percentages of dwellings stock built before 1901 and 1939 - on the assumption that the potential is mainly a function of the proportion of old dwellings in the stock. Also shown is the result of a recent European survey on the proportions of stock without basic amenities.

"Age of stock and amenities"

	% stock built		% stock without		
	Pre 1901	Pre 1939	Cold water	Hot water	Bath
Coventry					
U.K.	25	60	1	9	12
France	43	60	5	34	44
Germany	20	48	4	17	23
Italy	34	56	13	67	49
Belgium	16	50	15	58	56
Netherlands	9	45	1	11	22

Table III

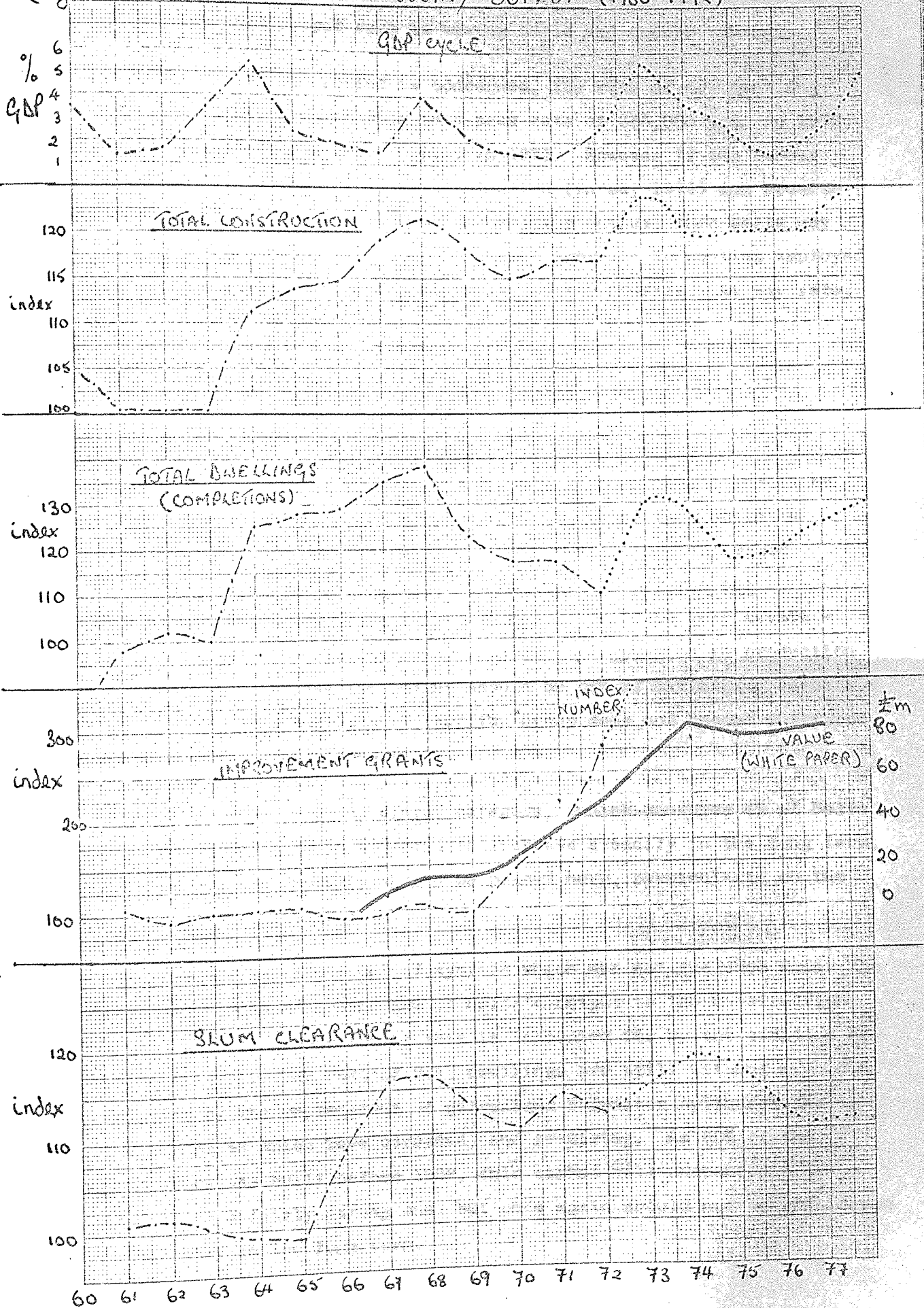
4.16 It seems clear that the domestic market will probably tend to support a good demand for the addition and replacement of systems which are excluded from the improvement grant scheme. It is also clear that both France and Italy have large proportions of their dwelling stocks which are of similar age, and thus should have potential here as well. But as far as basic amenities are concerned it appears that most of the other European countries offer very significant promises for a market and Delta may be in a strong position to take advantage of this, assuming it accepts a family pragmatic approach to the question of materials usage, and National domestic preferences.

4.17 Immediate Strategic Implications

Basically, the probable long term trends in the rate of construction of dwellings will tend to fluctuate around a stable and static mean. For Delta, this means that "new dwellings", (which consume 36% of building products), should not be considered for expansion but rather for consolidation of the existing position. There is

(Fig 8)

CONSTRUCTION INDUSTRY OUTPUT (1960-1972)

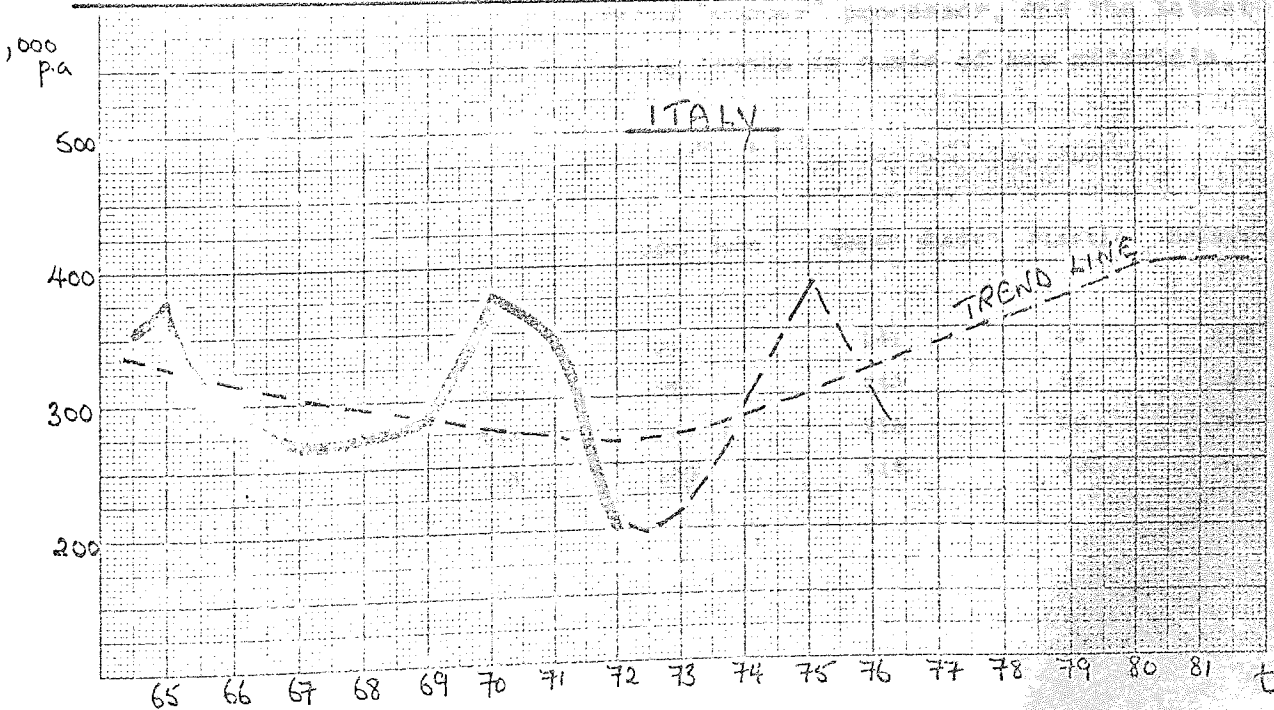
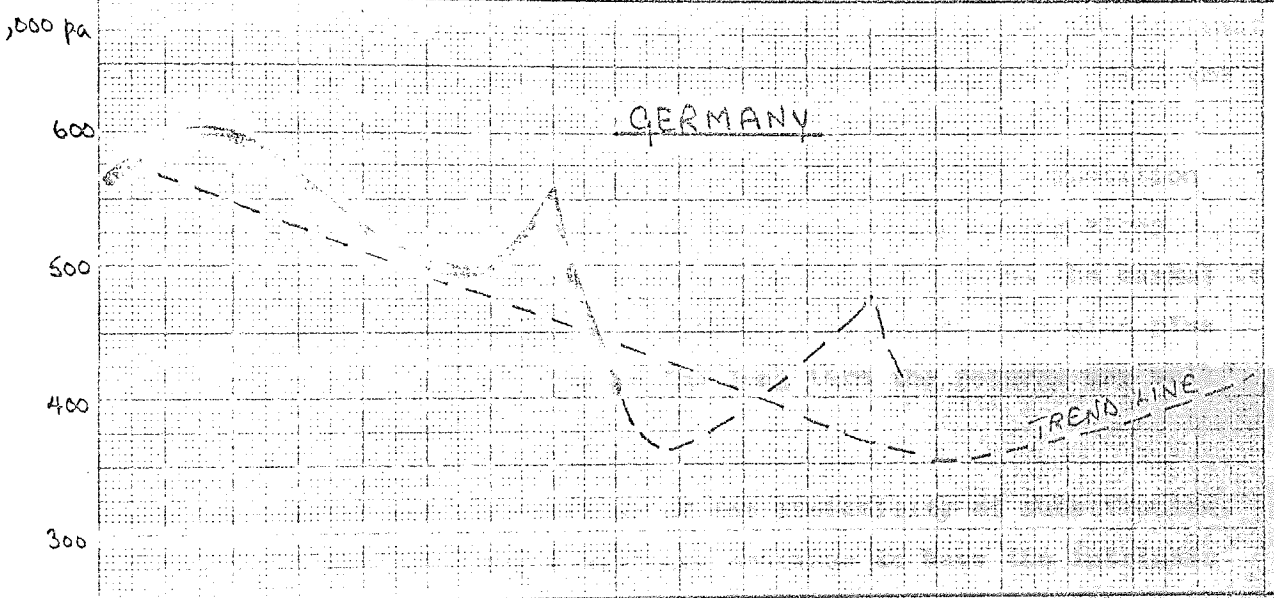
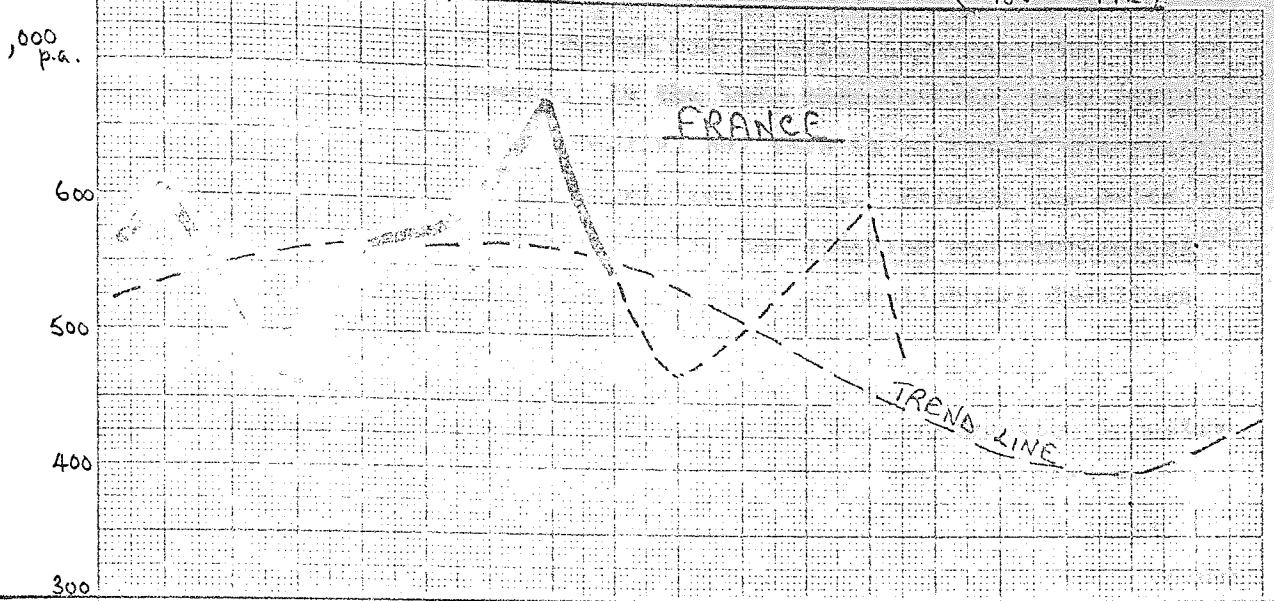


a trend towards smaller dwellings and this will undoubtedly affect the demand for non-unit output such as wiring cable and copper tubing.

- 4.18 As far as the proximate period is concerned, the rate of new dwelling construction is expected to rise to a peak rate of 356,000 p.a. in 1973, only then to fall around 348,000 p.a. in 1975. However if the Labour Party assume office the next general election (in say 1974) and reverse the present ratio of private to public dwelling output, then Delta may tend to suffer because of the more stringent approach to costing employed by the "production-line" approach to public sector housing. At any rate, margins will tend to experience some pressure.
- 4.19 Improvement grants on the other hand, will probably continue to be awarded regardless of Government party, and if the expenditure does increase as proposed then the next two years will show a strong increase in demand. However, this market is extremely vulnerable and should be regarded with caution. A good proportion of Delta's building products are consumed here and this figure may well have increased by 1974. But on present trends, the scheme may rapidly run out by 1976 or so and the subsequent drop in demand could be very severe - especially if Delta had followed the increase by expansion in production facilities. In this case the policy should be one of maximising advantage but at the same time making sure that the Group does not become entrapped by apparently favourable conditions.
- 4.20 As far as the "other new buildings" category, (which consumes 4% of Delta building products) this is expected to increase steadily in the long term, and perhaps greater emphasis should be placed here, particularly on the private non-dwelling sector
- 4.21 The "Replacement and addition" of systems which are not included under the grant scheme, consumes around 28% of Delta's output to the construction industry. A great proportion of this is accounted for by the addition of central heating systems (64% of U.K. dwellings are still without any C.H. system), and by the replacement of galvanised hot-water cylinders and steel water pipes which have corroded, and re-wiring. As 60% of the domestic stock was built before 1939, this market will undoubtedly continue to be a fairly strong one, but once again should not be considered as expansionary in the long term.

Fig(9)

DWELLINGS CONSTRUCTION - EUROPE (1965 - 1972)



4.22 In Europe the picture is that whilst the level of activity is apparently high in most countries, Delta's existing building product-mix may simply not have enough empathy with present continental usage-patterns, and as such requires some development. In the long term however, only Italy appears to have expansionary potential but this is in itself uncertain since there are some obvious economic restraints. Perhaps for Delta by far the most promising approach is in the addition and replacement market, as it would appear that vast numbers of continental dwellings are in need of basic amenities.

4.23 Broadly speaking, the potential for output to the construction industry seems to be profitable, but a careful analysis of the situation is required before embarking along on expansionary line. In the first place the overall market is simply a steady and linear one, where volume changes are expected to be slight. On the other hand it has the distinct advantage of sustainable margins mostly because the component costs are almost irrelevant in the context of an expensive end product. However there is also a significant trend towards greater competition as several large public companies have been apparently moving along similar lines. This is unfortunate since in physical terms the market is not likely to expand enough to cope with both sustainable margins plus increasing competition, and thus in the long term the returns may well be forced down a little.

4.24 This is especially relevant because of the probability of substitution. When using new materials Delta will not continue to have the intrinsic advantage of being a fully integrated "copper" processor, and the latest statistical index shows the following trends in costs of key materials.

1963 = 100

Year	Cost of total construction	Aluminium fittings	Copper tube	Copper sheet	Plastic	Brassware
1969	123	135	211	241	94	169
1970	131	143	221	243	96	191
1971	142	149	191	215	99	194
1972	155	155	190	214	105	203

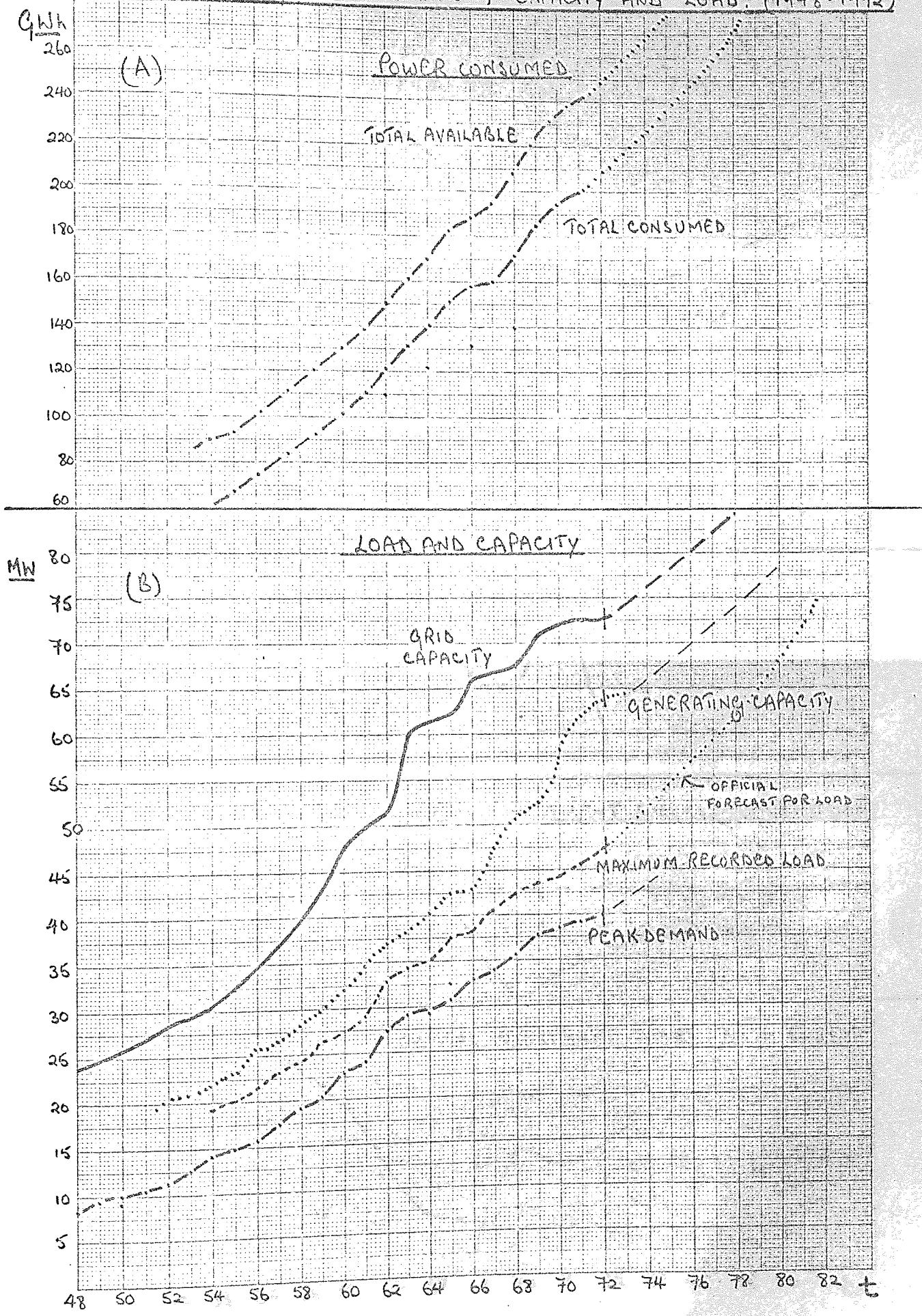
It is immediately apparent just how much copper and copper based products have risen in price, when compared to plastic or aluminium and sooner or later, a very rapid phase of substitution will occur. (probably around 1978)

- 4.25 Perhaps the best strategy is to use the construction industry market as an "anchor" or stable base since it is unlikely to either show rapid decline or dynamism in the long term. This would thus enable the group, to concentrate effort on other more diverse paths of development, where the long term returns may have greater potential.
- 4.26 Alternatively, a phase of very rapid and broad development could take place in building products, which would tend to secure good margins for the future.

V Cables and Electricals - Market Potential

- 5.1 Nearly 40% of Delta's output can be categorised as "electrical engineering" and of this some 15% is consumed by the construction industry - (in the form of domestic and industrial cable, switchgear, fusegear, plugs, sockets, and various accessories).
- 5.2 The demand potential for electricals and cables in construction can be split into several segments. The first segment is that consumed by new dwellings; the second is that consumed by existing dwellings and the third is that consumed by other buildings. Thus a significant component of total demand is accounted for by the rate of fixed investment in buildings, plus improvement grants for dwellings and other replacement expenditure.
- 5.3 The probable trends in demand for this proportion have already been outlined in a previous section, and thus to some extent the conclusions reached there also apply in this case. However, of the remaining 25% or so 3.5% is consumed by the transport industries, and another 7.0% by communication industries. Thus we end up with only about 14.5% of total output where the demand is a direct function of the consumption of electricity. However, in a broader context one may well say that in the long-term, up to 30% or so has, in fact, a demand potential which is related to electricity consumption in some way.
- 5.4 To examine the proportion of output consumed by the public sector first, figure (10) contains plots of consumption, grid capacity and peak demand of electricity. Around 7.0% of Delta's output is in the form of relatively low voltage power and distribution cables and accessories which are marketed to the Area Boards. It is true to say that both the Electricity Council and the CEGB have in recent years over-estimated the demand for electricity, and today we have a situation where both generating capacity and grid capacity are well in excess of current demand. (Latest estimates put maximum recorded load at only 65% of grid capacity and 73% of generating capacity).

(Fig 10) ELECTRICITY - CONSUMPTION, CAPACITY AND LOAD. (1948-1972)



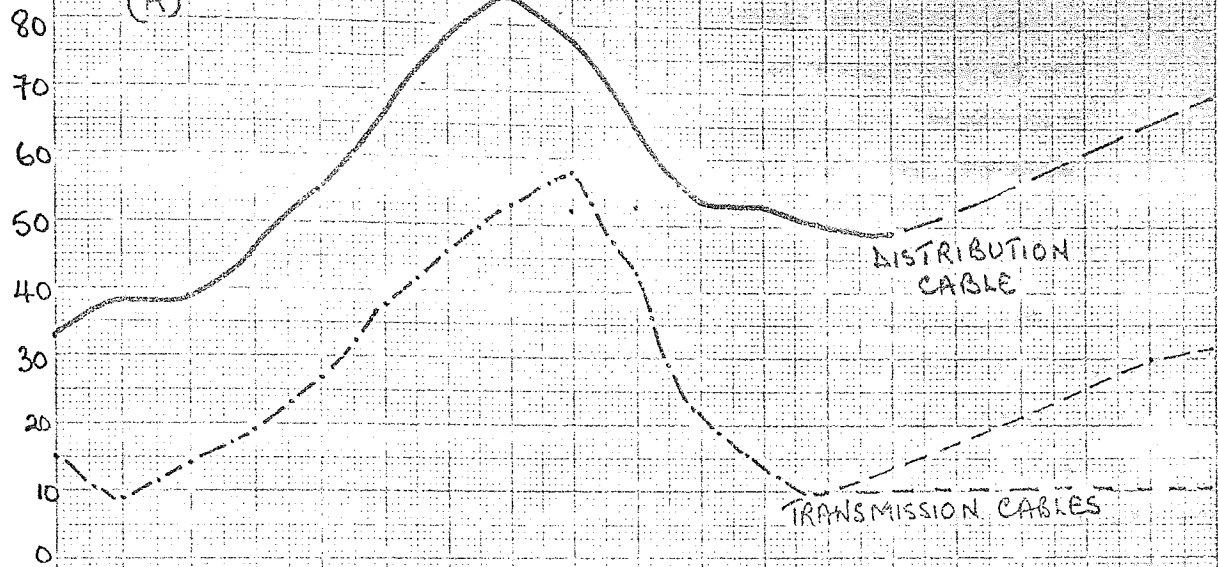
(Fig 11)

CAPITAL EXPENDITURE + CYCLES (1960-1972)

£m

CAPITAL EXPENDITURE ON CABLE (PUBLIC SECTOR)

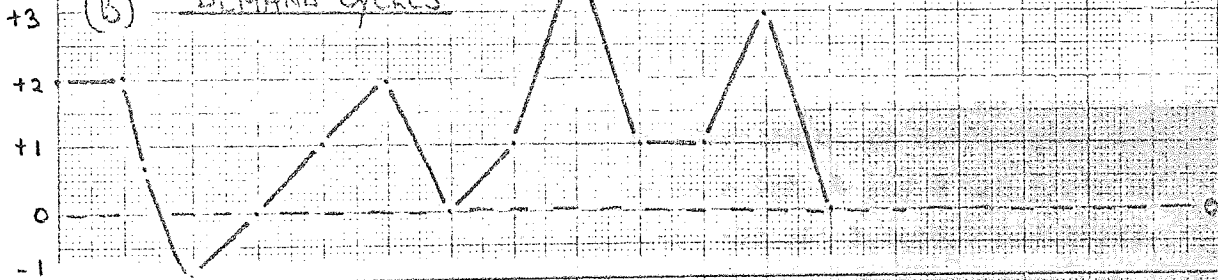
(A)



Δ%

(B)

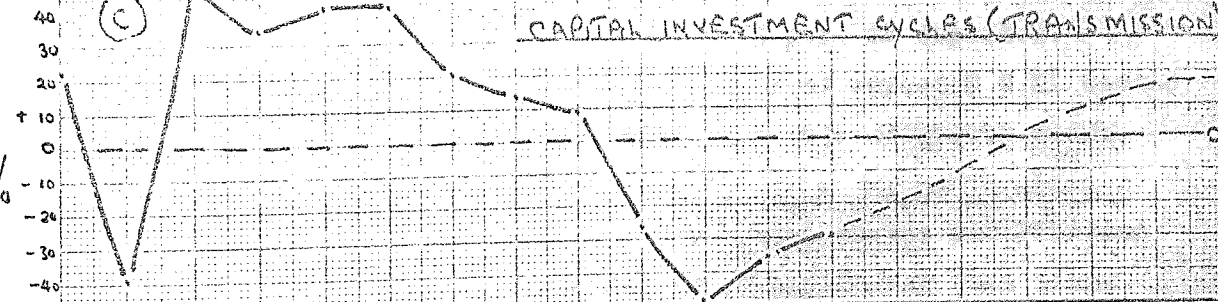
DEMAND CYCLES



Δ%

(C)

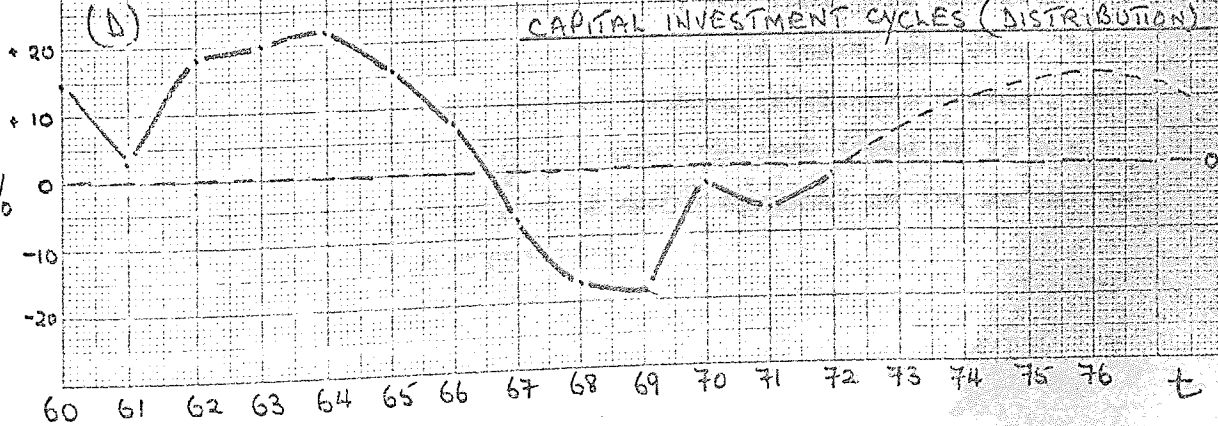
CAPITAL INVESTMENT CYCLES (TRANSMISSION)



Δ%

(D)

CAPITAL INVESTMENT CYCLES (DISTRIBUTION)



- 5.5 This came about mostly because the curve of demand from 1948 - 1962 showed it to be increasing very quickly and extrapolations of this led the public sector to invest heavily in redundant capital equipment. As can be seen, the grid capacity was increased very rapidly over the period, and figure (11) part (A) clearly confirms this. It is also apparent that capital expenditure has indeed fallen off significantly recently. In point of fact the planned "super-grid" transmission system of 400 kv is still not in proper use, because demand has not warranted it.
- 5.6 As far as distribution cables are concerned however, (which are relevant to Delta) there are said to be weak links throughout the grid system, even though estimated capacity is well above the demand load. Thus it is expected that there will be a continual but steady demand for these, in the short to medium term. However, in present circumstances there is perhaps a productive over-capacity in the U.K. cables market and for this reason (assuming only mediocre demand) oligopolistic competition is likely to ensue as margins will have to be fairly high if reasonable returns are to be effected.
- 5.7 In the longer term however, the rate of consumption of electricity is expected to increase exponentially. Figure (12) A and B are plots of the expected demand. It can be seen that all the European countries will probably double their consumption every ten to twelve years and hence a long term trend of growth of around 7% p.a. is expected. Figure (12) B shows a computer based projection of expected U.K. demand for electricity and it is clear just what this rate of growth means.
- 5.8 Thus for the next few years the demand for public sector distribution cables will probably tend to centre around strengthening weak links in the present grid system. However, in the long term the grid capacity is eventually going to require fairly rapid upgrading, but this will probably occur as a series of long investment cycles - or "steps". If such is the case then the long term trend of 7% p.a. growth is most certainly going to be quite cyclical as far as cables are concerned and this is unfortunate.

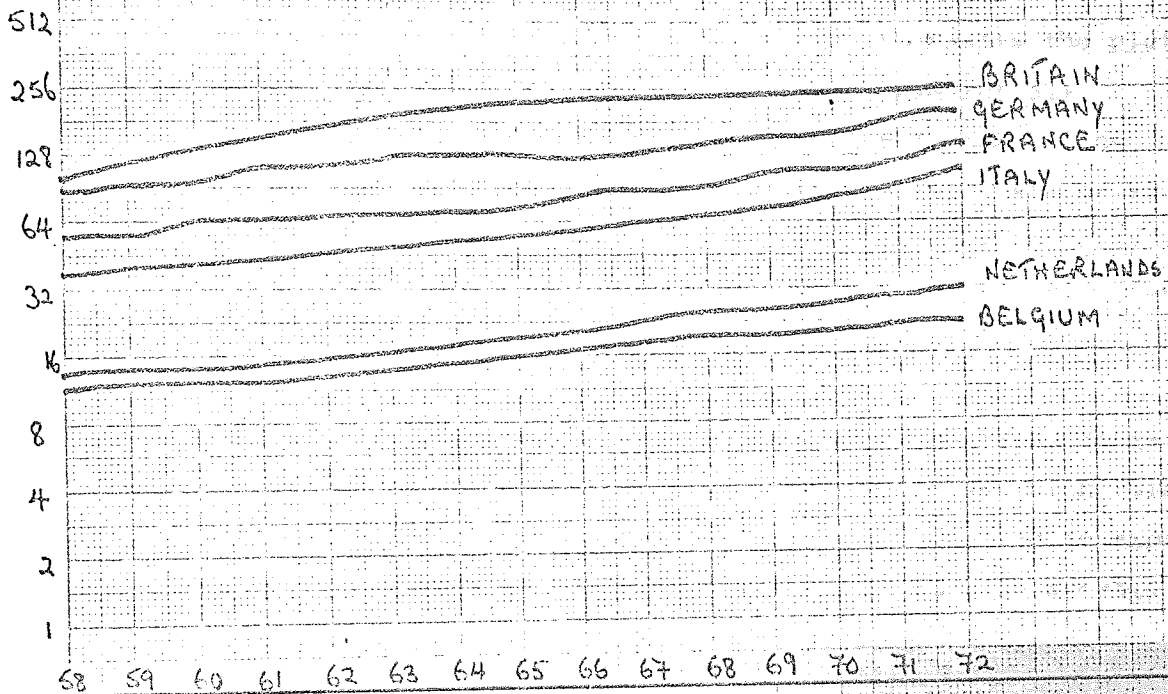
(Fig 12)

CONSUMPTION OF ELECTRICAL ENERGY

EXPO SCALE

E. POWER CONSUMPTION OF MAJOR EUROPEAN NATIONS

QWh (A)



QWh (B)

1500

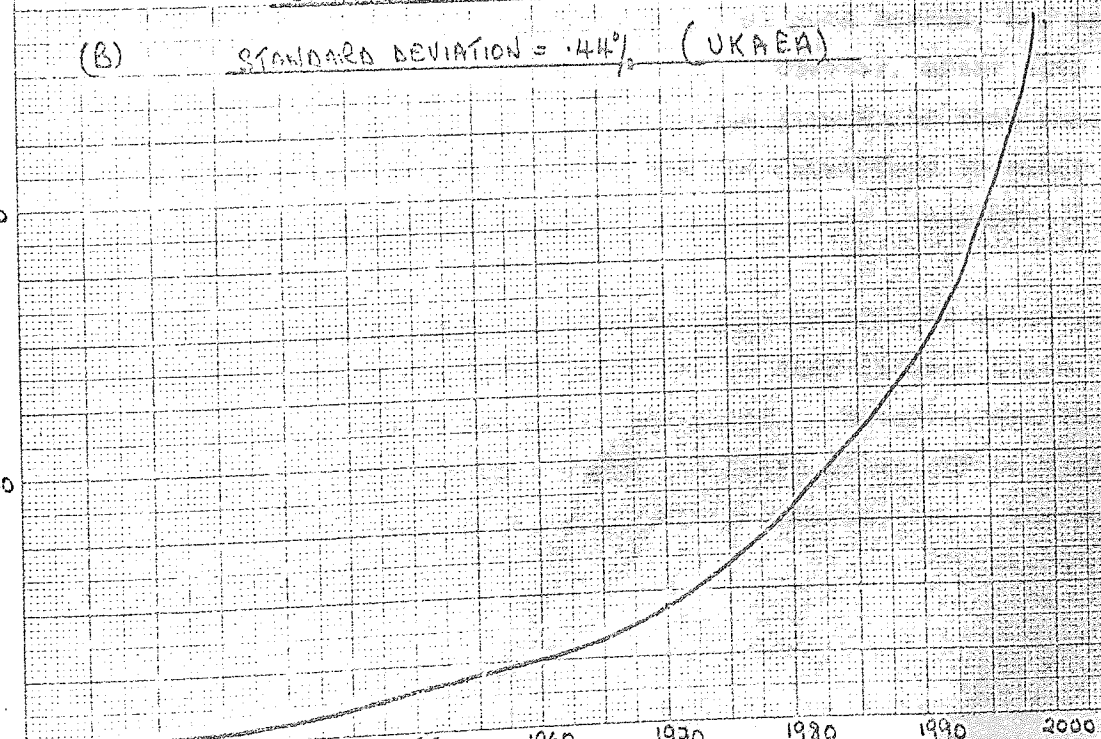
COMPLETED PROJECTION OF U.K. CONSUMPTION

(B) STANDARD DEVIATION = .44% (UKAEA)

1000

500

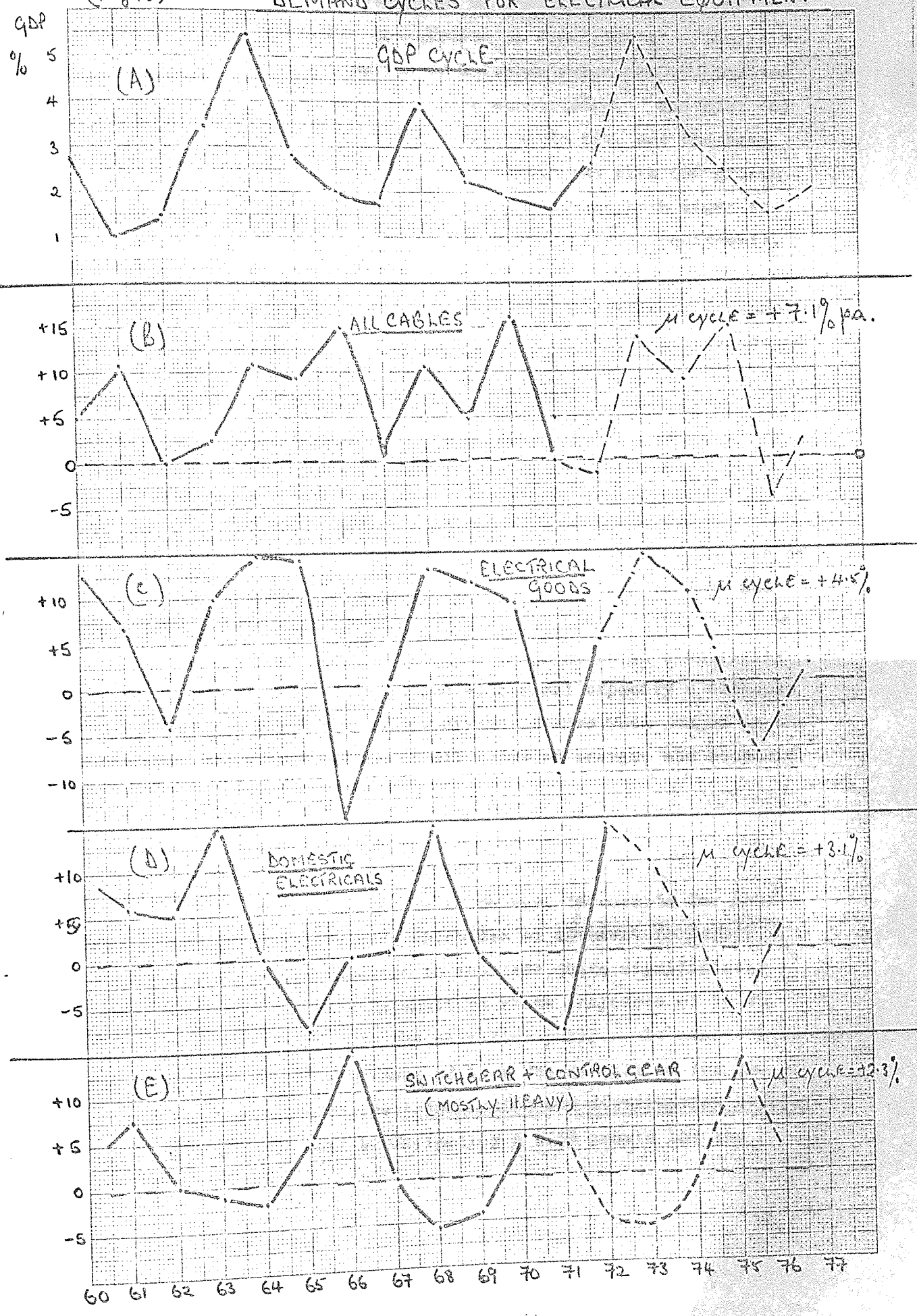
1920 1930 1940 1950 1960 1970 1980 1990 2000



- 5.9 Nevertheless if it is assumed that the overall demand for electricals and cables is some function of electricity consumption then these markets will tend to be expansionary - (at around the 7% p.a. mark) - and this is in itself extremely encouraging as a long term perspective. Continual expansion of markets tends generally to offset competition and to leave margins untouched. The same is also true for Europe.
- 5.10 As far as the short-term is concerned figure (13) represents the plot of various demand cycles against GDP growth. The cycle for all insulated wire and cable tends to contain two distinct peaks - one occurring with the peak of GDP and the other lagged by two years or so. In such a case the next three years are expected to produce buoyancy in demand, with annual increases of between 10% - 15%. The average growth for this cycle appears to be around 7% p.a.
- 5.11 The second cycle (C) denotes the trends in demand for the broad range of miscellaneous electricals and appears to be a long cycle which relates closely to growth in GDP. Once again this sector is expected to expand quite rapidly over the next few years, and appears to have an average growth rate of around 4.5% p.a.
- 5.12 The domestic electrical sector is one where Delta has a direct interest as around 2.2% of total output is consumed here. 1972 has been a year of easy credit (high consumer expenditure) and of good demand, and as such this will probably continue through 1973. However, after this the decline will begin to take effect. The average growth for this sector appears to be lower at around 3.1% p.a., and the peaks tend to occur a year or so before the peak in GDP.
- 5.13 Finally the cycle for switchgear and control gear is grossly coloured by the proportion of heavy electrical output and is thus perhaps quite irrelevant as far as Delta is presently concerned. Nevertheless the peaks of this cycle appear to occur about two years after GDP peak growth, but this may simply reflect the heavy nature of this sector. The average growth is also only 2.3% p.a.

(Fig 13)

DEMAND CYCLES FOR ELECTRICAL EQUIPMENT



5.14 Finally, Figure (14) contains two plots of demand for cables, and demand for electricals against consumption of electricity. They are obviously set out on the assumption of a linear relationship, and two simple predictor equations have also been constructed. The plot (A) of all insulated cable appears to be a reasonable fit, but the same cannot be said for (B) where the cyclical variations with GDP growth are more marked. (Electricals in this case contains both light to medium sectors of domestic, miscellaneous and industrial equipment).

5.15 However, using the computer based predictions of electricity consumption (from UKAEA) some type of crude quantification of the long term demand potential for these two sectors can be set out.

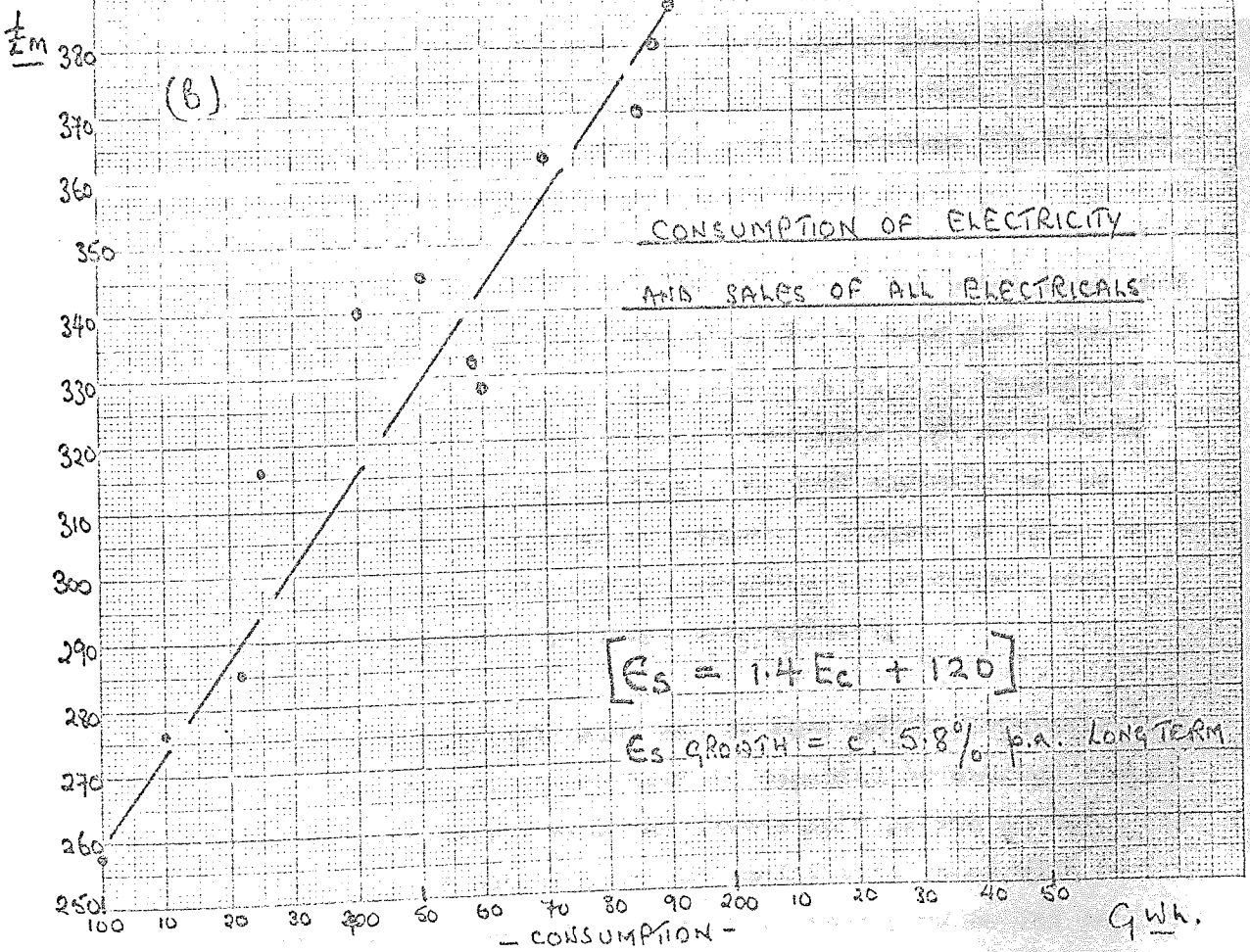
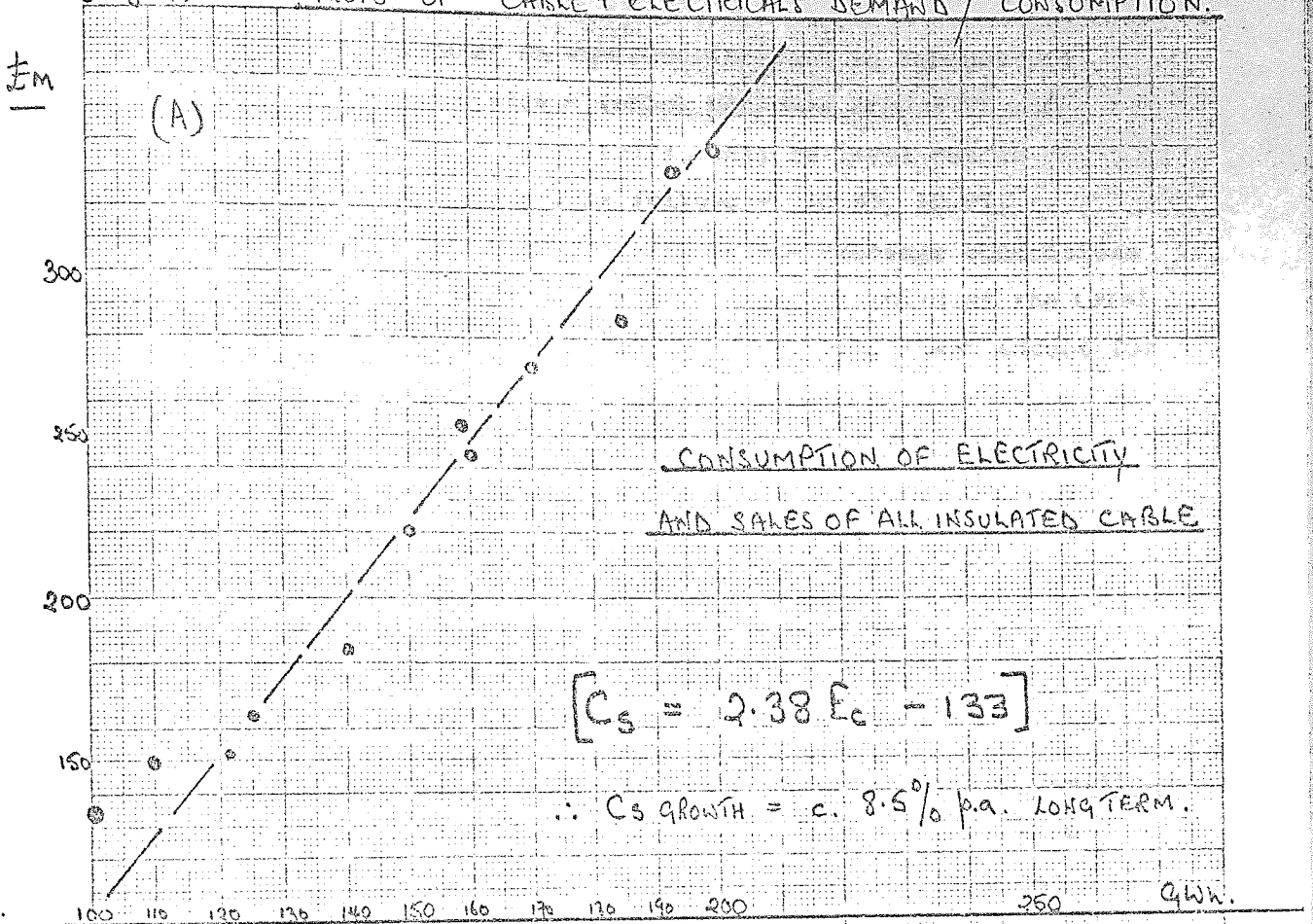
£m	1970	1975	1980	1985
Sales of insulated cables	338	582	912	1290
Sales of electricals	392	540	720	960

From these sets of figures it can be stated that the long term rate of growth of demand for all insulated cable is expected to be 8.5% and for electricals 5.8% p.a. It must be stressed however that will be some type of "saturation point" either in consumption of electricity per capita or fully adequate cable and electrical capacity - although this is expected to be in the fairly distant future when judged in the light of the present consumption of all types of energy, and economic growth.

5.16 Immediate Strategic Implications

Firstly the immediate future appears to be very favourable for most sectors of electrical engineering which are of interest to Delta. Public sector spending is expected to increase quite significantly and the White Paper on Public Expenditure shows increases of 10.6%, 0%, 10.4%, 10.7% and 11.2% over the next five years. It also states that about one third of total investment of Area Boards will be for the re-inforcement and extension of the transmission and distribution system. The NIESR also confirms this by estimating a 9.5% growth for the industry through 1973.

(Fig 14) PLOTS OF CABLE + ELECTRICALS DEMAND / CONSUMPTION.



- 5.17 The White Paper also indicates an enormous increase in expenditure on the P.O. communications system - (which consumes around 7% of Delta's output) over the next three years, only to level out in 1976 and 1977. The increases are as follows:- 10.9%, 10.8%, 10.4%, 0%, 1.0%. It is proposed to increase the exchange connections by 40% and to enlarge the total system by 50% with a third of the total investment destined for exchange equipment and a significant amount for increased cable capacity.
- 5.18 The majority of the private sector markets are also expected to be buoyant, except that of domestic appliances which may well tend to decline soon. However, taken all in all the immediate outlook for Delta's non-construction electrical engineering output appears to be very favourable.
- 5.19 In the longer term, the electricals and cables consumed by new dwellings will tend to be steady rather than expansionary, but there is also expected to be a significant market for re-wiring and replacement of existing electrical installations in older dwellings - other than the work presently carried out under the improvement grant scheme. As far as fixed investment in other buildings is concerned, then this is expected to gradually increase over the years, although the increase may tend once again to be steady.
- 5.20 Public sector distribution cables and accessories on the other hand, and other insulated wire and cable are both expected to have good growth potential in the long term with a rate at around 8.5% p.a. (sales value basis). However the public sector demand (consuming 7.0% of Delta's output) will also tend to be very cyclical, as grid capacity may be strengthened in "steps" with increasing demand. Because of this, the public sector cables will be unduly vulnerable - especially to competition - when faced with fluctuations of periodic over-capacity.
- 5.21 The broad spectrum of electricals also has an apparently favourable long term potential. The rate of growth here is expected to average around the 6.0% p.a. mark, with fairly wide variations with growth in GDP. Nevertheless, this type of potential growth means that there will be "room" for market expansion and the position is thus good as far as competition is concerned. This also applies to the developed economies of Europe where consumption is expected to follow similar exponential

trends, and thus the prospects for community inter-trade and indeed for exports outside the E.E.C. appear to be good and soundly based.

5.22 Generally speaking, the control and conduction of electricity is also going to be one of copper's real strongholds, despite the potential of a fairly significant price increase. And even though the consumption (on a tonnage basis) by electricals and cables is tending to fall because of substitution and rationalisation of usage, a growth potential of 7.0% may ensure some sort of stable base here. Thus the knowledge, expertise and some of the plant integration of the Group, will continue to be effective in at least one major area.

5.23 Finally it must be pointed out that within the very diverse scope of electricals and cables, there must inevitably be areas of stagnation and unprofitability - which have been brought about by special circumstances. Nevertheless, assuming a fairly pragmatic approach to manufacture and marketing, and assuming a steering away from the public sector and heavy electrical industry at present, then the long-term prospects for growth in this leg of Delta's tripartite base are extremely favourable, even though growth in itself does not necessarily imply automatic profitability.

VI Politico - economic considerations for Delta in Europe and overseas

- 6.1 This section of the work is going to be devoted to the prospects for Delta in Europe and the potential for expansion overseas.
- 6.2 Firstly it must be said, that Britain's entry into the EEC was a somewhat belated political and not economic decision. In economic terms the U.K. is definitely going to suffer slightly in the short term, and it is doubtful if any of the dynamic benefits of being associated with a trading system which has a faster rate of economic growth than our own, will show up until about 1980 at the earliest.
- 6.3 Thus the static effects of entry are that the U.K. will incur a cost of about £700m (or 1.25% of GNP) and will benefit from a possible trade diversion of only £19m (or 0.04% of GNP). The net cost of entry is thus put at around £680m.
- 6.4 In terms of the possible dynamic effects of entry, the average rate of growth of EEC member countries has been 4.3% p.a. as against 4.0% p.a. for EFTA. Britain's average rate of growth since 1955 has been only 2.87% p.a., and thus a significant degree of inter-trade may well help to push up this average marginally. However the U.K. economy is a mature one, whilst most of the EEC countries in post-war years "had room to grow" so to speak - and it may well be true to say that the potential impact on economic growth from the North Sea Oil industry will be possibly greater than the benefit of being within the EEC.
- 6.5 In terms of productivity the U.K. is said to have a level 15% - 20% below the norm for Europe as far as the manufacturing industry is concerned. Where the U.K. is efficient is in agriculture, but in this case because of the Common Agricultural Policy, we will tend to subsidise other European producers. Thus the U.K. markets must tend to expect fairly severe competition once the tariffs have come right down in 1975.
- 6.6 There may however be some potential economics of scale to be gained from a larger market especially in the areas of engineering batch production and such things as heavy continuous process plant industries.

Because of this one may, in the long term tend to find the development of large specialised production areas within Europe such as for example Northern Italy producing the majority of the domestic appliances, Germany specialising in engineering (both mechanical and electrical) Belgium in non-ferrous semis production and say Britain in chemicals and engineering. However whilst this is the logical economic development it is probably undoubtedly true to say that for strategic reasons Governments will also tend to hedge against such specialisation.

6.7 There will also probably be a change in the U.K. because of the so called "X - efficiency" factor of greater competition. This new situation it is thought, will increase not only the overall efficiency of production in say the fields of increased productivity and marginal costs, but also stimulate a much greater degree of industrial capital investment - which will itself show added returns.

6.8 However the immediate economic prospects for Britain in the EEC are not generally speaking, favourable. Firstly there is the net cost of joining the community. Secondly there is the estimated increase in the cost of food (+ 14% - 18%) which will put great pressures on any anti-inflationary policy. Thirdly there is the simple fact that for a variety of reasons the new competitiveness will tend to force margins down and at the same time increase the need for superiority in design and technology. And finally that there may be a net capital outflow from the U.K. although legislative regulations could be brought into force to prevent this if required.

6.9 In the medium-term we must also entertain the possibility of a break-up within the community. To date the EEC has primarily been a trading-bloc, but the present intentions revolve around an ambitious attempt at political, momentary and economic integration. Should this policy fail, for whatever reason, there is a distinct possibility of a complete break up, and a probability of a reversion to trading-bloc status.

6.10 As far as specific markets are concerned, the enlarged EEC obviously presents enormous theoretical opportunities both for investment and distribution. However in practice this is still relatively untrue. Even in the old EEC, where a foreign product has a "toehold" in a market, it is normally because of wider margins given to the dealer and not to the consumer. In other words, it is the distribution networks (and methods) which are important.

6.11 There is also a very significant degree of market distortion. Cartels, area agreements, nationalistic preferences and the like are apparently very common. And in France especially, foreign investment is strongly resisted both officially and unofficially.

6.12 To take the specific trade potential of copper and copper alloy semi-manufacturers first, it is apparent that the situation here is marginally unfavourable for Delta. Generally speaking Europe is a net exporter of semis and the following table quantifies this:-

Country	Net trade	,000 metric tons of semis (1970)
U.K.	-80	
Belgium	-18	
France	-16	
Germany	-28	Total balance
Italy	-15	= net exports of 75,000 tons
Netherlands	+52	
Denmark	+30	

6.13 Thus the enlarged EEC should, on paper, export some 75,000 tons or so. However this does not take into account the patterns of trade. Indeed if the patterns remain fairly stable, then the U.K. could benefit from a potential trade diversion of some 18,000 tons of semis.

6.14 At the same time this trade potential should only occur at times of strong world economic activity (when export demand is high). As soon as the periodic slumps occur, an acute over-capacity will ensue and Delta's margins on semis will be forced down considerably as producers fight for throughput.

6.15 This is especially relevant to some the German mills, many of which are small and privately owned. Thus not only are lower returns (and margins) demanded but also small mills should have an intrinsic advantage at times of slack demand since the profitability is not so sensitive to machine loading. However it is also true to say that many of these small producers have fairly old mills which are relatively inefficient and which may well be killed off during slump periods. But the remainder are likely to cause difficulty for many years, during phases of slack demand.

6.16 The only clear specific market for semis is indeed Denmark which tends to import around 30,000 tons, a significant proportion of which is accounted for by copper tube and copper wire. However once again this may be difficult to assess since the trade is probably primarily due to a relationship with Finnish producers. Nevertheless once inside the EEC Denmark should be watched closely.

6.17 The EEC configuration of copper end-usage is slightly different to that of the U.K. in that a higher proportion is apparently used in electrical applications and a lower proportion by the building industry. The following percentages outline the breakdown of end-user industries.

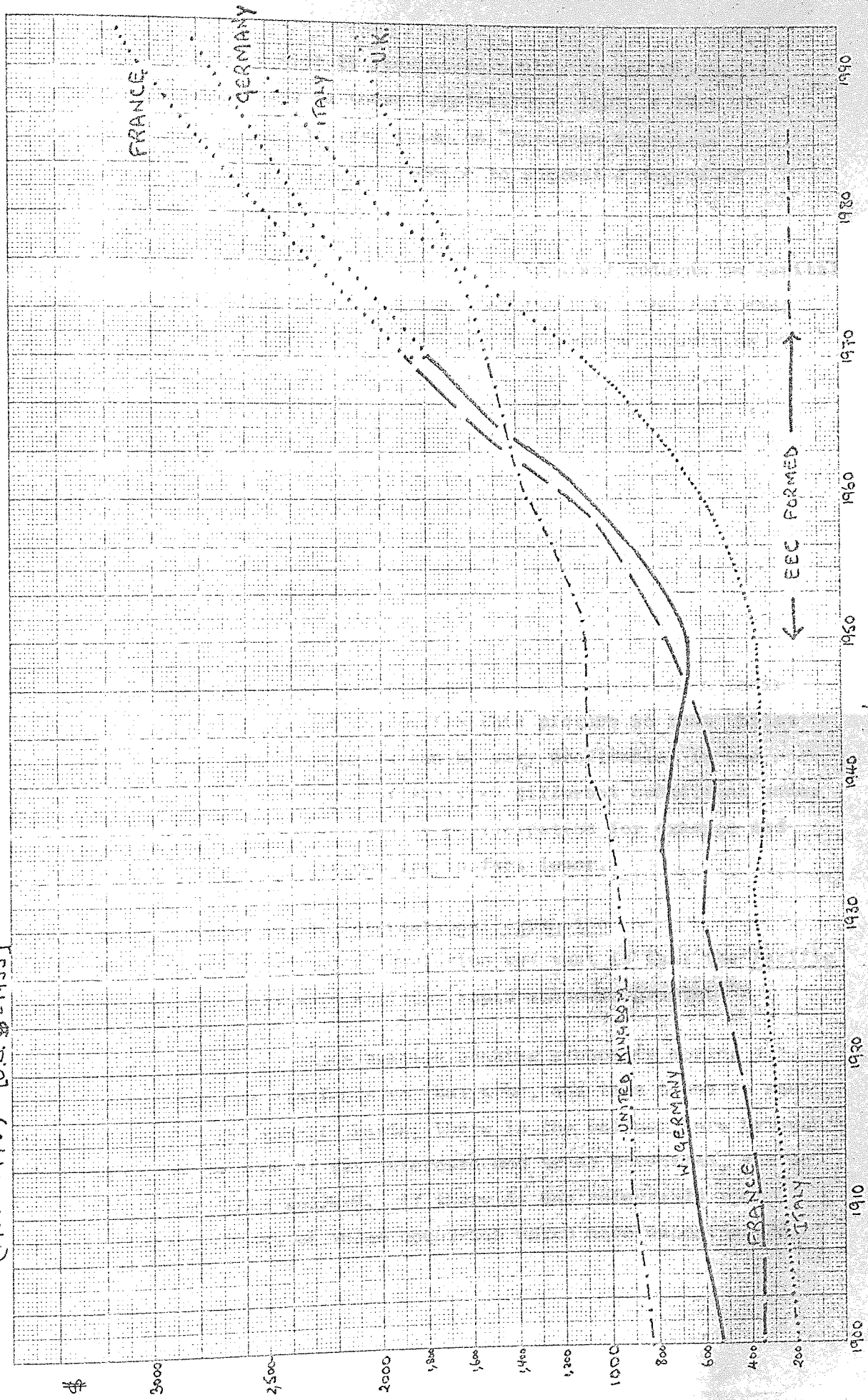
Electricals	55%	(47% as wire and cable)
General engineering	13%	
Building industry	19%	
Transport	13%	
	<u>100%</u>	

6.18 It is thought that total copper consumption in Europe is growing at the 4.5% p.a. rate, but that the electricals sector is growing at about 7.5% p.a. Substitution on the continent has also followed similar trends to those experienced in the U.K. even though consumption of copper per capita is generally much lower in the EEC (except Belgium).

6.19 As far as Delta's higher value-added output is concerned there is expected to be some benefit via indirect trade. There are also some small opportunities for the diversion of direct trade if the patterns remain stable, and the following are estimates of the main product groups made on the basis of 1965-1967 data.

- (1) Insulated wire and cable - £4.7m.
- (2) Non-ferrous nuts, bolts, fittings - £5.1m.
- (3) Electrical control apparatus £36m.
- (4) Telecommunication equipment £24m.

Fig (15)
GROWTH OF GNP/CAPITA
(1900 - 1970) [U.S. \$ = 1955]



- 6.20 One significant problem however is thought to centre around standards. The enormous apparent delays in these negotiations, implies that it may be many years before really free trade on "European Standards" basis takes place and there is also evidence to suggest a degree of collusion by several EEC countries.
- 6.21 As far as investment in Europe is concerned the apparant returns on capital are generally significantly lower than those of the U.K. The following table outlines the returns on capital for the non-ferrous industries of the major countries (except Germany where no data is available). It is thought however that Belgium realises much of its profitability from abroad:
- | | | |
|---------|---|-------|
| U.K. | - | 6.39% |
| Belgium | - | 8.68% |
| France | - | 2.98% |
| Italy | - | 3.26% |
- 6.22 If some of the major companies of Europe are also examined, then their returns on capital employed tend to confirm this picture so that whilst there are areas where small companies can be very profitable, in the majority of cases, perhaps because of the very different conditions under which European companies operate (equity participation for example and debt capital structures) the returns are in fact lower.
- 6.23 If we now turn to the scope for International expansion for Delta, there is only one major conclusion and that is that the Pacific Basin area has the greatest potential for rapid economic growth.
- 6.24 In point of fact one of the major british banking groups is moving a significant proportion of its funds to that area, and this trend is seen elsewhere. Thus for the Pacific Basin, there is the balance here between the U.S.A. withdrawing much of its interests and trade potential, and an inflow of funds from other sources. If there is one vulnerable spot perhaps, it is the problems of those countries which have export-based economies.

6.25 With this in mind, the most favourable countries for Delta investments appear to be the Phillipines, Indonesia and Malaysia. Broadly it is thought that Taiwan, Hong Kong and Singapore, where a phenomenal rate of growth has taken place, may now be fairly vulnerable to the present changing pattern of world trade.

6.26 Immediate Strategic Implication

Since there are no striking opportunities or benefits for Delta, the new EEC should perhaps be allowed to settle down before a real strategy is implemented. There are some very profound difficulties concerning acquisitional growth since the number of quoted companies is relatively speaking very small, and since in France especially there are official barriers as well.

6.27 In this light it is thought that Delta should penetrate slowly, by using a technique of organic growth on existing or newly acquired small units in the manufacturing industries, whose future potential has been carefully evaluated and planned for. The only other real method is that of private acquisition and in most instances this is fairly expensive. As well as this the apparent returns on capital tend to be lower in Europe and thus even if a profitable traditional business is found, then it will still face the pressures of conformity.

6.28 In order to obtain the potential economies of scale offered by an enlarged (if distorted) market, perhaps by far the best development is to place emphasis on 'networks' of distribution involving agents as well as the acquisition and organic growth of a series of strategically placed stockists. This is especially true for many of Delta's present batch produced engineering products, but a good distributive network could also logically handle a wide range of products.

6.29 Thus not only could there be European outlets for Delta produce but also there is the important point that stockists are usually fairly profitable business in their own right, and may be also used for defensive barter.

- 6.30 However if there is one message which seems to come across, it is that Delta should not invest in Europe just "to be there" for at this stage, simple presence is not necessarily important. The making of a viable business system in Europe is almost by definition going to be an extremely long process with a great number of obstacles, and it may be that the present climate needs a good deal of adaption before this is possible. And of course this problem is reciprocal.
- 6.31 As far as direct trade is concerned, the Semis Divisions obviously once again have problems - especially at times of economic slump when over-capacity begins to tell. There is also no doubt that the over-capacity situation will fall marginally as some of the German mills especially, fold up. But nevertheless the potential surplus will still be there and it will also probably be the Belgian semis producers who will become the dominant party here.
- 6.32 Belgium has apparently several "special relationships" with Ziare and can obtain their raw materials at a reasonable fixed price. Thus other producers, who will tend to experience a gradual increase, of the LME price for copper, may not be able to stand the periods of slack demand, when Belgian producers can afford to reduce margins in order to get the necessary throughput on their very large capital equipment.
- 6.33 On top of this it is also apparent that we shall soon see a degree of jumping at times of slack demand, and the use of mobile agents. Thus during the next slump period (circa 1975/1976) there is certainly the potential for very difficult conditions, and agreements are thought to be difficult not only because of legislative threats, but also because of the diversity within the industry.
- 6.34 As far as direct trade in higher-value added output is concerned, it is thought that there is some potential for wire and cable, and non-ferrous nuts, bolts and turned parts. There is also certain potential for communications equipment and electrical control gear which implies a favourable opportunity for the Electricals Division. However there is still the problem of standards here, and this is thought to be especially relevant as far as swithgear is concerned.

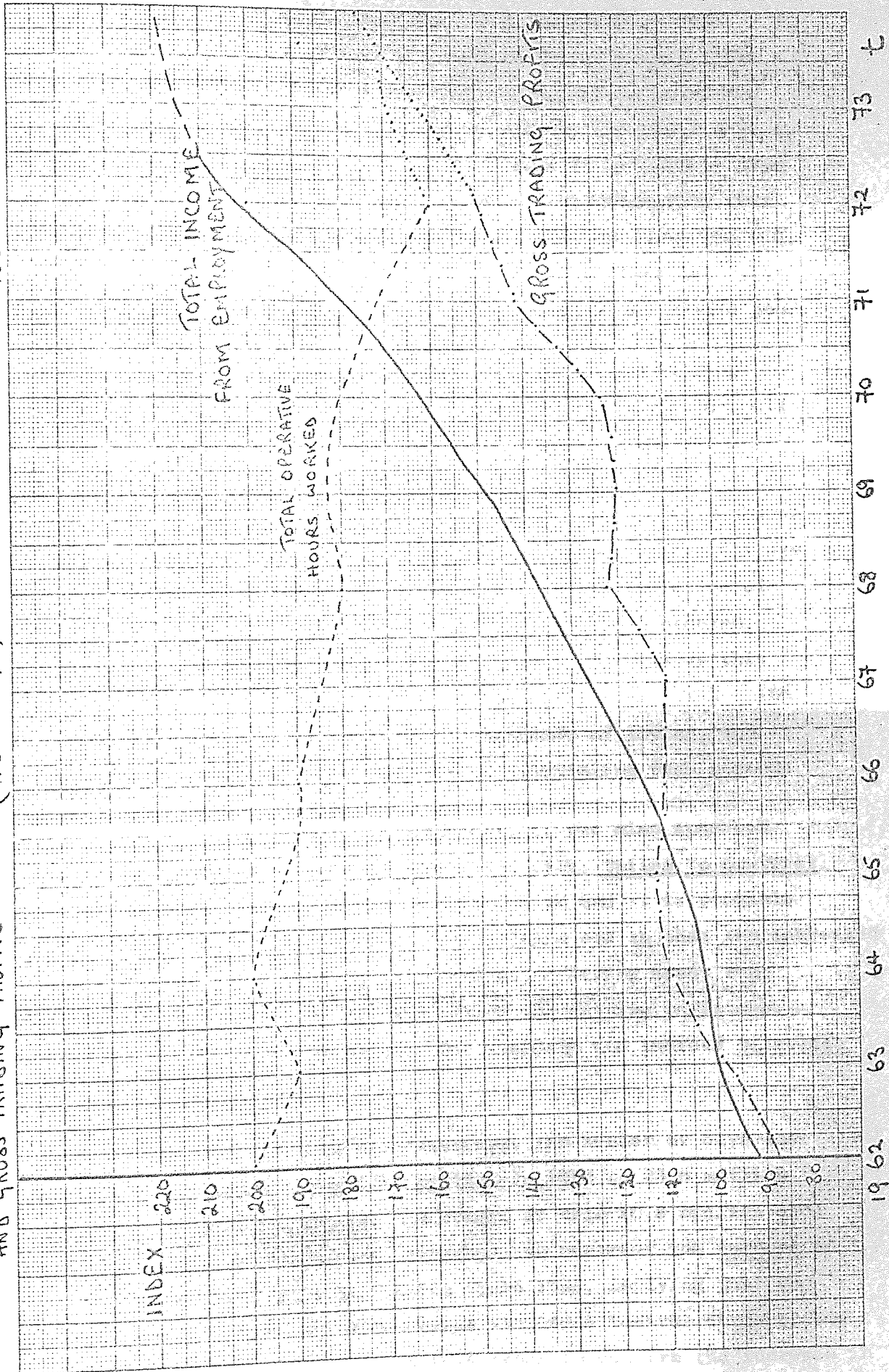
6.35 Finally to end on an international note, it is felt that for Delta expansion overseas the best opportunities lie in the Pacific Basin area and perhaps special emphasis should be placed on this since a period of rapid growth is foreseen soon. A special warning however, must be aimed at those countries whose growth is almost entirely dependent on an export-based economy since they may be especially vulnerable to the present shift in the pattern of world trade.

VII MANPOWER

- 7.1 The manpower constraints within which a company has to operate have, in recent years, become very much more important. Because of this, the probable future trends in this area may be of particular interest to Delta, and may also have to be carefully planned for, so that these plans can be integrated into the corporate planning, of the Group.
- 7.2 Over the years the proportion of national income going to labour has increased, whilst that going to capital has fallen. In 1960 the average return on capital employed for the U.K. was 15.7% and in 1972 this figure was estimated to have fallen to 6.7%. Thus the nature of growth of company earnings has obviously fallen as well. Figure (16) shows a graph of gross trading profits and total income from employment, (on the same index setting) for the period 1960-1972. It is clear that the rates of growth are quite different, and since 1969 especially, total income from employment has risen much faster.
- 7.3 Although expressed economically, the reasons for these demands are probably social and psychological in origin. People's expectations in this country have radically changed, due partly to break-down of the extended family, the decrease of religious and cultural disciplines, and partly due to the fact that mass-media communication enables living standards to be compared "across a country" rather than "down a street". The result is that the apparently most productive sector of industry tends to set the norm for pay increases (i.e. the car industry).
- 7.4 Where this has happened, the less productive sectors are forced to increase prices, and so demand and cost inflation follows. Thus in recent years, it has been the case that too many people have been putting too many demands on an economic system which cannot fully meet them. In order to remain viable, the system must then devalue the demands (i.e. money) and this is inflation.

Fig (16) INCOME FROM EMPLOYMENT AND GROSS TRADING PROFITS (1962-1972)

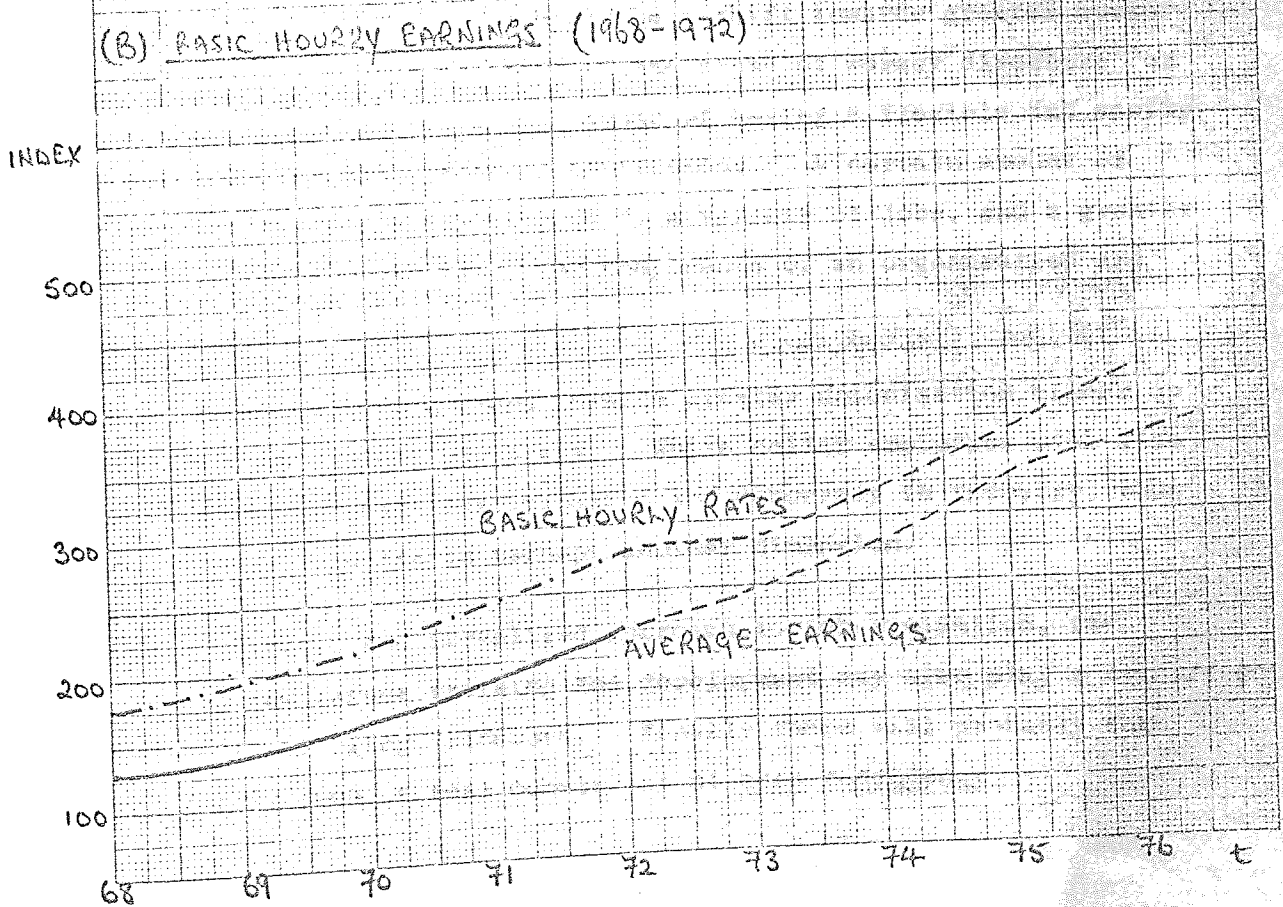
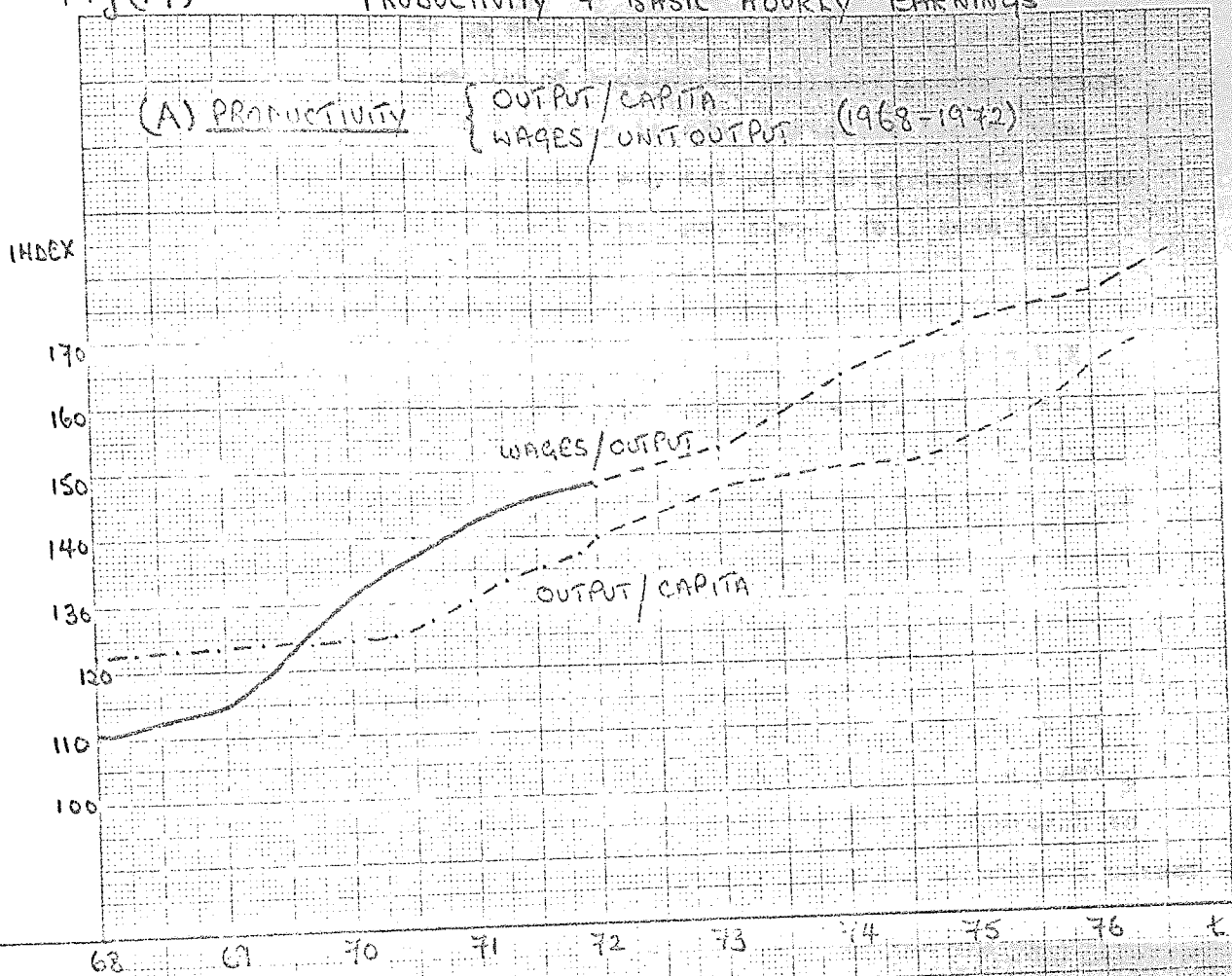
INDEX 1963 = 100



- 7.5 The rather stark dichotomy is that as a higher and higher proportion of income goes to labour, then less and less is available for capital investment, and thus productivity cannot be increased as quickly as it should be, in order to fulfil the increased demands on industry. The strange paradox is that today it is perhaps more important to be profitable, than ever before. Unfortunately this inability to become more productive quickly, tends to leave the U.K. at a disadvantage in terms of international markets (this is especially relevant to Europe) and so terms of trade may remain poor.
- 7.6 Figure (17) shows the recent trends in productivity and earnings. As far as productivity is concerned it is clear that wages per unit of output have risen faster than output per capita. The gap between the two indicates the sort of rate of inflation, and it is probably unlikely that the increases in wages per output will change very significantly in the medium-term. After Phases II and III are over, one may well tend to find a continuing rate of inflation of between 6% and 7% p.a. since it is now an international problem, and these influences are probably here to stay. As well as this a continued rise in prices, (especially EEC food prices - 14% - 18% over 5 years) will maintain pressure on standards of living, and it is this area which is so very sensitive in stimulating wage demands.
- 7.7 During the last period of high unemployment, it was also apparent that the rate of wage demands, for the first time, failed to contract. This implies a much greater strength of unionism and it is probable that union strength will increase. The problem now is that the increased resistance to downward pressure on standards of living means that increased personal taxation, the old weapon for cutting inflation, will probably now tend to do exactly the opposite and instead stimulate new demands for extra income.
- 7.8 As far as industrial disputes are concerned, the number of days lost in strikes has increased from 0.24 million in 1967 to 23.6 million in 1972 (i.e. nearly ten times). However, of this 10.8 million days were accounted for by the miners' strike. In contrast the numbers of workers involved in strikes has fallen since 1968, implying that the shift is away from short but wide-spread stoppages towards concentrated and prolonged strikes. Once again this tends to confirm the increase in union strength.

Fig (17)

PRODUCTIVITY + BASIC HOURLY EARNINGS



- 7.9 Against this however, it is also apparent that there has been a trend towards the formation of localised "splinter-groups" within unions, and the overall control has in many instances become weak and superficial. Because of this any tri-partite agreement between the T.U.C., C.B.I. and the Government, may simply fall down in certain instances, when union fragmentation occurs.
- 7.10 It is also possible that whereas to date the most productive U.K. sector has tended to set the norm for wage increases, once really in Europe it will be the most productive E.E.C. industrial sector which will be used as the indicator. The dangers probably need no more amplification.
- 7.11 Apart from an expected continuing rate of inflation (of around 6% - 7%) and a steady rate of wage demands, several other factors will probably enter the picture. Firstly increasing technological change will undoubtedly call for different methods of recruitment and upgrading in industry. A better standard of education, a better approach to "in-house" training of manpower and a better and more formalised career structure for all, will become necessary.
- 7.12 Secondly, there will also probably be a shift towards greater worker participation - not necessarily in the sense of worker directors or share distributions, but in the sense of having a flexible and easily controllable immediate working environment. A certain amount of liberalism, of people learning to do a variety of jobs, and a greater emphasis on "responsibility" for components of an organisation are also probable.
- 7.13 Thirdly there will be a trend towards greater unionisation higher up the present management hierarchy. White collar employees will also tend to demand greater participation and democracy in industry, thus strengthening unionism in perhaps another dimension.
- 7.14 A more systematic and formalised approach to job evaluation, remuneration and career training and development may also play a significant part in this emerging framework. Finally there will probably come about, fairly soon, a real constraint of zero redundancy.

7.15 Immediate implications

Firstly manpower is going to require a good deal more, in terms of a positive and professionally detailed approach to all the emerging trends. One may well see a fairly rapid change in the mechanics of administration, control and decision-making, so as to enhance the development of a more democratic, liberalised and participative structure.

7.16 These changes will also probably put some new constraints on corporate planning as such, and a shift in emphasis and perspective will be required. A "zero-redundancy" situation for example means that so long as the firm remains profitable, declining industries will have to be super-imposed upon by a "technology implant" so to speak, rather than closed down. It is immediately apparent that the phasing in and out of differing activities is likely to be both costly and difficult.

7.17 In its basic form there are two distinct paths of development open to Delta. The first is a deliberate policy of a move towards greater capital intensiveness, where the manpower requirements are fairly small. However, in this case, the approach is likely to be expensive in terms of depreciation and maintenance, and indeed the skilled operators no matter how well paid, still hold strategic control. As well as this, the opportunities for Delta in capital intensive heavy process plant appear to be few, and the strategy is inflexible.

7.18 The alternative seems to be an active attempt at welding all parties into a homogenous and viable unit through a different framework of control. This indeed would imply something of a restructuring of corporate objectives, in order to take full account of the needs of all participating parties. But even so, in the short to medium term labour intensive industries are still likely to be faced with greater wage demands, and because of that it seems to be crucially important to stress the need for "efficiency" in plugging leaks in profitability, and taking up all the slack in the system.

7.19 All told, there is probably a growing need in Delta's planned development, to raise thresholds of gross profitability in estimating returns on investment, since an increasing proportion of the profitability will probably continue to go to labour - in real terms. Thus as a major cost as well as a major resource, manpower should be treated with much more strategic significance.

7.20 Finally, the long-term shift in corporate objectives which can be inferred from the above, tends to point to the problem that the priority objective of return on shareholder equity may soon have to share its position, or even be displaced by, the objective "to provide meaningful employment". If this occurs then it seems clear that the implications for the present industrialised structure are in fact profound, and that methods of operation are likely to change. The question of whether to take an active or a passive role in this area seems to be a major policy decision which may confront Delta within the next five years or so.

VIII FINANCIAL TRENDS

8.1 The future financial conditions within which Delta will have to operate are the most difficult of all to identify. Fiscal problems can so easily arise through domestic and international crises that attempting to forecast such trends becomes very hazardous indeed. As a confirmation of this, Merchant Banks apparently plan no more than a few months ahead. Nevertheless, it is still important to identify specific 'probables' and relate these to Delta's strategy.

8.2 To take the long-term trends first, it must be concluded that the era of cheap money is now over. Leaving the problems of inflation and nominal interest rates aside, the real overall cost of money has increased and it seems unlikely that this 'threshold shift' will be temporary. Hence Delta will have to be more and more selective in its investments and, in addition, time its loans and debenture issues more carefully.

8.3 As a result of this, it may also be apparent that there will be a gradual move towards higher gearing for many companies. But the increase in Debt/Equity ratios may be not only a result of loan stock issues but also because of greater participation on the part of the banks in providing secured funds for specific projects.

The following table outlines Britain's arrarent international attitude towards gearing. It is clear just how divergent these norms are and indeed industrial re-organisation in the U.K. may well be greatly inhibited by financial structures.

	Equity Capital %	Debt Capital %
Britain	65	35
U.S.A.	60	40
Germany	40	60
Japan	20	80

8.5 Once fully integrated into Europe, one may find that these rigid barriers between industrial and financial sectors in Britain will tend to diminish. European banks may hence be more willing to participate in Delta's future.

8.5 Over the last 15 years or so there has also been a gradual decline in the returns on shareholders' equity. At present all the indications seem to point towards a continuation of this trend. At the same time the interest rates on loan stock (in real terms) seem to be increasing and hence the absolute differential between returns on "risk" and "debt" capital will become less. It has been suggested that for the risk in holding equity, a return on investment of at least more than 2% higher than the average loan stock rate is needed. Over the last few years the returns (in money terms) for equity and loan stock holdings have been about 13.5% p.a. and 10.16% respectively and thus there does not seem to be very much of a margin left.

8.6 The major problem of setting viable interest rates on finance depends to a great extent on the rate of current and expected inflation. It seems probable that despite efforts to suppress it, inflation will persist in the long term. It is, in effect, a fully international problem and as such is passed from one country to another via inter-trade. Under these conditions, and acknowledging the enormous difficulties of a full and concerted world - wide effort, one may speculate that we shall continue to experience a rate of inflation fluctuating around the 5% mark (RPI basis), for quite some time yet.

8.7 In view of this, one would also expect to see long term acceptability in altering rates of exchange (by floating or devaluation) and thus a quick trading response to potential currency re-alignments, by Delta's overseas companies may become a common necessity. But in theory an expected and consistent rate of inflation implies advantages for Delta in extending its fixed interest debt capacity. In practice however, it is probably the case that inflation is clouding the picture to such an extent that there is an unwillingness to lend money on a fixed interest long term scale, unless the nominal rate is allowed to float with the inflationary rate.

8.8 In joining Europe it has been stated there is also the possibility of a net capital outflow for investment purposes, assuming that the potential return on investment on the Continent is higher than in the U.K. In certain instances this is probably so, but the expectancy is that London will dominate the capital markets and will be the interest rate leader. Thus one would expect a flow of funds into the U.K. and the chance of cheaper loans on the continent. At any rate it is doubtful whether the Government would tolerate a net capital outflow for very long without re-imposing some control.

8.9 In the long-term it is also expected that the U.S.A. will eventually call in its balance of payments deficit (caused by the Vietnam war finance) and so a relative shortage of euro-dollars may well become apparent. The gap left by the euro-dollars might, however, have to be replaced by D-Marks, guilders or even sterling but at any rate a net decrease in this source of funds is expected. If such is the case, then interest rates for euro-dollar type finance will inevitably increase and yet another source of cheaper money will disappear.

8.10 In place of this one may find a much more active part being played by the Japanese banks which, because of Japan's trading methods, are very rich in foreign exchange and also very liquid. With the re-valuation of yen, and the decline in Japan's terms of trade, there will probably be a slight increase in foreign currency holdings over the years, despite a fall in the volume of exports. And because of this the Japanese may well be qualified to enter the international finance fields in a big way. If this does happen, then may well be an excellent opportunity for Delta to obtain long term relatively cheap finance here.

8.11 Finally, in the long term the North Sea Oil industry is expected to engage more and more funds. Indeed it has been speculated that there is not enough credit in Europe to completely meet the North Sea Oil

requirements and thus there may well be a resultant shortage of capital. It has also been stated that towards the end of this decade, the Middle East will be extremely rich in foreign currency reserves and may thus also become a potential source of funds for Europe.

8.12 In the short term, however, we can perhaps be a little more definite about the probable trends in finance. The U.K. economy is now expanding quickly even though a balance of payments deficit for the current year of some £600m is expected. Nevertheless reserves are good, and the U.K. can probably afford it without pegging sterling or decreasing the rate of growth very significantly. Thus the following rates of growth for GDP are expected:-

1972	1973	1974	1975	1976
2.5%	5.5%	3.7%	2.5%	1.5%

Because of the problems of capacity, and because of the dependence of the U.K. economy on the developed world's economy, a decline in activity is foreseen to 1976.

8.13 From this pattern it can be seen that the years of high activity (1973 and 1974) will engage more and more funds, causing a shortage (world wide) and thus pushing up interest rates. Indeed this has already happened to a degree, and although the position has eased slightly, one would expect the rates to increase once again and to peak around the middle of 1974, before dropping gradually to 1976. Thus investor liquidity should be good again in 1976 (but not much before) and if this is so then that time might be the best for Delta's next debenture or other loan stock issue.

8.14 Nevertheless the Group's present rate of activity will undoubtedly bring about a need for funds and short and medium term finance will be fairly expensive. Thus perhaps retentions could be marginally increased and depreciation be used more as a source of finance, since Delta's profitability is now good. Medium term finance is also thought to be possibly obtained more cheaply in Europe at the moment, although rates may rise slowly towards the par for London.

8.15 However having said this, it is also probable that, because of the recent changes in bank methods of lending, a fairly volatile trend in rates is likely; due to the changing liquidity position of the banks and their new competitiveness. Because of this relatively cheap loans, in certain instances, may well be obtainable at home, but they will have to be sought after.

8.16 As far as inflation is concerned, in the short term one may see a decline in the rate - to something around 7% p.a. - as a result of the recent Government measures. However there are many inhibiting factors and these are concerned with the increase in world commodity prices, (because of the rate of world activity and demand) the introduction of V.A.T., the impending rise in food prices because of EEC entry, and because of the apparent shortage of stocks at home. The last factor is probably potentially the most serious since at the end of 1972, when activity had definitely picked up, official statistics showed a continued decline in stocks and work in progress. If demand increases as quickly as it did in 1964 (the last occasion when a 5.5% growth rate was recorded) then there will be a relative shortage, which would not only stimulate inflation but also suck in a mass of imports - causing a large balance of payments deficit. Indeed the present signs tend to indicate that this is happening.

8.17 If however, industry can respond quickly enough, and has the capacity to do it, then this problem could be lessened to some degree but not, probably, completely averted. At any rate, the pound will tend to float downwards once again (helping exports) and inflation will not be checked as much as it should be. In these circumstances, it is thought that convertibles will continue to be popular, despite the constant threat of eventual dilution. However, since a company should maintain its proportion of convertible loan stock (i.e. replace it as it matures) then dilution should never occur anyway.

8.18 Finally the imputation system will soon be with us, and whilst it will probably not make such an impact as the 1965 Corporation Tax did, (in terms of altering capital structures and so forth), there will nevertheless be some probable changes. The first of these is that retentions will become relatively more expensive whilst distributions will be encouraged; and thus imputation tax will tend to cause a greater degree of borrowing. As well as this the dividend trends of companies will also probably become more erratic although the total effects of this on share prices is at the moment impossible to foresee. And thirdly overseas profits will now tend to become less attractive, and thus the threshold return on capital investments abroad may have to set higher.

8.19 Immediate Strategic Implications

Delta has, in the eyes of the "City", now recovered to a more credit-worthy position, and this is reflected in the recently ~~extended~~ extended borrowing powers. At the same time there is still a major proportion of output (turned parts, stampings, rod, sheet and strip etc.) which is vulnerable to the rate of economic activity and thus profits here still tend to be cyclical. This problem may well continue for a while to inhibit increased gearing as analysts will assume the potential of deviation in profit cover for long term debt interest.

8.20 To conclude that the average cost of money will be higher in future means that Delta ought perhaps to look to increased retentions and depreciation policy for more of its capital requirements. However it seems that the new imputation system will tend to make retentions more expensive and to encourage distributions, so a greater degree of emphasis may have to be placed on borrowing. In this light it would appear that depreciation may tend to become an even more favoured source of finance and if this is so then there would be advantages to Delta, in accelerating its rates where possible.

8.21 The second conclusion is that both short and medium term interest rates will become more volatile due to the new competitiveness between banks and their changing liquidity positions. This implies that it

would obviously be advantageous to selectively "time" borrowings, and to take the opportunities of relatively cheap loans when these conditions exist.

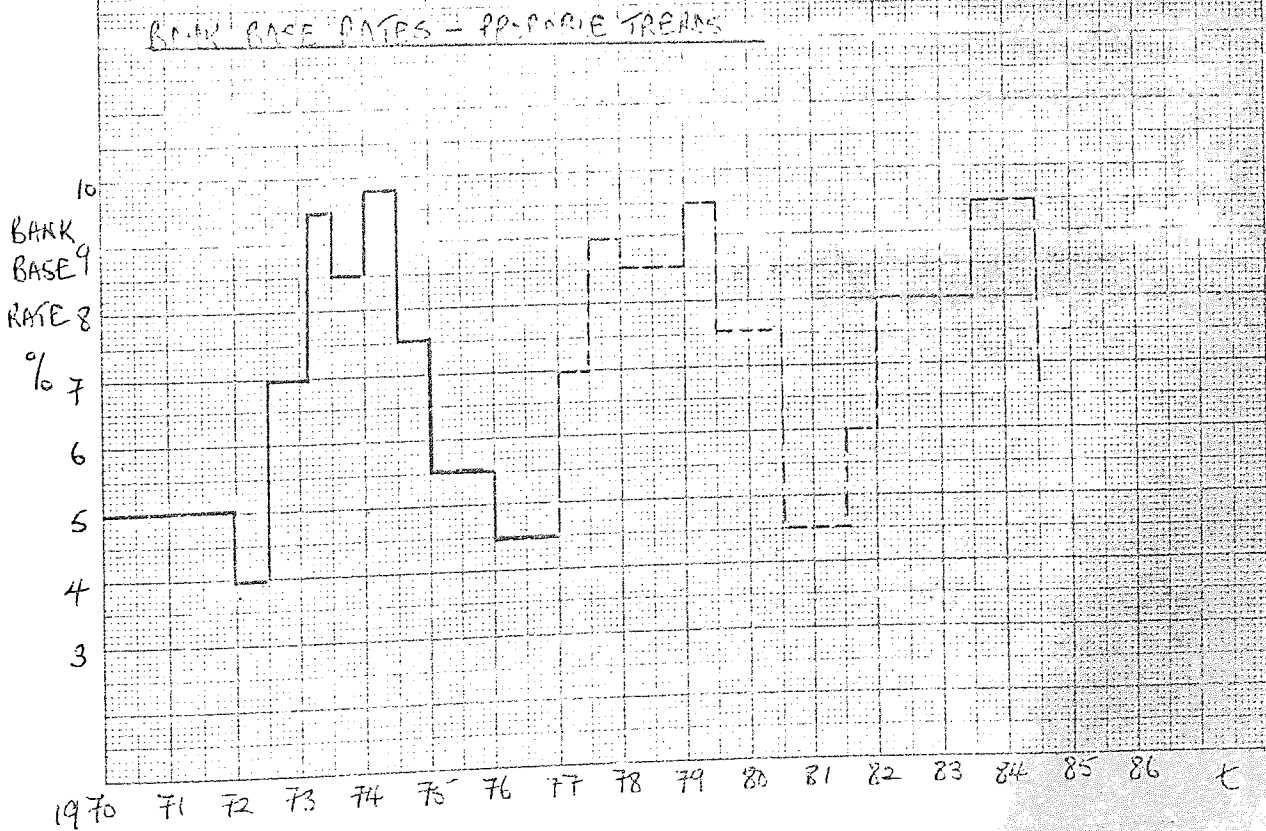
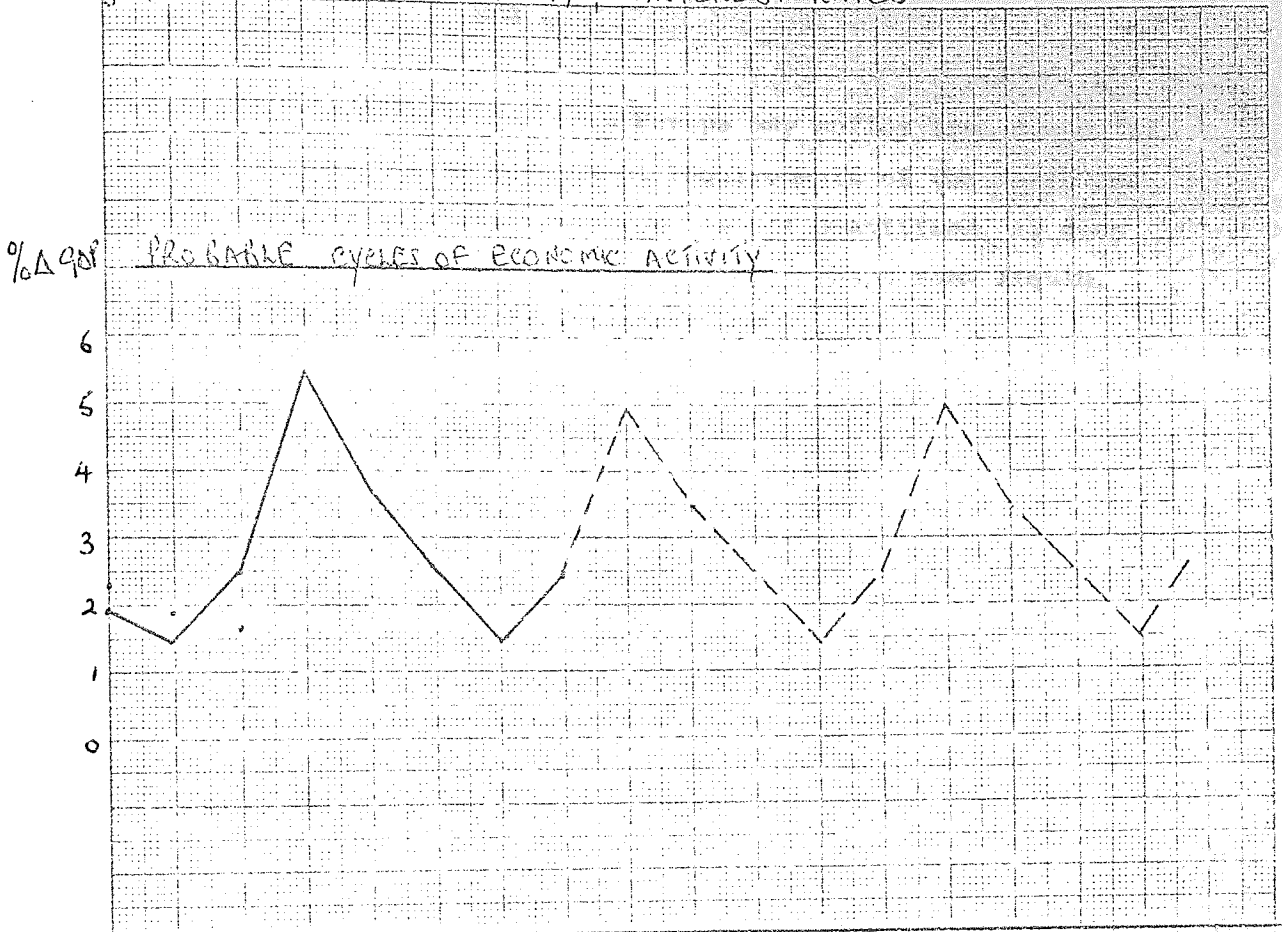
8.22 Inflation will probably tend to continue in the long-term at about the 5% p.a. mark and in theory such a situation would imply great advantages in long-term fixed interest debt. But the problem is that the rate of inflation is expected to fall slightly over the next few years and so present interest terms are not appropriate. As well as this, the recent spate of fluctuating inflation has caused much confusion and there is a reluctance on the part of lenders, to lend on a long-term basis, as well as a tendency to leave a greater margin of safety - (i.e. of over-estimating rates).

8.23 Figure (18) outlines the broad trends in the movements of interest rates with economic activity. It can be seen that 1976 is expected to be a favourable time for Delta's next loan stock issue since interest rates will be high. At the same time the tendency for inflation to persist implies that convertibles will continue to be successful, despite the dilution factor.

8.24 On a broader front, because of foreign attitudes to risk, (in terms of gearing) banks in Europe and Japan are expected to be willing to provide long term finance at cheaper rates than London. Japanese banks are also very rich in foreign exchange and this greatly improves the chances. Once in the EEC, it is also expected that London will dominate the capital markets and thus provide leadership for discount rates. If this does occur, then once again continental loans may be more cheaply obtainable.

8.25 On the introduction of imputation tax overseas profits will tend to be less desirable because of the problems of foreign taxes. Thus this implies that local profits should be used to finance local expansion and that the threshold for returns on overseas investments should really be increased in line with the new costs of withdrawing profits. Mention has already been made of the volatility of dividends, the greater costs of retentions and the probable extra borrowing.

Fig (18) ECONOMIC ACTIVITY + INTEREST RATES



8.26 Finally in the longer term Europe may suffer from a capital shortage because of the investment requirements of the North Sea Oil industry. Whilst this cannot be as yet quantified, it does suggest the importance of a company being perhaps more liquid, more self-financing, and less capital hungry.

IX. COMPETITION

9.1 The range of the most important variables external to Delta's control would be incomplete without a broad over-view of other competition. Indeed in this type of approach to the planning problem "competitors" play a much more important intergral part, and should be looked at under varying assumptions. However because of the limited time and effort which can be spent on any one area, we have tried to pick out only the major contenders.

9.2 Companies can only regarded as competitors if there is a risk to Delta's present product margins or turnover. We make the distinction between this and a group of other companies which can be called "inhibitors " where there is potential threat to present or possible future products, or indeed to any other logical path of development. With this in mind, let it be specified that assuming equal price; margins and/or turnover can only be affected because of superior products (real or preceived), superior service, the control of a distribution system or a better overall strategy - assuming that conditions in Delta remain static.

9.3 There is also the point of course that in some cases Delta faces not only "competition" in usual sense, from companies making similar products, but also from companies making these products in substitute materials. A fairly good example of this is copper tubing which competes with both plastics and stainless steel as well. However, most of the purely technical aspects of competitive substitutes have already been examined in Section II.

9.4 To take the heavy Semi-manufactures first, it appears that under the present conditions in Europe both rod and sheet will find themselves in an over capacity situation with each economic slump, because of the cyclical nature of the trade. As a result of this, competitiveness from European companies (especially from the small privately owned German mills, and from the Belgians') will once again tend to become fierce towards the end of 1977, and both margins and turnover may inevitably suffer. It is probable that some dumping will also take place as producers fight for throughput.

9.5 As far as the U.K. is concerned the brass-rod producers (the major ones being IMI, Peglers, Ever-Ready, BICC, McKechnie and Vickers) do not apparently tend to compete in terms of margins alone, and Delta has market leadership. The same however cannot be said of rolled sheet and strip because Ratcliffe Industries appeared to work on abnormally slender margins through 1971 - 1972 (in order to maintain measurable throughput) and a re-occurrence of this is expected in say 1976. Indeed if our present conclusions about the trend line of brass and copper sheet and strip, are correct, then intense competition between producers is expected after 1974, because of the capacity problems generated.

9.6 In the field of turned parts there are the obvious problems of the jobbing function, and because the economics of scale are apparently small, the industry is generally a very fragmented one, with many private units demanding lower returns. Because of this it is intensely competitive, and yet some of the major producers still seem to make reasonable profits (e.g. Delson 20+% Roc). Others however appear to be not so healthy (e.g. Anglo-Swiss 6% Roc, Crane Screw 11% Roc) and it may well be the case that in the fairly near future some of the smaller private companies will fold, and some of the public ones divest.

9.7 Stampings once again suffer from the jobbing function, but here the industry is much less fragmented and a fair amount of rationalisation has taken place in recent years. However, Delta together with its major competitors (e.g. Peerless and Deritend) instead face substitution, especially from plastics or composites, and thus a long term market decline is probably to be expected as indeed with brass turned parts, as well.

9.8 The expected gradual decline in the demand for turned parts and stampings implies a continuing over - capacity situation here, even allowing for accompanying divestment. As well as this, both of these activities are also vulnerable to the engineering cycle and as their respective outputs generally work on a "low margin high turnover" basis, the returns on investment will continue to fluctuate. Because of this, a movement away from jobbing-into integrated production with an eventual end-product seems logical. The problem may be however that there are more effective methods of production than by the "rod - component machining and assembly" process.

9.9 As far as Cables are concerned, it seems that Delta exists in a potentially oligopolistic U.K. market, but one where there is however periodic over - capacity. It is dominated by the huge BICC as market leader, and Delta has a good market share, followed by other cable - makers such as Pirelli General, STC, GEC and Ward and Goldstone. Nevertheless given the present market structure a reasonable degree of profitability is assured providing demand is good and European competition fails to make any impact. (Both of which are expected).

9.10 Electricals on the other hand, seem to be once again a fragmented market but one where profits are good because of reasonable margins. Some of the smaller companies (e.g. George Scoles and Dorman - Smith) produce returns of around the 40% mark, but mostly because of margins of 25% or so and their profits are thus vulnerable. The larger ones however, such as MK Electric or Crabtree (E.R.) have lower margins but a good turnover, and both Ever-Ready and MK are looking for expansion. MK especially wants to move into the industrial electricals more, and wants to expand overseas as well. Ever-Ready on the other hand, seems to be trying to simply diversify away from batteries. The giant GEC naturally competes with Delta in a small way as well, and so potentially does MTE.

9.11 In the building - products field, Delta competes fairly strongly with IMI, who are developing (with the aid of ICI) rapidly along the plastics lines. Delta also competes with Peglers, Glynwed, Evered and to some extent with Armitage Shanks in the area of brassware and fittings. Most of these also produce good profits, but once again from high margins, and there is no apparent over - capacity at present. However in terms of plastic building products, which may concern Delta to a greater degree soon, IMI must have an intrinsic advantage and orders for such products as plastic taps are said to be very good at present.

9.12 A look at overall Delta inhibition may now be helpful in outlining possible future developments in other companies. This must be examined in the light of the present moves towards tighter monopolies control. If these fruit, then acquisitional growth may well only be viable as an increase in concentration in a specific but fragmented industry.

9.13 Firstly in terms of large companies seeking Delta as an acquisition, there are only two or three possibilities. The first is GKN, desiring Delta as a horizontal integration. Many of Delta's activities could be seen as both complementary and supplementary to this enormous international engineering empire, and GKN certainly has the theoretical ability (in terms of (share price and resources) to carry this out. The problem would be the amount of paper generated by such an acquisition, and thus institutional barriers may well be the prevention.

9.14 The second possible is Rio-Tinto Zinc seeking a manufacturing facility for its copper mining activities. Copper accounts for 25% of RTZ's interests and thus such a move would be logical. The company also has the resources but once again institutional problems would almost certainly arise. On top of this however is the fact that raw - materials producers do not have similar philosophies to manufacturers (e.g. Alcan and Alcan - Booth). And as well as this the future for copper profitability seems already good for RTZ without entering a field unknown to them.

9.15 The most obvious potential merger is probably that between Delta and IMI (with ICI help) as a move towards Britain competing on a really international or European scale. However, under present conditions, the monopolies commission would very probably turn it down, and there would also inevitably be some fairly serious problems of integration because of the similarity of businesses. With the two previous possibilities (GKN and RTZ) Delta might be an "independent Division" so to speak, but this might not be allowed in an IMI - Delta context.

9.16 Thus, taken all in all, one would expect that Delta will remain independent within the U.K. at least. However, in the long term a global merger (in Europe) may be possible except for the fact that there are difficulties and that these have already been well illustrated by the Dunlop - Pirelli link. One may conclude therefore, that it is probable that Delta will remain independent within the scope of this study.

9.17 To speculate about specific company strategies which may inhibit Delta's development is not easy, nevertheless some broad but helpful conclusions can be drawn from recent evidence. The first of these is Glynwed which has recently diversified away from copper semis, and

in its acquisition of Allied Ironfounders in 1969, pushed into the building products and domestic appliances area. Its recent attempt to control Armitage - Shanks show the degree of ambition and the company is always active. Of Glynwed's output, 70% goes into buildings (40% as replacements), 11% into engineering and 12% into transport. Over the last few years there have also been moves towards greater expansion overseas (S. Africa with a ROC of 23%), a divestment of plastics - because it could not compete with IMI, Marley and Redland in plastic guttering and tubes - (plastics sold to IMI), a great deal of innovation and development in the iron bath field and stainless steel kitchen sinks, and a significant move towards greater participation in distribution (e. 5%) where the ROC is above 30%. To meet its target of a 13% p.a. growth in profits Glynwed will have to continue to be active, and the logical developments left open, include more distribution (builders merchants ?), a greater proportion in transport plus, perhaps, a new area such as kitchen furniture, building ancillaries, C.H. equipment or hollow - ware. Whatever the chosen area Glynwed is a potential threat to Delta's development.

9.18 The second company is obviously IMI as it has the closest profile to Delta. Most of IMI's efforts in the new metals fields have not been successful and this division is not very profitable. Thus emphasis is apparently being put on the development of plastics in application (with help from ICI) and many of the old non-ferrous products (taps, tube, fittings) are now being produced in polymers. Indeed the "Opella" range are apparently very successful. As well as this IMI have over the last two years moved into the fluidics fields in the engineering application. In addition, IMI has developed a series of domestic appliances in the heating/air-conditioning areas as well as the manufacture of a small range of electricals. Since an assault on the zip - fastener market by the Japanese manufacturers, IMI might feel once again that investment must be re-directed and this could be a development in the building products area (28% of output) and certain engineering sectors (27% of output). IMI are also well invested in Germany and may be in a good position for further expansion in Europe. The company has been consistently less profitable than Delta (present ROC = 11.5%) but has nevertheless shown its ability to change direction quickly. It would surely be pleased to see Delta move towards electricals more, and away from building

products but taken overall IMI is a definite "inhibitor" in the truest sense of the word, especially as it is also aiming at higher - value added output.

9.19 To a lesser extent at present, McKechnie could also be classed as an inhibitor even though it is still primarily interested in heavy semis and chemicals. This company has shown fairly consistent results despite this and is showing symptoms of diversification. Overseas investment may well be on the fore - front as well as the development of certain engineering areas and possibly some in the domestic hardware and fittings area as well. McKechnie's ROC is a very healthy 23%, which implies a need to cope with that amount of cash - flow.

9.20 Another large inhibitor is BICC which apart from its dominant cables position in the U.K. has also been actively investing abroad. The group seems interested in broadening its base and has interests in construction (21% of output) and metals generally (20% of output) as well as its traditional business. One may find BICC developing into the electricals field more, and a further development overseas - although the group is by no means an active acquirer.

9.21 In the broad scope of engineering activities with which Delta may be concerned, Serck, Peglers and to a lesser extent British Steam present problems. Peglers with its very sound internal development is producing taps, industrial and domestic valves, plumbing and heating fittings as well as various components in plastic and rubber. As a group they produce a good ROC of 28% (excluding good-will) and are probably actively exploring North Sea Oil markets. Once again they have the resources for such developments. Serck on the other hand are in for a bad current year and many of their possible development plans may have to be postponed. However, in the long term Serck are probably looking for further expansion into Europe and into more industrial valves, hydraulics and filtration equipment.

9.22 Finally three other engineering companies command attention and are, GKN, Tube Investments and Vickers. All must be respected because of size and resources but GKN is clearly looking for real international investment and Vickers has a new management team which are looking for fairly rapid growth in spite of its fairly low profits. British Oxygen also seem to have

extensive cash - flow to re-invest and are actively diversifying, with funds augmented by a recent increase in gearing.

9.23 In the electricals area Ever-Ready also looks for growth and, having assimilated Crabtree, will undoubtedly be looking for more areas. MK Electric showed its intentions recently when it attempted to control Allen West but lost, and are thus now probably looking for other paths of development into industrial electricals and growth overseas. GEC of course must be mentioned because of its resources, but it does not appear that the company is fully harmonised yet and thus effort is being spent on consolidation of its present position.

9.24 Finally in the building - products area, Armitage - Shanks, and Twyford (Reed) seem to be safely in the ceramics area, and Chubb seems to have control of the fire and security field with the help of Yale (Eaton Corp.). However, Newman - Tonks and Nu-Swift Industries present obvious opportunities for say IMI or Glynwed, should conditions be right. Another opportunity is SMC in the heating pump business, and this may appeal to a company like Serck or Peglers, or even indeed MK - although such an acquisition would be expensive.

9.25 Immediate Strategic Implications

Very little can be said about immediate implications without a context. However, it does appear that everybody is aiming to diversify and hence they are almost tripping over each other as regards acquisitions or even internal development. Placed upon this, is the trend towards tighter monopolies control, and it is obvious that the possibilities are indeed narrowed down considerably. Indeed it may be speculated that because a number of companies are actively engaged in diversification, that in the final analysis it will be the simple iron-founders who make the money, because of the competition that will have increased between the large predators.

9.26 In this sense, if Delta needs to diversify substantially further by acquisition, then these steps should be taken early. Subsequently, however, generation of an internal development programmes seem to be by far the best method of ensuring viability, especially if the threat to Delta itself is small. (i.e. that there is no need to be a GKN).

9.27 As far as competition is concerned, much will probably come from companies using substitute materials and a major example is IMI with its inherent plastics advantage. Semis as a whole will also have to face fairly stiff competition from Europe during every successive economic recession, and this is especially applicable to sheet and strip (because of the expected fall in demand). As well as this, turned parts and indeed stampings, will continue to be vulnerable in their jobbing functions. It is also expected that there will be a gradual decline in demand and thus an overcapacity situation may emerge - especially during slump years.

9.28 For Delta as a whole, IMI presents the strongest inhibitor but Glynwed, BICC, MK Electric, Serck, Peglers, GKN, GEC, Mc.Kechnie, Ever-Ready and many others could present threats to Delta's potential development; and a proportion of these companies have the resources and share status to diversify.

9.29 But there seem to be two distinct areas which warrant real investigation and these are the disadvantage Delta has in the plastics area when compared to IMI, and the potential of another company (Glynwed) moving into the control of distribution outlets (e.g. builders' merchants).

9.30 In the first place, IMI will probably attempt to continue to replace many of its non-ferrous building products and perhaps some engineering components with plastics - and it has the research facilities of ICI at its disposal.

The recent success with the Opella range may in fact accelerate this trend, and to remain competitive Delta may thus be obliged to follow. However Delta may still be at a distinct disadvantage in terms of technology and expertise, and there appears to be no solution to this problem apart from either attempting to promote a relevant R&D programme, or steer clear of conflict and instead develop into alternative areas which offer promise.

9.31 Secondly it might be proposed that even in the face of some enormous difficulties, a major move into the distribution area for Delta's products (stockists and merchants) should be very carefully considered - even though it would inevitably be expensive. Such businesses are almost inherently profitable (ROC = 30+%) and it does seem that this kind of move is a logical one for other companies. It is probably certain that should companies like Glynwed control such outlets, then it could be to Delta's real disadvantage.

X THE OVERALL STRATEGY

- 10.1 This section contains the salient conclusions which can be drawn from the previous passages. It also outlines a number of distinct and alternative strategies which Delta could follow, and selects what appears to be the most desirable mix under probable circumstances.
- 10.2 It must be stressed however that the final outcome of the study of an "over-view" generally tends to propose a series of overall policies and not detailed and specific opportunities. Its inherent value is that it indicates areas of development where there is the potential, and narrows the field so to speak. The next step therefore is the one where the detailed analysis must take place, and where a decision must be adopted. What the "over-view" attempts to do, is to make sure that any development has broad long term viability, and is in the best interest of the whole Group. Bearing this in mind, the following points are the most important conclusions, and whilst there are always exceptions to the rule, nevertheless some rules are better than no rules at all.
- 10.3 Perhaps one of the most important changes which is affecting and will continue to affect Delta, is the conceptual role which copper plays as a material. It is very important to fully appreciate that the use of copper and its alloys will tend to become more and more selective, so that the metal will only be employed where its unique set of properties offer significant advantages in cost/benefit terms. Within Delta to-day, there appears to be a distinct polarisation, and this is probably symptomatic of the rate and direction of change which the Group has recently experienced.

- 10.4 The expected increase in the price of copper will continue to effect this change so that conceptually at least, copper will become more and more a "precision" metal - (such as Nickel is to-day). This change may thus have two major consequences, firstly in the practical sense of a shifting end-usage pattern and substitution, and secondly (perhaps more important) it will alter much of the philosophy upon which a large proportion of Delta's present business has grown.
- 10.5 In more basic terms any increase in the price of copper will obviously become more expensive to Delta and this cost will have to be passed on in price increases, thus accelerating any substitution. At the moment, copper potentially engages a continual capital sum of perhaps around £8.5m or so in Delta as stocks and works in progress. On present rates of interest (which may well increase in real terms) the cost of this investment is probably around £0.9m per annum on average, but then add to this the opportunity cost of the investment (i.e. what it could earn say on the Stock Market) and this figure is pushed to over £1.8m per annum. If the price of copper increases as foreseen, then at the same rate of consumption the cost of such stocks could easily rise to as much as £2.7m per annum by 1978.
- 10.6 As well as this a good proportion of Delta's present output would be uncompetitive against substitutes (see Section II) and would by then (post 1978) probably be made in such materials as stainless steels, plastics, aluminium or clad steels. A changeover in the production process would in most cases be quite possible but as an integrated business Delta would tend to suffer as far as its semi-divisions were concerned. This leads to the whole question of the business philosophy upon which

Delta has grown, namely the buying of end-users, and the establishment of outlets for the original business. To-day and certainly in future circumstances, looking for tonnages of semis in development obviously has serious limitations, and such a strategy only seems viable if there is an excess of other advantages.

- 10.7 As far as substitute materials are concerned, the change in the role of copper implies that attention should be given to the most probable future (i.e. stable) applications and uses of the metal - so that Delta will continue to benefit from its wealth of technical expertise - and also that some R & D should be also directed towards a careful analysis of the best contingency plans for the adoption of a new material at operating unit level.
- 10.8 Unfortunately, the one major substitute material which immediately springs to mind - plastics - may have limited potential for Delta. Over the recent years IMI has become increasingly involved in the manufacture of traditionally copper based products in plastics. They also have the enormous advantage of being able to co-operate with ICI, and to be able to tap their research expertise. Thus Delta may in certain instances simply not be able to compete on this basis and some of the Group's products could in future be in a potentially difficult position. Of course there are many other materials which are also viable, and stainless steel, clad steels, Swedish iron (which has good anti-corrosion characteristics) and to some extent aluminium (which is also competitive) are just a few. Magnesium has also been tipped as a metal which is going to become increasingly used. But Delta ought to obtain a greater "toe-hold" in plastics even if it is at the moment relatively unprofitable,

and direct an R & D programme into the application of traditional and substitute materials.

10.9 An alternative is of course to obtain a source of supply as far as copper is concerned. Ownership, or part-ownership of a mine, or a long-term contract with for example RTZ are both possibilities, but there are some obvious disadvantages. In the first case mining is a very capital hungry business and in the light of an overall increase in discount rates, obtaining such capital will become more expensive. In the second, securing a source of supply will not necessarily prevent the change in the overall pattern of end-usage and thus many of the problems may still remain. Thirdly recent political shifts of power tend to indicate that foreign investment on the necessary scale would be vulnerable to nationalisation without full compensation, and such an occurrence would indeed be disastrous. All considered, a backward integration would be probably risky even though as an extractor, a processor and potentially as a commodity trader in a metal which is due for a fairly significant increase in real world price, Delta could also become extremely profitable.

10.10 However, accepting the probable increase in the price of copper, and the subsequent effects of substitution and taking account of the need to use a different business philosophy, there are two major areas where copper is likely to maintain a stronghold. The first is in the field of electricity conduction and control and the second is in the specialised area of heat exchangers. The former is in fact now an integrally important part of Delta, but the latter has little or no place at all. It seems that somewhere here there should be an opportunity which could be developed and exploited,

especially in certain specific engineering applications, and that as an important potential area for Delta's experience, effort should be directed towards a thorough evaluation of the possibility. As shall be seen later, if such a move seemed to be viable, it would go some way towards helping the apparently rapid decline in the copper and brass sheet and strip business.

10.11 From almost every angle of examination, the obvious conclusion is that the heavy semis divisions (Rod and ERM) are probably going to suffer most in the long term. But the position for brass rod seems to be a great deal better, since its end-usage pattern tends to be more diverse and more stable than that for copper and brass sheet. Section III outlined the probable trends in demand for both, and it is immediately clear that sheet and strip may have as little as five years of profitability left. This is undoubtedly a very serious problem because at present around £7m is employed in the rolling mills equipment and on a 10% per annum straight line depreciation, this leaves a residue of some £4.14m in 1978. Even with profits of say £30m by then, this would still prove to be an expensive write-off.

10.12 But as has been stated before, just how fast the decline in the demand for semis takes place may in many senses be quite irrelevant. The heavy capital equipment is dependent on throughput, and once this falls below a specified level, the operation seems to become increasingly less profitable. Assuming the semis divisions maintain a fairly constant market share, then according to the cyclical variations in demand (dependent on GDP) 1976 may prove to be unprofitable for both, since it is apparent that there is an overcapacity situation in Europe, and margins may be pressured downwards as producers fight for

throughput. The great danger seems to be that because 1973 and 1974 are likely to be good years, it is misconstrued that 1971 and 1972 were just freaks. It is vital that it is fully appreciated that the overall trend lines are nevertheless sloping downwards and that the end-usage patterns, potential substitution and increases in copper price tend to confirm that ~~erased~~, this decline will continue despite cyclical variations with economic activity. And finally this will tend to cause an increase in overcapacity in Europe so the consequences for both margins and turnover are obvious.

10.13 But immediate attention must be focussed on the potentially serious problem of sheet and strip. The gradual decline in brass rod demand may well offer enough time for the depreciation to be almost completed, but this may not be so with the rolling mills. The great temptation seems to be to revert to the philosophy of chasing tonnages in an attempt to control customer industries. However, there are some obvious shortcomings here, since in the face of substitution, the customer industries may for example become uncompetitive or be forced to incur reduced profits in order to continue to use copper. Secondly Delta's growth may easily become illogical, and lack synergy, but perhaps most important of all, such developments may also incur an opportunity cost far in excess of the cost of finally writing-off the residual capital equipment. Thus growth orientated towards securing tonnages should be very carefully considered in the long term context and should perhaps only take place where there is the potential of the acquired business making a significant contribution to total Delta viability in its own right.

10.14 It logically follows that further investment in semis production seems unwise even if there is potential for

enhancing productivity and cutting marginal costs. A possible exception to this may be the limited introduction of mini-mills which would be mostly employed internally, but the economic implications obviously need a thorough examination.

- 10.15 As far as the market for building products is concerned, this should be seen perhaps as a stable base which could be broadened rather than one for pure expansion. The rates of construction of new dwellings seem to hold only very limited potential and frankly the improvement grants area seems to hold danger. Between the two Delta ought to continue to go for replacement markets as a priority, and this is especially relevant to Europe. Expansion in line with Local Authority expenditure on grants however should be avoided or at least accepted in the longer term context. There may also be some apparent potential in increasing Delta's output into the new non-dwelling construction area.
- 10.16 The above tends to imply that Delta ought to pay more attention to distribution despite the very significant difficulties. A major step into the stockist or builder's merchant area would probably have good chance of success in the longer term since apart from the synergy and market control elements, such businesses are very profitable in their own right, making in the majority of cases a return of more than 30%. This move ought to be made soon however, because companies such as Glynwed and IMI seem to be moving in this direction as well. Recent monopolies commission rulings should also be considered.
- 10.17 In the electricals and cables arena, the long term general outlook is promising. Not only is the area a major consumer

of copper (and this is expected to continue) but the overall rate of increase in the need to conduct and control electricity will tend to increase rapidly. The one instance where profitability may not be good however, is in the case of public sector customers. It is felt that both electricals and cables also have good long term export potential and the same is probably true of telecommunication cables and accessories.

- 10.18 Because of the favourable outlook, this seems to be a major opportunity for Delta expansion, despite a fair degree of competition, and it is one that the Group ought to continue to exploit. The one proviso perhaps would be to keep out of areas where there was fast moving technology or where the unit turnover was low, as in advanced and specialised fields. In other words, the type of low-voltage equipment presently produced provides a framework for expansion in general terms, and on an international basis.
- 10.19 In terms of turned parts and components, the historical jobbing function of these industries tends to lead to cyclical demand, periods of overcapacity and in the case of turned parts, intense competition as well. The natural move towards establishing a product-market which integrates with present activities is obviously a good one and should be continued but there are added difficulties. The expected long-term decline in the demand for brass rod implies that apart from substitution and rationalisation of usage, alternative production methods (e.g. castings and shell-moulding) which turn metal directly into almost finished components without all the intervening stages, may also become predominant in certain instances. At the same time several customer industries in this area could be logically acquired since

they are viable in their own right. (e.g. fire extinguishers, pneumatics, hydraulics.)

- 10.20 There is also perhaps an increasingly strong case for greater real integration between say Rod Division and stampers and turned parts manufacturers in the Group, despite the difficulties of competition customers. Indeed there might be a conflict of interest in the not too distant future, where for example one of the light semis divisions wants to move into plastics in a big way at the expense of the rod producers. Thus there may come a time when it is appropriate to re-house these divisions as their roles could be about to change; so that on the one hand real integration can take place, and at the same time growth into new and perhaps more profitable areas can take place without constraints.
- 10.21 As far as Europe is concerned it is strongly felt that Delta should not invest in manufacturing units just for the sake of "being there". If the apparent low returns, and all the difficulties of acquisitional growth in the EEC are taken into account, one may conclude that in cost/benefit terms it is simply not worth the effort. What should therefore be done, is that once again Delta ought to develop a network of distribution since this would offer viable businesses in their own right, plus a bargaining trading position and one where any potential economics of scale or home production could be obtained.
- 10.22 The cash acquisition of strategically placed small private European stockists, distributors or merchants, which could be organically grown over a period of say five years would be the sort of strategy to adopt; providing of course that they were not tied to Delta produce alone but were flexible and pragmatic in operation.

Another important advantage of developing a distribution system first is of course that once soundly based, development backwards into further relevant manufacturing activities could then also take place, enabling Delta to really spread its wings.

10.23 As regards international growth, then by far the most promising area seems to be the Pacific Basin, except for those countries with vulnerable export-based economies (e.g. Singapore, Hong Kong, Taiwan). Delta could well establish a very sound series of investments in such areas as Malaysia or Indonesia, and could take full advantage of the apparently forthcoming good economic growth.

10.24 Finally the manpower situation in the United Kingdom and in Europe lends a good deal of support to Delta's historic policy of keeping manufacturing units, where possible, small. In view of the expected future trends in this area it would seem desirable to continue with this policy without allowing it in any way to restrict growth should there be economic potential. However, as a broad guideline, the tendency of small units to work more effectively in terms of labour is a good one, and will become relatively more important in future. There will also perhaps be a need for a re-structuring of certain growth policies, especially in the light of the very rapid advances towards manpower participation and flexibility in working.

10.25 Alternative dimensions of strategy

After that brief discussion, we can now come to the main specific alternative dimensions of strategy open to Delta, after which a final overall strategy will be chosen. These dimensions are as follows:-

(A) Buy into a copper mine or enter into a long term contract with a company like RTZ in order to obtain the raw material at a reasonable price. Develop a small commodity trading arm for the Group which would profitably deal in copper and other non-ferrous metals. This would enable Delta to continue to utilise its present manufacturing processes and expertise whilst competing successfully (and probably advantageously) with substitute materials. And operating at the top end of the market, these businesses would most probably continue to be profitable. This alternative is however rejected since there is inherent risk, and Delta is probably not yet really large enough to sustain the type of capital investment required for such an operation. As well as this, certain coppers are specific, and it may well be the case that the Belgian producers (with their historic relationship with Zaire) will accept this type of business role in Europe anyway.

(B) Because of this divest of heavy semis in order to release the capital tied up there, to cut the opportunity cost and use it to develop a more profitable base for future Delta growth. It is possible that a large European or even Japanese concern would be willing to buy Delta's semis businesses at a reasonable price and as a "going-concern", in order to gain a base in the United Kingdom and/or Europe. In purely objective terms this is certainly a possibility and as Delta is in many ways not really

integrated, Group users would not be drastically affected, especially since European overcapacity would enable them to buy semis outside at similar prices. Once again this alternative is rejected because the capital would not be fully realised if broken up, and if sold outside the resulting fragmentation within Delta might be severe.

(C) So increase semis productivity by further investment, and at the same time reduce marginal costs so as to extend the life-cycle (i.e. increase consumption) and hedge against the long term decline. Such a move would also enable other Group users to be more competitive and/or more profitable. This is also rejected since we already have an overcapacity situation and such a strategy would tend to accentuate the situation. Apart from this there is absolutely no guarantee that the long term decline would be halted, and if not Delta would be stuck with a large bill to write-off as well as a possible opportunity cost on the investment.

(D) Gain control of more end-user industries so as to hedge against substitution and rationalisation and ensure the continuance of profitable semis operations. This is again mostly rejected since such a strategy could lead to unrelated growth, uncompetitive user companies, and a major opportunity cost to Delta. However, in certain instances, where the businesses have viability in their own right, and where they could make a significant contribution to maintaining a semis operation through its depreciation, such a development is obviously sound. Indeed it may well be that this is the only alternative which could help the sheet and strip business in view of the previous conclusions.

(E) To intensively develop the electricals end of Delta since there is much overall potential and because this is

an area which will continue to utilise Delta's expertise in copper and copper alloys. This alternative is accepted in principle, taking into account of course specific difficulties. However, such a development is basically a sound one as the overall electricals and cables area appears to have good long term potential, in a truly international context. Whilst there will always be certain areas which are not profitable or where competition is fierce, nevertheless being in the field will probably have real benefits for Delta in the longer term.

(F) To intensively develop the building products area especially in Europe. This alternative is partially accepted. Delta might well broaden its scope here but not expand in depth since it is felt the overall market area is a steady and limited one. Going for the replacement sector seems to be the best bet but once again no apology is offered for emphasising the danger of chasing after the improvement grant volume with production expansion.

(G) To develop a comprehensive distribution system for Delta Products by the acquisition of builder's merchants, stockists and wholesalers. This is accepted in principle despite inherent difficulties which Delta has already met in the past. Where such a move is undertaken, it is important that outlets should not be specifically tied to Delta output, and growth in this area would also require a major thrust rather than a gradual build up. It is felt that this is by far the best alternative for Delta's European growth as well.

(H) Finally to develop a fourth area of operations outside the present electricals, building products and general engineering fields. Because of the apparent lack of opportunity for concentric growth in existing areas, Delta

should develop a completely new field, preferably orientated towards the consumer end of the market. Opportunities may exist in the consumer durables field and such a strategy could also tie in well with the network of distribution. This alternative is partially accepted, once again in principle, but it is of lower priority in present circumstances since development within existing areas has not yet been fully exhausted. Nevertheless areas such as the manufacture of appliances could present Delta with a major addition to its base of operations.

... quality ... initially ... to be ... companies ... and ... of optical ... since it is ... and logical ... in this way, ... backwards ... in Europe ... could well be ... to admit ... and perhaps ... (e.g. electro ... distribution ... in its own right ... thus it would ... indeed.

10.26 The final choice of strategy for Delta

Having summarised the broad conclusions and their implications for Delta's possible development, the following outlines the strategy thought best for the Group.

(1) A high priority is that Delta ought to make a major move towards the establishment of a comprehensive distribution system for its products. The acquisition of builder's merchants, semi stockists, electrical wholesalers and so forth, would obviously present significant problems but it is felt that if they could be overcome, such a development would be very much in the Group's interest in the long term. Two provisos are that these outlets ought not to be tied specifically to Delta products and that this move has to be initially carried out on a large scale. It also ought to be effected fairly quickly since certain competitor companies have been developing in this direction and the Monopolies Commission has been moving towards tighter control. The establishment of a distribution system of outlets in Europe is also included in this proposal since it is felt that this is the only really viable and logical step for Delta in the EEC. Once having based itself in this way, the Group could then, where appropriate, move backwards towards relevant manufacturing activities in Europe as well. Thus in several years' time, there could well be a Service and Distribution Division in Delta, to administer (on an international basis) these outlets and perhaps with even a contracting arm in the business (e.g. electrical contracting). Whatever the outcome, distribution makes a return of around 30% on capital in its own right and is a logical development for Delta, thus it would provide a very sound extension indeed.

(2) Secondly, Delta might be wise to develop a fourth major area of operations, largely because concentric growth in the general engineering field seems to be limited. The consumer durables area might provide opportunities but this obviously requires much detailed examination. Nevertheless it might slot in well with the proposed distribution system as well as perhaps the present electricals activities of the Group. Such a move is however of lower priority, and is thus further into the future, but there is the potential of profitability here, and something will have to be done with the type of cash-flow Delta is going to be generating by 1978. Perhaps a good example of this type of growth would be into hollow-ware.

(3) Delta should also perhaps establish a greater share in dealing in plastics, partly as a hedge against the expected continuance of substitution and partly because if the Group fails to get a toe-hold IMI is going to become dominant in the field. Indeed IMI has all the advantages at present (i.e. ICI) and is fast exploiting the use of polymers in various traditionally copper based applications. Thus whilst at the moment Delta's investment in plastics could incur an opportunity cost, nevertheless for the purposes of longer term optimal development, it is felt that such a move would be a wise one. As well as this the detailed examination of the use of other materials notably Swedish iron, magnesium, stainless steels and various composites and claddings, in application would seem to be of strategic importance in the dealing with the expected shifting pattern of end-use for copper and its alloys. Thus perhaps it would be wise to direct an intensive R & D programme towards this end.

(4) The Group should continue to broaden its activities in

the building products area, but not expand them in depth. The development into such areas as locks, security, fire systems, heating pumps and ceramics are all obvious examples. Delta ought also to continue to assault the replacement sector of the market, especially in Europe (allowing for standards difficulties) and this once again dove-tails with the setting up of a system of distribution. However, the limitations and vulnerability of improvement grant demand should also be recognised. A greater emphasis should also perhaps be placed on new non-dwelling construction which appears to have some potential. Taken all in all, this area should be treated as one for solid development in consolidation of Delta's existing position rather than one for dynamism, since the long term potential for the new dwellings area is far from expansionary, and that in the final analysis it is the rate of new dwellings construction which provides the key to the characteristics of much of the market area.

(5) Delta should continue to develop, both in depth with a broadened base, its electricals and cables activities since there is promising and exponential long term potential demand here. This area also provides the one really solid stronghold for copper, and would thus continue to use Delta's expertise as well as helping existing capital equipment. One may also highlight electricals and cables for further international expansion, especially in the Pacific Basin area as well as there being a good deal of export potential. Europe is also thought to be a good proposition for telecommunication equipment. The one proviso perhaps is that the Group might be wise to avoid areas where the R & D requirements are very significant (i.e. sophisticated fast moving, or slow unit turnover equipment) as well tending to keep clear of public sector contracts where the returns appear to be continually restricted.

(6) In the general engineering field, the opportunities for concentric growth appear to be limited and the returns also seem to be relatively low. Delta might try to develop into certain specialised engineering areas (although the obvious fluidics field has been taken by IMI) but these are as yet unidentified. It is generally felt that as the prospects in the engineering sector are limited, investment here should, as a general rule only, be given lower priority except perhaps in the case of products relating to the North Sea Oil development and such things as industrial valves and special heat exchanger equipment, (especially if there is potential for the use of some electricals usage here as well). It is once again felt that the key to some success in the engineering fields may lie in the control of systems of distribution by Delta.

(7) The heavy semis businesses are undoubtedly the ones which present the most persistent potential problems and the sheet and strip sector can be highlighted as the one with most difficulties. It is a very difficult decision but it is felt that there is a case for real integration within these areas. In the first instance the long-term decline of brass rod is expected to follow a gradual and cyclical pattern so that a more direct link-up with internal Group customers may have long term advantages in allowing natural development; something which at the moment appears to be lacking. This would allow the existing light semis divisions to develop unconstrained and without a conflict of interest. The case for sheet and strip is, however, much more immediate and requires attention. There seems to be no logic in simply chasing a wide variation of small tonnages in order to secure a market and hedge against what is expected to be a pretty rapid decline. However, the one major area which

may have long term potential in its own right is that of heat exchangers and thus Delta ought to examine in depth and decide upon a possible large scale movement into the heat exchanger field; a move which would be logically integrated into ERM's present activities. Having said that, it is also logical that further investment in copper based semis production ought to be, as a rule, avoided since it would probably incur a significant opportunity cost.

(8) Finally Delta's latest development into extractive metallurgy may imply a good deal of logic in having a small but useful commodity trading arm. The expected increase in the price of copper, together with the increasing need for more selective purchasing both indicate that such a development could be to Delta's distinct advantage, and in trading in non-ferrous and other more specialised metals, it would seem that this would present a profitable opportunity for the Group. This sort of area could also encompass the recycling of non-ferrous scrap as well, since as the real prices of metals (expecially copper) tends to be on the increase so recycling will become more and more important.

10.27

Delta's final strategic blue-print

If the above strategy as outlined is accepted as a reasonable method of development for Delta, then the following "blue-print" is what the Group might look like towards the late 70s or early 80s. If this sort of picture is accepted, then the logical Group objectives for its achievement could be subsequently deduced. It is proposed that in maintaining a decentralised structure Delta would by 1980 have eight divisions. These are as follows:-

(a) An Engineering Division - based on the present Rod Division, it would be a properly integrated unit producing various turned parts, stampings, forgings, diecastings, sand castings, sinterings and shell mouldings in copper, brass and other alloys as well as aluminium, mild and stainless steels and so forth. It would emphasise its development towards producing finished components and equipments and would have moved into industrial valves, North Sea Oil components, filtration and perhaps further into the fluidics area. Its output would be extremely diverse and it would also perhaps sell to the transport industries to a reasonable degree. The Engineering Division would also, of course, have some manufacturing facilities overseas and eventually some in Europe. Capital employed would be around £35m and profit contribution = £5.25m.

(b) The Metals Division on the other hand would be based largely on the present ERM and would tend to deal in larger and more semi-manufactured output. The Division would have a significant interest in heat exchangers and this would be a fully integrated process, producing where possible, finished equipments. The Metals Division would

have a small commodity trading arm, responsible for supplying Delta as a whole as well as managing the extractive metallurgical interests of the Group. As well as dealing in copper and alloys, this Division would also process and manufacture with such materials as magnesium and Swedish iron in addition to various steels aluminium and zinc. Certain more specialised metals (tungsten, manganese, vanadium and so forth) might also be used. The Division might also do some presswork and be involved in the anti-corrosion and related businesses. Capital employed - circa £35m. Profits - £5.25m.

(c) The Service and Distribution Division in Delta would manage a comprehensive range of outlets for the Group's products, ranging from semis stockists, electricals wholesalers, builder's merchants and engineering outlets. In addition it may do some actual contracting work, based on Delta's products (e.g. electrical installation etc.). This distribution network would be largely based in the United Kingdom and Europe but could also extend to such places as the United States of America, Africa and Canada, since it would be responsible for all export trading as well. Thus, although being intensively market orientated, it would not necessarily have exclusive control of all Delta's products, neither would it deal with those products alone. Capital employed circa £15m, profits - £4.5m.

(d) The Plastics Division would be smaller but would be a sub-contractor for other Delta Divisions as well as marketing its own products. Dealing with the majority of common polymers, it would provide the Engineering, Building Products, Electricals and Cables Divisions with their requirements and at the same time develop a wide range of finished plastic components and laminates which could be

logically marketed through the Service and Distribution network. Capital employed about £10m and profits - £1.5m.

(e) The Electricals Division would be a logically grown, but distinctly international version of the existing structure. Based very broadly on the low-voltage and low R & D type of electricals the Division would probably have as much capital overseas as in the United Kingdom, and it would be especially strong in the Pacific Basin as well as having expanded some way into Europe. It would also be significantly export orientated and might in addition be producing some simple instruments, meters, perhaps thermo-couples, heating and cooling elements, sensing switches, relays and even electrical machines. Capital employed - about £30m. Profits = £7.5m.

(f) The Building Products Division would be also broadened but not expanded in depth. It would apart from its present product-mix, deal in security and locks, be involved in the manufacture of fire extinguisher equipment, perhaps in ceramics and perhaps in the production of heating pumps. It too would be really export orientated and would be distinctly strong in European markets via the Service and Distribution Division. It might eventually control manufacturing activities in Europe as well. The Division would especially cater for the replacement market and would once again use the contracting services of the Service and Distribution Division. Capital employed = circa £25m. Profit = £5.0m.

(g) The Cables Division would once again be a broadened and expanded version of the present structure, dealing perhaps in more specialised cables, and even in a return to high tension equipment. This Division too would have a very significant part of its assets abroad (but not

probably in Europe) and would be generally speaking export orientated. It might also have developed a small arm dealing with such things as insulators and related accessories, conduits, ducting and junction boxes. Capital employed = circa £25m. Profits £5m.

(h) Finally the Consumer Durables Division would be a relatively small unit producing products perhaps in the hollow-ware, electrical appliance and related fields. It would provide Delta with one more major support in an attempt to maintain a steady stream of earnings despite the cyclical variations in most industries and would be responsible for its own distribution and marketing of products. The Division would probably confine its activities to the United Kingdom and Europe. Capital employed = £10m. Profits = £2.0m.

10.28 That concludes the outline of the blue-print, and it would call for three major changes in Delta's present structure.

- (i) Three quite new divisions (namely Service and Distribution, Plastics and Consumer Durables) would have to be grown and set up. The highest priority here is probably the establishment of the Service and Distribution unit.
- (ii) The two major Semis Divisions (Rod and ERM) would move towards real integration in processing, and would then be broadly expanded on that basis. This would obviously call for a re-structuring of Astonia and Components Divisions plus a major movement into industrial valves and heat exchangers.
- (iii) Finally, the present Overseas Division would be subsequently split up and its companies allotted within the new Divisional structure. Thus Delta's divisions would eventually have the opportunity to become truly international in terms of the management and expansion of businesses.

10.29 At present, all the relevant research which has been carried out under this project, tends to point towards the possibility that this type of company structure would be most appropriate for Delta. If these lines were indeed followed, the Group would then have a total capital employed figure of about £185m, a turnover of about £320m and annual profits of say £36m.

A P P E N D I X (B)

'GREEN' PAPER PROPOSING PLANNING
OBJECTIVES FOR DELTA

GOALS, OBJECTIVES AND PLANNING : AN APPENDIX

Robert Easton, May 1973

I Introduction

- 1.1 As requested, this paper is an appendix which contains a series of purely personal views which seem relevant to the outcome of the above paper. But although they are personal, I have tried once again to be both objective and logical in preparing them - and they are now presented in the form of a brief discussion paper.
- 1.2 The paper itself seeks to outline the major apparent problems which were illuminated by the initial research, to examine them in a theoretical context, and finally to draw logical conclusions about the possible ways round them.
- 1.3 For the purposes of being easily read, this appendix has also been kept as short and simple as possible, and so most of the arguments proposed here could be greatly expanded upon. With this in mind, apologies are offered for any detail omitted.

II Planning Objectives

2.1 From the evidence gathered during the initial interviews, three main problems seemed to emerge as regards "objectives." These were:-

- (a) that Divisional Chairmen had difficulty in fully empathising with group objectives,
- (b) that the type of "goal" for Delta as outlined seemed to be inconsistent with the objectives apparently presently thought desirable,
- (c) that the degree of variation of scores awarded to specific objectives implied disagreement within both groups.

2.2 The first problem might well have been expected. Divisional Chairmen are an integral part of a middle order system and as such should (theoretically at least) have difficulty in understanding the logic and language of "the Group." The same could also be said of the logic and language of profit centres which belong to the lowest order of system. Because of this, it would seem important that:-

- (a) Divisional Chairmen are involved more in the setting of Group objectives - so that they may more reasonably understand the underlying logic and reason,
- (b) Group objectives are very carefully translated into the language and logic of the other two levels of the organisation, (namely Division and then profit centres) so as to ensure a consistent approach to what the whole Group is attempting to achieve.

2.3 The second and third problems are perhaps related, since the emerging picture is really a series of differing opinions about both the objectives for planning, and about what Delta is "wanted to be." This seems to imply that the "goal" for which Delta is aiming has not been thoroughly thought out, but this anomaly can perhaps be best explained another way.

- 2.4 In the eyes of the City, 1967 was seen as Delta's bad year, even though there were important reasons to account for it. Nevertheless the City tended to lose confidence and this was expressed by the fairly rapid drop in share price. Thus for the last five years, there has been an obvious planning goal - namely recovery - and most of the rationalisation and subsequent development was perhaps the means to this end. However the 1972 results have left Delta with a strong progressive EPS trend line, and in the eyes of the City, the Group is once again financially sound and has now "recovered."
- 2.5 Thus a "cross-roads" may have been reached, the obvious goal of recovery has disappeared and something of a vacuum remains. In this light, it would seem important that firstly a new "goal" is identified, and secondly that a logical series of objectives are deduced from this "goal."
- 2.6 One City analyst said of Delta - "it has been buying earnings, and as such does not warrant a higher P/E rating since it has failed to demonstrate effective management of its assets." He also indicated that Delta had been writing-off goodwill and was thus "cheating" in its claims of a high return on capital. The Lex column of the Financial Times said at the last write-up, "(it) remains a high quality stock but is unexciting."
- 2.7 So what the City seem to be looking for is not simply growth in earnings per share. Originally share prices depended mostly on the dividend paid, and later on the rate of growth and volatility of the EPS trend, but now what they seem to be saying is that they want to see "efficiency" in the management of assets. Companies will now tend to be assessed in "phantom reference" terms - that is, "what would your profits have been had nothing been acquired?" Thus whilst acquisitional growth was the optimal method for Delta's development recently - in shifting sources of earnings - it would now seem desirable to place a much greater emphasis on internal development, and to communicate this.
- 2.8 If this is so, then a more meaningful approach might be as follows:-
- (a) - that the financial criteria by which a company is initially judged, should not now be seen as objectives but as constraints.
 - (b) - that an open-ended exploration by Delta's top management about what they want Delta to be in say seven years time, takes place.
 - (c) - that the real objectives are deduced from the "goal" identified during this discussion, are formally set out and where possible are translated into the languages and logic of the lower-order systems.

- 2.9 If one accepts that, primarily, the financial performance criteria relate to the risk and to the return on the investment of the shareholder, then these can be quantified in terms of "conformity." That is, that Delta offers a normal (or a little more than normal) return on equity, through dividends and capital appreciation. If this is accepted, then the prime financial constraint on Delta, is that it has to offer over a long period, an average return on shareholder investment of around 8.0% in real terms (or around 12% in money terms). - (Merrett & Sykes - District Bank Review no. 158)
- 2.10 And so, once having satisfied this constraint, either by dividend payments or by capital appreciation (both of which relate to earnings per share growth) then the resources left over could be invested in the real objectives for Delta's development towards its identified "goal." Indeed an extension of this idea would involve an investigation of the categories of Delta shareholder, an assessment of their wants and perhaps even the issue (in theory at least) of two types of share - one for those seeking greater capital appreciation, and one for those wanting greater distribution - if this were at all possible.
- 2.11 Basically, it is believed that most of the real corporate objectives would probably come under the "umbrella" of attempting to ensure the maintenance of Delta's long term future viability. That is, that as a total system, the Group continues to be able to honour its obligations and to "work together" successfully by endlessly investing in its future. This is proposed because it is more than probable that the "goal" as identified will also be continually changing its position and shape as time goes on. Nevertheless, if the "goal" is seen to be a visible one, then the objectives which logically flow from it will also be meaningful and realistic.
- 2.12 Finally a word must be said about the importance of translation of the constraints on the one hand, and the objectives on the other. It has been mentioned previously that the Group, the Division, and the profit centre are three quite distinct operating systems, each having its own logic and language. Earnings per share for example, would probably mean absolutely nothing to a production controller when making a decision. So it is most important to translate both Group constraints and Group objectives into a language which is meaningful to the Divisions and profit centres. Instead of a threshold of average performance however, it would also probably be more helpful if the constraints and objectives for each Division (or profit centre) were unique, and were related directly to the potential or the position of that Division. If this was done -

- (a) both the constraints (23% return on capital) and the objectives (development of a distribution network) would be meaningful and realistic.
- (b) the "adding-up" of the eventual results would more likely be near-optimal for the whole Group (i.e. Group objectives and constraints would have a greater probability of satisfaction).

Objectives - a Resume

- (1) The problems which emerged from the interviews were the difficulty Divisional Chairmen had in fully empathising with Group objectives, and the apparent lack of a "goal" for Delta with the resulting variation in attitudes to objectives.
- (2) In order to counter this, firstly let the present financial Group objectives become constraints, which are quantified by a normal value for a return to equity investors. Then let a "goal" for Delta be identified by having an open-ended exploration with top management, so that a series of real objectives can be logically deduced.
- (3) To make both the objectives and the constraints meaningful, translate them into a series of unique and democratically approved Divisional targets and indeed sub-divisional targets. This would help in increasing the probability of optimal results.

3 The Planning System

3.1 Before we examine the problems apparently arising from the planning system it would be most helpful if the system was examined in theory. Stafford Beer (Brain of the Firm, Allen Lane 1972) states that where it is the case that Divisions are essentially autonomous in a decentralised firm, there are three managerial requirements:

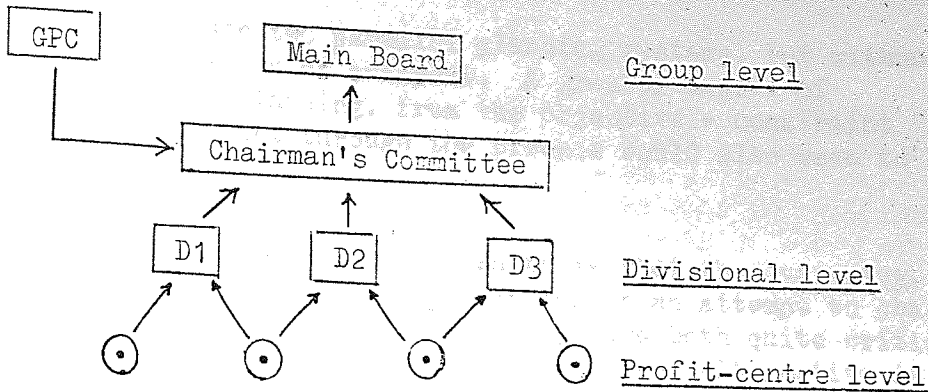
- (a) that there are common objectives and that Divisions operate within the intention of the whole group,
- (b) that Divisions operate within a co-ordinating framework by recognising the existence of other Divisions,
- (c) that in the final analysis Divisions submit to the automatic control of the corporate regulatory body, for the sake of synergy.

3.2 It certainly did appear that the majority of evidence pointing to a sub-optimal planning system in Delta, could be directly explained by the above. To quote Beer - "Divisional people must first learn the language (of the Group system) and then identify. They are often unwilling to do this," - and as regards (b) - "In reality (Divisional Chairmen) are far too involved in their own Division for this and must constantly fight other Divisions for capital. Thus some measure of control must be vested in a corporate regulatory centre."

3.3 As far as planning is concerned what we really have is in theory a centralised system being by far the most efficient, but in practice is being a complete disaster. On the other hand whilst a decentralised ("building-up") planning process gathers the information, involves the people who must implement the outcomes and taps the expertise; it is also the case that active line managers simply do not have the time to plan thoroughly, and that there is also a very limited perspective which continually distorts information and its relevance. So the answer must be some sort of hybrid.

3.4 In terms of Delta's present methodology, there appear to be two structural anomalies:-

- (a) - that there is no really independent arbiter,
- (b) - that the GPC (a group component) reports to and advises the Chairman's Committee which is probably more likely to be Divisionally weighted in outlook. Thus there is a theoretical problem of communication and logic here as well.



3.5 To take point (a) first, it can be argued that it is the Chairman's Committee which is the (democratic) arbiter. However, if the C.C. is more "Divisional" than "Group", it has a theoretical problem of understanding the "Group" point of view. But this quite apart, it is also attempting to police a system of which it is an integral part, (especially in a fund competitive situation) and thus success here is (theoretically) improbable (e.g. the City seem to be consistently unsuccessful in its regulatory panels).

3.6 Once again Stafford Beer illuminates the situation by saying that where there are members who belong both to a Divisional Unit and a Group unit, there is an obvious duality of interests and roles. He goes on to say "... it is rare indeed to find that all parties to a corporate decision fully understand at any one time who is adopting which role." Such may well be the case in the Chairman's Committee.

3.7 Point (b) follows very directly from that, and one Divisional Chairman's remark that the GPC was "too narrowly based in their outlook" tends to substantiate this. If this is so, then the GPC should not be plugged into the Chairman's Committee but should be completely independent of it. It should be thus explicitly responsible for:

- (a) helping to set Group objectives and constraints,
- (b) for over-viewing the whole group system,
- (c) for evaluating proposed development in the context of the whole Group and
- (d) should be able to present in depth, "cast-iron" cases for or against any specific proposal or policy, as a method of assessing priorities, and of arbitration.

- 3.8 Thus one would see two parallel planning systems, but without too much duplication of analysis. A greater degree of co-ordination of planning, from the objective + constraint setting phase, right through the process would also seem to be desirable.
- 3.9 What this in effect all boils down to is that the over-view, and the ability to co-ordinate planning in an attempt to chase Group rather than sub-Group optimality, are both quite critical issues for successful development. The other alternative is of course to re-house the present Division under two or three wings, in which case, as a related conglomerate, Divisional optimality could then be a permitted planning method.
- 3.10 However, a clearer decision framework for making the best use of proposals generated by the "building-up" process, coupled with a detailed analysis of the "fit" from a total Group perspective is the type of role the independent arbiter should primarily play. Thus the GPC should be much more than a "steering committee."
- 3.11 Finally many seem to question the initial premise that the "building-up" planning process is sub-optimal. So let us examine three purely hypothetical Divisions in a company similar to Delta. Division (A) is a highly efficient unit which has submitted a proposal for a project which it estimates will produce a return of 20%. Division (B) is not quite so efficient in its planning and has produced a weak case for an investment which may yield a 25% return. Division (C) on the other hand is a relatively unprofitable unit, but has produced a good case for an investment which is expected to give a 15% return.
- 3.12 There are enough funds for only one of the proposals since a split two or three ways will lose any potential economies of scale. On the basic evidence the order of priorities would probably be (A), (B), (C), since an apparently certain 20% is better than only a possible 25%. However, a little more analysis would reveal that Division (B) has been quite correct and so the order is re-arranged to read (B), (A), (C).
- 3.13 However, what wasn't examined, was that if the funds had been given to Division (C), not only would 15% have been made on them, but the boost to morale of the management team would in fact have increased the total Divisional return by 1%. making a net gain equal to 30% on the original investment and at the same time keeping a good management team together. Thus whilst on the basis of the investment, the order of priorities would be (A), (B), (C), or (B), (A), (C), the optimal investment for the whole Group would in fact have been quite the reverse - (C), (B), (A).

3.14 The above example is necessarily over-simplified and theoretical - but it may not be too unrealistic, and the point is made. Optimal planning implies planning for the whole system under control. Indeed if sub-group units are individually allowed to optimise, this removes many of the very synergic advantages of being part of a group.

Planning System - a Resume

- (1) The problems seem to all centre around the fact that there is no really independent arbiter, and that the GPC is plugged into the C.C. where there may be a conflict of perspective.
- (2) The C.C. cannot really police itself so to speak, and so it needs an independent GPC to assess priorities fairly, and to examine in depth, and in the context of the whole Group, proposals generated by the "building-up" process.
- (3) The GPC thus needs the ability to present "cast-iron" cases, for or against proposals or policies, and to over-view and co-ordinate the whole planning process.

4 Conclusions

4.1 If these arguments are accepted, even in part only, then the following alternative planning framework can be tentatively proposed. In this procedure a clear distinction is drawn between the financial performance criteria by which the City and shareholders supposedly judge a company, and the other aims which are emphasised by top management. The former are instead now classified as constraints, and the latter as the real objectives.

4.1 (A) The Group constraints are quantified by the GPC on the basis of:-

- (i) - an average return on shareholder equity over a long period equal to or slightly greater than the normal value for all U.K. public companies. (=circa 12% p.a. money terms)
- (ii) - or alternatively that the growth in EPS + dividend is equal to or a little greater than a norm of performance (EPS = circa 12% p.a. money terms) - although planning on the basis of EPS alone has dangers.
- (iii) - whilst of course maintaining an acceptable degree of investor risk (i.e. reasonable values for the financial ratios + gearing, etc).

(B) (i) The Divisions then propose their probable contributions in the form of a ROC, taking into account economic and trading conditions ruling for that year, plus investment and divestment decisions.

(ii) These proposals are examined in depth by the GPC who eventually agree on a unique target figure with each Division. Any extra free-cash-flow is of course gathered but then immediately re-deployed in fulfilling real objectives.

(C) (i) An analysis of the future corporate environment, plus top management involvement, defines a total Group "goal" and the objectives and targets for Group development are equally deduced and set by the GPC.

(ii) Where a Division is implicated, a series of unique divisional objectives are democratically agreed with the GPC, and the Division is then responsible for setting out its proposals and targets for this achievement.

- (iii) Where the logical Group objectives imply pure diversification, then the GPC is responsible for proposals and targets, which are communicated to and agreed with the Divisions.
 - (iv) Divisions are also responsible for proposing apparent opportunities for diversification, should they be consistent with the total Group objectives.
 - (v) Most of these real objectives would be concerned with making sure of long term future Group viability.
- (D)
- (i) That the Divisions supply the GPC with a constant feed-back on the position as regards achievement towards targets and vice-versa.
 - (ii) That both Divisions and GPC together make any necessary modifications in the light of new information, difficulties and so forth.

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