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CORPORATE PLANNING - THEORY, PRACTICE, COMPARISON

– A study of remote guidance and control systems among U.S. and European firms

by

Gunnar Eliasson

FEDERATION OF SWEDISH INDUSTRIES

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STOCKHOLM

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0. FOREWORD

Planning is a systematized way of thinking ahead of time. In this general sense planning has always been there; with individuals as well as in organizations, large and small ones.

In most business firms planning is predominantly informal and communication largely oral and relying on memory rather than numbers and memoranda. However, the formal or bureaucratic element in planning has grown with the size of the organization. This is something that has been observed. More formal communication is also a rather obvious requisite since mental faculties of humans are limited; in particular when memory is involved.

Informal planning represents a process of thinking leading ultimately to an irrevocable decision. As such planning and decision making is a mixed process. No doubt, the formalized plan in some way or another reflects the ways business men think when facing the future. In a large organization there is more information to handle than in a small organization and there are more humans involved. Consequently the process of arriving at a decision and implementing it is more complex and has to be standardized and coordinated to be manageable. This is the basic reason why the use of formal planning methods has become more frequent. This is also the first reason why the formal planning system of business firms has been singled out as an object of investigation in this study. Prime emphasis has been placed on the logical structure and integration of formal planning routines. The bulk of the text is devoted to an analysis of various aspects of the formal planning systems in use among a sample of U.S. and European corporations. Besides formal planning routines are fairly easy to observe.

This does not mean that the informal element in planning - always present even in very large business organizations - has been neglected. Although hard to observe systematically, attempts have been made to recognize the ways management discretion are imposed upon the formal planning routines and to assess the importance of informal planning in final decision making.

Still, it is imperative to keep the concepts of planning, decision making and behaviour apart. The explanation of behaviour should always be the prime

concern of research in social sciences and formal planning as a logical construct could only be considered of interest if a potential impact on behaviour is at least to be expected.

The second purpose was in fact the original one; namely to examine the relevance of some basic assumptions as to firm behaviour postulated on rather loose grounds in two previous studies of mine.[1] Furthermore I felt a need for more relevant starting points for a meaningful growth theory of a business organization, than those provided by current "a priorising" in economic theory. As a result this monograph in fact winds up with a set of suggestions as to the formulation of a growth theory of a business organization.

Third, requests on firms to supply all kinds of data on their plans for the future have taken on such proportions over the last 10 to 15 years that one is at times inclined to talk about a fashion among the bureaucracy, the data gathering institutions and the professional economists. Such data are now put to extensive use for prediction purposes, economic research and as a basis for macro-economic policy making. For this reason alone there should be some demand for information as to the character of such data and the purpose they are supposed to serve within the firm itself. On this point I can promise to present results since the problem refers directly to the matter that takes up the bulk of the text; namely how numerical data related to aggregate firm operations originate in and are processed within the firm.

The project sounds rather pretentious on the surface of it and the modest results arrived at will not compare well with this introduction. I also have to add that writing this report has been an intellectually rather frustrating experience. Not only has defining my problems and concepts been like fitting an elastic painting into a rubber frame. The only method of measurement at hand (interviewing) has meant applying a rubber ruler the elasticity of which is impossible to assess properly. Besides, condensing the mass of details of the next few chapters into a manageable logical construct, that could be used for drawing some conclusions of interest, is constantly open to objections on grounds of the text of the chapters presented just before and sometimes (although not always, fortunately) in conflict with conventional views on business behaviour. I have, however, at times experienced the comforting feeling of being an explorer in virgin lands trying to systematize and describe what I observe as well as I can.

---

1) Kreditmarknaden och industrins investeringar, Uppsala 1967 and The Credit Market, Investment Planning and Monetary Policy an econometric study of manufacturing industries, Uppsala 1969.

Thus, the results to be presented in the chapters to come pretend to be no more than a description of the methods by which large firms arrange their formal planning routines and suggestions towards a theory of firm behaviour based on rapsodic evidence from a biased sample of large and (predominantly) successful business organizations. Observation is basic. No advise is attempted. The figures of the plan are of secondary importance. It is the ways and means by which members are arrived at and how they are interpreted and put to use what matters. I find March's (1965 p XIV) implicit suggestion that academicians have a lot to learn from practiced organizational technique a useful starting point.

This study was started up during my visit to the United States in 1969. I am very grateful to the Industrial Institute for Social and Economic Research (IUI, Stockholm) for making this visit possible and Sparbankernas Forskningsstiftelse for supporting the interview series in the U.S. I also want to thank professor Dale Jorgensen, then at University of California at Berkeley for providing generous secretarial help and for many fruitful discussions on economic problems, not in the least on the matter of firm behaviour. I also want to express my gratitude to professor Hans Brems, professor Case Sprenkle and professor John Meyer for many fruitful discussions and generous secretarial help during my brief stays at the University of Illinois and The National Bureau of Economic Research respectively.

The interviews stretch over the five year period 1969-1974. The bulk of U.S. interviews were conducted in 1969 although several return calls were made in November 1973 and May-June 1974. Most Swedish interviews took place in 1969 and 1970 although my present position as chief economist at the Federation of Swedish Industries has provided ample opportunities of systematic interviewing and return interviews (listed in supplement 7) and more occasional inquiries as to planning practices with Swedish companies. Similarly, frequent travelling on the European continent in my present professional capacity has facilitated my interview calls to a fairly large number of European firms. I am also very grateful to the Keidanren for preparing my visits to three Japanese firms. The long observation period has at least two advantages. I have had the opportunity to register substantial reorganizations in planning systems among several of the firms visited twice and three times; changes that were not anticipated by the time the first interview took place. I have observed how new problems like inflation and flexible exchange rates have brought about modifications of the planning systems.

A preliminary report on the U.S. interviews was discussed at a seminar at the IUI in the spring of 1970. A brief article on some of the results was published

in Svensk Sparbankstidskrift[1] the same year and the experience gained during the course of this project has greatly influenced the lay-out of two "intermediate" studies of mine; one for the Swedish ship-yards committee on the financial situation of the ship-yards and one survey paper for the OECD on "capital transfers, taxes and international corporate operations".[2]

A preliminary report was prepared in July 1973 for restricted circulation among participating firms. I am very grateful for all the comments received. They have affected this final version in various ways.

Some results from this study were also presented in a paper presented to the Twenty First Conference of the Economic Outlook at the University of Michigan, Ann Arbor in November 1973.[3]

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1) Planering i Amerikanska Företag, Svensk Sparbankstidskrift, nr 2, 1970.

2) Räntabilitet och finansiering i sex svenska varv under en 20-årsperiod from Ekström; Varvsindustrins problem, Stockholm 1970 and Capital Transfers, Taxes and International Corporate Operations, nr 2 Mimeographed Economic Research series B (Federation of Swedish Industries) April 1972.

3) Published in papers and proceedings from that conference under the title Business Cycles in Business Planning, Ann Arbor, Michigan 1974 and as nr 8 in Economic Research Reports, series A (Federation of Swedish Industries), Stockholm, March 1974.

PART I

CONCEPTS AND PURPOSES

I INTRODUCTION

1. Plans, decisions, behaviour

Firm behaviour is partly dependent upon the decisions taken by the firm, partly on the environment in which the firm operates. Decisions are based on expectations as to this environment. Decisions taken involve the problem of adopting to an expected environmental development as well as to change the environment (move into a new market etc.). To achieve this decision-makers have to acquire knowledge about the environmental situation and its future prospects. They have to know about the mechanics of their business organization. They have to make up their minds as to what they want to do with it (goal formulation, policy making). They have to check up to what extent results conform to established goals (control).

Normally also the various parts of the organization (divisions, subsidiaries etc.) face problems similar to that of the entire organization. For each of them the rest of the organization is part of its external environment. The character of this problem faced by a subsidiary or a division depends on how the pieces of the organization have been knitted together or on its hierarchical decisions structure.

For those at the hierarchical top responsible for the entire organization (Corporate Headquarters, (CHQ)), the remote guidance and control function is composed of two problems; first, the external relationships to the environment which are a matter of high quality, relevant information and good judgements. Second there is the internal problem of coordinating, guiding and motivating activities of the various parts of the organization. From the point of view of CHQ this is a matter of management efficiency.

Sometimes all this is called planning and we might as well use this terminology. By this definition probably most - by any measure - of planning is of the informal type without any kind of systematic documentation. This process can be observed by those directly involved only. Behaviour can be observed by an external investigator and sometimes the decisions taken, if put on record, but not the process of arriving at a decision.

In addition to this formal planning routines are employed. This time information handling and decisions taken within the planning process are put on record in a systematic and standardized form. This time the process also to some extent can be observed by an outside investigator even after it has taken place.

This is a prime reason why the presence, character and methods of formalized, numerically defined and comprehensive planning systems within business organizations have been made the object of inquiry in this study.

Both formal and non-formal planning affect decision making and behaviour. To study the links between formal plans and behaviour via decisions taken informal planning has to be considered in some way. This is also necessary to lend some interest to the formal plans themselves. The question, what kind of purpose the formal plans fulfill, has been kept activated right through this study.

The term "comprehensiveness" refers to the coverage of business operations. To qualify as a comprehensive plan all aspects of operations from purchasing and production to sales have to be covered along the vertical scale and all divisional and/or subsidiary operations along the horizontal scale. A comprehensive plan - in addition - requires that a complete closing of the future accounts (profit and loss statement and balance sheet) on the horizon be made or at least be possible. This defines the formal comprehensive plan as an exclusive CHQ instrument. It also puts stress on such key words as information handling, coordination, control and remote guidance that will appear frequently in the text.

It also means that little attention has been paid to planning at the workshop level and to sub-planning routines such as production and inventory planning that normally appear as activities parallel to comprehensive CHQ planning, sometimes based on the overall plan, sometimes not. Less attention has been paid to such details of the comprehensive planning system as the so called appropriations procedure or to rate of return calculations on individual investment objects even though these formalized planning sub-routines may bear heavily on investment decisions.

The concept of integrated formal (and/or comprehensive) planning sometimes appears in the text. In keeping with current business terminology this term has been used to indicate that the various sub-routines of comprehensive planning (division plans, short-term and long-term plans) may or may not be integrated into a consistent (numerical or not) procedure. The concept is also defined to include the adjustment or negotiation process between CHQ and divisions that often precedes the finalizing of the comprehensive CHQ plan. A high degree of integration is by no means a necessarily good thing.

Too much integration between long-term and short-term planning is often considered detrimental to long-term planning and we will see in what follows that internal consistency is no particular characteristic of planning systems; and often deliberately so.

To qualify as a formal plan some minimum requirements as to numerical specification (mentioned above) have to be satisfied. Even though formal and numerical planning at times will be used synonymously in the text, formal planning is the broader concept of planning subject to investigation. However, most of the information compiled here refers to the substructure of it that has been numerically specified.

To some extent planning of foreign subsidiaries has been covered, but it will be reported on in this study in a rapsodic fashion only.

As for the time dimension of planning emphasis has been put on what is usually called long-range planning or extended budgeting including also the short-term budgeting procedure. No complete account of the presence (in the sample) of so called prospective or strategic planning will be given, although the possible importance of such plans in long-range planning will be discussed.

In what follows, the concept of a short run plan should be identified with the budgeting procedure covering at least the next fiscal year. Any numerical projection beyond five years is defined to constitute a long-term plan. To be classified as a comprehensive long-term plan the projection has to cover at least five future years and be comprehensive in the sense defined above. Objections may be raised to calling a 5 year plan (budget) a long term plan. Whatever the case, some arbitrary classification criteria have to be entered from the beginning in order to introduce the terms.

Formal planning so defined seems to be a fairly recent thing even among large U.S. corporations. If one looks back into the history of most firms, one will see that even annual budgeting on a formalized and comprehensive basis is a typical post-war thing. Some kind of partial capital appropriations procedure involving the final authorization to spend on capital account usually preceded the introduction of budgeting.

Formalized and numerically specified long-term plans covering a future period of 5 years or more have been developed during the last 15 or even 10 years even

among very large U.S. corporations. So called strategic or prospective planning taking in the future beyond the 10 year horizon is an invention of the last 5 or 10 years in those few firms where it takes place.

Summarizing so far, to start with, we will use Theil's (1966 p.3) definition of a plan as a forecast of the firm that is to some extent controlled by the firm itself. Systematic observation will only be made (1) on the formal side of corporate planning, (2) on the part of planning that is ultimately handled at CHQ and concerns the entire business organization and (3) on the part of planning that fullfills certain minimum numerical requirements and as a consequence limits the time horizon considered to 10 years or less. This definition does not cover (4) the process of arriving at a plan and (5) interpreting and putting the plan to use or - as I will also call it - the content of planning. There is also the problem of (6) how planning relates to the organization of the business entity. Formal planning can be conseived of as a set of measures or a measurement method. The meaning of these measures for managers and decision makers depends on what the measures stand for and to what extent supportive knowledge (read experience) for their proper interpretation is available. One should not take the presence of such knowledge for granted or regard it as self-evident.

The interpretation of the measuring system depends heavily upon how the business firm has been divided up into measurement units or cells. The method of planning has to be determined with a particular purpose of planning in mind. This in turn should affect the method chosen to organize the firm. With such a broad coverage of the concept of planning some would probably say that the planning system studied here should rather be called the formal side of management or organizational systems.

There is also the semantic problem of how and when plans resolve into decisions (cf. Eilon (1969)). In this study planning will be described as an ex-ante rehearsal of the macro decision process that controls the entire business organization. Planning consequently both leads to a number of ultimate decisions and involves a number of decisions. Further clarification on these points will follow in the next section. Some important modifications in the above definition will have to be made as we proceed. This cannot be done until we have discussed the purpose of planning in Chapter II. The reader will have an additional opportunity to participate in the various conceptual and definitional problems of planning in the survey Chapter IV on the literature on planning.

2. The observation model

One could hardly claim that informed opinion favours the view that formalized planning methods support more sophisticated decisions when we reach above the level of routine operations management. Most business executives would agree to this and they are backed by Ansoff[1] who argues that those who abstain from making up their minds but on the basis, of numerically specified information will be left "to graze in an enclosure beside the road that all decision makers have to travel".

Nevertheless, some such objectionable idea will have to guide observation work in this study. The questions will always have to be asked: What kind of decisions can be improved (be made more sophisticated) by recourse to a formalized planning method? What other and better instruments are available? For this to be possible a reference model to compare with is needed and some simple text-book idea of optimal decision making will have to do as a yardstick when commenting upon observed patterns of planning.

Thus, for instance, we will assume to begin with that there always exists an easy and practicable way for CHQ-management to obtain information in full detail about its own internal organization; an assumption that we will later have to refute. When we furthermore find, as we will frequently do, that planning routines mean that positions are numerically fixed step by step and that sub-decisions are often taken in an uncoordinated way we will conclude that information is lost in the process and ask why. The answer may be that the information lost is not essential to decision makers or not worth the effort needed to procure it on the margin. It may also be that the time lag in getting hold of essential information is so long as to make it irrelevant to the decision once obtained. Another answer may be that formal planning routines are not primarily designed to channel data to facilitate more informed decisions e.g. as to where to invest. Control rather than guidance may be its most important function. How come otherwise that rate of return calculations on an investment object basis normally are carried out only after the investment plan has been decided on and that rate of return calculations on plan data are only seldom performed at the level of aggregation of a division or a profit centre? This is one reason why the purpose of planning will have to be considered rather extensively in the next Chapter II and that Chapter III will be devoted to an account of the organizational structure of planning work.

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[1] Ansoff, H.I., A Quasi-Analytic Method for Long-Range Planning from Organizational Decision Making (Alexis and Wilson, eds.), Englewood Cliffs, 1967.

After Chapter IV reading becomes of necessity very cumbersome. Details will have to be amassed and this rather unorganized matter can be structured in an easily readable way (and then in a much too simplified form) only from Chapter VII and onwards.

To help the reader through the morass of Chapters V, VI and to some extent also Chapter VII some conclusions from Chapter VII will be noted already here. For the same reason a brief survey of the literature on corporate planning has been inserted as Chapter IV.

Diagrams I:1 A-C exhibit the general planning structure used as a basis for questioning during the interviews. Charts A and C are rather self-explanatory. Chart B has to some extent been adjusted to fit the results of the study although the basic structure is still the one preconceived before interviewing started.[1] In a way Diagrams I:1 can be said to represent a second kind of reference model for this study. It carries no normative connotations like less or more optimal, sophisticated, bad etc. As it stands most formal planning systems met with in the interviews contain the simplified structure represented on the charts and individual planning features most often can be identified as extra loops in this structure. So it will also be made use of although explicit references back to this chapter are not always made.

As for Chart A the input of expectations and the links between planning and decision making have to some extent been covered during the interviews. The process of implementing the plans has been left out altogether. The reason for this is that implementation planning - if there is any - is never part of comprehensive planning and never takes place at CHQ. Prime emphasis has been put on the internal structure of the long-term plan, the annual budget and the control function (shaded blocks).

An appraisal of the control function as an element and a purpose of planning turned out to be a necessary part of the study. The plan horizons, the frequency of plan revisions, the degree of specification and the character of the control function have all been covered in a fairly systematic fashion.[2]

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1) This causal structure also has a precedent in Eliasson, op.cit. 1969 p. 48 f.

2) Note that many authers on the subject prefer to keep the concepts of planning and control apart as e.g. Vancil (1972) and Anthony (1965). Also cf. Hofstede (1967 p. 10 f). However, one prime purpose of short-term planning - as it turns out - is to build a system of reference measures for the application of controls and we will loose sight of some important aspects of the matter by studying planning and control separately.

The internal structure of the long-term plan and the annual budget has been accounted for in much detail. The recursive, time structure of this process displayed in much simplified form in Chart B turned out to be quite typical: so typical that Chapters V through VII have been structured accordingly, starting from the left hand side. As far as possible attention has been paid to the frequency and character of informal feed back between the blocks in Chart B - and this is accounted for simultaneously with the calculation procedure that makes up the formal plan. This is one reason why going through Chapters V through VII at times excercises great strain on the reader.

The hierarchical structure of planning (Chart C) is perhaps even more important than its formal structure. It defines the character of management involvement in planning and - as it seems - also the extent to which information from the formal plan enters the decision process. Is CHQ the only active part in company-wide planning or is planning an interdependent process between CHQ and division management? To what extent and when are top CHQ executives involved in the shaping and authorization of formal plans? Whenever deemed necessary information of this nature is entered in all chapters. However, a more systematic summing up is presented in Chapter IX.

The report winds up in Chapter X with a summary of the results arrived at and in Chapter XI with a set of suggested implications for the theory of firm behaviour. As far as possible these results have been phrased in terms of the hypotheses as to the purposes of planning to be introduced in Chapter II. Chapter X also attempts a comparison of planning practices in U.S. and non-U.S. firms. Needless to say the element of speculative and impressionistic inference drawing grows in the final two chapters.

Principal topics for discussion with corporate planners have been; what kind of numerical information on the future is put together and prepared? What kinds of plans are submitted regularly to top management? Where does the work on the plan start? How does the final product look? If several plans are worked out, what are the principal differences in purpose and method? What written documents (if any) regulate work on the plan?

When returned for implementation, what revisions have usually been imposed on the plan by top management? To what extent is the current realization of plans analysed in terms of original plans? To what extent does planning work actually tie in with decision making? Is there much planning work and information processing going on, the results of which never reach decision makers? Given the

information about and the proposals for the future, why did top management make such and such revisions in a proposed course of action?

The object under investigation, the plan or the planning system has been defined already with reference to its formal appearance in the firm management process. The definition of the content of the plan in essence will be a desired end-product of this study. This ambition will only be partially attained. It is, however, appropriate again to emphasize that comprehensive planning will gradually (by description) be seen to embody a method of ex-ante decision making for CHQ. Rehearsal of decisions or preliminary decision simulation will also be terms used to achieve some verbal variation. Decisions at CHQ control aggregate firm behaviour. The rehearsal is a macro decision process involving a large number of interdependent decisions. One should recall already here that practice as a rule should lead to improvements, this time in decisions actually taken. Hence, this way of looking at planning has got implications for the accuracy of plans. The "rehearsal" often leads to changes in actual decisions taken. If so, actual performance should deviate from planned performance.

Most firm officers wanted to emphasize the fact that the designs and comprehensiveness of the planning systems were constantly changing. As far as the structural features were concerned I could hope for no more than an instantaneous view to enter into my records.

This is an empirical study with no numbers and quantities and few diagrams. As mentioned before the basic empirical concern is with the structural ordering of numerical routines as an information and guidance system for a business organization. This purpose also gives the form of presentation.

There are at least two different lay-outs of a study like this. The first, which is normative, starts from the ideal planning system and registers and evaluates the deviations met with in practice. The second, which is less pretentious, starts from observation and attempts a report or a reconstruction only, of the typical planning set-ups met with and an analysis of the consequences inherent in various schemes. I do not feel competent to present the ideal planning system. I definitely would not dare do such a thing on the basis of empirical literature and current theorizing on the matter. The reader may judge for himself when he reaches Chapter IV and has consulted the literature. Besides that my prime secondary interest is to search for explanations to behaviour not to teach business (man) business. So, I have chosen the second line of approach.

Diagram I:1 A The time structure of planning

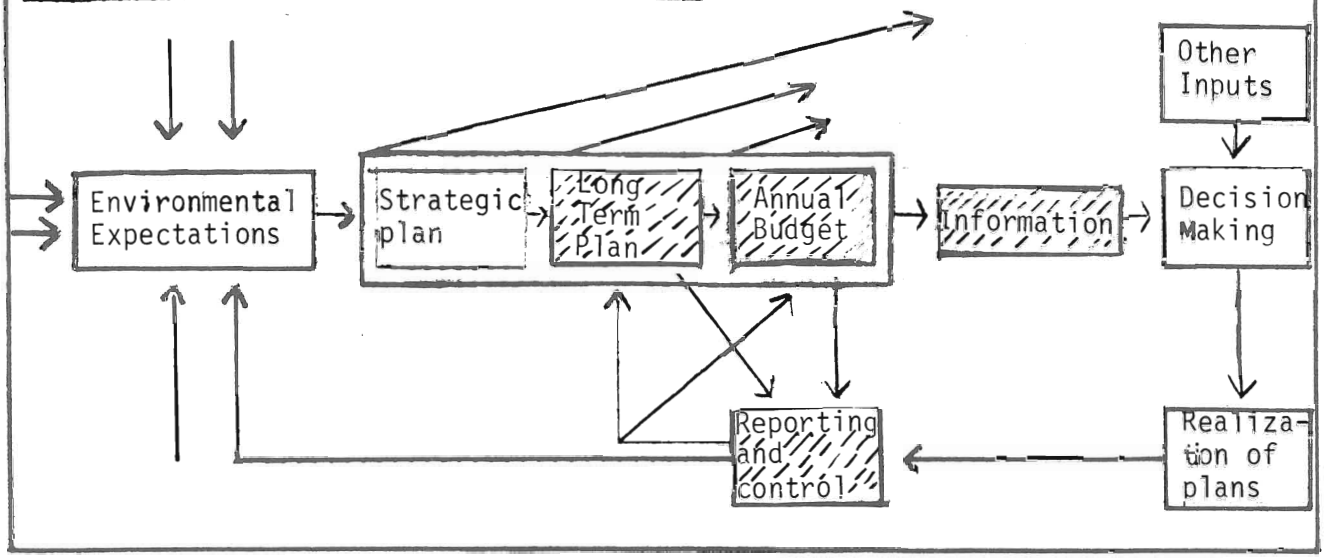


Diagram I:1 B The elements of the plan

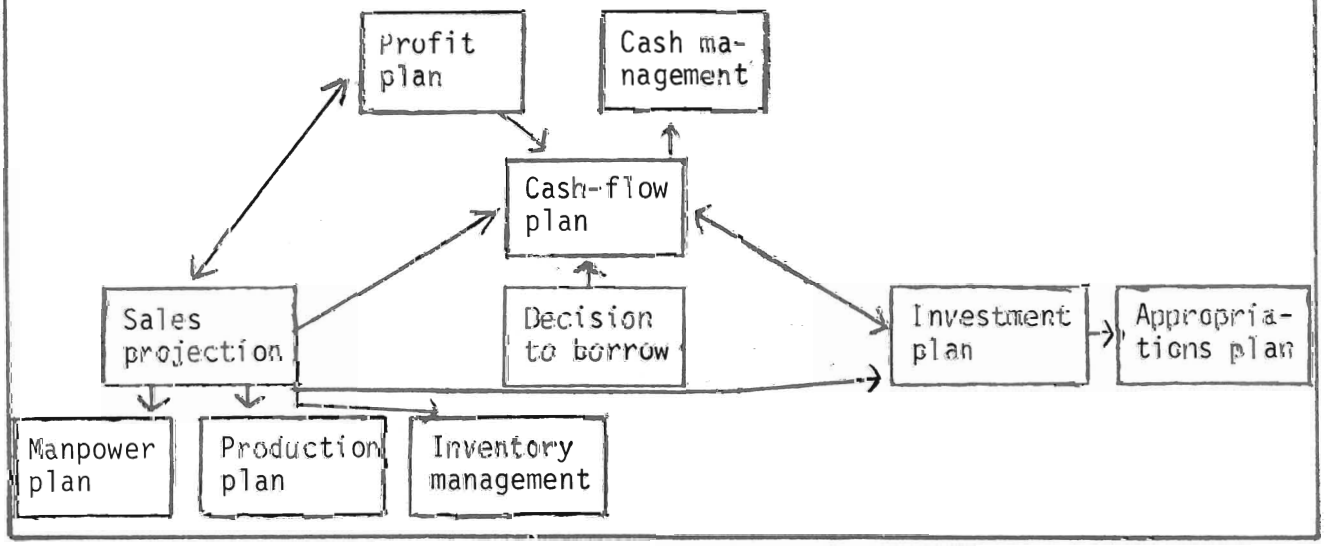
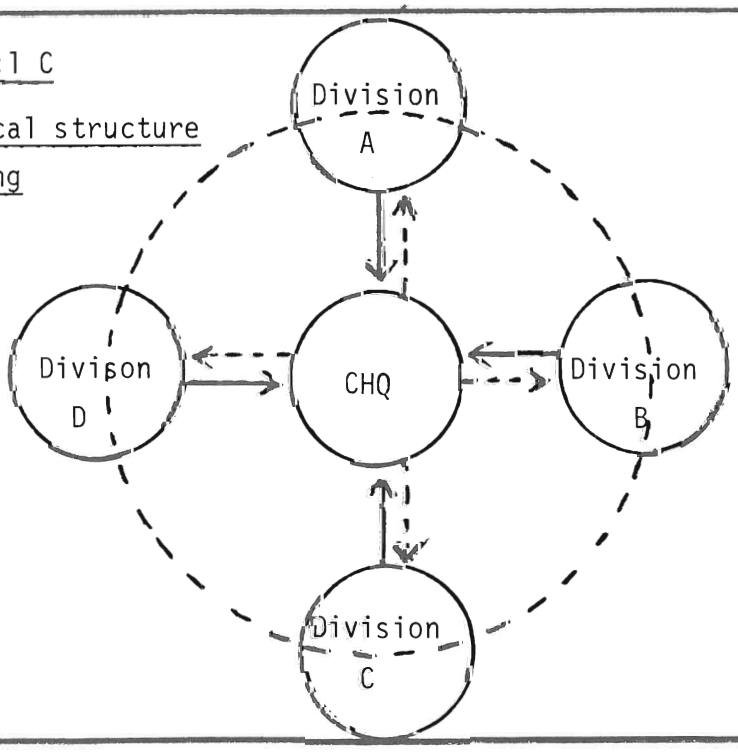


Diagram I:1 C

Hierarchical structure of planning



Terminology used:
pure shop-floor approach; CHQ assembles plan data from division level. Data are consolidated for the entire firm as they are.

pure CHQ approach; plan is put together at CHQ with no systematic data collection from divisions.

3. Method of observation

The method of measurement has been interviewing. Since 1969 58 predominantly large corporations have been interviewed in 73 systematic interview sessions; 30 U.S. firms and 28 non-U.S. firms - among which 15 firms are Swedish - make up the sample. The firms are all listed by name in supplement 7 at the end.

Each interview in the U.S. has taken 4 hours on the average. The non-U.S. interviews average 5 hours. 5 U.S. and 3 Swedish firms have been subjected to extensive observation in two or three interviews. In one of the U.S. firms I spent altogether three days and in one Swedish firm four days including a visit to one of its subsidiaries in Mexico City. During these extensive interviews I had the opportunity to meet a large number of corporate officers in each firm. For obvious reasons several of the cases reported on have been selected from these 8 firms.

To stabilize the scales of the measuring instrument a basic set of questions was asked at all first interviews although the scope of questioning has changed and been enlarged during the course of interviewing. It has also been unavoidable to rephrase some of the basic and initial questions in the light of experience gained during the interview-sessions. It must be told that my initial interview approach during the first U.S. interviews in 1969 was much prejudiced by the popular conception of planning as an instrument primarily designed for gathering and analysing information and to produce a rich menu of options for decision makers to choose from. In retrospect this notion of planning at CHQ of course looks somewhat naive. It had to be modified. As far as possible "CHQ-information" has been gathered on the "arrows" in Chart A. The presence (or not) of so called prospective or strategic plans has been ascertained and the shaded boxes have been covered systematically and in much detail. This means inter alia that emphasis has been put on the causal ordering represented by the arrows in Chart B and that the methods of putting together the consolidated profit, cash-flow and investment plans have been gone through in detail, the appropriations procedure less so and the sales projections only in so far as CHQ could provide answers. The origin of plan data, the starting point (shop-floor or CHQ) and the extent to which plans go into the decision process have been covered systematically by questions although the selection of persons to interview, difficulties of communication and the intricate matter as such make the pieces of information obtained rapsodic at best.

A separate and at times rather lengthy report has been written for each interview - in most cases on the same day as the interview. Furthermore some basic characteristics of planning were entered for each interview on a prepared form for all interviews carried out through 1969 and 1970. The records so obtained have been necessary for an objective appraisal of the observations made.

As mentioned already a separate summary report on the U.S. interviews in 1969 was completed in February 1970. The results put down in writing in this report have not been changed here and they hopefully represent a fairly stable standard of reference for comparing results from the non-U.S. firms and later return visits to U.S. firms. However, this also means that questions and discussions in the non-U.S. firms to some extent have been oriented towards finding differences in planning methods on both sides of the Atlantic.

The interviews conducted cover some medium sized but mostly large and very large firms. The average size of the sample (measured by sales and excluding General Motors) was $ 1350 M in 1968 for the U.S. firms and compares with an average (the same year) of $ 850 M for the non-U.S. firms and $ 310 M for the Swedish firms only. The size distribution of the U.S. and the non-U.S. sample by sales and employment 1968 is given in Diagrams IX:1 and 2 in the final chapter.[1)]

It should be noted that firms have not been selected for interviews with the purpose of obtaining a "representative" sample of U.S. or Swedish firms. Secondly, since very few studies of the kind here to be accounted for have been conducted before, and since we know very little empirically of corporate planning, the most optimal first step in gathering information was considered to be to investigate the most sophisticated and/or successful systems in use. Thus large and successful firms with sophisticated production and sales techniques and advanced products ought to bias the sample. Thirdly, and finally, even though I encountered new details, new names and new concepts until the very end, a rather stable pattern as to major features of corporate planning practices become apparent at a rather early phase of interviewing.

The U.S. firms to be interviewed were taken from a list of potential firms selected from three basic sources; A) Fortunes Directory of the 500 largest

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1) These data exclude firms interviewed after August 1973 (EXXON) and in 1974.

U.S. firms, B) Moody's Industrial Manual and C) Poor's Register of Corporations, Directors and Executives. It should be mentioned that 22 of the 30 firms interviewed were listed in Fortune's Directory of 1968.

The firm officers interviewed in U.S. firms vary in rank between firms. As a rule, my first contact was with the (Senior) Vice-president of Finance, or the Comptroller (often with the rank of VP). Sometimes this person took on the interview himself, sometimes he referred me to the officer in charge of corporate planning, or one of his assistants. On most occasions I had the opportunity to question two or three persons within the firm. Even though most large firms had a separate department of planning or at least a firm officer in charge of planning (often with the rank of VP), this particular person could seldom be identified from the beginning from the directories referred to above. Generally speaking in practically all firms interviewed (and this holds for non-U.S. firms as well) the planning function was attached to or subordinated the financing and/or controlling function.

As far as the San Francisco Bay area is concerned all interviews on the potential list were completed. This, of course, was due mainly to the fact that I was stationed at the University of California at Berkeley for four months. As for the New York City area my time-schedule could not accomodate contacts with more than 6 of the sample of 11 firms selected for potential interviewing. The remaining interviews involved extensive travelling. My method was to contact one firm by letter or by phone, fix an appointment and then hope to arrange one or two more appointments from the potential list upon arrival. This method worked out quite well, although some contacts simply could not be made due to insufficient time. Despite the rather straight-forward and demanding methods of approaching the firm that I had to adopt in order to keep travelling within limits, it never happened that I was refused an interview in the U.S.

As for the Swedish interviews I have had the opportunity to choose and contact firms in a fairly systematic fashion over some 5 years. In 1969 and 1970 12 interviews were carried through. The rest, including the European ones have mostly been conducted in conjunction with the extensive travelling associated with my present position as chief economist at the Federation of Swedish Industries. This position of course has given me more than ample opportunities to tap business executives at all levels and from a very large number of firms on information on the matter of planning; this has been in a form that cannot be labelled systematic interviewing and the firms subjected to it have not been listed at the end (Supplement 7).

4. Problems of objectivity

Direct questioning always involves the danger of suggesting an answer with the question. Leading questions are by their very nature inevitable, since the mere choice of question at least suggests the problem one has in mind. My first attempts to work my way through a prepared battery of questions did not turn out much of a success. For one thing many questions were simply irrelevant or wrongly posed. Secondly a large number of relevant aspects of planning were not included in the battery. Thirdly, to break off an interesting discussion in order to have the time to follow through a preset sequence of questions gave rise to too many associations of court room procedure, it was slightly disturbing for the person interviewed and - above all - it did not create the atmosphere needed for the interesting pieces of information to come forward.

Consequently I changed the technique after a first round of interviews and instead asked the person being questioned to give a rough outline of the planning system adopted. By inserting questions now and then the conversation could normally be shifted from subject to subject - without any obvious purpose being revealed - to cover in the end most essential aspects of firm planning.

It is true that this method sometimes meant that some aspects in some instances were missed due to neglect from my side or from lack of time. This was a minor problem, though, since a complete coverage of each important aspect of planning with every firm was never attempted.

One cannot pass over the professional language problem that always has to be faced in a study like this. An economist by profession and corporate excutives as a rule will have to communicate by way of two overlapping languages. As we will see in Chapter IV the literature on planning has not helped to dispel semantic confusion. Also, the terminology used differed a great deal between firms, in particular when it came to defining the exact meaning of concepts like gross profits, operating income or profitability. It is also quite certain (to me) that some firm officers tried to hide what they considered less sophisticated planning devices by way of a difficult terminology. I believe, however, that the difficulties of language are not as important in practice as they may seem. They apply mostly to the gathering of qualitative information. As far as the numerical planning methods go it was always possible to get information on the exact methods of calculation put to use - if desired I was also happy to note that no corporate officer took offense at the rather far reaching cross-questioning and backchecking methods that I indulged in towards the end of my interview.

A major observation problem refers to the operational definitions of the large numbers of concepts used. I have found it an impossible task to attain the degree of precision in terminology that would of course be desired. Planning is difficult to understand since few know what planning is. A general definition would be all but an empty statement in a context like this. Any definition will have to refer to operational practice directed towards some set of management purpose. It helps but it does not solve the problem to explain by introducing a new and somewhat more exactly defined concept. However, one is always at liberty to assume a circle of fairly well experienced readers endowned with the faculties of imagination needed to overcome a less perfect communication method. The reader can see for himself by consulting a random sample of the literature on planning referred to in Chapter IV that this is a problem not unique for this piece of research. One should also recall a simple rule of scientific inference often forgotten, namely that the degree of exactness required in defining the concepts used depends on the degree of precision required of the conclusions. There is no extra virtue to be gained from being more accurate than needed. I feel that I have kept within acceptable bounds here.

The problem of empirical method, however, still remains. E.g. several, rather extensive arguments, consist in an analysis of the consequences for firm decision making of some particular feature of planning met with in three, four or at best five firms only. Such analysis cannot be justified on the ground that they constitute a typical feature of planning systems, among U.S. and/or European firms. The small sample and the selection method chosen do not allow such back-ward inferences and I seriously hope that no one will read such implications from the text.

The generalizations made in this book through Chapter X refer to the sample of firms interviewed only. This is an obvious circumstance that I have abstained from notifying the reader about at all places.

Chapter XI is of a somewhat different character. I am still not generalizing beyond the sample of firms. However, I am generalizing with little or no empirical backing from my observations on planning methods to the behaviour of the firms studied. Consequently Chapter XI contains no conclusions but suggestions as to certain features of a theory of firm behaviour, that might be considered worth testing out empirically by another method, on another sample of firms by someone else.

II PURPOSE OF FORMAL PLANNING PROCEDURES

Planning is a multidimensional thing. There are a number of overlapping and partly conflicting reasons for operating a planning system in a business organization. There are an equally large number of methods of engaging a planning system in the decision process of the firm. The method cannot be understood or evaluated until the purpose or the set of purposes have become clearly formulated in terms that are operationally understood. The purposes are in turn manifold. They apply at various sub-stages of the hierarchical goal structure of the business organization that may be fairly simple and loosely phrased at the top but that may display features of extreme complexity and detail at lower levels. Consequently neither purpose nor method can be studied in isolation. They mirror the type of organization, the degree of centralization of decision making, the history of the firm, current problems, the mentality of top decision makers etc. or there may be no links to these facets of firm life which is interesting enough as we shall see.

Five principal motives for the application of explicit, formal planning procedures have been repeatedly stated in the interviews. These are:

a) Control and coordination
b) Forecasting
c) The specification of goals or targets - motivation
d) A point of reference for the measurement of (management) performance
e) Information for improving the allocation of available financial resources

The five purposes, of course, often overlap as to content and no clear-cut distinction between them can be made. However, between firms emphasis put on the five purposes differ and the differences in emphasis also seem to be reflected in the methods of planning adopted.

a), c) and d) are the explanations to particular features of the planning set-up most commonly volunteered during the interviews. b) and e) were less frequently referred to. On the other hand b), and in particular e), figure importantly in normative economic literature as the rationale for compiling and analysing numerical "data on the future".

Surprisingly enough a sixth motive for planning;

f) Improving flexibility - contingency planning

did not often appear during the course of the interview.

Very often the word planning is associated with a seventh motive for or rather type of planning:

g) Activity planning or programming.

I found very little reference to the budget as a program for action among the firms interviewed within the context of comprehensive planning. However, more specific functions within the firm such as production scheduling, transportation planning etc. where this quality of planning routines may be more relevant have been left outside the interviews.

The seven "purposes" a) through g) listed may be reclassified under three main headings;

(A) Analysis (what?)
(B) Control (where?)
(C) Implementation (how?)

"Analysis" covers the "sub-purposes" forecasting (b), allocation (e), and flexibility (f) and may as well be referred to as the information aspect of planning in the sense of gathering and analysing data on the future with a view to deciding on a most optimal course of action. This aspect of planning highlighted by the question: what shall we do? is the aspect most emphasized in non-empirical literature on planning. This purpose of planning being dominant would also mean - by inference - that planners play a supreme role in the decision process. As we shall see evidence in this study does not suggest that neither analysis with a view to deciding on what nor presenting basic information to support the same analysis is of any importance in comprehensive, formal planning applied to-day at the corporate level.

Once what has been decided on there is the next step to communicate the decision to the organization and to see to it that the decision is enforced. Control in the sense of coordination (a), targeting (b) and performance rating (d) is heavily emphasized in comprehensive, formal planning. The control purpose then also includes methods of shaking information out of the cells of the organization and forcing it to surface at the corporate level. Targeting is part of this process. Targets (given the objectives or goals of CHQ) mean operational specifications

for middle management who is responsible for their implementation. It is basically a top-down procedure. Reviewing the plan means coming to an agreement on the numbers to stay with for a well defined future. It means responsibility for middle management and involves a process of negotiations and agreement with CHQ. Reporting often means reporting against these numbers to CHQ. The whole sequence essentially means putting the planning system to use as a control instrument. Control also covers the design of the planning system in the sense of deciding on which strings CHQ should pull, how far down in the organizational hierarchy these strings should go and what decisions can be delegated downwards. If control is an essential objective of planning - as it seems to be - the design of the planning system should mirror also the hierarchical level of the decision process. Where are decisions taken and by whom.

One management function typically delegated below the level of CHQ is the decisions as to how comprehensive plans are to be implemented. Hence, the method of implementation (selling, producing etc.) is typically absent from comprehensive formal planning. However, the final execution of the plan again ties back into the plan through the reporting procedure.

What has been labelled activity planning or programming under (g) is part of the implementation phase. As a rule there are numerous sub-planning routines that control or guide the implementation of the comprehensive plan. They often use data from the comprehensive plan as inputs. The implementation side has not been systematically covered in this study although certain aspects of it have been discussed. One interesting aspect of implementation has to do with the use of comprehensive plan data for cash management purposes (see Section VII.3).

There is a pronounced financial bias in all planning systems investigated in this study. Even though operations planning and financial planning always blend in comprehensive planning these two different sides of business activities will have to be kept apart in what follows. Both in annual budgeting and in long range planning the ultimate aim normally was to produce a set of future income statements and balance-sheets. One reflection of this bias is the fact that with no exception, comprehensive planning at a level of aggregation above the division or profit centre level is in terms of values expressed in current prices. This feature and the predominance of single valued plans tally neatly with the emphasis put on the control, targeting and performance rating motives of planning.

In some literature (see Chapter IV) one meets with an inclination to approach the concept of planning in terms of all-purpose information or decision systems.

Here the quality of consistent information processing and non-conflicting purposes becomes important. Some of this literature has its origin in price theory and its application in modern planning theory at the national level. Some fruitful results have appeared in the methodology of optimal transfer pricing where the existence of a consistant and numerically specified organization model is a requirement. Part of the literature falls back on enthusiasm for the potential of modern computer technology (cf. Supplement 6). Practically nothing of this kind came out of the interviews. Even though many firms had developed comprehensive formal planning systems they were never of the all-purpose type. A number of separate purposes (like production planning) were either catered for by separate planning sub-routines connected with the comprehensive plan, with no feed-back allowed or by entirely separated planning routines. Conflicts of purposes were, as we shall see, frequent. Also the comprehensive planning system as a rule consisted of a set of not well coordinated and at times grossly inconsistent numerical routines. This was sometimes deliberately made so and some reasons for this peculiar feature will be given as we proceed.

1. Control and coordination

The first and foremost motive for planning stated in the interviews was control; in particular control of current operations for CHQ. In fact, most firm representatives made it quite clear that the ever-present budget procedure was basically there to control and coordinate overall operations. A second aspect of control, not as emphasized, was the possibility of comparing current, actual performance, i.e. the realization of plans (production, profits, investment, etc.) with the plan itself. Experience often reported during the interviews was that the more formalized and systematic the planning procedure, the easier it was to track down the causes of arising divergencies between actual and planned for developments, and the faster new decisions could be made to correct an undesired development. This second aspect seems to explain the detailed specification of ex-post records on a quarterly or a monthly basis, a degree of specification that was commonly required also in plans.

In fact, almost all U.S. firms interviewed had at least quarterly reporting routines of all basic external and internal accounting entries. In 21 of the 30 U.S. cases, reporting was by month. In at least 23 of the 30 cases ex-ante and ex-post entries were systematically and currently matched at quarterly or monthly intervals. In at least 12 of the U.S. firms interviewed such checks

were computerized and "requests for explanation" were forwarded as a routine procedure to those responsible. Again, in 12 out of the 20 instances, plans were systematically revised each quarter for at least the rest of the fiscal year taking current changes in basic plan assumptions into account.

However, the control purpose also entered formal planning indirectly, by way of the actual process of putting the elements of the plan together. During this process all kinds of problems, that would otherwise have been securely concealed in the depth of the organization were brought upwards in the management hierarchy. In this sense the plan filled the purpose of an early warning system.

It may be that the impression given so far of a dominant control motive is biased by the results from the mostly very large U.S. corporations interviewed. In effect when looking at the non-U.S. part of the sample of firms the control motive did no longer appear as predominant. On the other hand the degree of detail and sophistication in planning was also lower (see Chapter X). It is fairly safe to conclude that the presence of numerical detail in corporate planning is strongly correlated with the emphasis placed on control. There is furthermore a distinct difference between the degree of numerical detail between the U.S. and non-U.S. parts of the sample.

A second aspect of control is the increasing need for a coordinating system, the larger and the more decentralized the firm organization. As will be accounted for in what follows, some typical features in firm planning can be pointed out which are always present in a decentralized decision-making structure but not so in a typically centralized organization. This does not have to mean, however, that the amount of planning for control (firm size held constant) is proportional to the degree of decentralization and the willingness of CHQ management to delegate responsibility. It may be noted that the planning system was often characterized (mostly in U.S. firms) as a means of decentralizing decision making keeping only the most essential reins for CHQ and top decision makers to pull and to guide the entire business in the desired direction.

Finally, the control motive basically accounts for the 100 per cent presence of short run (mostly annual) plans (budgets).

Thus, it seems to make good sense to keep two aspects of control apart; (1) control in the sense of an auditing system oriented towards checking performance

against plans or goals and (2) distant control of a large organization from CHQ where emphasis is on such key-words as information and coordination. There is also another dimension of the control function that cuts through both (1) and (2). Control can be excercised at the ex-ante stage of planning (usually called reviewing) as well as in the form of checking performance against the plans (reporting). All this will be covered in more detail in Chapters VIII and IX.

2. Forecasting

The notions of a plan and a forecast sometimes tend to be confused. I often heard the term forecast used in two different senses. First various elements of forecasting in the sense of the most probable estimates of the future always enter formal planning work; notably when basic plan assumptions such as future sales levels have to be decided upon. The "sales assumption" - normally exogenous at least in the short term planning (budgeting) process - often figured by the name of a "sales plan" or a "sales forecast".

Second, within the plan, certain data from the plan were often used to forecast other entities - given the plan as an assumption. "Liquidity forecasting" was a term sometimes used. Implicit in this notion was the firm as a fixed structure of calculation procedures (a model) that adjusted passively to a given exogenous environment. What happens to liquidity or profits if this or that particular set of initial conditions come true? This last mentioned use of the plan was common in short term planning (budgeting)[1] but was almost entirely absent in the long term planning routines investigated. However, in these instances where this matter came up for discussion it was quite obvious that no one thought of the plan as a "map of the future". The plan was rather regarded as a forecast for some important firm targets (profits, sales etc.) that were at least partially under the control of the planners (cf. the definitions on planning and forecasting in section I.[1]

In the long run the plan was usually looked at as (approximately) the best program for future action given circumstances of to-day and conceptions as to the

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1) A case in point is the use of an updated budget for purposes of current cash management (see section VII.3, also see Gershefski, The Development and Application of a corporate Financial Model, Oxford, Ohio, 1968, p. 15) or the use of a long-term plan to derive the need of external financing in order to carry out a growth program (see section VII.2).

future (initial conditions). Above all the plan - no matter the distance to the horizon - was always regarded as something that would normally have to be revised - often substantially - long before the planning horizon.

To sum up under this heading. Initial, environmental conditions for the planning procedure are usually arrived at in a way that warrants the name forecasting. Planning in the sense of forecasting, however, would be a very mechanical calculation procedure. It occurs regularly in a partial sense when a division picks the data-set from the comprehensive corporate plan as initial conditions for some divisional projections or when some particular entries on say the cash flow balance are taken from a given and completed corporate plan to be used for some particular purpose in say the treasures department (cf. section VII.3).

3. Targeting

The third motive, targeting, emphasizes the degree of active steering versus passive adjustment subsumed in firm planning. The targeting concept, as I have understood it, encompasses two main objectives: 1) the specification of overall firm policies or desired objectives; 2) the stating of particular objectives to be achieved, if possible.

Corporate policy making or targeting in the first sense will be further considered in a separate section later on. Targeting in the second sense, in one way or another explicitly and in much detail enters firm planning procedures in about half the cases investigated. By explicit I mean that there are well defined methods and criteria to be used as a guide in current planning work. Rules can be found as to how to evaluate the distant future as compared to the future nearest ahead; what kind of projects should be submitted to strict economic evaluation, and what projects should be considered mandatory for the long run survival of the firm; to what lines of business the firm should be restricted etc. There is of course no clear dividing line between policy making of the losely phrased first kind and explicit and very detailed operations targeting of the second kind.

With some exceptions, in all instances where this topic came up for discussion I always found some policy constraints on the courses of action open to firm management and - consequently - planners. Sometimes these restrictions had been made explicit in formal documents but often they were implicit in the sense of being "felt as traditionally established" by those concerned. They were loosely

phrased or not explicit at all but still of such a distinct quality that an operational impact was to be expected.

Even though the frequency may be hard to establish, there is written (although not presentable) evidence to support the hypothesis that firms - as far as policy making goes - often do favour growth within traditional lines of business at (expected) satisfactory rates of return at the cost of lost, more profitable and possibly even safer opportunities outside traditional lines of business. If these lost opportunities are of a short run nature - the most frequent case - such behaviour could easily be rationalized in terms of uncertainty as to the future and the presence of a basic survival premise in firm behaviour, i.e. survival as a business organization. Also elements of inertias built into the enterprise were presented as a rationale for explicit policy statements as to the boundaries of operations open to the enterprise. "These are the technologies, production methods and the markets our people are experts on" etc.

However, the sample of firms interviewed also include some (notably U.S.) firms with conglomerate features. These firms displayed in the interviews, in their policy manuals (a couple of cases) and in their planning documents a much less restrictive attitude towards the lines of business open for future exploitation.

Well developed and elaborate planning systems always exhibited a number of circular sequences where beginning and end met at least in a delayed, iterative step. Targeting was often seen as the first step and a method of specifying the future goals of the firm. Quite often policy elements appeared in the targets in the form of intentional deviations of targets from what planners believe is feasible performance without extra exhortation. Most often targets were rather crude (profit-margin requirements etc. cf. section VIII.1) and sometimes quite loosely formulated. There were several exceptions to this, however, and some targeting systems in the sample were found to be very specified and elaborately tied in with the reporting and control procedure. This time, however, targeting should be conceived of as a systematic break down of aggregate goals formulated at the top executive level rather than profitabiliting goals in particular. This break down may go into extreme detail and the problem of formulating such detailed targets consistently was considered important.

One frequently met with quite detailed requirements imposed top down on operating departments such as growth requirements on individual product lines, requirements to maintain certain ratios as regards particular cost items (cf. section VIII.5) etc. Quite often such requirements were in apparent conflict

with one another. They might (e.g.) have been introduced in a period of sudden commercial distress. To warrant the name targeting here they had to be the result of a systematic and consistent effort on the part of the management to break down aggregate goals and plans into sub-items with the express purpose of making the reporting and control system more effective. With this qualification targeting was very uncommon among the sample of firms interviewed.

Case. Sophisticated targeting (simplified). Large U.S. firm.

In this large U.S. firm the targeting procedure followed a very sophisticated sequence. One particular man with an assistant was assigned to the task of compiling three sets of data at an early phase of the planning sequence; (1) CHQ forecast on the environmental outlooks (2) division forecasts and plans (preliminary) and (3) records on past division performance. This information was then put together into aggregate targets for decision units (profit centres) that were considered reasonable in the sense of being obtainable with some effort. In this firm the growth rate in net profits was the most common profit centre target.

These targets were then subjected to hearings between people responsible for their realization and the planning people possessing an overview of entire corporate operations. Once a compromise has been struck CHQ planners took over the data and started breaking down the targets into goals (sub-targets) that were based on the preliminary division plans handed in and were made consistent with aggregate targets decided upon. A division might get to ponder a set of product-wise sales growth and profit margin combinations to which were added price specifications, minimum productivity demands (here output in current values divided by man hour inputs) the volume and composition of employment allowed, certain maximum cost-shares allowed (e.g. on computer installations, secretarial personnel etc.) and so on. This sub-targeting was made up in current contact with responsible profit centre people and much of the work was done by planning people at the profit centre. The goals decided on were finally authorized as operational targets in a format consistent with the reporting format.

These operational targets made up the backbone of the annual budget and also the long-term plan. After some supplementary mechanical calculation work the set of operational targets was reshaped - late in the year - into the set of future accounts that constituted the budget. This budget also was the basic reference yardstick for reporting and control purposes throughout the year even though the budget as such was revised completely three times during the year for other purposes.

It was normally conceded if not volunteered that targeting often had the same purpose as the carrot and whip for the donkey. In many instances, such targets, as numerically specified in the plan, (e.g. minimum profit margins or required growth rates) were consciously over-optimistic and failure to reach them was excused. In such instances - the frequency and extent being impossible to establish - planning of course is not only a way of numerically mapping out a future course of action.

I will argue later that many of the extensive planning systems of U.S. firms that may seem extremely bureaucratic in the bad sense of the word at first sight may have been designed deliberately as such to function as administrative stress systems. They serve the purpose of forcing information out of isolated organizational cells and channelling it upwards to CHQ screened for irrelevant information and shaped in a format that can be taken in by those who have to make major decisions. This does not exclude the possibility that many or most of these complex systems nevertheless are bureaucratic and excessive in some sense.

As reported to me several times the purpose of the planning system was less to channel reliable indicators on the future upwards but rather to reveal as early as possible when something was going wrong and how. Such information was harder to extract from the parts of the organization than ideas. Covered up information and biased presentations were often considered a problem by CHQ in their negotiations with divisions. This probably also explains much of the emphasis placed on targeting, on the one side, and reporting and control, on the other, in conjunction with planning.

Planning as an administrative stress system also emphasizes the link between planning and the organization of the corporate body. It also highlights the planning system as an administrative replacement for a competitive market mechanism that does not exist within the business organization.

Case. A system of contention (large U.S. firm).

In this firm the finance director of the entire corporation had established - directly reporting to him - a small unit of planning coordinators that were concerned with the ways by which plans were made up not with their content. The finance director was also responsible for planning and budgeting as such and participated in all major decisions.

The philosophy of the firm was that the more people that are involved and the more views that are given the more information will be fed into plans and decisions. However, one was not prepared to let top-decision makers' time and work get clogged up with such "democratic practices". Involvement and participation should be hierarchically ordered. Second, the belief was also that slight but current confrontations between planners and operations people forced information to surface at CHQ and forced people to respond in various ways. A major task for planning designers therefore was to see to it that the right level of contention was always tuned in. In short, as one executive expressed himself; "The planning system should be a system by which CHQ communicates efficiently with the shop floor and not only in one direction".

Thus an elaborate three (or four) dimensional cell design had been built up. There were three mandatory friction surfaces. Division planners (1) had to even out their plans with CHQ short-term planners and (2) with CHQ long term planners. Also (3) CHQ long-term and short-term planners had to bridge conflicting ideas.

In this firm CHQ short-term planners were responsible for overall supply coordination. CHQ long-term planners reviewed overall financing and investment plans. The finance director occupied a very strong position in the corporate hierarchy and actively made use of this planning apparatus to "communicate with" the organization.

Division planners were supposed to push the interests of the division while CHQ planners were supposed to represent the entire organization. At each meeting agreement might be reached easily and the final plan may take shape with few or no interruptions. Non-concurrence, however, should take place in a non-alarmist way. After some further consideration either party might revise its views. If not, each party was supposed to present their views briefly in writing upwards and downwards. CHQ management might then either solve the issue itself or call (at their initiative) a hearing with all management people that were in some relevant way affected. The idea was that if the "conflict" had gone so far it should be brought into the open for resolvement. In effect this meant that if the cells could not compromize the right to decide was taken away from them.

Targeting in the first policy sense referred to short run as well as long run planning. Targeting in the second sense of being an incentive system or a "whip" built into the plan was most frequently met within the context of short run, annual budgeting and lost in importance in long-range planning. Also, it was very frequent in U.S. firms and much less so in the sample of non U.S. firms.

4. A point of reference (responsibility budgeting)

The fact that plans often were used as a point of reference for the measurement of management performance at various levels within the firm may seem surprising, since failure to realize plans depends also on variations in the basic assumptions of the plan (product market development, prices on inputs, etc.) in addition to the ability to carry out a proposed course of action.

Primarily the short-run plan or the annual budget was put to use as a point of reference for performance rating. As such, again, it was mostly considered to be a device to measure performance between the various sub-sectors (divisions or profit-centres) of the firm organization. As a standard of comparison the plan normally replaced the method of assessing change in terms of percentage increases or decreases from a previous period (year). This feature of short-term planning may also explain the well known practice with firms to stick to the original (annual) budget through-out the budget year no matter how the basic assumptions of the budget turned out ex post. The budget was practically always looked upon as a document that had been compiled carefully and in detail, with much consideration and with a substantial input of effort. Its basic premises

were supposed to be known.Thus divergences from budgeted entries were considered to be more informative than say the change from the previous year.

Often a series of updated budgets - usually only partial versions - were made alongside the original budget. To be noted is that comparisons with ex-post outcomes were practically always made with originally budgeted entries. It is fairly obvious that in the capacity of serving as a standard of comparison the need for stability is imperative and this was the most frequent reason cited for not revising the budget too often. A person currently travelling (by air) around the globe having several appointments a day and crossing several geographical time-limits a day provides an illustrative case in point. It would be highly inconvenient for him currently to keep local time as a point of (time) reference. His only purpose being to keep his appointments, it doesn´t matter very much which scaling of time he chooses. On the other hand the locations of his point of departure and point of final destination should suggest some particular standard as convenient.

Performance rating between divisions usually was a multifaceted matter. Besides traditional comparisons of growth rates and returns on investment over past periods division heads were sometimes ranked according to their ability to present and to realize plans. This is another aspect of the need for a stable standard of comparison. In this context the need for proper and transparent transfer pricing systems was also emphasized (see later on).

Division management normally was responsible for the setting of reasonable or realistic assumptions as to the future as well as the implementation of the plan. Such a management evaluation aspect being emphasized in planning work, it also tended to lend more importance to the plans, as well as to result in more realistic plans. Furthermore, if failure to achieve proposed goals was dependent upon factors which could not reasonably have been foreseen and/or could not be controlled by management, the evaluation could be adjusted accordingly, and the more explicit the plans, the more easy such adjustment.

A fact that puzzles the author is that the valuation of performance aspect of planning in 6 cases was mentioned (or even emphasized) in conjunction with the targeting of goals to strive for (see previous section). To use the same instrument for performance rating and targeting must involve an element of contradiction.

The measurement of performance aspect was only stated in connection with short run (annual) plans (budgets).

5. Allocation

Planning for improving the overall allocation of available financial resources in some well defined sense is the fifth and most involved one of the aspects of planning listed. It was seldom volunteered as a basic reason for formal planning. However, when I brought up the question the answer was invariably, "of course". To some extent - that is true - the allocation aspect is taken care of under the headings of control and targeting. These purposes, however, conflicted with the idea of using the formal plan as an analytical instrument e.g. to provide information in order to facilitate the choice of the most optimal courses of action. Since planning normally involved the deliberate introduction of biased information the analytical purpose is not well served by the numerical information handled in the planning process. However, once a choice had been made, the plan decided upon it served the purpose of a standard of reference to check that CHQ intentions were carried out as planned for. Also, a meaningful plan to promote a more efficient (as yet undefined) allocation purpose as a rule must have a horizon beyond the one and five year limits usually applied in formal planning. Furthermore, in order to serve as guidance in the choice between different investment opportunities or different courses of action open to the firm, a systematic evaluation procedure (defined in terms of specified firms goals) covering all aspects of firm behaviour must exist. Even a very generous appraisal (by me) would mean that not more than a fourth of the firms interviewed (U.S. and non-U.S.) made systematic efforts to collect the information required to perform - systematically again - any meaningful allocation purpose within the framework of the comprehensive, numerical planning routines. Allocation decisions involving a choise between alternatives will have to be taken on top of the formal planning process based on information external to planning (see below).

This does not necessarily imply that the "sophisticated" group mentioned above represents the most successful group of firms in terms of their ability to fulfill stated or standard criteria of success (growth, profitability, etc). An argument often met with was that the economic environment of the firm was a too uncertain, a too complicated and a too esoteric matter, to lend itself to numerical measurements. The reliance on guesses, feelings or outright hunches often had proved far superior when major decisions were concerned or as one executive

in a Swedish firm expressed himself; "All our successes have been based on hunches while decisions founded on careful calculations usually have resulted in bad profit performance."

I have four comments to this. The first is that in firms where major decision making is running parallel or contrary to explicit, formal plans, planners in fact do not possess the relevant pieces of information and/or are unable to present such information in numerical and explicit form. Second, in some firms planning - notably long-term planning - seems to be viewed as an activity which is not really necessary to-day but which has to be carried out and which has to be improved for possible future uses. In such cases management participation in planning work was usually lacking and plans consequently had no or little leverage on decision making. Third, rate of return calculations and rate of return standards at the level of the individual investment object took place or were applied in practically all firms interviewed. However, within the framework of the entire business organization the evaluation of individual investment projects was a typical suboptimization procedure (part of the appropriations procedure) that in most cases was not even integrated in comprehensive planning proper (see section VIII.3).

My fourth comment is the most important one. It refers to the restrictions instilled upon planners by explicitly stated corporate policies; not unfrequently in the form of written documents. I met with no such simple notions as the maximization of profits (in any time dimension) or present net worth of the firm. Neither did I find much evidence to support a proposed alternative; namely to maximize growth (e.g. in sales) provided certain profitability standards were met.

I met with a number of profitability standards to be satisfied in planning. However, there were numerous exceptions, sometimes stated in the formal policy documents and often violated in practice. Of course, this "evidence" should not lead anyone to believe that "money-making" is not a basic objective of business firms. On the contrary, I was sometimes met with generous agreement when I brought up the matter of maximizing certain goal variables (profits etc.). Again, the objection was invariably that the notion of optimization was not operational. A basic purpose of the firm organization - implicit in several policy documents - was to stay alive in the long run and often to stay alive in a rather restricted environment (market, technology, etc.). To extract maximum profits in the short run, i.e. within the budget or the five year plan would not benefit the purpose of fulfilling such long term goals, it was argued. Since most

important decisions carried consequenses beyond the long-term plan the notion of an "optimum"solution to-day was not considered meaningful[1].

Another(fifth) objection to "optimal thinking" sometimes raised was the fact that the information bank on the structure of the business organization residing in CHQ was of the "softcoefficient" type. Improvements in performance mostly occured through changes in that structure usually without CHQ people knowing exactly how. CHQ planners then have no fixed coefficient model at their disposal that remains stable in an optimization experiment. Optimization exercises then become less meaningful.

This "softcoefficient" feature of the firm structure is sometimes referred to as the presence of "slack". We will see in later chapters how the "awareness" by CHQ planners, that unidentified "pockets of slack" exist everywhere in the organization,is systematically made use of in planning.

As a consequense one would expect a frequent use of probability concepts in planning work; e.g. to work with alternative plans. I found very little of this. With a few exceptions plans were all single-valued. Again the argument was that uncertainty could not be specified numerically in a meaningful way. Besides, most long-term plans were completely revised at least once a year, a circumstance which probably didn't make the numerical specification of an uncertainty element worth while. Consequently the sixth point to be made is that the presence of an allocation purpose in planning has to be related to the basic policies of the firm organization. These for one thing vary over time in a not negligible way. Secondly they are seldom explicit or precise enough to allow a satisfactory numerical analysis of the matter.

By and large my impression was that the systematic pursual of the allocation motive in formal planning was of rare occurrence. If defined with respect to simplified notions such as maximizing expected profits in a fixed time-dimension or expected present net worth of the corporation it was probably entirely absent. Major decisions that involved basic structural changes were taken outside the context of formal planning and most probably not even on the basis on

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1) The only areas where methods of normative planning or optimum programming have been used with some success are these where (1) the numerical structure of the activity is approximately stable during the optimization period and where (2) decisions are bindning for a relatively short period of time only, such as production or inventory planning.

information provided by the planning process. In addition the implications of the chapters to come will be that the structure and information content of the formal did not allow such sophisticated applications.

6. Flexibility - contingency planning

To enhance flexibility by way of planning has often been advocated as the primary motive of planning e.g. by Donaldson (1969). By preparing a set of alternative plans each contingent upon a particular and not unlikely development of an erratic economic environment the firm should always be ready to reverse decisions taken or to wait with decisions to the latest possible date with a minimum of economic disturbance.

The interview findings on this point were in the negative. For one thing this aspect of planning was seldom emphasized during the interviews. Second, most formal planning systems investigated were too crude to be of much use in such a context. Normally the workload required to produce a single valued budget or plan of sufficient detail only was so large that the presentation of alternative plans was simply out of question.

Practically all planning systems (budgets and long-term plans) investigated were of the single valued type. In a few instances explicit and numerical consideration was given to the probability of this or that outcome of the exogenous, environmental variables of the plan. Always, however, both the budget and the long-term plan were stated in terms of one choice or one solution. As for the budget flexibility was incorporated by frequent but partial updatings. In long term plans the annual and complete revisions were considered sufficient.

Despite the impressions reported on above, this does not mean that flexibility or contingency planning is not important if planning is defined more broadly than to include only numerically specified plans. First, it was frequently stated during the interviews that the process of arriving at the planning document was more important than the document itself. This process - as we shall see - was built on an elaborate system of integrated information points with telephone dialogues, working sessions and negotiating procedures before basic data for the plan were fixed. Normally, CHQ people had a detailed working experience of the "numerical properties" of the business organization. Such information and the informal information-contact system could be put to use at short notice without going through the whole process of producing a new planning document.

Second, to a varying degree special or new projects or particular functions (like inventory planning) were singled out of the comprehensive, planning process for separate inquiry. Here, alternative planning was frequent and I had the opportunity to look into a few cases where the basic concern was to estimate what would happen to the firm if one particular (and major) project went wrong in several well defined senses. One large firm, for instance, was very much concerned with the fact that its present dominant business would not be able to support operations of the present size for more than 5-10 years. If no other major business could be embarked upon successfully over the next five years the firm would have to shrink considerably in terms of employment. The most promising candidate involved a new technology to be introduced in the same market. A new R & D set-up was needed and capital requirements were considerable. So were also risks, since there were at least two major competitors. Here, planning was more concerned with the impact of a major mistake and - if so - to map out ways of coming down with both feet on the ground rather than with the consequences of success.

Third, contingency planning within the framework of comprehensive numerical planning was normally considered on the financing side rather than with reference to operations planning. What minimum financial margin was needed each of the next five years? For how long could the decision to float the $ 50 million bond issue be postponed?

In a small number of the U.S. firms interviewed a financing simulation model had been built to facilitate financial flexibility. Usually, this model was a condensed and much simplified version of the long-term plan. Normally it was also considered to be too crude to be of much use - so far. The majority of U.S. firms, however, revealed (in 1969) that they were currently working on building such a model or planning to start on such work soon. However, scepticism rather than enthusiasm seemed to dominate among those I had the opportunity to question - with the exception of those persons actively engaged in model building work.

7. Activity planning

From what has been said already comprehensive, numerical planning at the CHQ level has a marked financial bias. In short run, annual budgeting financial and profit control seem to be the dominant motive and - as will be illustrated in

much detail later - the information handled in the budget procedure is defined in financial terms. In long range planning financing and profit prospects are still dominant in the sense that the long-term plan represents an evaluation of the financing and profit consequences of a chosen growth path.

In both annual budgeting and long range planning at CHQ level the operations or implementation side seems very much suppressed in the data-set that constitute the comprehensive CHQ plan.

There are some exceptions to this that will be accounted for later. The point to be made here, however, is that operations problems in planning except large investment decisions are solved at levels below CHQ. This is probably the main reason why contingency planning on the operations side did not appear as a motive of any importance in comprehensive planning. However, the fact that single-valued comprehensive plans ultimately fall back on an operational basis must excercise some kind of constraint on the options for contingency planning at below CHQ level. Production planning normally takes the sales and investment plans of the budget and the long-term plan as given inputs. The same holds for manpower and inventory planning (see Diagram I:1 B). Within this enclosed environmental frame operations planning reduces to a rather technical suboptimization problem[1]. Here, planning normally takes on the character of activity planning or programming. I have met with several sophisticated and numerically specified optimization systems at this level and in particular in day-to-day production scheduling and inventory planning. On this point, however, interviewing has been very rapsodic and no account of such methods will be given. Still, the focussing on comprehensive CHQ planning chosen for this study explains why subroutines such as rate of return calculations at the investment project level and production planning play a secondary role in this book. Besides, these topics have already been covered fairly extensively in literature.

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1) Note, however, that even though comprehensive CHQ plans are normally single valued the informal process of arriving at the single valued plans at an earlier stage of course necessitates a choice-sequence. This will be considered in the following chapters.

III TYPES OF FORMAL PLANNING SYSTEMS

At CHQ the concept of "planning" most frequently was understood as "comprehensive planning". The notion of comprehensiveness seemed to mean that the plan should encompass all relevant activities of the business organization within an integrated system i.e. being coordinated the way a budget usually is. For obvious reasons this is the interpretation of planning one would expect to find at CHQ the place where practically all interviews were carried out. Thus, at other parts of the corporate hierarchy the term "a plan" most probably carried different associations. For the same reason, it is impossible to acquire information on all aspects of planning at CHQ. For instance, in one firm the "long-term plan" consisted of a prolonged (annual) budget for 2 extra years only. There existed, however, a 5 year R & D investment plan compiled annually at the research departments under the auspices of a sub-committee of the Board of Directors but outside CHQ. In addition the sales plan (with some rough profit estimate attached) was revised annually for a 10 year period. Again, this was a planning procedure parallel to CHQ comprehensive planning even though the planning sub-committe of the Board was the supervising body.

A second problem of comprehensiveness has to do with the coverage of group (i.e. parent including subsidiary) operations. The primary purpose of this study has been to investigate the existence and structure of comprehensive and formal planning systems in particular among large business organizations. The bulk of the text is devoted to this topic. However, as has been noted already in chapter I, when such a demanding criterion on comprehensiveness is adopted only the U.S. firms did comply fully. A large number of European firms neither had a comprehensive long-term plan nor did it cover subsidiary operations.

There are more ways - besides the degree of integration and comprehensiveness - of classifying the types of formal planning set-ups in large business organizations. A third criterion has to do with the length of the planning horizon in time. As always there is a great deal of overlapping between the two lines of classification; i.e. the necessity for logically integrated formal systems increases with the length of the planning period. The consequences, at the beginning of the planning period of activities planned for, then are more likely to take effect within the horizon.

A fourth criterion for classification refers to the methods employed in making up the plans; i.e. whether the plan is based on shop-floor sources of information, or a pure CHQ product or a combination of the two extremes. There is also an important fifth way of classification, which we will postpone for later consideration. It refers to the degree of management participation in formal planning. It is imperative to note that this and the next 4 chapters (from Chapter V) will be (primarily) concerned with the structure of the formal planning routines. Not until Chapter IX an attempt will be made to stage the formal plan against the background of decision making and firm behaviour. This is where non-formalized routines such as management participation in planning work enter.

Again, there is a need for delimiting the purpose of this study with reference to the character of information available. Sub-planning routines below CHQ have been covered systematically only to the extent that they enter as inputs in the CHQ comprehensive and formal plan, and only in so far as details of such sub-planning routines have been available at CHQ. In addition the purpose of planning as stated in the previous chapter and in the chapters to come refers to the use to which such plans are put or may be put at CHQ-level. These delimitations also have a bearing on the classifications to be given below.

1. Plan horizons

A grouping of planning systems according to time dimension provides a good first illustration at this introductory stage. Plan horizons for one thing are fairly easy to register. They also provide information about the time limit beyond which CHQ does not try to look in terms of numbers when planning systematically for the future. To put overdue emphasis of such fixation points as plan horizons, however, involves the risk of misleading conclusions. A close scrutiny of the complete planning set-up of a business enterprise will usually reveal the existence of several "horizons", applied at various stages in the work on the plan. Besides, if the detail as well as the comprehensiveness of the plan decreases with the distance in time, also the notion of a horizon fades away with time.

U.S.-firms (1969 interviews)

In all of the 30 U.S. firms interviewed a short-run plan (budget) existed, encompassing at least the coming fiscal year. In one firm only the annual budget was all there existed in the form of formal planning. In 5 additional firms a comprehensive 3 year plan existed, and no more in the form of comprehensive planning.

It is interesting to observe that 4 of the very large corporations belonged to this group. If on a 3 year basis the plan was usually called a "3 year budget". Here and in what follows a comprehensive plan is defined to include at least a complete profit and loss statement and a balance sheet for each of the years of the plan, or - if not explicitly prepared - the data required for such a presentation should be compiled on a routine basis.

The typical long-term plan existing in all other except 2 U.S. firms interviewed was completed for a five year period. In those 2 cases the horizon was between 5 and 10 years.

This, however, does not exhaust the subject. In at least 10 of the U.S. firms interviewed, the budget and the long-term plan was inclosed in a so called strategic or prospective plan. The planning periods here varied substantially. The horizons were at least 10 years. In one firm some numerical projections were made to and beyond the year 2000. The strategic plans were much less specified than the long-term plans. Except for the specification of some growth rates, most of them were only verbal in presentation. Policy aspects seemed to have a rather free play and often suggestions as to alternative courses of future development were presented in the planning documents.

Strategic plans were practically never comprehensive even in the sense of covering (verbally) all relevant activities of the firm organization. Emphasis was on the future environments of the firm rather than on the firm itself, and its adaptation to expected environments. It may be that I have been too generous in assigning a prospective plan to no less than 10 firms. In some of these U.S. firms the strategic plan consisted of little more than a carefully worded "policy manual" for internal use. However, when defined broadly, some interesting aspects of strategic planning appeared. In three giant U.S. firms the only projection beyond a 3 or 5 year extended budget consisted of a few separate investigations on large investment undertakings contemplated. A group of CHQ people had been assigned the task to prepare a report on each particular venture. In two firms, my impression was that the strategic plan only covered investments in research and development for future production. A common arrangement was to have the strategic plan cover all considered (including alternative) investments involving the opening up of new markets, or the entering of new markets meaning both the starting of production within traditional lines at a new location (e.g. abroad), the production of new goods and the application of new techniques to modify the qualities of established products.

Prospective planning often seemed to be fairly explicit on the policies adopted as to expansion, i.e. whether the firm should grow internally or externally or in what proportion. In some prospective plans I found the outline of an acquisition program. The areas in which to look for suitable firms for sale, the extent of dilution of own equity allowed, etc. Negotiating policies etc. might be indicated in fairly precise terms. It is important to observe that acquisition programs as well as policies were normally kept outside or parallel to both the budget and the comprehensive long-term plan until the purchase was final. It happened, though, that the budget as well as the long-term plan included provision of financial resources for potential future acquisitions, although - as it seemed - acquisitions often were on an equity-sharing basis and then did not involve more than minor net transfers of liquidity.

In some instances the treatment of the separate development project plans were quite comprehensive in the sense of including an explicit numerical analysis of the profitability as well as liquidity consequences of the entire project for a very long future period. In two cases the separate development project plans were partially consolidated on a financial resource requirement basis, or rather, the development projects were spaced (preliminarily) over a future period to fit into an estimated total availability of finance frame for the entire corporation.

The budget was normally specified by quarter or by month and the long term plan by year (see below). As mentioned the strategic plan was mostly verbal. Sometimes five year (average) growth rates for basic entries such as sales, profits, investment etc. were entered to support arguments.

Normally, the budget was made up once a year. Updating of the budget - partly, more seldom completely - was frequently made during the year; quite often on a rolling basis constantly preserving at least a one year horizon. Normal practice was to revise the long term plan once a year only. It happened that important occurrences, such as basic errors in the sales forecast or the acquisition of a new subsidiary, made a revision necessary during the year.

The strategic plan - as mentioned - is a fairly recent thing even among giant U.S. corporations. I found regular updating practices only in three cases, where revisions took place once a year.

If any distinct border lines should be drawn between plans when grouped accord-

ing to horizon criteria they should be drawn between the prospective plan and the long-term plan; not between the long-term plan and the budget. As we will see later most differences as to methods of compilation and purpose are to be found between the prospective plan and the long-term plan.

Also, the degree of integration, between the three time-layers within the complete formal planning system suggested, shows quite distinct properties. As a rule the short-term (annual) plan was quite well integrated into the long-run plan in the sense that the final result of the work on the long-term plan served as a basic assumption for the work on the budget which had to be trimmed into the long-run trends outlined. However, in 4 instances the budget was completed before the long-term plan and coordination seemed to be almost entirely absent.

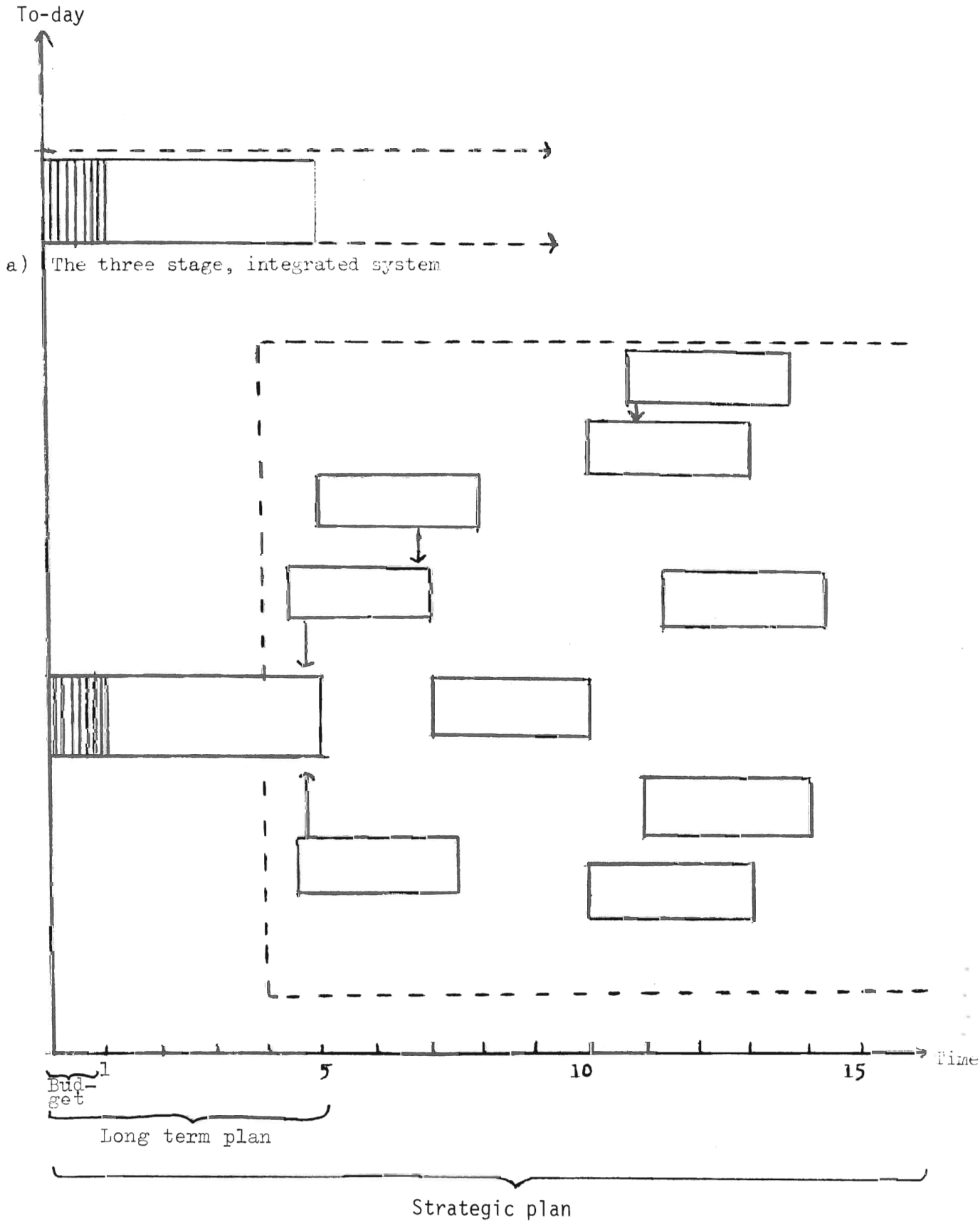
Coordination between the strategic plan (when existing) and the long-term plan was more loose. The strategic plan was completed before the long-term plan in these three cases where updating was annual. Most often, however, updating took place at irregular intervals only. Usually the long-term plan was expected not to deviate in any important way from the perspectives outlined in the strategic plan. However, the strategic plan as a rule was general and unspecified enough not to pose any particular problems in this respect. If the strategic plan consisted of a series of separate "project plans" there was a good chance that some of these "development projects" (even with no explicit time dimension given) would fall partly within the horizon of the long-term plan. Attempts were then made to account for this possibility in the long-term plan.

The accompanying Diagram 3:1 attempts to illustrate the typical structure of a system encompassing all three kinds of plans.

Non-U.S. firms

The fundamental difference between U.S. and non-U.S. firms to be accounted for under this heading has to do with the resources spent on planning "as such" and the date of introduction of formal planning routines. Generally speaking the U.S. firms had started with planning as described here 5 to 10 years before their European counterparts. Once introduced differences in structure and even degree of sophistication were difficult to find. I will attempt later on Chapter IX), to give some vague and preliminary indications as to the quality of these differences. Suffice it to note here that two large Swedish firms had no comprehensive formal plan whatsoever beyond the horizon of the annual budget at the time of interviewing (1970,1972). 5 (or perhaps even 7) additional Swedish firms

Diagram III:1 Structure of two planning systems



b) A two stage system, with a project based strategic plan attached. The dashed, open square is meant to indicate the possibility that the various projects (investigations) of the strategic plan may be systematically coordinated.

were in the process of introducing a 5-year comprehensive plan, but so far compiled only partial plans such as "sales plans" or "investment plans". In all but 4 of the Swedish firms planning was at the parent company level only while - in contrast - comprehensive planning in practically all U.S. firms covered (controlled) subsidiaries as well.

By a generous appraisal two of the Swedish firms put together a so called prospective plan in a routine fashion with separate staff personnel assigned to it. Of course, several additional Swedish firms had some qualified people appointed to exploring the future development of the production and product technologies with which the firm was currently working. However, by comparison with the U.S. firms this does not rank as prospective planning in a comprehensive sense.

In general, a much more pronounced and systematic scepticism was voiced vis-à-vis planning in numbers beyond the annual budget in the non-U.S. firms compared to the U.S. firms, whatever significance should be attached to such remarks.

To be noted is finally, that in what follows primary concern is devoted to the long-term plan and the short-term budget. As will become more obvious in the next section there is no reason to keep the time dimensions of planning separated until Chapter IX. Thus the account of the structure of the planning system in the next few chapters will be equally valid for the budget and the long term plan if no particular comments are made.

2. Planning methods

On the methodological side there are at least two distinct extreme approaches to the making of a plan. The first approach starts from shop-floor information (estimates) and the plan is condensed by several stages to a consolidated plan for the entire corporation. This approach also carries the name bottom-up planning. In the second case the plan is a pure CHQ product. Sometimes this CHQ plan consists of a "synthetic" product in the sense of being based on a numerical model of the firm - usually quite simple[1] - in combination with CHQ estimates

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1) I cannot resist mentioning that the methods and structure of these prediction "models" closely resembled those of Eliasson (1967, 1969), the difference being that the coefficients of the model were known to planners from the internal accounting system of the firm; not so in Eliasson (1967, 1969) where recourse had to be made to external estimates or assumption.

on the future development of exogenous input variables such as sales, profit-margins, etc. Usually there is a break down on major divisions and if the CHQ plan is all there is to comprehensive planning prior checking with local division opinion on the future is normal procedure.

As a rule planning routines in existence were a mixture of the two approaches, the degree and character of mixing defining the kind of management involvement to which we will turn in Chapter IX.

In a few U.S. firms two parallel plans were completed, the one based on a pure shop-floor approach, the other being a CHQ estimate for the entire corporation. In these instances the CHQ plan was a modified projection of past trends. The output of the CHQ "confrontation" plan principally consisted of a set of preliminary targets. Before the basic plan (built up from the shop-floor) was submitted to the Board for approval a confrontation with the CHQ plan took place and appropriate adjustments were made.

The shop-floor approach was invariably the method used in short-term budgeting. In 25 of the 30 U.S. cases this was the basic method used also in long-term planning. In 2 U.S. cases a pure synthetic model approach to the long-term plan was the only one; in 21 U.S. firms a combination of shop-floor data collection and synthetic CHQ projections was the method used and in 5 U.S. firms two separate and complete long-term plans were completed. This exhausts the number of U.S. interviews.

No apparent differences in method could be found between U.S. and non-U.S. firms among those firms that had introduced a fully fledged comprehensive planning scheme. Short-term budgeting was almost 100 percent of the shop-floor, bottom-up kind and long-term planning a mixture of the shop-floor and CHQ top down approaches. At least three Swedish firms investigated had adopted the method of confronting division plans with independently made up CHQ sales and profit targets. In several firms (U.S. and non-U.S.) I met with the CHQ opinion that the making of long-term plans could not be entrusted with the divisions. "They are all too concerned with their current operations to lift their eyes above the horizon of the annual budget" as a CHQ officer expressed it. As a consequence, the argument continued "you got no more than trend projections of current activities and these we do better up here at CHQ".

Nevertheless, a not negligible amount of long-term planning consisted in little more than passively adding up the contents of filled in standard forms from

divisions and subsidiaries (see supplements S 1 and S 2). A preliminary observation is that this kind of passive use of data collected from down below in the organizations was typical for the long term planning system just recently introduced. Once the regular collection of data for the plan had been established as an accepted routine CHQ began to exert pressure on the divisions on the basis of information contained in the same data. This may be one reason why the passive collection and summing up of numbers seemed to me more frequent among the European firms while on the other hand the element of informal management involvement prior to the completion of the planning documents seemed to be more noticeable among the U.S. firms. The matter of management involvement in planning, however, will be postponed to Chapter IX.

3. Case: elements of the planning system - and sample variations around the mode

The organization of formal planning procedures seems to vary distinctly between firms. A not unimportant factor is the organization of the firm itself, notably the degree of decentralization of decision making. Different plans are prepared at different divisions and levels within the firm and by different groups of people. However, the differences in planning procedures are largely explained by the degree of integration and simultaneity in planning for various activities. Diagrams I:1 A-C introduced already in Chapter I have been designed to illustrate typical differences as well as common elements in the various planning systems met with. They will be used henceforth as a reference guide.

As a rule there is one sales plan (or projection or forecast), one profit plan (or estimate etc.), one cash-flow projection and one investment plan. Sometimes these plans are prepared (formally) quite independently of one another. Most often a recursive scheme is adopted in short-term (annual) planning without recognizing (formally again) interdependencies in time. Practically always the same recursive scheme is also used in long run planning, apparent inconsistencies (interdependencies) being taken care of informally on an ad hoc basis (Chart B).

In the typically decentralized organization the planning system was usually organized as a group of separate sub-routines - one for each subsidiary, division or profit center. A complete plan in the sense of including all elements of the plan mentioned above was made up for each sub-center. Consolidation of all separate plans to a corporate masterplan was the task of CHQ. Various methods of

consolidation were employed varying from almost complete independency in planning at the division level and simple summation at CHQ to systematic headquarter control and participation at all stages in the work on the individual division plans.

In the typically centralized firm, planning at subsidiary, division or profit centre levels was only partial and the complete planning system was to be found at the CHQ-level only.

Only a very small number of firms could be classified as having adopted either of the two extreme forms of organization. Not surprisingly most firms in the sample of 30 U.S. firms displayed features of both and so did the planning set-ups.

Normally, firms divisionalized according to market criteria rather than by production type or some other method exhibited more features of decentralization in planning routines. In firms where the sales function had been concentrated to CHQ and divisionalization was along production lines rather than product lines on the other hand the making of complete division plans was not possible. There are no apparent differences in planning methods between the U.S. and the non-U.S. firms to take note of at this point. One should note, however, that divisionalization of the firm organization along market or product lines was more frequent and more systematically carried through in the U.S. sample than in the non-U.S. sample. Consequently, this also meant that decentralized planning in the above mentioned sense was more frequent among the U.S. firms. This, however, did not mean that the degree of control excercised through the planning system was less intense among the U.S. firms. This aspect will be dealt with in more detail in Chapter IX.

The presence of a sales plan was a prerequisite for the presence of the other three projections (profits, cash flows and investments). It happened often that the sales plan was projected for a more distant horizon than profits, cash-flows and investment. This, for one thing illustrates the typical recursive property of planning schemes. To be noted is also that in a firm with a centralized sales function the sales plan consisted in an input datum handed down from CHQ as a basis for division planning (cf. Charts B and C in Diagram I:1).

A profit plan, a complete cash-flow projection and an investment plan being compiled meant that data had been assembled to present a complete ex ante closing of the accounts (profit and loss statement and - given initial data - a

balance sheet). If so, the planning system fulfilled the criterion for comprehensiveness.

As mentioned the shop-floor approach was 100 per cent practice in short-run planning or budgeting and normal practice also in long-term planning. Even though CHQ - as was the case in a few firms - sometimes produced a numerically specified 5 year plan as an "optimum" or "ideal" solution from a number of computer simulations on a formalized planning model the work on the less sophisticated but much more detailed budget always involved a number of short cuts which violated the logical structure of the complete planning system. In practice such violations didn't mean very much for the final product (the plan) - such was the contention - and further refinements of details were not considered worth neither the time nor the effort. As mentioned the usual way to take care of arising inconsistencies in short-term planning was to adopt a recursive or iterative scheme of adjustment, revisions being made every quarter or year.

The predominant recursive planning schemes met with, had the following rough outline (again see Diagram I:1 B). First a sales and profit-margin estimate was determined for the planning period. The sales projection often was regarded as a growth-plan. Most components of working capital usually displayed rather constant proportions to sales levels in the long run. Given the profit-margin estimate "normal" cash-in-flow projections thus could be calculated rather mechanically from the sales and profit estimates.

Independently of this budget (investment) requests were collected from firm divisions. In practically all U.S. cases a distinction was made between mandatory projects in the sense of being necessary for the realization of the sales plan[1] and other projects giving rise to growth beyond the planning horizon. This practice for some reason was much less frequent among the European firms interviewed. As a rule budget requests were subjected to negotiations between CHQ and division management. Once the sales plan had been fixed cut-backs were primarily made among the nonmandatory projects. Sometimes projects were screened on the basis of expected rate-of-return calculations. Various methods were employed[2] but I found in no instance that one particular method was systematically put to use all through the firm. One somewhat surprising observation relating

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1) Note this way of taking care of the interdependence problem.

2) The most common ones being discounted or non-discounted pay-back periods.

to this is that the profitability consequences for the entire corporation or its constituent parts - the subsidiaries, divisions or profit centers - often were not made explicit until at a late stage in the making of the plan. This final analysis, however, seldom resulted in more than partial backward revisions in the formal plan before the next date of revising the plan.

Normally, however, the liquidity consequences for the entire firm of the sales-growth plan were made explicit at an early stage of planning in a future cash-flow analysis. In the majority of U.S. as well as non-U.S. firms interviewed the internal cash-throw-off served as some kind of long run constraint on spending on capital account as far as the making of the plan goes. At least it served as an information input in the decision to borrow. The nature of this restraint will be discussed in more detail later on (Chapter VII). However, granted that a decision in the planning process has to be taken on the basis of such a future cash-flow analysis another interdependency factor primarily working in the long run has been imposed on the formal planning system.

Negotiations between CHQ and divisions being completed and the formal plan being passed by the Board, only in a few rare cases divisions and/or subsidiaries were automatically authorized to start making commitments according to the investment plan so sanctioned. In the majority of instances, a separate authorization procedure preceded the actual decision to start making commitments. This last decision was usually referred to as the capital appropriation stage and consequently most firms had an investment plan as well as a capital appropriations plan.[1] This appropriations procedure was always there in U.S. as well as non-U.S. firms.

To repeat: The box Diagram I:1 B gives a simple pictorial view of the elements of the plan. However, the contents of the boxes are as yet unaccounted for. The arrows indicate the order in which the elements are joined. The arrow-scheme stands for a typical ordering of a formal plan. There are several exceptions and the arrows do not account for those numerous, informal considerations (links) that are always present in planning work. Two arrow-heads indicate the presence of at least some degree of simultaneity.

Usually the profit plan is a current expense projection, given the sales-projec-

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1) Cf. the "capital appropriations" data collected by the National Industrial Conference Board in U.S.A., e.g. in Cohen, "The National Industrial Conference Board Survey of Capital Appropriations" from The Quality and Economic Significance of Anticipations Data, NBER, Princeton 1960.

tion. The content of the investment-plan-box varies. Usually, the last two boxes contain only hardware such as investments in machinery, equipment and construction. These entries also go into the cash-flow-plan, hence the double-pointed arrows. Normally R & D investments, advertizing and other non-depreciable expenses that are partly of investment type go under the current expense account and - as a consequence - they are filed under the profit plan.

With the qualifications given, Diagram I:1 B provides a fairly accurate although a very simplified representation of the formal short-term budget as well as the long-term plan; not so for the strategic plan.

Together the budget and the long-term plan make up the basic body of numerically explicit formal planning routines. Because of this it would mean an unwarrented strain on the reader to see the structure of the planning system repeated twice in two separate sections; the one dealing with short-term budgeting and the other with long-range planning. For that reason the two types of plans are treated jointly in Part II. Not until Chapter IX do we return to the time-dimension in planning. Despite this simplification in presentation the reader is warned that most of Part II will contain a laborious and detailed account of the build up of a typical plan. Thus, the previous chapters have been designed to allow the fast reader to proceed directly to Chapter VII. He may, however, want to read the brief survey of the literature on corporate planning that begins on the next page, first.

IV THE LITERATURE ON CORPORATE PLANNING - A BRIEF SURVEY[x)]

1. Some concepts

A substantial literature exists on the philosophy, theory and practice of planning at the national level. Although the basic principles of planning at the company level are quite similar, operational practice and tradition differ. Hence, the literature on corporate planning - also substantial if defined broadly - displays contrasting features.

Formal planning at the company level most probably has developed from several origins each representing a different purpose. One such origin is in large administrative systems like public bodies where market price mechanisms cannot be made to serve the purpose of providing signals on performance and where certain public documentation has been enforced legally. As companies operating in a market environment have grown large enough to acquire the same internal lack of good market information the same need for substitute arrangements also has made itself known.

In this sense the planning system of a firm provides the service of an internal signalling[1)] system replacing the market mechanisms. Reporting against plans and other controlling devices are essential here.

Often planning is considered to be essentially a device for gathering signals from the environment of the firm in order to forecast the basic external variables that constrain the behaviour of the firm.

The mechanical gathering function becomes more of an analytical device when such signals are interpreted, reshaped and used as a basis for decision making. There are numerous examples of mechanical applications of the gathering function and the interpretive use of signals or both in combination. Econometric

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x) This survey of planning has no ambitions of being complete. Like all surveys of such heterogenous and semantically unstable matters as this one it cannot even be based on the idea of being correct in any general sense.

In compiling sections 2 and 3 I have found the excellent survey of budgeting literature Budgetering (1970) published jointly by Sveriges Mekanförbund and EFI very useful.

1) I take the liberty of adopting Arrow's (1973) terminology in his lucid lecture on "Information and Economic Behaviour".

demand models used to project a firm's sales plan,being based on externally given forecasts of leading signals such as GNP predictions for various countries, are an example of the first kind. If a financial model describing the internal costing, accounting and cash flow structure of the firm is tied on to such an external forecast one has an example of both. Mechanical applications of rate of return calculation procedures are also an instance of the interpretive function.

As mentioned,the origin of accounting can be traced to control mechanisms adopted often by decree in public administrative bodies.[1] Budgeting and later planning were a rather natural outgrowth of such a system in the form of "future accounting" the basic purpose being to emit signals on the future state of financial affairs of the administrative body in question rather than serve as a basis for analysis and decision making. This information purpose is often dominant in long-range planning both in administrative bodies and commercial entities of to-day. The purpose may be to provide internal as well as external information signals.

The signal emitting function, however, can be made more sophisticated and be combined with both the internal signalling and the interpretive function into a guidance, control and coordinating instrument. Signals are gathered and analysed and shaped into targets that are in turn imposed upon the organization to serve as guidelines for similar, repetitive procedures at lower levels. These procedures put together in turn result in plans (ex-ante decisions) against which performance is later checked. Once targeting enters planning we have to reckon with the possibility of biased information (signals) and deliberately introduced elements of conflict.

The various functions listed above have been emphasized in various combinations in the literature. The very diversity of combinations met with may be due in part to the apparent lack of empirical information on firm behaviour and a consequent need for a priori speculation. This may also explain the manifest tendency towards normative theorizing that I like to call advisory economics in the sense of setting up criteria for decision-making that are "rational" in some well defined sense within the framework of a synthetic (restricted) economic environment. Confused terminology may be part of the explanation. There is no good all purpose definition of planning and the two previous chapters illustrate why quite well. There is neither to be found a commonly accepted definition even when a

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[1] See e.g. Hofstede (1970, p. 20).

commonly accepted purpose of planning has been described.[1] Planning is a design to facilitate desicion-making and the two concepts are hopelessly confused until some arbitrary dividing line has been introduced.[2]

There does not seem to exist any kind of professional conjecture about what is the purpose or the purposes of planning. There is the problem whether concepts and purposes should be defined with respect to some ideal model of rational behaviour or be delimited by operational criteria. At times articles or even books have been written on planning with no definition of the concept attached. Understanding then presumes some subconscious, common experience between reader and writer. We will not require such faculties here, but some mental capacity of the kind undoubtedly has been of some help already and will be.

2. History

The concept of planning appears in all branches of theory; organization, administration, financing, accounting, information, theory, operations analysis as well as in pure economic theory. It is a concept with loosely defined limits of usage. In Fayol's classical grouping of management functions into "planning, organization, command coordination and control" it essentially takes in attention of the future. However, planning in the sense used in earlier chapters covers virtually all the five functions listed by Fayol.

The functional classification along the lines of Fayol was very dominant in the development of budgeting theory during the fifties, planning here being viewed

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1) See the derisive Appendix A on management semantics in Anthony (1965).

2) By Eilon's (1969) definition planning is an early part of the decision process that in fact covers all intellectual management activity within a firm. This contrasts with the more popular notion of a decision as a resolution.

An interesting conceptual arrangement - not well substantiated by this study - is given by Starr (1966) as a prelude to presenting a class of "planning models". Starr introduces a generally defined class of decision models that "can be divided into plans and policies" and proceeds to argue that when the "same type of unit decision problem occurs repeatedly it can be categorized as a policy situation" (p. B-118). Policies are then well structured, preplanned decisions that can be automatically activated when the appropriate situation repeats itself.

in a narrow sense as part of budget classification problems. Normative rules of calculation and measurement constituted the essential ingredients as is obvious from much European literature on the matter through the fifties. In German literature budgeting was rather regarded as predictive accounting, one of the four categories of accounting together with "book-keeping", "calculation" and "statistics" and planning was thought of in a physical or technical sense (production scheduling etc.). This notion of planning is also found in Madsen (1959).

3. Mechanical decision systems

By degrees a more analytical approach is entering into literature. Budgeting as a control and coordination instrument is being more and more emphasized and the idea of budgets as administrative systems for the solving of various management problems gradually develops - first on the U.S. scene - into theorizing in terms of generalized guidance and control systems. Practically oriented rules-of-thumb give way for theory. The astonishing development of computer technology during the sixties has made possible the building of computer programmed piloting systems that mechanically optimize behaviour of business organizations such as e.g. in Glans etc. (1968) and even in March and Simon (1958). At times such as in Simon (1965) human beings are predicted to be replaced by computers in the near future even when it comes to complex business judgements.

Little understanding for the presence of limits to informed analytical decision method as contrasted with intuitive judgements is exhibited in such works on the well structured future ahead of us. As we shall see in later chapters business beliefs and management practice of to-day are, however, far off such future scenarios. "Mathematical models of programming and optimization are increasingly used for" solving technical problems at the level of the production line, in inventory handling etc. but definitely not as argued by Rapoport & Drews (1962) in any operative sense to inform and guide top decision makers at the level of the entire business organization. This is at least one of the conclusions that comes out of this study (cf. Supplement 6). Literature on the matter is typically concerned with how to build such models and how to use them in theory while practically no experience on their actual use in conjunction with decision-making has been reported on.[1)]

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1) cf. Starr (1966).

Formalized systems theory typically presumes extensive availability of business external information, reliable environmental forecasts and the efficient internal handling of such information at no or small costs. Theoretical literature on planning hence concentrates around the purpose of well informed and optimal decisions and the idea of budgets or plans as instruments of control tends to be suppressed. It should be mentioned here that such systems theories with mechanical optimizing schemes have found very fruitful applications in restricted business applications where uncertainties can be handled elsewhere, and where risks are controlled by repetitive experience such as in production scheduling or inventory planning. Less sophisticated systems theories at more aggregate levels have been applied less fruitfully. Mechanical planning systems in the form of financial models e.g. as described in Gerschefski (1968) are instances of this. It should be mentioned also (see further Supplement 6) that as of to-day the major volume of computer use outside production and technical applications is devoted to the mechanical handling of numbers and accounts, routine reporting and control procedures but very little to analytical use.

Several trends have been emerging during the sixties contributing to a richer conceptual framework for planning theory but also to confusion. Planning is more and more becoming the general concept and budgeting a narrow accounting-forecasting routine being part of planning. To some extent this usage may be due to planning being considered an activity of high status and "closely associated with top managements' interests" (Starr (1966)); a contention that will not be substantiated in this study. Planning in theoretical writing is conceived of as a generalized information handling structure upon which a multitude of goals and value restrictions can be imposed. From such abstractions stems the now frequent emphasis of strategic thinking, goal formulation and targeting as e.g. in Ackoff (1970).[1)]

Ansoff (1967), however, summarizes the reasons for scientific and numerical decision methods being relatively successful only when applied to limited sub-problems within a business organization[2)] by referring to the difficulties of "struc-

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1) Again see Anthony (1965), in particular Appendix A.

2) Such as inventory control as contrasted to the absence of success when it comes to the more judgemental decisions forced on top level management or when it comes to adjusting the entire business organization to its external environment.

turing the problem" and above all - or rather as a consequence - the lack of an operational theory of the firm. A well structured problem is often seen as a problem that lends itself to numerical specification.

Theory - as the concept is normally understood - usually has a numerical content or is designed at least in principle with a view to possible numerical application. With no relevant theory at hand - Ansoff argues - success in structuring complex business decision problems in a numerical format is less likely.

However, - as he puts it - restricting the concept of theory to what potentially lends itself to numerical specification would be to put the theorist to graze in an enclosure beside the road that all decision makers have to travel. At the same time it would be an undue downgrading of the large body of theorizing in social sciences that is predominantly verbal and intuitive. Thus the "quasi-analytic" method of planning that Ansoff suggests should be allowed to carry the status name of both analytical and theory.

Going one step further in the direction Ansoff has taken it becomes, however, too easy to accept the position that the traditional micro theory of the firm is of little or no use as a theory for the business organization both of the past and of to-day. Nevertheless, when noting the basic lack of a relevant and rigorous theoretical body outlining the principles of operation of the present day business organization as in Ansoff (1967), Simon & Newell (1958), and others, one simply puts the requirement on theory above the level of what is possible. This is so even though Simon & Newell (1958) and Simon (1965) profess "optimism" about eventually and even soon (Simon 1965) replacing intuition by analytical method in decision making - (NB) to the benefit of the decision.

In this terminology formal, comprehensive planning may be likened with a procedure for structuring a set of CHQ management decision problems and operational planning practice will define to what extent this has been possible.

If theory is considered in a positive sense I would be inclined to conclude from the chapters following this one that a formal presentation of the algoritms making up a typical budgeting procedure together with some rather simple algoritms representing the judgemental decisions entering here and there in the budgeting process would make up as good an explanation of business behaviour as any micro-economic theory of firm behaviour existing as of to-day. As the reader will soon notice there is a certain similarity between a typical formal planning system

and the Cyert & March (1963) type of firm model. The main difference lies in the importance of extraneous ad hoc information and decision inputs that go into the planning process and the circumstance that planning is a management excercise in future time while the distinction between ex ante and ex post is seldom systematically entered in the theory of firm behaviour. Very little in the way of combining formal systems theory (with potential numerical application) with judgemental, ad hoc and intuitive interactions with the decision process is to be found in literature. Such approaches are difficult for the book-writer. Yet - as we will see - this interaction is exactly what constitute typical planning sequences within business organizations.

4. Synthetic, internal market mechanisms

It is quite fashionable to view planning as an administrative signal system that replaces market price signals. This way of looking at planning conforms well with modern price theory. However, the competitive market function performs two services to the business organization. It provides information signals to react to but it also forces firms out of business if they do not respond to these signals. The first "analytical" aspect of planning for more information dominates literature on planning. There are, however, several cases in the sample of interviews where planning systems have been purposedly designed as administrative stress (tension) systems. There, the intent to force people to perform according to preset standards is more important than the intent to provide a better information input in decision making.

There are of course numerous links between earlier and parallel developments in economic theory and in the literature on business administration. There are close links between market and price theory and the theory of planned economies as illustrated through the development of economic doctrine through Pareto (1927), Lange (1936-37) and so on through the high fashion theorizing of to-day as in Malinvaud (1967). Thinking of such a nature shows up in the development of transfer pricing methods e.g. in Gordon (1964), Hass (1968) etc., methods that are in turn essential (1) for gathering information of where in the organization profits do in fact originate and (2) for the efficient application of profit control instruments.

The idea of determining shadow-prices from company wide econometric models for use as allocation instrument appears in literature as well as in the development of methods to decentralize integrated organizations into profit centers

and to excercise profit responsibility on the basis of such prices. In effect, much of the application of these methods enters already at the early stage of reorganizing the firm onto a profit center or division basis system (cf. Hirschleifer (1956)).

The emphasis in planning put on targeting and control rather than analysis and implementation mentioned in Chapter II underlines the application of the planning system as a substitute for competitive, market control that is lacking within the business organization.

5. Planning and control

The larger the organization the larger the need for a system rather than individuals to hold its parts together. There is almost a saying that aggregate capacity to perform of a large business organization is larger than the added performance of its parts - if the right coordination system has been found. To achieve this end in a decentralized organization the span of responsibility almost by definition must exceed that of authority, since division or profit centre managers must associate themselves with goals that are not directly linked to and do not directly benefit their own unit of authority. Planning is often (not always) a system to make far-reaching decentralization possible yet exploiting the synergy effect mentioned above. This can be accomplished - as in Vancil's (1972 c) account of procedure in Texas Instruments - by superimposing a hierarchical structure of goals on top of the decentralized structure of organizational units. Goal formulation is the task of CHQ and the goals "forces" the profit centre manager to exercise responsibility for activities over which he has only partial authority (control).

Such a system of course has to be supported by an incentive system; a combined incentive and control system (as in Texas Instrument) or a pure command-control system.[1)]

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1) The incentive system in Texas Instrument is partly built around individual profit-centre management performance partly ties in all high level management in a bonus system that gives everyone a standard benefit that in turn is linked to aggregate T.I. performance. In T.I. much emphasis is said to be paid to achieve a desired balance between attention paid to short-run (operational) profit performance and the long-run profit prospects at hand. Vancil (1972 c) does not tell how the incentive system contributes to this purpose and how the negative impact on the attention paid to the long-run prospects - experienced in other firms (see Section V 7 b) - is avoided.

The by far most practiced way to solve these problems is to break down overall corporate goals or objectives into reasonable targets and apply an elaborate reporting system to these targets.

This is again something different from the "contention" system illustrated by a case in Section II.3 designed to shake out information for the benefit of CHQ and to see to it that the organization and the planning system is structured so as to force a particular negotiation-responsibility pattern onto the people involved. The contention system should rather be described as a pluralistic control system that has much in common with the many dimensions of control listed in Hofstede (1970 p. 11-12) where pure "hierarchical authority" is replaced by other control devices.

While early literature tended to associate planning with the technical problem of how to do it (implementation), it is now common as in Vancil (1972 b) and Anthony (1965) to describe planning and control systems in terms of deciding what to do (planning) and assuring that decisions have been carried through (control see Anthony 1965, p. 10). Even here the distinction is not clear and many writers tend to regard control as part of planning which includes also budgeting (cf. Anthony 1965, Appendix A).

It is usually so that general concepts like control, planning etc. are useful for conveying a set of associations in a context where precise understanding is not required and the discussants put their own intuition to use trying their best to understand. However, semantics reach a new level of sophistication when general definitions are attempted with no operational context attached. Control within an organization according to Hofstede (1967 p. 11) is "The process by which one element (person, group, machine, institution or norm) intentionally affects the action of another element". This statement would probably pass reasonably well as a definition of "decision-making", "planning" and "management" or "administrative procedure". It does not help much as in Drucker (1964) to distinguish between "controls" as the process of arriving at the end results the ultimate arrival or outcome being called "control" without "s". "Controls" would then be very close to the old usage of "planning".

Maybe "controls" should be chosen as the general concept a terminology used in the collection of essays in Bonini-Jaedicke-Wagner (1964) of which Drucker (1964) is a part. However, this terminology again conflicts with the even more general concept of management or management systems of which planning and control is by some tacit understanding a part (Anthony 1965, Appendix A).

Any non-operational set of definitions of these concepts will necessarily be almost identical and/or quite empty. We will find - also - that advanced control systems are in practice linked to planning and budgeting systems. Common semantic practice among firms furthermore seems to be to let the term planning cover the whole sequence targeting - reviewing - reporting, which is the dominant aspect of planning. Planning hence - basically operates as a control system. Planning is in turn a sub-set of practices of a more comprehensive decision - or management system - that stands for "everything else" that ultimately manifests itself in what is called behaviour.

Fortunately, phraseology is an instrument to facilitate understanding only it can be thrown out when of no help. The purpose of this study has been to investigate the character of the process of making numerical projections into the future that takes place at CHQ in large corporations and to evaluate, if possible, its significance for decisions and firm behaviour. This process is often called comprehensive formal planning within the firms themselves and we adopt the same terminology. It is, however, not defined until we have described it.

6. The time element

The modern trend in theorizing and to some extent also in business practice (as illustrated by the emerging presence of a so called strategic or exploratory planning function) seems to be a devotion to analyse and determine business long-run desires (targeting) and to find methods of securing that decisions are consistently made and the organization constantly heading in the desired direction.

One typical feature of most decisions is that they are not reversible once implemented and that it takes time to adjust the development of the organization from an undesired to a desired development path once that path has been determined at an earlier moment. Incomplete or erroneous information guarantees that the organization will constantly be off the desired path and that changes of course will be constantly required. Decision-making under risk and uncertainty (or incomplete information) has been handled very skillfully in theoretical literature, however, predominantly with a view to making the best decision on the first hand. Many pages have been written about the need for flexibility and for alternative planning in literature, but also here the matter of making the best choice to begin with is dominant. Surprisingly little consideration has been given to the fact that most major decisions are taken within a very narrow range of alternatives, that alternative planning is very rare (see following chapter) and that

the considered range of uncertainty is practically always between success and failure. However, the substitute for alternative planning, namely methods to device "plans" to correct undesired developments with a minimum of economic disturbance to the firm has found surprisingly little coverage in literature.

Theorizing with a view to explaining economic behaviour defining time reaction structures began to appear within the so called Stockholm School of Economics (Wicksell, Myrdahl, Lundberg, Svennilson, Lindahl). Such thinking was beautified by Hicks (1946) and has been developed into a rigid structure of mechanical time-lag functions in the literature of applied economics of the sixties. In an interesting piece of theoretical research by Modigliani-Cohen (1958, 1961) the fact that some decisions meant more commitments for the future or more difficulties for speedy corrections than others were analysed.

Yet, one has to go far to meet with any kind of operational consideration of such phenomenae. In an interesting document Cole (1969) argues that it in fact makes more sense to concentrate on finding reliable methods of recognizing at the earliest possible moment where one is heading rather than devoting the time to assessing what is the desired long-run direction. The ability to take early corrective action according to Cole may be more important than trying to pinpoint an ever changing optimal future. This is one side of the application of the plan as an internal, early warning or detection system. Cole's argument may be interpreted as an argument for better control rather than analysis, the presumption being that we will always be bad forecasters and badly informed planners. This proposition is also supported by the low correlation found in Vancil (1970) and Eliasson (1974) between plans and realizations on such basic plan-input variables as e.g. sales.

7. Linkage between plan and budget

In earlier literature a plan was a narrow concept covered by the term budget. In recent years the plan has gained the status of being the general concept incorporating the budget as the short-term plan. Budgeting is more of a forecast or an action plan for the future. Planning is often seen as the evaluation of the options presented by the future and the process of selecting one out of several options. We have already made the destinction between short-term (annual) budgeting, long-range planning and exploratory planning (Chapter I). We have also taken note of the various and often conflicting purposes often associated with planning. Since the long-term plan as to basis, structure, format and organ-

izational relations - as will be seen in Part II - is very similar to the short-term budget the problem of how the budget and long-term plan relate to one another emerges.

The normal feature of long-range formal planning is that of an extended budget (see Part II). As a rule "the analysis of the future" approach often attributed in literature to long-range planning was not of frequent occurrence among the firms interviewed and (if present) largely non-formalized and prior in time to the formalized planning procedure (Chapter II). Hence, as a rule fairly strong links were found between long-range plans and budgets. Normally, the budget was a blow-up of the first year of the long-range plan.

However, many writers like Shank (1970) on the basis of interview material emphasize the dangers of too strong links. The budget myopia extends to long-range planning and long-range plans grow too rigid and turn into action plans and control instruments rather than analytical tools.

Many recent writers like Ackoff (1970) and Drucker (1972) sweep by the down to earth art of budgeting so much written about in earlier literature with a derogatory smile, concentrating on the analytical design of major top management decisions. On this matter can be mentioned that this study will not picture the presence of comprehensive long-range planning as an analytical basis for major decisions. If at all existing such analysis seems to take place outside the framework of comprehensive planning.

The bulk of formal planning routines whether long term or short run, whether comprehensive or not seems to be oriented towards targeting, coordination and control and "financial forecasting". Then a fairly tight linkage between the long-run and short-run plans becomes natural and there is much support for the arguments for tight linkage also listed in Shank (1970). The commitment to planning by management required by these purposes also requires some sort of realism och coordination between the figures and various pieces of the plan. In large firms the tendency towards myopia and rigidity in long-range planning is to some extent allievated by having different sets of staff personnel make up the different plans and perhaps a third set of people coordinate the plans.

8. Planning versus forecasting

The question of linkage is intimately associated with the purpose and definition of planning. There is a rich sample of vague definitions of planning and some sort of controversy over the issue where planning departs from forecasting. The most commonly accepted definitions seem to be the almost trivial ones that a forecast is an estimate or inference about the future based on observations of the past as in e.g. Johansen (1970) and that a plan is a forecast over which one (read the firm) excercises some sort of control as e.g. advocated by Theil (1966). Thus there are two "economic mechanisms" involved that separate the past from the future. There is the method of forecasting and the method of control (read the planning system).

In the systems approach terminology of e.g. Simon-March (1963) the alternative way of consolidating the two concepts would be to identify forecasting with estimating the future, environmental input assumption relevant to the firm and the planning system of the firm as a model of the firm that specifies how the firm adapts to this expected environment. Adopting this conceptual approach one would be inclined to advocate a strong linkage between budgets and long-range plans. The analysis and evaluation of the future has already taken place at the forecasting stage and the business (planning) system is expected to have the needed adaptative properties. There would then be a reason to expect forecast environmental assumptions and plans to be accurate if forecasts and plans are based on good methods. Forecast (or plan) realization comparisons furthermore should be a method of measuring the degree of perfection attained in forecasting and planning. The arguments presented in the chapters to follow will be that this may be a valid thing to do in a short-term business cycle context.

However, such a mechanical measuring instrument entirely passes over the essentials of a properly installed and well functioning planning system - well functioning according to the purposes of planning most often stated to be the valid ones. It overlooks the trivial fact that forecasts are always extremely conditional and - as a rule - cannot even be labelled the most probable future development. As a rule they are not expected to be accurate even on the average and over time and the planning system often is designed to accomodate such environmental forecast errors with no consequent adjustments of final results being made (see Chapter IX). Both forecasts and plans may be deliberately biased and plans as a rule are made up to accomodate a host of different interpretations of environmental circumstances at various hierarchical levels as part of a decentralization scheme. Hence, if planning is viewed as a management information system

as in much of the theoretical planning literature the issue of consistency is brought to the fore.

The distinction between forecasting and planning is drastically approached by Drucker (1972, p. 3-4) who argues that "long-range-planning is not forecasting". He states rather categorically that "human beings can neither predict nor control the future" and concludes that "long-range-planning is necessary precisely because we cannot forecast". Finally he resolves the issue by defining "the end result of successful long-range-planning" as "a capacity to take a greater risk".

9. Contingency planning

Even though this may not have been the exact interpretation intended by Drucker his statement ties in conveniently with a conclusion to be reached later namely that long-range plans among the sample of firms interviewed (1) exhibited a strong financial bias and (2) were - if anything - designed for the purpose of assessing future cash inflows and requirements and deciding upon the proper time to replenish financial capacity by recourse to external cources of funds. In this sense long-range planning is a device always to be financially prepared and hence a "risk reducing" instrument by providing for financial capacity.

This purpose, however, is also coupled with another feature observed throughout the sample of interviews that rather contradicts the purpose of enhancing the capacity for financial risk-taking namely the predominant presence of single-valued plans. This is observed by Donaldson (1969) who notes that "planning in its present form is largely an exercise in converting an unknown future into a known - and therefore manageable - future". Rigidities - he argues - tend to be built into the planning system as such "that work against quick and effective response to the unexpected event". Thus Donaldson stresses the need for contingency analysis in planning.

The conflicts of method that originate in the many purposes of planning that can be found embedded in planning systems in operation surface again. An "effect to gain and maintain a commitment to the targeted sales and profit levels" tends to depress considerations (in formal planning) of the case when the company falls short of its targets. However, targeting and the implicit bias towards maintaining a "subconscious" organizational compulsion to perform well will be

observed to be one of the main purposes of planning among the companies interviewed. The important issue is what is considered most important by company executives; targeting or contingency planning. The two purposes cannot easily be blended in the same system and the "usual result" that Donaldson criticizes, namely that contingency planning is "driven underground" may even be a deliberate method.

In effect what should most properly be labelled contingency planning hardly exists among the tasks alloted to corporate planning departments. If existing it takes place at a very high level or in parallel staff functions and this again tallies neatly with the conclusion reached in this study that both budgeting and long-range planning is a method of (1) delegating operations management and (2) providing top management with grass root information; i.e. a two way communication system that (a) frees and (b) informs top management for major decisions aimed at restructuring the company and providing time for such action to be taken. One should not forget the fact that early and reliable information from bottom all the way up is a major risk reducing factor and that the background of major decisions - quoting Ansoff again - is seldom well structured enough to be based on a formal planning apparatus.

Thus - contrary to Donaldson's (1969, p. 18) argument - among the subset of "smaller" problems usually taken care of within the formal planning and budgeting apparatus the method to "make a new plan" or rather updating the plan may be a quite satisfactory formal handling of the contingency aspect.

Also, I am not so optimistic as Donaldson (p. 20) about the possibilities of using computerized simulation models to enhance the potential for analysing the alternative financial outcomes under various sets of environmental assumptions for the purpose of adding a contingency planning scheme to the planning set-up. For one thing any major such alternative must (as a rule) incorporate a different corporate financial etc. structure. In practice such structural changes cannot be simulated by models of the traditional kind. Second, most - probably all - models built so far are too crude to accomodate the degree of specification needed for a meaningful contingency analysis aimed at assessing the impact on the company of major, less probable events (see Supplement 6).

The two points raised above require the kind of interaction between management and "the model" in the form of intermediate decisions that take place - as we shall see - in a routine fashion during the course of corporate budgeting

and planning. Hence the closest one can get to contingency planning within a company is a fully computerized budgeting and planning system that allows speedy up-datings of the budget and the plan. The need for such automated planning systems is well illustrated by the frequent comments met with during the interviews: "we are still working with the old plan. Even though it is way off our present plans since a couple of months ago we won't have the new figures for another month".

10. Business cycles in business planning

Drucker's (1972 p. 3 f) categorical statement that the future cannot be predicted may have some truth in it. It dismisses, however, the entire science of business cycle forecasting and will hardly be well received - if read - by the large number of professionals engaged in this trade. It also bypasses the question whether the kind of information produced in such forecasts even though less than 100 per cent reliable (by definition) still does not possess some information that can be put to some use for the benefit of the company.

For some reason company planning in a business cycle context is an almost blank page in the literature of planning. At the same time the very existence of a business cycle is evidence enough of the difficulties involved in and/or the incapabilities present among business firms when it comes to foretelling the twists and turns in macroeconomic activity. Firms themselves are to a large extent the vehicle of the business cycle. Furthermore they suffer large losses by being off the cycle in their planning and stand a good chance of reaping substantial profits from framing the business cycle problem properly in their planning as demonstrated in Eliasson (1974). One interesting observation made over the 5 year period 1969-1974 - covered by this study - is that the "revival" of the business cycle during the last years of the sixties has meant a sudden growth of interest in business cycle forecasts for planning purposes among the firms interviewed (see Section V.5).

The tendency of investment spending among business firms to surge ahead when demand is peaking or in the downswing phase and the new capacity to produce no longer needed is a global phenomenon. Business sales plans furthermore tend to overshoot systematically and substantially in the downswing phase of the cycle and vice versa. In effect the predominant feature among a sample of large Swedish firms studied was that sales plans from the annual budget tended to be a point

on the sales (trend) of the five year plan which was in turn heavily dependent on the current situation (Eliasson, 1974 p. 16 ff). Results from this interview study suggest that this is a phenomenon equally present among U.S. firms. It is fairly easy to demonstrate that as long as beliefs are held that the demand cycle of the firm will turn upwards again there is (as a rule) a systematic ex-ante profit benefit to be gained from taking the risk of investing too early and a substantial loss is guaranteed (ex definitione) from being too late (Eliasson,1974 p. 27 ff). The need for getting a better grasp of the business cycle problem in planning thus seems well established.

Throughout the literature on corporate planning a warning for too much preoccupation with the immediate future called "myopia" is currently raised. This kind of myopia by definition is to be found in the short-term planning routine usually called budgeting. However, proper and beneficial consideration of the business cycle also requires a cycle to be built into the long-range (at least five year) plan. This again brings back the question of linkage between planning and budgeting systems (see Section 7) and the question: What are the purposes of planning?

Is the all-purpose planning system that incorporates all the aspects of planning brought up so far a feasible option for the future? Such a system has not been found among the firms interviewed in this study although purposes will be found to be quite mixed in the planning systems observed. Do academic economists and business practitioners talk different languages? Do they not recognize each others objectives? Who is ahead if there is a difference? One thing is crystal clear. The thing called planning will definitely get more and more confusing as we proceed.

11. Planning and organization

By its very nature the method and purpose of planning chosen has to be intimately linked to method of firm organization adopted. The planning system almost by definition has to be based at least on a partial purpose to help joining the pieces of the organization together. Coordination of decisions thus is a key function of planning, however not necessarily with a view to obtaining more consistent decisions as advocated by Back (1973). This, however, does not preclude the quite plausible argument by Back that a more consistent coordination of interrelated decisions would improve performance in some sense. Rather, the observations to be reported on in the following chapters do not support the conclusion that more "consistency" is a prime goal of planning. Coordination in plan-

ning is rather viewed as a means of CHQ to manage and control at a distance the various units of the organizations. By a proper choice of relevant "strings to pull" from CHQ this could quite well be used as a method of increasing the degree of decentralization and the more decentralized decision-making the more secondary the problem of consistency.

Formal planning as a method to achieve standard profit control in the organization is a related matter. We are then partly concerned with methods of combining decentralized decision-making with centralized control of relevant variables and partly with methods of finding substitutes for market mechanisms to guide and control internal transactions within large business organizations.

Recent literature abounds with treatises on the proper use of ROI and other performance measures in improving aggregate firm profit performance as in e.g. Schiff & Schiff (1967), Henrici (1968), Henderson - Dearden (1966) and Robbins-Stobaugh (1973). Also most of the planning systems described in literature and observed in this study include the processing of data required for ex-ante interdivisional performance comparisons and we will be able to report on the actual use of such methods in planning later on (Chapter VIII).

At least three sub-problems relate to the issue of interdivisional profit comparisons. The first has to do with methods of organizing the firm with a view to making decentralized decision-making possible. We will have to leave out that part of the problem. The method (second) for decentralization is to use some measure of performance to excercise distant (decentralized) profit control. This is a highly technical and controversial matter. We leave it for later consideration in Chapter X when the technical concepts needed have been introduced.

Formal methods as a means to achieve a decentralized decision structure immediately (third) raises the question of management participation. It is quite true that "managers and academicians alike have tended to treat formal planning as an essentially impersonal, self-contained and rational process which is "systematic", "objective" and "scientific"" (Greiner 1970).

In contrast to this observation one of the conclusions to be drawn from this study is that an essential prerequisite for formal planning to figure importantly in the decision process of the business organization is (1) extensive management involvement not only by top decision makers but also way down in the management hierarchy and (2) that such involvement requires open, nonanalytical planning

systems that can be manipulated with from within. This contrast between practice and academic advice is probably explained by the multitude of purposes allotted to planning. Purposes like targeting, control and coordination are definitionally linked to the human beings who inhabit the cells of the organizations. These purposes seem to be dominant in the planning process. To secure participation of those affected involvement in the making of the plan is needed. If not achieved planning is normally shifted aside into a rather isolated CHQ staff function. The closed, analytical planning systems of the model type often do not allow this kind of involvement. They rely basically on the information available at CHQ and the method of planning consists of systematizing this information, either by concocting a numerical structure on historic data by some kind of econometric method or by adding up in a routine fashion plan data requested from the various parts of the organizations. These methods also figure with some frequency in the interview sample. The material collected can be handled in a "scientifically" detached manner at CHQ. A numerical planning model of the kind described in Gershefski (1968) and Boulden-Buffa (1970) is an extreme case of this method.[1] However, this method defies the purpose considered important, namely to extract new information from the bottom up to CHQ and to excercise some kind of coercion the other way. To do so human involvement in the making of the plan is needed, and the figures gathered take on a different character. If the planning system is deliberately put to use for some coercive purpose the figures will also be biased an inadequate to handle in the traditional, analytical sense. If the extraction of new information is the primary reason the figures gathered will be more informative than those obtained by way of detached studies at CHQ. However, the emphasis is on the planning system as a method of extracting information rather than analysing the information, the latter being the typical objective of the scientific approach to planning. Depending on the purpose and method chosen the sets of numbers obtained will be different. This must be an important "conceptual" problem for planning theory. Even though every writer on the subject emphasizes the need for management participation I have found very little of substance on this matter in literature.

Much of the confusion experienced when screening the literature on planning probably can be traced to the fact that planning has become an all purpose "status"

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1) Cf. the report on why financial models in two U.S. companies are no longer operated in Budgetering och Planering i USA (Sveriges Mekanförbund), Stockholm, 1973 (s. 26 ff).

concept will less-restricted usage and an existing dichotomy has developed between normative literature on advisory economics on the onehand and empirical practice on the other.

There is a fairly well delimited, observable, phenomenon sometimes called comprehensive formal planning and budgeting sometimes being given other labels, that will be studied here. This is no all-purpose planning system. As will be seen in what follows several short-term operations plans like production planning, inventory management and recruitment plans use the comprehensive plan as an input forecast i.e. no feed-back to the comprehensive plan is allowed. Many important activities such as acquisitions or large scale new undertakings are not planned for in a formal sense or taken care of outside the comprehensive planning system. Other functions like forecasting or goal-formulation and targeting preceds the planning process and may be of a quite informal, ad hoc nature.

The basic point is that formalized, comprehensive planning despite its complexity is a skeleton performance model of the business organization that can be said to be capable of simulating ex-ante decisions on a set of hypothetical assumptions. Hypothetical consequences for the entire firm are thus made available for immediate analysis. This is the definition of planning that will be adopted in what follows. However, this simulation process as it is usually practiced each time the plan is updated or revised involves numerous ad hoc judgemental inputs that are not explained or regulated by the formal planning procedure.

All-purpose, integrated corporate planning systems are probably an absurdity that will never find useful applications. Various purposes of planning are handled by separate planning functions whithin the business organization. They may be formal or not and they do not necessarily have to be coordinated. Nevertheless, the typical, comprehensive planning systems observed in this study are multipurpose tools replete with inconsistent calculation procedures and biased numerical information. This feature is partly deliberate and partly not so and whatever the reason it effectively blocks optimum decision-making except by chance. Besides nobody would ever have the information needed to know or to pinpoint the optimum position. There is the interesting question whether this is really a problem of any consequence that we will return to later.

A problem, however, is that by asking a library computer to round up everything written on the code-indicator "planning" one is liable to come up with everything written on the management of organizations. Maybe this brief survey will help to avoid this kind of confusion.

12. Recent developments

During the last 5 years a number of more empirically oriented studies on planning in a modern sense have been published. They may be grouped into three categories. The first (1) is oriented towards targeting and goal formulation and an attempt to an operational analysis of business objectives. Several of these pieces of work appearing in business journals like Kami (1969) or Jantsch (1968) are replete with jargon or of a loosely phrased semi philosophical type that are not easy to comprehend by the non-insider. I will not attempt a review here.

Despite the non-operational appearance of such writings, however, we have seen already in Chapter II that targeting in a broad sense often is very much emphasized in planning by planners themselves. The reason for this of course is the difficulties involved in describing what is exactly done in planning and what this or that particular feature is good for. These are difficulties that we will meet with in abundance in the chapters to follow. It is easier to report in general terms on the desired purposes of planning and leave it as such. The policy handbooks published or distributed internally in firms and collected in large numbers during the course of this study excell in such terminology. However, planning actually carried out is something way off from these pieces of literature.

The second (2) category is more of the business advisory (consulting) type. Numerical methods from economics and business administration like how to estimate demand curves, how to project trends, how to solve a linear programming problem (in the form of a numerical example) or how to apply mini-max reasoning are framed in a planning context. Typical examples of this is Hetrick (1969 a, b and c) and Rapoport & Drews (1962). The conclusion of this study is that such methods have found very few applications within comprehensive corporate planning so far and that prospects that they will are not overwhelmingly on the positive side. The applications met with are in the form of corporate financial models of the input-output simulation type such as e.g. Gerschefski (1968)[1] that are in fact simplified versions of the typical formal budgeting process.

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[1] Also cf. Hammond (1972) and Boulden-Buffa (1970).

The most promising development is to be found (3) in a series of attempts to observe and measure in a detached way the various features of corporate planning as it is actually practiced in firms. This is a laborious and intellectually non-challenging work that, however, in the end will turn out the information needed for the outsider to comprehend at last what is going on within the large business corporation. As can be expected the locus of observation to begin with is the formal side of corporate planning. Formal planning is at least capable of observation and measurement. This study hopefully belongs to this category.

There are the not-so-ambitious articles that describe (case by case) the practices of individual companies like Pinnell (1969), Smalter (1968), Hussey (1969), Lloyd-Jacob (1969) etc. and some larger studies like Henry (1967). However, the most informative research output so far originates in the ambitious project "formal planning systems" of Harvard Business School that has resulted in a series of mimeographed editions of working papers[1] several of which have been referred to earlier. The overall impression from these studies is that there is a grand step between formal operational planning practices and verbal and theoretical counselling in literature. There is still a long way to go until we get a fair grasp of what is actually done in terms of planning, a full account of which even responsible planners have difficulties of giving for his own company. An understanding of planning means knowing the formal side of planning. From this end attempting to acquire some knowledge of the informal, ad hoc judgemental side that links formal planning with decision-making and together makes up what is often called management technique is a step so far hardly attempted.

13. Conclusion

Thus it is quite logical to end this brief survey of the literature on planning with March's (1965, p. XIV) conclusion that "organizational technique" has far outrun "management theory". Since very little empirical evidence is available in literature on the exact nature of this "superior" organizational technique

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1) Vancil-Aguilar-Howell (1968, 1970)
Vancil-Aguilar-Howell-McFarlan (1969)
Vancil (1971, 1972)
Other studies of a similar quality are: Langtidsplanlegning - fem praktiske eksempler fra norske bedrifter, Oslo 1969 och Långsiktsplanering i medelstora företag - sex praktikfall i ett perspektiv, Stockholm 1972.

we can delimit quite nicely an operational purpose and reason for this study, namely to trace down the nature of these techniques in so far as it is possible by observing organizations at work. As in the Harvard study the presumption is that comprehensive planning systems are elements of such organizational techniques and an answer to the question whether this presumption is valid will be attempted.

If superior organizational technique is the reason for success, a sufficiently large number of successful organizations should be included in the observation sample. Since literature yields few clues as to how operational hypotheses should be formulated the final outcome of this study will be a set of hypotheses and not a test for the validity of some a priori set of suggested hypotheses. The reader is adviced to keep this in mind as he proceeds from now on.

As said already planning is not decision-making and decision-making is definitely not behaviour. There is - as we have seen - a literature on business planning. There is a huge literature on firm behaviour that treats firm decision-making and behaviour jointly or synonymously. There is a vast and uncomfortable no-mans land to travel between these two sets of literature. The final outcome i.e. behaviour can be statistically observed. Methods of planning can be observed if formally organized. The content of planning is normally non-available information for the outside observer and non-comprehensible information for everyone who does not know the method. Similarly, decision-making is a phenomenon that is hardly observable. It is unintelligible without reference to a relevant theory of decision-making and behaviour. This study is based on the presumptions (1) that formal planning can be observed (2) that formal planning imitates the macro decision system of the business organization and hence (3) that there is a way of bridging the marshland between planning and behaviour. No attempt to build this bridge will be made in this study. However, a blueprint and places of location for the bridge will be suggested for others to investigate further if willing. These are also the more interesting and most unreliable parts of this study. They have been saved for the very end.

PART II

P R A C T I C E

V SALES AND PROFIT PROJECTIONS

1. The market environment

The basic concern of any business organization is its current adaption to a usually unstable economic environment. All decision making carries with it consequences for the future. For some decisions only the future immediately ahead has to be reckoned with. Very often, however, a decision finally enforced, constrains the range of alternative open to a firm for a number of years.

Little or no information about the characteristics of the economic environment some time ahead of to-day can be foretold with perfect accuracy or the probability of one. The most relevant aspect of the economic environment facing the business organization is its product markets. Not only the pure demand factors have to be taken into account but also potential competition on the supply side.

It has been maintained in some theorizing e.g. in Arrow (1973) and (probably) Debren (1959 p. 100) that full information on the future development of the economic environment can always be acquired if more effort and cost are applied at collecting additional information. This can be proven true only in a world without some relevant characteristics facing business decision makers. Information gathering about the future is not only a straight forward inquiry into the records of history. It has to subsume the decisions and the results of the decisions taken by all other agents in the market facing the same situation but interpreting it differently. In an empirical context it is a gross simplification to assume that the relevant information about the future can be ascertained to-day even at the application of infinite effort and cost. Even with a complete knowledge of all reaction patterns of firms, consumers etc. the problem may have a number of solutions in an ex ante context. One factor often forgotten is time. By the time the extra information has been gathered and analysed the information may already be obsolete for the decision at stake. Whatever the position taken on this matter this seems to be the one taken by business men facing the future and it is all too obvious from the methods of assembling information that he practices.

Within the context of formal planning systems there are several open ends where planners are confronted with the economic environment of the firm and where expectations as to the future have to be formed. The first and fundamental confrontation involves the appraisal of the product market. This chapter is con-

cerned with the methods adopted in fixing the sales and profit projections and the ways the two estimates interact.

2. Market appraisals in general

In all firms interviewed the market or sales forecast coupled with a gross profit projection or a gross margin estimate served as prime input variables in planning work. The sales forecasts as compiled at CHQ were predominantly in terms of values rather than volumes. As a rule there was a parallel production forecast based on the sales forecast.

Sales and profit projections were normally completed at the division level to be submitted as "final products" to CHQ to be used there in the drawing up of the comprehensive CHQ plan.

Present productive capacity was a prime variable considered in short run planning (budgeting) on an annual basis. In some - less sophisticated - planning systems an aggregate projection of capacities of individual production lines constituted the sales projection. However, in the majority of cases the marketing as well as production departments of the divisions were involved, and apparent inconsistencies between potential sales estimates and present productive capacities were usually evened out at division level before the (usually single valued) sales plan was decided upon.

The shop-floor bottom up approach in collecting forecasts was 100 per cent present in the context of budgeting and mostly in long range planning. However, one frequently heard views such as: "The division marketing people are not capable and imaginative enough to look beyond the calendar year. We have no use for their sales plan data. We can do a much better job here at CHQ".

a) Order, sales or rentals

In what follows I will be concerned mostly with sales projections. In budget work - which extends as a rule over at least a complete year - and in long term planning covering several years this was also the typical variable CHQ planners were concentrating upon in the first stages of drawing up a CHQ plan. There were exceptions, however. In some heavy machine tool industries for instance order

placements were the appropriate variable to look at[1], order placements being the initial variable from which both sales-profit projections, profit plans and investment plans originated. As soon as the plan (budget) for the next fiscal year had been broken down on quarters or even months - which was common practice in U.S. firms - the order variable becomes more important. Usually order projections were explicit in short run planning (budgeting).

A similar problem arises in the case of firms which rent rather than sell their products. This time, of course, the projection of rentals rather than sales is the main concern. Still the principal methods employed are the same in the context of aggregate comprehensive planning.

b) No aggregate price data

The almost complete absence of price data for the past as well as the future as soon as work on the sales forecast reaches the level of aggregation defined by a division or a profit centre does not necessarily mean that the conception of alternative price-output-cost combinations to choose among has never entered planning. Even though prices and volumes cannot be traded against each other at that level, division management normally had a quite good control of the cost structure as well as capital requirements for individual product lines. Rather than settling for the sales value that could be expected to yield a satisfactory profit (in some sense) the common procedure seemed to be to estimate the sales value range, that was compatible with a satisfactory profit margin i.e. (implicitly), the margin that gave by experience a satisfactory (average) return on invested capital[2]. This range was normally conceived of as rather wide. Then considerations of competing products within the firm, their demands on total available production capacity and supply and market conditions in general entered in the final fixing of one single valued sales plan. This process took place in a stepwise fashion and was largely informal. It was at times very elaborate with extensive management involvement. The point is, however, that such an important input variable in planning as the sales plan was fixed rather definitely at a very early stage in formal planning. Thus one feature of long range planning as

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1) Ship yards with order books sometimes filling most of production capacity as much as three yards ahead is a case in point.

2) A frequent comment was that sales-asset ratios are very stable over time for division or firm aggregates as long as the overall product mix does not change radically. For an analysis of the relationship between the profit-margin and return to invested capital see section VIII.1.

well as annual budgeting was the pervading practice of working with single-valued plans, that - once decided upon - rather heavily constrained further work on the formal plan.

c) Single valued plans - the typical feature

There are many reasons for the well established practice[1] of working with single valued estimates only all through the planning routines. The very complexity of coordinated planning routines met with in U.S. firms often made this a matter of necessity rather than convenience. In addition a multivalued approach would be rather meaningless when formal planning schemes are basically designed to function as incentive or control instruments of the firm. The dual or rather many-sided approach to planning is well demonstrated by the frequent practice of viewing the profit-sales projection as a reasonable or desirable "objective" rather than a narrow "forecast". In those instances where this projection consisted of a projection of past years' experience only this policy objective was emphasized rather than the other way around. Past experience sometimes served as a starting point for negotiations between CHQ and divisions. Sometimes it was used as a reference to ask questions such as why past profit performance could not be maintained in the future.

d) Forecast or target

In some rare cases the final sales-profit projection constituted a CHQ decision as to how to join two independent market appraisals; one aggregation of detailed division estimates and one aggregate projection at CHQ on the basis of past division performance. Usually the goal or target aspect was related to the setting of the gross profit margin rather than the sales level for a division. In several instances the responsibility of setting the target was partly delegated to the division manager. Sometimes a fraction of the salary of division managers was tied to their ability to (1) present reasonable plans and (2) to realize them.

3. The sales forecast - established products

The methods employed in projecting future sales vary widely not only between firms but also from division to division within one firm. This variability refers not

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1) The exceptions are few. Cf. Section VIII.6.

only the level of sophistication of techniques used. The length of the planning horizon is one factor and the techniques applied are very much related to the type of products for which market forecasts are made. Still another important line of distinction has to be drawn between market planning for new products and already established products.

Forecasts originating at division level were - with hardly any exception - very detailed on individual and well defined products. The shop floor bottom up start of planning was always the method of short run planning (budget work) for the next fiscal year where division forecasts invariably served as the basic input datum. In most of the long range plans beyond the fiscal year studied in U.S. firms, division estimates were again the basic source of market information for further corporate planning. Normally only aggregate data on major product groups or divisions are submitted to Headquarters in a routine fashion.

Except for large scale producers of bulky or homogenous products (aluminium, oil, steel, etc.) I found surprisingly little evidence on the employment of sophisticated statistical methods in sales forecasting. This result, of course, might be due to the fact that sales forecasting was not typically taking place at CHQ and that the methods of sales forecasting were not always familiar to planning people at CHQ.

The application of sophisticated statistical techniques in forecasting, however, were by no means of rare occurrence. Most firms in the billion dollar category and several firms below that level had at least one professional economist or a group of economists currently occupied with forecasting and analysing the future trends in the U.S. economy as a whole as well as the future development in world markets. Modern econometric techniques were frequently employed and one large firm referred to its econometric model of the U.S. economy as superior to any existing university model. One reason for this apparent duplication of research efforts mentioned was that long term forecasts of the U.S. economy did not exist and that whatever existed in the form of numerical predictions into the more distant future either was wholly unsatisfactory or inadequate for the firm in question (cf. on Business Cycle Forecasting in Section 7).

a) Growth potential of market

Work on the sales forecast usually started with an appraisal of future growth potentialities in each individual product market defined in an operational sense. The overall outlook on the future growth of the economy presented by the group

of corporate economists - if such a prediction was made - might serve as a basis for this forecast. The results of such predictions were normally available at a fairly early stage of planning and distributed throughout the firm. My impression, however, was that this sophisticated prediction work quite commonly was a rather isolated activity being parallel to, rather than integrated with planning work. I found very little of this kind of activity among the European firms and some among the U.S. firms. Usually the "Economic department" or the "Economic planning department" was something relatively new among the U.S. firms at the first series of interviews in 1969. Many firms, however, revealed plans to start up activities of such a kind in a near future. And the 1973 and 1974 return visits to U.S. companies revealed what I interpreted a much more keen interest in business cycle problems in particular (cf. Section 7).

There are two basic stages in the making of a market forecast for established products at the division level. Sometimes only one is represented; most often both. Usually the division managers start (the first stage) by requesting information on market prospects for individual products from sales agencies and/or individual sales men. My impression from those few instances where I had the opportunity to discuss this matter in full is that estimates on what volumes can be marketed at current (present) prices are asked for as a first step. It should be recalled that at least during the last decade up to 1968 most U.S. firms had been accustomed to moderate price increases only. This circumstance makes the starting assumption of constant prices not unreasonable.

Coupled with this information gathering there is a second appraisal (second stage) of the future growth potentialities in each individual product market. Typically this is a joint result from a series of meetings between marketing people and division managers (planners). As I was told the usual assumption was that the firm itself cannot affect total market growth.

b) Market strategy

Suppose this joint appraisal results in an estimated annual x per cent growth (exogenous) during the next y years in demand for products which can be put to one particular use. The firm produces one such good. Its present market share is z per cent. The sales people may now be asked to state whether they believe they can maintain or increase this market share charging present prices. This estimate should include considerations of potential competition from established as well as new products and possible substitutes. In some firms this was all information that went into formal planning. A next step could be that some re-

strictions as to productive capacity were submitted to sales people from division management or from CHQ. "At present prices we are willing to produce so and so much. If you can increase sales volume (number of items, tons, etc.) to x by lowering price not more than y per cent it is OK with us. If volume z cannot be marketed at prices above p the product should be gradually taken out of the market or production is to be discontinued." Such limitations given from division management were often based on past experience and knowledge of the present "profit set-up". Typically throughout the sample was a focussing of attention on the "market share". It was often considered a desirable end in itself in planning to plan for an increase in the market share.[1)]

c) Pricing

A characteristic thing to notice is that price estimates for individual products concealed in product group sales values delivered to CHQ were usually regarded as no more than "good" or "informed" guesses. In these firms where this problem came up for discussion the definite fixing of individual product prices often was a top management policy matter. This policy aspect - and this holds for short term planning (budgeting) - was more pronounced the more diversified the product mix and the larger the range of substitute products (automobiles of different sizes and designs, etc.). Corporate planners were not always present at such policy discussions, and the aggregate corporate plan ready to be submitted to the Board for approval might constitute an important source material for such final price-policy decisions. As a consequence price policies decided upon might be at variance with the details of the sales plan. It did not seem to me to be common practice to revise the sales plan all the way from its base in the light of these new price decisions.

d) Profitability considerations at this stage

If the sales projection extends beyond the next fiscal year the growth estimate

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1) Proxy goal variables like this one, applied - as it often looks - rather arbitrarily, may appear less rational at first sight. However, there is often some fairly solid empical experience in the background. A desire to attain a larger market share of course always means striving for a better control of the market and a higher degree of monopoly pricing. It is also obvious from the study of Schoeffler-Buzzell-Heany (1974) on 36 corporations and 350 profit centres that a high market share is very advantageous for profit performance. Supporting results were recorded already by Collins-Preston (1969) who observed a significant association between the price-cost margin and the level of industry concentration.

usually involved capital expenditure requirements which were at least implicitly considered in deciding upon a sales forecast. However - and this must be important - as far as I could understand profitability considerations as a rule did not enter explicitly at this stage. Usually the setting of capacity constraints entered already at the level of the production line where capacity potentials and requirements were well known to production management. Sales plans consistent with maintained or improved sales-profit relationships were approved. Consequenses on the capital spending side again came up for approval in the cash flow audit (Chapter VII) and in the appropriations procedure (Section VIII.3). As will be seen later (Chapter VIII) this is in practice the same as to apply a profit margin rather than a profitability requirement. Of course, - and this was stated frequently - if sales-growth projections deviate substantially from past patterns and/or implies a marked increase in capital spending requirements a dialogue with CHQ is common practice before numbers are fixed. It has been mentioned already that the division sales budget in some firms has to be authorized by CHQ.

As will be elaborated upon in what follows this emphasis on the first stage in planning - the making of the market forecast - not only indicates its importance; it was also regarded as some king of a guarantee that no sizable surprises would be turned out from the final analysis of the plan, which should ideally comprise a solution to a simultaneous and consistent system, but for convenience has been broken down into a recursive or iterative calculation procedure. The more of a fixation point the sales plan in comprehensive planning and the more of management effort and attention put in at this stage, however, the more of a mechanical calculation procedure will be the rest of the plan and the less its analytical value for management (see Section IX.2).

In two instances the verbal dialogue mentioned above had been replaced (quite recently) by current telegraphic transmissions of numbers between divisions and Headquarters to make possible an iterative solution to an almost completely simultaneous planning system. These two cases will provide a convenient framework later on for analysing formally the structural properties of the typical planning process.

The following might serve as an example of the kind of instructions handed down to the division planning manager prior to the making of the sales plan:

(1) Define the market (current size, expected growth trend, competitive position etc.).

(2) State future objectives (desired market penetration, new products desired, etc.).

(3) Strategic plan for attaining objectives (change in marketing techniques, advertizing programs, price policies, productive capacity, capital requirements, etc.).

(4) Present (a numerical) sales plan by product, etc. ((4) represents the result of the analysis under (1), (2) and (3). Usually standard forms are used for the presentation. See Supplement 2.)

This set of instructions is quite typical for both the long range market projection and the short run forecast for the budget. As a rule the short run market forecast was an explosion of the first year of the long range market projection.

In so far as the sales plan is a long range plan covering several fiscal years a fifth paragraph may also be found among the instructions.

(5) If major differences between (4) and last (years') sales plan; explain!

Case: Large U.S. firm (somewhat modified for reasons of confidentiality)

This firm operated a one and a half year (short term) market plan with a financial budget structure attached and a long term market plan 10-15 years with a long term financial plan attached. The short term market plan was specified by month and was rolled on once a month for 18 future months. The long term plan was specified by half year and was rolled on every half year. The horizon was fixed for 3 to 5 years. At the time of the interview it was set to 1985.

Short run planning at division level: On the 10th of each month there is a so called preforecast meeting lasting up to one day. At this meeting an estimate of the future demand potential of the relevant markets made by the corporate economics department is presented for discussion. The staff of economic forecasters meet the marketing people.

Market specifications are very detailed to match a high degree of product differentiation on the part of both this company and competitors. Into this market-forecast a sales plan suggestion for the company is fitted under the presumption of what is loosely phrased expected "competitive prices" on each product. A preliminary sales plan in much detail, by month for the next 18 months is decided upon.

On the 20th this preliminary plan has been read by the "supply people" and a one day confrontation is routinely scheduled. This time market and production people meet and only a few persons from the economics staff are present.

The supply departments inform about capacity enlargements scheduled and the degree of flexibility available in the production facilities. A compromise decision on the sales growth potential is reached.

On the 28th an almost definite so called management forecast for sales is finalized and studied by top division management. To this management forecast prof-

it estimates by month are attached as well as a cash flow analysis. The final result is then authorized at division level and furthered to CHQ for approval and consolidation.

Business cycle considerations were entered by the economics staff in the first round of negotiations. However, the marketing department people - as I was told - had a strong inclination to "push estimates upwards". In the second session with production department people these somewhat exaggerated plans were modified again to fit into the limits set by production capacity. Top division management finally tended to even out "performance" variables like sales and profits in an upward direction to "please CHQ". The end result usually was a sales growth plan "slightly above" the capacity to produce and a profit plan "slightly above" what was deemed feasible. These figures were then systematically entered as reference numbers in the reporting and control procedure for appraisal of achieved results. As a rule very little of the business cycle was left in the figures handed in to CHQ but - as I was told - the "information got there anyhow if not by way of numbers so by way of the people involved and in parallel documentation."

Long run planning at division level emphasizes investment and capacity enlargement. Basic policy guidelines from CHQ are available before work on the plan starts. A fairly aggregated sales plan for the next 10-15 years is made up every half year, first (again) by the economics staff. It is then discussed together with marketing people and then the supply departments provide the necessary technical information to estimate needed capacity enlargements. This time production and supply departments play a predominantly advisory role. Information from a parallel R&D spending plan is entered and a long run sales, investment, profit and cash-flow plan with half year specification up to 1985 is completed and sent to CHQ. Before CHQ approval, division planners go to CHQ (or vice versa) for a preliminary "confrontation". Revisions are frequent. A new version is put together for final approval at CHQ. It happens that the final authority - a subcommittee of the Board - requires further amendments before authorization is granted. The consolidation of all division plans is used at CHQ to estimate overall financial needs and this analysis may at times result in non-approval even though CHQ intentions are known in principle before work on the long term plan starts.

Finally, the investment plan decided upon (being also a necessary input assumption for the sales growth plan never) means general authorization to start making commitments on capital account. Projects above a certain level in terms of costs has to be finnaly OK'ed in the so called appropriations procedure before commitments can be made.

4. The sales forecast - new products

In the previous section the presence of new products has been deliberately suppressed in my account of forecasting methods. To leave things at that, however, would be not only a representation in apparent violation of reality, it would also mean to neglect one of the most important analytical stages of planning. In most firms interviewed every year meant the marketing of several new products; new in the sense that past market experience was lacking even though past production and cost experience could be put to use. The more distant the planning ho-

rizon the larger the portion of new products in total forecast sales. Hence sales forecasting for new products gains in importance when we move from short term budgeting to long range planning. In several firms, operating predominantly in the markets for consumer durables and specialized business equipment (instruments, electronic components, etc.) the average length of a product cycle was substantially below the horizon of the long range plan. As a consequence, very few of the products in the market at the time of planning could be expected to remain there at the end of the planning period. Quite typically also the more stable over time the product pattern the less sophisticated seemed to me the plans; the level of sophistication this time being "measured" by the ability of the plan to channel information rather than by its degree of elaboration and numerical detail.

Unfortunately, the series of interviews reported on here only allows a very rudimentary account of the methods employed in forecasting new product sales. The relating of a few cases will have to be sufficient.

The initiative to market new products and/or to enter new markets may originate at any stage in the corporate hierarchy. The larger the venture and the more alien to the current product mix the closer to CHQ the decision and the more pronounced policy considerations. This is what can be judged from roughly one third of the total of the U.S. interviews, where this topic was covered in some detail.

In two interesting U.S. cases CHQ was currently trying to shift the innovative initiative from the production lines to the Headquarter marketing section. The idea was that instead of relying upon the rather erratic and random creation of new product designs by the engineering departments only, the marketing section of CHQ was to take a comprehensive view of future market potentialities and announce as a result of their analysis what desired direction the innovative process should take; thus accomplishing some kind of a market steering of R & D efforts directed towards creating new products. On the other hand there are also two cases (also U.S.) at the other extreme. Here the importance of not unduly constraining the innovative process was emphasized. These two firms maintained a not small but rotating set of R & D people who were allowed a rather free scope of action experiment with own initiatives and ideas not necessarily related to the present product set-up.

a) New markets

New market penetrations were practically never considered in what we have called formal short term or long run planning. However, in some large and at least in

the past highly successful firms the long-range, comprehensive, numerical plans was incased in a prospective or - as it was sometimes called - strategic plan. The main purpose of the explorative plan was to investigate future market potentialities. As mentioned already in Chapter III the "long-range" plan in 5 of these firms consisted of a projection of the annual budget for two additional years only. The reason given for such a short planning period was the one mentioned above, namely that sales could not be forecast with required accuracy for more than a few years. In these firms - most of them in the category of process industries - experience was the forecasting up to 3 years could be achieved with "good" accuracy[1] and a three year budget - once fixed - was looked upon as an uncertain estimate of the future. What came beyond this extended budget was called the prospective or strategic plan, and was regarded at best with sceptical interest by CHQ top decision makers.

The explorative plans I encountered were not comprehensive, mainly verbal and not standardized as to exposition. They typically consisted of a number of separate investigations the time horizons varying from investigation to investigation but always stretching far beyond the horizon of the extended budget or long range plan; sometimes into the next century. In two U.S. firms prospective planning had been started during the previous year as one instrument in a planned diversification program. During the last decade these two firms had been very successful in a rapidly growing but rather narrow and - now - highly competitive market. The firms had by now grown to such a size that they felt an urgent need to diversify in order to sustain its past growth rate. The strategic plan not only provided for internal growth but also included an acquisition program - acquisition programs being typically absent from comprehensive numerical planning.

Case: Successful U.S. firm

In this firm the prospective plan was part of basic firm policy making. It was regarded as an instrument to broaden the outlook into the future compared to the restricted choices imposed by necessity in comprehensive numerical planning. The prospective plan was considered far more important than the comprehensive numerical plan. This time the whole hierarchy of corporate management from the division level through the layers of CHQ staff to the top executive level was involved in the making of the plan. Reports were submitted according to an elabo-

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1) Note that regular experience was that sales plans beyond the annual budget would normally have to be revised substantially in the next annual planning round (see Section IX.1b).

rate time schedule and after a series of meetings specific courses of action were proposed to a sub-committee of the Board. If accepted - maybe after several revisions - the strategic outlook so defined served as a basis for the making of the long run numerical plan. One comment was that this arrangement was an excellent early warning system making top management aware in good time of relevant problems in a complex corporate organization (cf. the case of a "contention system" reported on under Section II:3. Also note that this analytical use of the planning system with full management participation is very rare in the sample. It is, however, the design of a planning system frequently recommended in recent literature, see Chapter IV.)

My impression was that prospective planning on top of long range planning and on a sizable scale is a rather recent development. In one of the very large U.S. firms a separate department for prospective planning had been instituted less than a year prior to the interview. Prospective planning was rare among the non-U.S. firms at the time of interviewing. A word of caution, however, is appropriate at this point. Prospective planning in the sense indicated above is a very loose concept. At one extreme it is simply a way of "thinking ahead of time" which certainly has always been a necessary feature of successful business management. Secondly, prospective planning might very well take place in less organized forms than within a special CHQ-staff unit. If so it has not been well covered in my interviews. Thirdly - and to my surprise - I noticed quite often that prospective planning, long range planning, annual budgeting and other forms of planning were performed by different groups of people the channels of communication between the groups being all but well developed. Consequently, the persons interviewed might not have been able to supply correct information on the extent on prospetive planning. Finally I also found an inclination to name, what we have called long range plans, strategic or prospective plans.

In two U.S. and one Swedish firm in the typical process industry category future market appraisals had a markedly dual purpose. In these three firms separate research groups had been organized. Their purpose was (1) to estimate the future market potential for the type of services rendered by the type of products now manufactured by the firms in question (e.g. energy) and (2) to estimate the future market potential for the same products employing basically the same raw materials and production technologies as of to-day. These three firms were facing severe competition from new substitute products manufactured by new techniques. The important long run problem was to decide whether the firm should compete in the old market by adopting the new-type products and technologies or whether it

should open up new markets where its "old" production technology could profitably be applied to produce some new product.

b) New products

When viewed in the light of new market appraisals the planning for new or modified products to be introduced on established markets becomes a matter much more manageable in numerical terms. It is usually incorporated in the comprehensive long range plan and much more elaborately so in the short run operational plan or budget. In the budget, numerical appraisals on market possibilities may be gathered from the field. In any event, division management is usually required to deliver detailed sales values and profit margin estimates for the next fiscal year. Normally the launching of a new product is coupled with the gradual phasing out of an old and "technically" less developed product.

Nevertheless, the more distant the horizon the larger the problems for numerical planners. Market uncertainties increase. Past production experience grows less and less relevant for decisions and close to the horizon the "control" of costs is more a matter of imagination than knowledge. For one thing new productive equipment to produce these new products will have to be acquired or at least committed for some time in advance. Here we may find one reason for the apparant tendency among many firms interviewed to rely on CHQ estimates rather than market forecasts at division level and below in long range sales planning as against annual budgeting. I often met with statements like "the sales people in the field are very good at appraising next year's sales of the products they are selling now. When it comes to looking 5 years ahead our crude rules of thumb seem to be much more reliable".

c) Case - U.S. firm

One solution to this planning problem met with in one U.S. firm (household electronics production) may serve as an interesting example. The procedure was described in detail in the planning manual and standard forms for numerical estimates were enclosed. The gradual increase in emphasis on targeting rather than forecasting with time was apparent. The first step was to compile the sales plan (forecast) for all established products over the planning period. Since the average life of products in this firm was just below 3 years, very little sales of established products was planned for the final, fifth year. Next an inventory of new products, the introduction of which had already been time-planned, was required. The sum total each year was then compared (for each division) with a trend projection of

past years sales values. Since we are dealing with post-war experience for a highly successful firm this is, of course, a growth projection.[1] Maybe, in addition, the growth projection was slightly steepened upon suggestion from corporate Headquarters. Usually the sales plan for established products and time-planned new products quite well filled out the trend projection for the fiscal year nearest ahead. Beyond that, however, a widening gap emerged, which even in a five year plan became quite sizable on the horizon for divisions producing commodities with short life spans. The final stage was to require from division management a plan or a strategy as to how to close the gaps (what products, what markets, etc. and why). This presentation had to be both verbal and numerical. In the case referred to no more numerical details were entered into the "sales plan". As long as a satisfactory strategy to close the gaps could be presented the trend projection were the ones used as input variables in the comprehensive numerical plan. The targeting and motivating element in such a procedure is all too obvious to need further comments (cf. however targeting on the profit side below).

5. The business cycle in planning

The follow-up interviews in the U.S. in 1973 and in 1974 and my current intercourse with large Swedish firms over the year 1970 through 1974 whether in the form of systematic interviews or sporadic contacts (not listed at the end) yielded some important insights as to how substantial changes in the economic environment of firms also brought changes on to planners and the focus of planning. Late in the sixties (U.S.) and in the beginning of the seventies (Europe) the stable growth trend in economic activity of the sixties with minor cyclical interruptions was "unexpectedly" brought to an end. A severe downswing was coupled with a substantial upward shift in the rate of inflation and a dramatic monetary turmoil on the international scene. These environmental events suddenly hit three weak spots in corporate planning routines; (1) allowing for the business cycle (2) allowing for inflation and (3) allowing for capital gains and losses, occasioned by parity realignments. The impact variables hit by such environmental changes were of course sales and profits.

Already in 1969 many of the large "giant" U.S. firms visited maintained a small

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[1] I want to mention this since a past experience of sales contractions and declining profits quite certainly would call for a different procedure.

staff of corporate economists either parallel to or within the corporate planning department. The task of these economists was to assess currently the short term economic outlook of the U.S. economy in particular and also to watch for significant trend changes in important growth variables. Some firms were regular subscribers to the services of such institutions as the Wharton Econometric Associates and the University of Michigan Conference on the Economic Outlook that regularly presented short-term forecasts on the basis of large econometric models for the U.S. economy. A couple of firms had their own econometric models for the U.S. economy (cf. Section 3). Several firms with international operations required their foreign subsidiaries as part of their reporting system to supply CHQ (anually, semiannually or even quarterly) with assessments of the current economic outlook and the 1 to 5 year future of the economy in which operations took place.

This description was adequate for a small number of the giant firms interviewed in 1969. Among the other firms such environmental surveying was predominantly vested with the marketing and sales departments and entered the planning system predominantly by way of the making of the sales plan. With a few exceptions in the sample this kind of systematic macroeconomic surveying does not yet exist among the European firms interviewed, although the tidings in economic activity since 1970 has witnessed a rapidly growing interest in business cycle forecasts among Swedish firms[1].

As for the U.S. firms a substantial shift in attention towards business cycle and inflation problems could be observed between 1969 and later, among the firms visited in November 1973 and in 1974. In one giant firm the economic department had been drastically reduced in size up to 1969 when the company was unexpectedly hit by a recession in demand that - as it was phased - "cost the company a lot of money". The department was now well above its previous "peak" size. In another company the very day I visited the company the chairman asked for a briefing on the current business outlook scheduled routinely 3 weeks later to be given the next day. As can be judged from my small sample of follow-up interviews the new attention paid to business cycle problems had (so far) basically manifested itself in the form of a more frequent interchange of information between the corporate economic staff and the top decision making level rather than

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1) The only part of the sample for which a systematic checking of this issue has been made.

by the more explicit incorporation of business cycle predictions in the planning and budgeting routines. I was, however, told in all U.S. companies visited after 1969 that the "business cycle people" now played a much more important role in the final reviewing procedure of the part of corporate planning that took place in CHQ and that more attention was in fact paid to business cycle assumptions forecasted and circulated to the staff of planners prior to the start of planning. These observations again emphasize the conclusions drawn in Section II.6 that major environmental shifts of a "contingency nature" tend to be handled outside the formal planning routines and very "high up".

There is also some fairly strong evidence that recognition of the business cycle in formal planning is not frequent. The long term (5 year) sales plan is normally a flat, exponential trend with no fluctuations allowed, and the sales budget for the next year is often a point on this trend. The strongest evidence for the presence of business cycle considerations in formal planning is to be found in the tangential character of those trend projections; bad years meaning pessimistic long-term forecasts and vice versa.[1] The common explanation to this peculiar feature is that business cycle matters are handled outside and on top of planning. Another equally common explanation given was that "we are not allowed by CHQ to plan for a slow down in sales and profits. Plans have to be geared towards maintained or improved performance". Again this probably a manifestation of the dominant motive of targeting and control in planning referred to already in Chapter II.

The fact that short term plans were normally broken down into quarters and months in U.S. firms should not be confused with explicit allowance for cyclical variation. At times seasonal variation patterns over the year was used to spread annual figures by month over the year but quite commonly a simple linear method was used. The express purpose for this degree of detail in time specifications was control and plans were regularly made up on a format consistent with the reporting format that in a large number of U.S. firms was by month. (See further Section IX.2. Also cf. case in Section 3 of this chapter.)

Up to around 1970 most firms interviewed argued that product price increases were small enough not to require a separate attention in sales planning at the CHQ

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1) Cf. Eliasson (1974).

level. In the U.S. and in European firms operating predominantly in export markets inflation rates on identical products up to 1968 or 1969 as a rule had stayed below 2 or 3 per cent. In fact aggregate product price indexes were seldom used in CHQ planning.

However, during the last few years inflation has become a global phenomenon and sales growth in most companies to a large but very variable extent consists of price increases. In interviews carried out after 1970 I have not found any apparent move away from the prevalent practice of working with sales value (rather than sales volume) plans. However, attention paid in planning to the inflationary problem certainly has increased, but in a way that does not disrupt past planning practices. We therefore defer the treatment of inflation to a more adequate context in Chapter VIII after having introduced the problem of asset and debt structure and a formal apparatus.

6. The production plan

Few things about corporate planning should be more disturbing to the neoclassical economist than the suppression of the "production side". Men are fairly easy to aggregate and aggregate man-power requirements seem to be one of the few variables reaching the Board of Directors which would ring a bell in production function men. Data on investments and assets can always be found in the corporate plan but - alas - expressed in values; not in volume-terms. The concept of an aggregate volume (quantity) of output or productive capital never surfaced in the interviews without direct and repeated questioning.

Again this is just another facet of the recursive structure of formal planning systems. Aggregate corporate planning at CHQ, as mentioned, has a distinct financial proneness. Division sales forecasts are its basic source of input information. Production planning (or scheduling) starts at the same roots but branches off in another direction. Finally man-power projections, investment proposals, inventory requirements, etc. reach Headquarters by different routes and are worked into the comprehensive plan.

Costing is what links production technology to aggregate corporate planning and this will be discussed at length in the next section. Besides that, any formal recognition of the production structure seems to be an isolated engineering problem data on which only occasionally - and referring to particular cases - reaching above profit center management. For obvious reasons detailed questioning on such

matters had to be left out and for equally obvious reasons well digested information on these matters was not available at corporate Headquarters. To corporate planners - and to me - the production side often appeared as a "box" of unknown content. Details on sales aspirations were fed into that box and out came details on man-power and investment requirements, etc.; men being classified by numbers and skills and investment by machine types and technical capacities. For each product line these factors are then priced within the profit center and aggregate values - after a series of reviews and revisions - then passed on to CHQ (cf. the costing procedure in the next section).

It is inevitable that some kind of a screening procedure enters already at this stage. Even though not always formally explicit some kind of rate of return considerations are usually applied to keep e.g. budget requests within reason and past experience before data delivery to CHQ takes place. Marked deviations from past profit margins computed usually set-off a series of questions and revisions within the profit center. In some very large firms there were "policy" hand-books (manuals) which spelt out in detail how various categories of investment proposals should be evaluated and traded against each other (see further Chapter VIII).

In order to establish a sales - and a production plan - particular attention should be paid to finished goods inventories. In a growing market production not only has to provide for current sales but also for the accumulation of inventories. The determination of desired levels of finished good inventories was a problem normally delegated to the marketing people. A roughly established ratio to expected sales levels - sometimes revised from year to year - was a common criterion. However, in a few firms very sophisticated optimizing schemes were used for arriving at desired (maximum acceptable risk) inventory levels (see further Section VII.6). As a consequence, once the sales projection had been determined for the plan, this component of working capital could also be estimated for the planning document. Similarly, once the production plan had been established very little leeway was left in determining needed stocks of raw materials and intermediate goods, etc.

7. The profit and expense projections

a) Ex ante costing

Quite naturally, profits appeared in many places in formal planning routines. It entered importantly into the central cash-flow analysis present in every budget

and long-term plan (see below) as the major source of financing. It appeared in every future performance analysis of the business organization. However, as mentioned several times already in most firms (U.S. and others) the profit estimates that entered the plan were fixed (for the plan) as the result of a trade off between a sales and profit projection at a very early stage of the planning procedure. Experience from the interviews was that a major part of planning effort was spent at this initial sales-profit fixing and that backward revisions of these estimates were seldom made in the light of results turned out from later analysis of the plan.

The first distinction to be made is concerned with the directness of approach in projecting profits, i.e. whether the profit projection used in overall planning was a direct estimate or derived indirectly from a current expense projection. To a not unimportant extent the method adopted also indicated the importance of targeting in planning. The more direct the method the more paramount seemed the element of targeting as against the more mechanical procedure of starting with elaborate ex ante cost calculations.[1] The second distinction has to do with the methods applied when directly estimating profits. As mentioned there seems to me to be a fairly direct link between the modes of estimation and the dominant overall purpose of planning as expounded in a previous chapter.

All firms, of course, had adopted quite elaborate schemes of ex post costing along individual product lines. The first distinction refers to the question whether this information basis is in fact put to use in formal CHQ short term and long term planning routines to estimate future profits. This was not invariably so and various reasons for that was put forward. The more diversified and the more rapid the change in the product mix of the entire firm the less reliance was put on detailed ex post information both in forward expense projections and profit predictions. Thus (for example) process industries working in well established markets with gradually and slowly changing production techniques were most apt to put this information to systematic use.

Related to this observation is another important difference in planning techniques between the short term (annual) budget and the long term plan. Over the next year planned or expected changes in the product mix were normally considered rather small. Consequently data on past unit or standard costs were considered appli-

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1) It should be noted again that this statement referes to the figures that enter the planning document that ultimately ends up at CHQ. Ex ante costing for other purposes e.g. pricing is something quite different.

cable to a large portion of total output or total sales. The relatively larger effort spent on elaborate ex ante costing in short run planning (budgeting) compared to long term planning is also one of the distinctions between the two time-dimensions in planning to be stressed further in Chapter VIII.

The content of the expense account varied. Usually it was divided up in two sections; the first containing current costs only ("cost of sales") and the second various overheads. The first current cost section was normally estimated for each production line. Subtracted from the sales value it gives (by definition) an estimate of gross (operating) profits. Estimates on overhead costs as a rule were compiled at the level of the division or profit centre only. The timing of overheads did not seem to be carried through systematically. My impression was that normally only overhead entries depreciable on capital account according to Federal Taxation rules were properly timed. In fact I observed no exceptions to this rule. This, however, may be due to the circumstance that I did not have the time nor the opportunity to go into the details of costing in more than one third of the interviews.[1] This meant that advertising expenses, non-depreciable investments in distribution net-works, goodwill, education, etc. and above all most of R & D investment were allocated to the year when incurred or planned to be incurred. These are normally sizable entries and returns from such investments are spread over a large number of future years.

When overhead expenses so determined are substracted from gross profits one obtains an estimate of net profits or pre-tax income. For U.S. firms this measure - on an ex post basis - usually coincides with the corresponding estimates in income tax statements filed with the U.S. Treasury once a year.

The fact that the various aspects of production technology employed was invariably taken care of at the division or profit centre levels has already been emphasized. Firm planners are all too well aware of the intricacies involved in giving the

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1) It is interesting to notice for a Swedish reader that in U.S. firms often no distinction seemed to be made between book depreciation and "calculated" economic depreciation. In several instances I found that life-length estimates of capital equipment from "Tables of Useful Lives of Depreciable Property", Bulletin F. United States Treasury Department, Washington 1942 or the updated version "Depreciation Guidelines and Rules" (U.S. Treasury Department Internal Revenue Service, Publication No. 456 (7-62), July 1962) - were applied rather than internal estimates.

production structure of the entire firm organization a formal representation. As a consequence, no such thing as a "firm production function" was ever presented to me as something seriously considered in formal planning. The substitute - ex-ante costing - was always carried out at the profit-centre level and on a very detailed product basis. Existing production structure and expected changes in production structure then automatically entered the expense projections and were later transmitted to CHQ in financial terms and aggregated to the level of the profit-centre. This seems to me a very elegant way of cutting through one of the interdependencies that must plague any a priori researcher into formal planning systems. More of this in a later chapter. The outcome of all this is that the basic input datum in overall firm planning att CHQ is a numerically specified relation between sales and profits for every single period considered - a profit function.[1)]

As mentioned the exploitation of ex post costing information was very common in short term budgeting, but less frequent in long term planning. When met with in long term planning it was usually confined to process industries that expected to continue its operations for a long time in rather stable markets. In conglomerates operating in a large number of different markets CHQ-planning was apt to stick to one standardized procedure for all subsidiaries and divisions. I.e. even though elaborate ex ante costing procedures were put to use in separate profit-centre planning routines, CHQ again was inclined to adopt a more simplified but standardized approach (see below).

Again, my impression was that firms producing largely for well established, rather homogenous markets (oil, steel) and - at the same time - relying on elaborate costing schemes in their long-term planning also tended to emphasize two particular purposes of long term planning; namely control and forecasting in the sense of numerically mapping out the future; the targeting purpose being less pronounced. The small number of firms interviewed, however, suggests that I stop further elaborations on this point in this empirical context in order to avoid the impression that this is a well established empirical observation. Nevertheless the matter is important enough to deserve further comment later on in a more suggestive context.

The fact should also be mentioned that some large firms relying heavily on detailed ex ante costing in their long term numerical (five year) plans sometimes had one

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1) I feel an inclination to make the reader aware of the fact that this is exactly the approach adopted in Eliasson (1967, p. 75 and pp. 206 ff) and (1968, pp. 40 ff.).

or two "parallel" layers of planning routines for the same planning period but serving different purposes.

b) Profit targeting

The alternative to elaborate costing procedures in long term CHQ planning is a more direct approach. This direct approach usually means that planning work proceeds on the basis of a direct estimate of the gross profit margin exclusive of charges on capital account. Sometimes this estimate is made at CHQ on the basis of past profit-centre or division performance. Division managers were asked to present only sales plans that were consistent with this profit margin requirement. Sometimes such estimates were made at the profit-centre or division level. One common argument was that "the division manager knows the profit-set-up of this product lines well enough. We leave the responsibility with him to present a reasonable estimate. After all he is paid for that". The awareness of the hazards involved in such numerical specification was all too apparent in the interviews. "After all, there is much beyond the numbers. When we don't believe in them, we change them or disregard them", was a frequent remark.

The more distant the planning horizon the larger the proportion of new products in the final year and the more important changes in production technology and factor and product prices. Hence, the less reliable elaborate estimating procedures and the more adequate a more intuitive fixation of the numbers involved. For that very reason, as a rule, there were several stages involved in the estimating process. Normally, the individual product-profit-margins for divisions were the subject of several joint sessions between divisions and CHQ management.

Nevertheless, whatever hazards and efforts involved the final product to be fed into the overall CHQ-plan arrived at in all instances but a few (3 cases) were single valued estimates. Several arguments were presented in favour of this particular feature of planning which is somewhat at variance with prescriptions derived from modern economic theory. We save them for later consideration.

If present, the targeting and motivating purposes in planning enter most importantly at this very stage of planning. Whatever side conditions and constraints being applied the "making of money" was an ever present goal in formal planning. Even, given various constraints imposed upon operations, this purpose was never presented to me as identical to the making of as much profits as possible but rather staying well above certain standards, and if possible improving performance.

A few persons interviewed expressed sympathy with the objective of maximizing present net worth to shareowners but could not - at least at present - make much operational sense out of the concept. The notion of improving performance and the "profit performance" in particular made much more sense to them.

Targeting entered the estimation of profit margins in short run budgeting as well as in long run planning in several ways. Profit-centre or division estimates could be adjusted at CHQ; usually slightly upwards. CHQ might extrapolate past performance in terms of profit margins into the planning period, sometimes adjusting these extrapolations slightly upwards and then compare with division estimates, the final fixing of a "number" being the result of one or several joint negotiations between CHQ and division representatives. I some times met with some glomy retrospect feelings in U.S. companies about the excellent profit performance recorded this current year. "Now they (CHQ) will only raise profit requirements for next year which we know will mean a slow-down in business".

Another method was to present the division or profit centre manager with a series of minimum margin criteria on various product lines and the requirement not to start production of goods not expected to fulfill these criteria or to take such goods out of the market. The reader should not be lead to think that the adoption of such criteria meant a disregard for the presence of capital and overheads in the production process; quite the contrary, the setting of gross profit margin criteria usually (even though not always) was based on careful, even though not always numerically specified, considerations of capital requirements for the production line in question. We will return to this matter in another context in Chapter VIII. The last feature of profit-planning has to do with institution of profit-sharing-incentive arrangement that I met with in a few firms.

Case: Profit-sharing incentive systems

In four firms it was volunteered to me that the setting of profit margins and sales plans - given certain standards - was at the sole discretion of division management or the division manager. The responsibility to realize the "plans" or "goals" so presented also rested on the division in the sense that management remuneration (salaries) were largely tied to their ability in that particular respect. In two cases the arrangement was somewhat like bidding in bridge. The better the performance planned for compared to past performance the higher the potential personal gain to management, however, the larger the potential loss if standards planned for could not be met. Performance was measured by (inter

alia) planned growth in sales and planned returns on total capital invested. There was also a factor ("a discount rate") favouring profitable long run growth in order to avoid the temptation with profit-centre managers to become too myopic in their outlook and to exploit the opportunities always there to reap short term profits at the cost of losses in the long run. Ex post improvements of performance on top of planned - and thus "officially recorded" - improvements were remunerated at a lower rate than if such improvements had been properly planned for in advance. In those two instances reported I was assured that such ex post performance ratings were made "net of the influence of factors outside division management control". The presentation to me of these incentive schemes was verbal. I was given only one opportunity to look into the exact specification of such incentive formulae.[1)]

c) RoR standards

It has been mentioned several times that the most common profitability indicator put to use in planning work was the profit margin on sales. In the majority of firms interviewed a profit margin criterion was used in fixing the sales plan for the budget or the long run plan. Since profit margins on division sales is not a very good proxy for the rate of return at division level this is one of the more important examples of sub-optimization in planning work that may lead to substantially less than optimal results if applied indiscriminately to guide decisions. This was, however, seldom the case. We will return to this matter in Chapter VIII. Suffice it to mention a few cases in point at this stage. For one thing 8 of the 58 firms interviewed (4 of them U.S.) that had very recently started to calculate

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1) In this firm - a U.S. firm - each division manager was responsible for the performance of his division on a rather far-reaching delegation basis. Roughly the method was as follows. Bonuses were tied to sales growth and profit margins at division level as budgeted for. If realized sales and profit margins fell short of budgeted entries the division head suffered a reduction in his bonus and vice versa. In order to secure good budget discipline the bonus element attached to above budget performance was determined at a rate substantially below the rate applicable if this performance had in fact been budgeted for and vice versa. Deviations from the budget due to circumstances outside the control of the responsible manager could always be subjected to negotiations. Similarly long-term investment undertakings the returns of which did not materialize until after several years were normally kept outside the bonus system. Since it was possible in practically all operations to squeeze out short-run profits at the cost of less efficient performance in the long run (possibly with a new manager) the conflict between the short run and the long run was the area where most difficulties with this incentive system had been met with. These problems had in fact been considered serious enough to call for a temporary suspension of the system. At the time of the interview a much cruder arrangement was used until the above mentioned difficulties had been taken care of.

the rate of return consequences of the budget at divison levels had experienced "surprise" results compared to what they had expected from their profit margin "rules of the thumb". The reason in all 8 instances had been found to be that the set of "differential profit margin" criteria used for product lines or divisions in planning had not been changed for 5-10 years and were quite olsolete because of substantial changes in some sales-capital use ratios. For several years some divisions in fact had suffered extremely demanding profitability requirements from CHQ while others for the same reason had had an easy time under slack attention from CHQ. It should also be mentioned again that only a small number of the interviewed firms did calculate the ex ante RoR consequences of the budget at the level of division or profit-centres. In 10 of the 58 firms interviewed only, future profitability was calculated at division or profit centre level before the sales plan was finally fixed (see further Section VIII:2).

d) Transfer pricing

Some of the largest U.S. corporations interviewed represented production and distribution systems of a size comparable to some of the smaller European, industrial economies. Such business organizations have to cope with internal problems that are comparable both as regards type and scope with those of planned state economies.

The more vertically integrated the business organization and the more tailor-made their products the less market price information is available to assess and to compare performance of the various parts of the organization. We will return to the centralization issue in a later chapter. However, it has to be pointed out here that the methods applied in pricing internal deliveries are of crucial importance for the quality and character of the information that reaches top management by way of the planning system. This problem is of particular importance when it comes to assessing relative performance of various divisions.

Three features are well worth pointing to already here. When available (1) external market price information was normally put to use in internal pricing. Second (2), when not available the principles of the school of economics typically honoured in planned economies were normally applied; i.e. various methods of cost-plus-pricing. Third (3), transfer prices were often deliberately biased by various policy adjustments to secure certain objectives. To this we will return in more detail in Chapter VIII.

8. Summary

To illustrate what has been said in this chapter let us present a simplified standard form with basic data requested by CHQ for the making of a five year plan..

Table V:1 Profit projection at the division level

Year	1	2	3	4	5
1. Sales forecast - established products					
2. Sales forecast - new products					
3. Planned sales, total (= S^P)					
(-)4. Cost of sales (= C^P)					
5. Gross profits					
6. Gross profits in per cent of sales (Gross profit margin)					
(-)7. General and administrative costs, including depreciation					
(-)8. Selling expenses					
(-)9. Research and development expenses					
10. Operating income (net profits)					
11. Net profits in per cent of sales (net profit margin)					

As a rule each profit-centre was required to hand in completed forms in at least this detail to CHQ at a predetermined date for the unit as a whole.

Normally the forms were more elaborate. Quite commonly a break-down of the first 6 entries on individual product groups ("markets") was requested.

At this stage entries were invariably in terms of values. Often profit-centre management had compiled these aggregate data from much more detailed work-sheets containing quantity estimates (numbers, tons, etc.) for every single, identifiable product. To these quantity data were added price estimates usually decided in joint "policy" sessions with CHQ.

This procedure was very often the case in short term (annual) budgeting but less systematically so in long term planning. Individual product specification in long term plans was normally restricted to the identification of product groups and "gaps" in terms of productive capacity to be filled in by new, as yet undefined or unknown, products.

VI SPENDING PLANS - DEMAND FOR FUNDS

As has been emphasized already sales (value) plans and profit plans are the prime input variables in CHQ planning. From these variables two subsections of the plan structure branch off to be closed again at a later stage (see Diagram I:1 B). The profit variable generates an internal cash-inflow variable. This side will be a topic of the next chapter. The sales variable generates a demand for working capital stocks as well as part of an investment spending plan. This side is the topic of this chapter.

A substantial portion of total demand for funds is generated from three clearly distiguishable subsections of the balance sheet. They are:

a) Working capital requirements
b) Investments in production equipment
c) Financial investments.

In addition to this comes a not negligible "capital requirements" entry;

d) Investments in non-depreciable assets.

The methods of determining spending plans under each of these headings are basically different, and they are treated in four sections in the order indicated above. The classification has not been made for didactic reasons only. Both firm planners and decision makers tend to keep the four components on the financial uses side apart. In fact one of the interesting observations to be made is the conspicuous attention paid to "hardware" on the capital spending side i.e. on investments of type b.

The results of all spending on "capital account" are not activated in the books of the firm - neither externally as required by law nor internally. A not negligible portion of the total application of funds is plowed into non-depreciable assets such as internal education, the organization of distribution net-works and research and development (d).

One conclusion that emerges from the text below is that investments in working capital (type a) is to a large extent considered to be of a mandatory type in planning routines needed for the realization of sales plans etc. To some extent this also holds for parts of the regular investment plan (b) and parts of investment spending on non-depreciable assets (d). However, for several reasons to be expounded below capital spending of types b and d contains a larger portion of investments the time planning of which is considered flexible.

1. Working capital

The components of working capital that fall under this heading are inventories, trade credits given (accounts receivable) and liquid assets of various kinds. The last component, denoted "cash" for simplicity, plays a very particular but nevertheless important role in planning routines. In fact it could equally well be classified under the heading of "Financial investments".

A close association with the current level of sales is a characteristic feature of aggregate working capital stock. It is not uncommon that investments in working capital amount to twice or even three times the amount spent on capital account (machinery and construction). It is also surprising that so little attention has been paid to this heavy investment item compared to the massive concentration on hardware spending as reflected in current economic literature and empirical inquiries.

a) The cash position

Common practice in annual budgeting was to regard the cash position as a residual that adjusted itself automatically when all other financial decisions - and then most notably the decision to borrow - were final. The exceptions to this practice were few among U.S. firms. Although methods of planning were similar, some distinct features in this respect were found among Swedish firms. This did not mean that the implications for firm liquidity were disregarded in deciding upon other variables in the plan. Quite to the contrary, the overall financial position of the firm, and for the next budget period in particular, was often stated as an "assumption" before work on the plan began, and spending plans tended to adjust accordingly. However, given this approach the cash position also fell out as a "consequence" or a residual in the formal planning routine. One possible explanation to this practice might be the frequent arrangement of "amply spaced" and seldom more than partly utilized "credit limits" (bank-lines) with one or several commercial banks. Cash management so described is indeed a very important piece in this study. It is, however, most adequately handled in a later chapter, when the overall spending and financing plan has already been accounted for.

In long term planning the cash-position entered in a somewhat different way. All other entries on the spending and financing side (next chapter) except long term borrowing being completed on a preliminary basis the change in the cash position - as before - could be derived as a residual from a cash-flow chart. This result (transformed into a series of future cash-positions) often served as an information

variable in deciding whether and when the firm had to turn to the capital market in order to prepare financially for the carrying out of the long term plan and/or to what extent cut backs should be made in the plan proposed. Also the treatment of this matter is postponed to the next chapter.

b) Inventories

Inventories constitute one erratic element in firm planning. Raw materials, intermediate goods, goods in process and finished goods are each sizable entities compared to sales and at times exert a not unimportant strain on overall financial resources of a company. The decision to invest in inventories before the production stage often involves some kind of speculative element which is normally quite well controlled by management. In so far as this speculative element is not present or if nonspeculative inventory investments can be isolated out remaining inventory components usually show quite stable proportions to planned sales in the immediate future or so it seems at least from the methodological approaches taken in formal planning.

Finished goods basically serve as a buffer between production and sales. Quite often, and in firms working in seasonally unstable markets in particular, inventory plans are geared to stabilizing the level of production while intentionally leaving wide seasonal swings in finished goods inventories. There is always, however, the extra uncertainty created by the business cycle and firms constantly plan to maintain a certain safety margin, not only in order always to be able to meet expected demand, but also to be able to take advantage of unforeseen market upheavals. The result is that the plan involves explicit recognition of substantial swings around planned for levels. This recognition is again normally geared towards maintaining financial stability. Unplanned for finished goods inventory build-ups usually exercise a great strain on the short term cash position and there is usually a direct link between the experienced stability of inventories and the ex ante desired cash position that is entered into the plan (see Section VII.3 c).

In short and long term formal planning the determination of desired levels of inventories usually takes the form of applying a vector of predetermined coefficients to sales levels of various products; the coefficients normally being determined on the basis of past experience. Such individual coefficients are usually "reestimated" from time to time and besides that the aggregate firm relationship between desired or planned for inventories and expected sales is rather sensitive to changes in the product mix.

The exact methods applied in determining the individual coefficients used in projecting desired levels of stocks were a matter usually handled in separate sub-planning routines outside the CHQ planning department or section. Most often these methods were said to be "crude" but varying in degree of crudeness from production line to production line. In some firms working in highly volatile markets characterized by short product life-spans active work was being done in reducing planned-for and "safe" inventory levels. In fact one U.S. firm in the below $ 500 M size class (1969) had found it profitable to establish a separate section at CHQ employing no less than 30 (professional) people full time on inventory management.

c) Trade credits given

Trade credits given (accounts receivable) usually make up the dominant portion of working capital stock. Accounts receivable constitute a component of working capital that varies significantly in importance between product markets and as a consequence between firms as well. Quite naturally it plays a relatively larger role with producers of heavy capital equipment and of durable household goods. In some firms the financing of sales had been surrendered to a separate financial intermediary (a factoring institute). If so accounts receivable did not show up properly in the firms' balance sheet nor in their planning routines. In larger firms (sometimes) it had been found convenient to establish a separate financial intermediary within the firm organization. This intermediary often did not restrict its operations to the financing of the sales of its parent company only.

All firms interviewed had a stock of outstanding accounts receivable large enough to be entered into formal planning routines. As a rule these routines were quite elaborate. In the same way as with inventories, projections of stocks of accounts receivable were tied to projected levels of various components of sales. A typical feature of individual product markets is that a stable and accepted practice on payment terms has developed. This practice may be subject to changes, in particular during temporary periods of changing conditions in the credit market. Nevertheless, the important thing is that such terms of payment are quite well known to corporate planners. This is true in particular for the making of short term (annual) plans and less so - of course - in the context of long term planning. Thus the projection of stocks of accounts receivable was a rather straight-forward, albeit numerically cumbersome procedure.

An example of the amount of detail involved is that two U.S. firms took care to account for the fact that payment terms were different (for each product) between

commercial sales and sales to Government. Government payments usually were in cash with a few days delay. The two U.S. firms thus entered, in their projections of sales and accounts receivable, assumptions as to the relative importance of sales to Government. An important thing to bear in mind is that accounts payable provided an important neutralizer as far as the financing requirements of trade credits given were concerned. The methods applied in projecting accounts payable were analogous to those described above; the difference being that this time the estimate was tied to projected purchases of intermediate and investment goods. However, in five U.S. firms I found that the projection of accounts payable was obtained by a rough application of a predetermined coefficient to sales as well. The result of such a practice is that the planned for net asset or debt creation originating in the trade credit section of the accounts is roughly proportional to changes in the projected level of sales.

An unforeseen prolongation of the average credit period with a day or two in most firms would mean a sudden and sizable impact on the demand for funds. As a consequence much attention was paid to the current position of accounts receivable. Delays in collections were frequent and usually meant that large amounts of capital were tied up at zero returns.

Since planners were required to adhere to established payment practice in the various markets such delays immediately turned up as divergencies between budgeted and (ex postly) registered stocks of accounts receivable. In those firms - about half of the U.S. sample - where an analysis of such divergencies was carried out currently (i.e. from month to month or from quarter to quarter), systematic deviations from budgeted amounts were immediately detected and could be corrected - if possible - at an early stage.

2. Investments in machinery, equipment and construction

a) The investment plan

There are at least three links between the investment plan and the comprehensive CHQ plan that should be mentioned. The first one ties part of the investment plan to expected sales over a number of future years. The second link is between expected sales, working capital requirements and the accumulation of productive capital (investment). Working and productive capital accumulation together makes up the dominant component in the demand for finance in most firms and consequently has to be trimmed to available finance, which is composed of expected internal

cash-throw-off (dependent upon profit margins and expected sales) and borrowing. With this in mind there is little room for "investment functions" leading a life of their own within the budget or long term plan and neglecting all other facets of the firms' sales, asset and debt structure.

The basic factors determining investment goods demand are to be found among the factors determining the production and sales plan. The information needed to derive capital requirements from production and sales plans was only to be found at the level of the individual production process. Thus the methods used tied in with the detailed production and sales plan. Whenever the investment plans was elaborate in terms of project specification - which was always the case in budgeting and usually the case in long term planning - each project could usually be identified with a plan to e.g. expand capacity at a particular production line at one particular location and with elaborate technical specifications attached. In about 6 of the 30 U.S. firms and 7 of the 28 non-U.S. firms the long term plan consisted of a crude projection of sales. Assets on the balance sheet were projected by the application of predetermined proportionality (constants) to sales. In this case the derivation of financial requirements from various alternative growth-paths of the firm was the basic purpose of the long term plan.

Normally, however, the investment plan originated at the profit centre level or below. The usual procedure was to work through the details of the sales plan to see what new investment objects were needed, where and when. Lists of individual object proposals with much technical detail attached were forwarded to CHQ as budget requests. Estimated prices of investment objects were specified together with planned purchase and delivery dates etc. At the profit-centre level such prices were aggregated to values for various investment goods categories and periodized.

It should be mentioned that entries 5, 6 and 7 in Table V:1 by no means contained minor requests for funds. Under these headings were also classified a large number of not definitely time planned investment activities which - for that reason - had no exact counterpart in the sales plan. Entries 6 and 7 also contained lump sums allowing for the fact that a complete listing of every single investment object properly to be classified under 1 to 5 could not be made.

Requirements to motivate individual objects above a certain size (value) were normally rather stricts. An account of this is, however, most appropriately deferred to Chapter VIII on "Rate of return considerations in planning".

A standard form prepared at CHQ and sent to each profit centre might contain the following entries:

Table VI:1

Year	1	2	3	4	5
Investment needed or desired					
1. to keep plant operating					
2. to meet sales-plan requirements; old products					
3. to meet sales-plan requirements; new products					
4. to reduce cost (rationalization)					
5. for production to materialize beyond the planning period (horizon)					
6. others					
7. contingency allowance					

Completed forms of the type indicated in Table V:1 as well as the lists of individual investment objects were then handed in to CHQ and subjected to detailed checking. Usually a number of projects were weeded out on the basis of the experience that budget (investment) proposals were normally exaggerated. Comments on the apparent lack of a systematic procedure to trim "exaggerated" investment requests to meet available financial resources will, however, also be postponed to Chapter VIII. It sometimes happened that such a screening procedure necessitated a corresponding reduction in the sales-growth plan. However, as far as I could understand this was of rare occurrence, since consequences of this nature were taken into account already at the early stage of fixing the sales plan.

b) The appropriations plan

With practically no exceptions specification in and approval for the investment plan did not mean authorization for division or profit centre management to go

ahead making financial commitments according to the approved plan.[1] After approval of the plan an appropriation preceded each commitment to start spending on capital account. The appropriations plan or procedure was a matter of regular occurrence (each month or more often) and carried out at various stages in the firm hierarchy. It was normally regulated in written documents. Large projects had to go all the way to the Board for final appropriations to be made. Medium sized projects were finally authorized by senior officials at CHQ. Smaller projects could be authorized by the profit-centre manager and minor projects at the production line. In essence the appropriations procedure meant that the final decision to spend on capital account was left pending as long as possible.

An interesting thing to notice was that objects included already in the approved plan (except for very large ones) were normally carried through the appropriations procedure as a routine matter. New projects outside the original investment plan coming up for appropriation sometimes had to be motivated in two ways. First on their own merits then as a reason for revising the original investment plan. Projects needed to realize the sales plan were always put on the priority ranking in the appropriations procedure irrespective of their merits in other respects relative to other projects.

In general (and using our terminology) the investment plan and the appropriations plan (budget) are two different things. The investment plan is a solution to the comprehensive plan when all relevant factors have been taken into account (see Diagram I:1 B). It defines how large a portion of total funds expected to be available that is planned to be allocated on capital account. It cannot be determined until the financing side has been considered. This will be done in the next chapter. The appropriations plan comes later and is designed to finalize the selection of individual projects within the so determined frame. It is final and means authority to start making commitments. Normally, however, some individual project specification takes place already in the making of the investment plan.

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1) In 4 U.S. firms and 2 non-U.S. firms out of a total of 58 interviewed firms the existence of an appropriations procedure parallel to or separated from the budget procedure was not recognized. I was told that preparation of the investment plan of the annual budget was very elaborate, that is in fact included the appropriations procedure but that capital spending commitments could be delegated up to a year ahead of the project start. During the course of these interviews it appeared, however, that a variation of the appropriations procedure existed anyhow. Projects, and particularly large projects, could always be reconsidered and often were. However, one important difference with these firms was that the initiative to reconsider projects within the investments plan lay with either CHQ or with the responsible division manager. No initiative being taken from either side spending according to the plan required no final authorization.

3. Financial investments

The subject of financial investments of a more long run nature did not come up for discussion in all interviews. In about 15 interviews I got the opportunity to ask detailed questions on the matter of financial investments. The interviews' results should be evaluated accordingly.

Three different types of financial investments will have to be kept apart.

1. Investments in short term or liquid securities
2. Investments in stocks as part of an acquisition program
3. Investments in long term securities (including stocks) as an alternative to investments in productive capacity.

Invariably 3. was regarded as an irrelevant consideration for the firm. 1. was considered a matter of cash-management (next chapter) including temporary accumulation of cash in order to finance future investments, and 2. a proper question on a highly relevant matter of frequent occurrence.

It is hard to judge how the negative reaction to question 3. should be interpreted. The only exception conceded was repurchases of own stock in the market, which is allowed in the U.S. In those formal planning documents that were shown to me I found no evidence of explicit plans to invest in long term securities other than - as it happened in two U.S. firms - as part of an acquisition program. These plans consisted of no more than the provision of readily available funds for such purposes.

The distinction between 2. and 3. may seem less sharp. An acquisition programme of course could be considered as an alternative to a plan to expand productive capacity internally. However, when classified as an acquisition program the purpose normally was a long term policy to diversify business activities (production) or to spread risks rather than deliberate plans to shift emphasis between plowing funds into pure financial investments and investments in production capacity in order, say, to support a higher rate of return than possible when restricting the option to one type of investments only (cf. however, the discussion on cash management in the next chapter).

This being a relevant observation it certainly provides an empirical basis for cutting through the maze of interdependencies plaguing the a priori theorizer

in monetary economics.[1] And, indeed, if formal planning on this point has a bearing on decisions made and actual behaviour the observation is consistent with the typically stable patterns of self-financing in manufacturing observed in many empirical investigations. Excluding the option of long term purely financial investments as a potential alternative to direct investment in planning leaves plow-back of total available funds into productive investments and acquisitions as the only alternatives besides the possible financial leakage represented by the paying of dividends. Maybe this observation is not so surprising, after all. There is still the option of balancing the timing of productive investments against the cash position (under 1.) and this may be the important consideration for firm management. The observation made also confirms an impression from many interviews that most firms operate under self-imposed constraints as to choices of activities open. Very often internal policy documents voiced restrictions related to raw materials, markets, present type of technology or skills or simply "traditional lines of business". These constraints may be lifted but a reasonable hypothesis would be that it takes both much time, much effort and long sustained management tension to transform an oil company into a producer of electronics equipment and that intentions of such a nature are not likely to be made explicit in the long term plan.[2]

4. Non depreciable assets

A substantial portion of financial resources is currently allocated to the accumulation of non-depreciable assets in various forms. Examples of this are spending

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1) The a priori exclusion of any possibility to balance investments in securities against investments in productive capacity except as a short term timing arrangement in Eliasson op. cit. 1967 p. 70 ff and op. cit. 1969, chapter 2, was out of convenience rather than empirical intuition. The observation above, however, lends support to this assumption whatever its original motivation.

2) It is not a coincidence that Beckman Instruments Inc., Fullerton, Calif., that started as a producer of an acidity meter for the vineyards several decades ago is still producing instruments for an expanding market, however, now mainly for other purposes. In this case a fundamental change in the product mix had taken place on the basis of a given technology. In 1969 Xerox Corporation purchased Scientific Data Corporation (SDS) in order to diversify into joint data processing and reproductive techniques. Plans to diversify in this direction had existed for some time. A similar diversification scheme but in the opposite direction was in the plans for IBM at the time of interviewing. This time reproduction technology was developed internally. Similarly one U.S. firm in the sample with conglomerate features had developed very sophisticated scanning techniques to decide upon the areas (markets, technologies etc.) to enter upon and where future acquisitions should be made. One such area considered by the U.S. firm at the time of interviewing was "Education" very broadly defined. To be noted again is that there issues were not considered in the context of the long range plan but as s part of the prospective or - as it was called in the U.S. firm - strategic plan

on R & D investments, in marketing, internal organization, education, goodwill etc. More than half and probably close to two thirds of the U.S. firms estimated that "investments" of this kind exceeded investments in production equipment (machinery & constructions) by a wide margin. In one electronics firm (U.S.) R & D spending only was three times that in production equipment. We also know from OECD statistics that R & D spending in U.S. manufacturing (inclusive of federally sponsored defence and space R & D in industry) is as high as between 50-60 percent of investment spending on capital account. Similarly R & D spending in total Swedish electronics industry exceeds spending on capital account somewhat.[1)]

With these figures in mind it is interesting to note that practically all firms interviewed (U.S. and European) treated such investment expenditures as current costs also in their internal budgets and long term plans. The standard form in supplement 2 (B. Profit-plan) is typical in this respect. This means that gross operating profits are typically calculated net of the bulk of spending that should most appropriately be allocated on capital account. With such accounting methods the difficulties involved in calculating company rates of return to capital and making meaningful intra company profit performance comparisons are easily understood (cf. chapter VIII). This may even be the reason why such calculations are seldom carried out above the individual investment project level.

On direct questioning several reasons for these inadequate accounting methods were put forward; (1) the difficulties involved in keeping separate books for taxation and other purposes (2) tradition. Such investments were of minor importance not long ago. (3) "The data are of no use. It is impossible anyhow to put a dollar value to such an esoteric thing as the accumulated asset of being established in a market or accumulated stocks of internal education or spending on "goodwill account"."

The above remarks refer to comprehensive budgeting and planning. In keeping with the frequent practice of maintaining a number of subplanning routines more or less attached to the comprehensive plan normal procedure was to have a separate e.g. R & D cost plan within the budget or within the long term plan. Sometimes practice was to decide on the size and time-shape of this R & D cost plans separate from all other planning work. Sometimes a total of R & D money was allocated as a CHQ planning decision the matter of distributing the total being left outside

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1) Eliasson; Forskning, investeringar och utveckling, Affärsvärlden/Finanstidningen, Nr 47, 1971.

comprehensive planning work. In one European and three U.S. firms very sophisticated techniques to decide when to terminate R & D projects were experimented with. The methods used was to decide at what future date costs incurred could not be recovered even if the project should prove successful given two or three alternative discount rates.

As far as can be judged from the interviews R & D spending was often on the "priority list" when budget slimming was needed for liquidity reasons (see Section VII.2). Separate planning routines for market investments, education etc. were seldom met with at the level of CHQ planning. Such matters seemed to be delegated to the division or profit centre level. This of course does not exclude that major policy decisions such as the penetration of or building-up of a new market or going abroad were usually studied in detail and subjected to extensive investigations within separate project groups at CHQ - but normally parallel to or separate from comprehensive planning routines (cf. the presence of separate "project plans" on Section VIII.8).

5. Summary

Summarizing so far, planning routines usually revealed some kind of priority ranking on the spending side. Net trade credit extension, part of investments in production equipment and in inventories were normally looked upon as mandatory for the realization of the sales plan fixed already at an earlier phase of planning work. Since the sales plan was seldom revised in the light of later analysis of the plan also these spending components in principle were not tampered with in the negotiating process between CHQ and division aimed at trimming spending proposals to available finance.

VII THE FINANCING PLAN

The previous chapter was devoted to an account of the stagewise fixing of various spending plans within the firm. In this chapter the financing side, or rather the financing plan is introduced. The separation into two chapters emphasizes the current practice of keeping the two sides (spending and financing) as two separate sub-routines within the total, comprehensive planning system. This chapter closes the accounts. This holds for short term planning (budgeting) as well as long term planning, whenever comprehensive.

The closing of the accounts may reveal apparent inconsistencies between the various sub-routines of the total plan. Inconsistencies, which ultimately depend on the fact that the sub-routinized or recursive structure of the formal plan does not allow for a number of relevant interdependencies, at closing time show up inter alia in a residually-determined cash position. Sometimes revisions in the plan are found to be necessary and a number of backward iterations may follow. In a few U.S. firms where all numerical calculations were performed in a computer, such iterative "runs" were a matter of routine in order to reach a more "optimal" and consistent solution. As a rule, however, the fixing of values at the several sub-stages of the planning routine (e.g. sales levels and profit margins) involved a well-experienced and implicit recognition of important consequences for the solutions at later sub-stages (investment requirements, external financing requirements , profitability, etc.). This was at least the answer always given at repeated questioning.

1. Internal cash-throw-off - gross saving

A crucial input variable in planning that is arrived at with much judgemental effort (see Chapter V) is the gross profit projection. The expected internal generation of funds then normally can be derived directly and with minor difficulties from the gross profit projection. This derivation was much simpler for the U.S. firms than for other firms within the sample, since fiscal depreciation rules applied by U.S. tax authorities to investments in production equipment roughly approximate what may be termed the useful life of a depreciable asset. As the result of a grand effort to arrive at reasonable estimates of the rate of economic depreciation of various kinds of productive assets, the U.S. Tax Authorities (U.S. Treasury Department. The Internal Revenue Service) have produced a fairly

complete survey of the manufacturing sector.[1] These rates serve as guidelines for the income assessment. Besides, as I found during my interviews, it is prevalent practice among U.S. firms to use the same guidelines in their internal accounting. Where this is done there is normally little room for the creation of hidden reserves in production capital within U.S. firms[2] beyond what comes as a result of inflation. In European firms calculation procedures were not as simple.

I often met with the following rough approach to a gross saving estimate:

Table VII:1 Source of Internal Funds (U.S. case)

Year	1	2	3	4	5
1. Gross profits net of overhead expenses					
2. Other income (net)					
3. Provision for federal taxes (= 50% of gross profits plus other income less depreciation and interest expense)..					
4. Dividends					
5. Amortization and interest expense					
6. Gross saving (= 1+2-3-4-5)					

Dividends were determined from year to year independently of the work on the plan, usually according to a traditionally established policy.

2. The external financing decision

We have now arrived at a crucial juncture of sub-routines in the overall planning system. Last time planners had to face the world external to the firm organization in an important way was at the very beginning of the work on the plan; namely the

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1) The so called Bulletin F from 1942 and updated versions. For exact references see note in Section V.7 a.

2) The possibilities of accelerated depreciation to stimulate investment for contracyclical purposes allowed during the sixties of course are exceptions to this practice.

product market contact when the sales- and profit- (or profit-margin) projections were fixed (see Diagram I:1 B). The external financing decision is a second and highly critical confrontation. The problem is to close the possible gap arising from a divergence between the total spending plan and the projected cash-throw-off from current operations. To make the plan comprehensive, a plan to borrow (the most common case) has to be made up. Sometimes such a borrowing plan is not completed. Since the rest of the plan has usually been fixed or approved by CHQ the result is simply a "gap" or a derived demand for external sources of funds whatever their origin finally may be.

At this point a distinctly different approach appears in long range planning and short term budgeting. Total spending plans and estimates of internal cash generation from the long-term plan were normally put to use to determine when need for large lumps of external funds may arise; or rather to determine how long such borrowing decisions could be postponed before - given spending plans - liquidity problems begin to appear. As for the long range, numerical plan this analytical exercise may be its most important application (cf. Chapter IX).

The annual budget on the other hand was more oriented towards determining how much borrowing is needed next year. This decision necessarily gets very much involved with the problem of determining the required stock of liquid assets during the next year. The question, however, still remains whether the cumbersome numerical procedure that makes up the budgeting and planning process is really needed to secure that kind of information. I was told quite often by people not directly associated with planning or budgeting that needed external funds could be estimated more reliably by much simpler "back-of-the-envelope" methods. However, I was also told very definitely and repeatedly in one U.S. firm that short-term borrowing had been substituted for a large long term loan with a fixed interest rate (already decided upon by the Board and partly negotiated) on the basis of a series of simulation runs on a corporate financial model. This analysis had demonstrated that under the assumptions adopted in the long range plan and within all reasonable ranges of uncertainty the money (intended to finance an accelerated growth program) would not be needed after five years at the most. This presentation - I was told - was what was needed to convince the Board.

Usually some ex ante decisions or plans exist as to how to solve the external financing problem in more detail than determining total borrowing needed only. For the time being we disregard the possibility of making use of negotiated banklines and day-to-day cash management. This is a matter discussed in Section 3. The

financing decisions that are part of the planning sequence is rather concerned with negotiating a new or larger bank line, deciding upon what short term liquidity buffers that should be accumulated over the planning period or to size up the present and future credit market situation with a view to timing borrowing on longer terms than a year (Empty box Table 7:2). Such borrowing often meant the tying of present interest rates for most of the amortization period. At the time of my U.S. interviews (1969, 1973 and 1974) this problem was considered quite acute. Current interest rates in the U.S. credit markets were on all occasions considered extraordinarily high compared to past postwar experience and credit-market conditions were generally deemed unfavourable by firm planners despite high rates of inflation. Especially in 1969 expectations were in favour of an "easing" of the credit market in a not-too-distant future and decisions were to reduce borrowing as much as possible and resort to internal sources of funds and/or to restrict spending. As a rule all management staff involved in planning all the way down to the profit center levels had been informed about the position taken vis-ã-vis external financing at an early stage of the planning process; the implication being that spending proposals should be trimmed down voluntarily as far as possible.

There were exceptions, of course. Available to planners and decision-makers at this stage were (as a rule) a complete investment spending plan for the next five years and a plan in much more detail for the next 12 months. Each object in the spending plan of the annual budget was normally accompanied by an extensive documentation as to its purpose; in several instances this included quite elaborate and numerically specified rate-of-return considerations. Sometimes these motivations were convincing enough to override inhibitions vis-ã-vis the current credit market situation. It is important to note, however, that expected returns on proposed investments were not reported as dominant criteria in such decisions (cf. Chapter VIII).

This observation is again consistent with the presence of a "quantity restraint" in external financing decisions as far as corporate planning is concerned. The reason for such considerations was that a credit contract written today was expected to be charged above market rates of interest for a long time ahead if interest rates were considered "high" and vice versa; a "closing in" effect on the borrower's side. If borrowing is postponed and if this cannot be temporarily compensated for by drawing on liquidity reserves, the short-term effects on the timing of investment and growth of some firms are obvious. Cutbacks in spending plans will be necessary. Also cf. the consequence of debt-equity considerations discussed in Section 4.

The "aversion to external finance" hypothesis has a long standing as a subject for academic disputes among economists. It was very interesting for me, of course, for this and other reasons to inquire about the ways by which such an aversion could be observed in formal planning routines. However, such a touchy and never well-defined matter was hard to approach directly in an interview. As far as important details go, quite often the interviewer and the person interviewed speak different languages. Besides, direct questioning, to be understood, had to be rather free from intricate reservations and possibilities, and consequently was apt to be somewhat leading. There is the apparent risk that the person interviewed supplies the answer inherent in the question. On this, as well as throughout the interviews, my approach to begin with was to let the interviewed person volunteer information, then try to shift the conversation without any obvious purpose from subject area to subject area. The major subject areas being covered or time running out I usually rounded off with a series of direct questions, partly in order to check my earlier impressions.

On the internal financing subject or aversion-to-debt hypothesis I think I can produce some tentative conclusions. This topic was covered systematically only in the U.S. interviews. In slightly less than 25 percent of the U.S. firms interviewed it was clearly stated that whenever "good" projects or opportunities were at hand, finance, including external finance, presented no problem. In about 25 percent of the cases the official policy of the company was said to be not to make use of any external funds for any long-term purposes. In some cases this policy was even stated in internally circulated documents or planning handbooks. One could also observe from annual reports that long-term external financing had not been resorted to. As for the rest the answer was: "it depends".

However, there are reservations to be made to these observations. In the non-aversion case the definition of an investment opportunity was a non-tangible matter indeed. If the definition of an investment opportunity cannot be specified, the meaning of "no aversion to debt" is equally unspecified. On a direct question in a few "no aversion firms" as to what were the required rates of return, the answers ranged between 20 and 40 percent before tax. It was said to me and/or shown to me that this (policy) rate was again officially documented for internal use in planning (cf. Chapter VIII.3).

The next qualification refers to the "complete averters". My direct question, why the company did not resort to external funds in order to raise return to equity or to grow faster, was often not understood. In several of them I found

out during the interview (and in some afterwards) that not only was profitability very high but annual growth rates in sales during the past five or ten or more years ranged on the average well above 10 sometimes around 15 percent. When pursuing this matter further in one particular firm it appeared after a while - the time taken being due to semantic confusion - that the firm simply could not grow faster. Even though new products and techniques were flowing out of the R & D departments it took time to get them on the market, it took time to erect production facilities and - not least important - it was hard to get the right people to manage all new operations. In short the organizational structure could not sustain higher growth-rates than those easily sustained by internally-generated funds (even after 50 per cent of net income had been distributed as dividends) without starting to disintegrate in an alarming way. No extra funds were needed to speed up production and sales, since this was not possible for other reasons. This firm had adjusted to some kind of an internal plow-back equilibrium growth plan and had gradually adopted this financing pattern as an official firm policy.

There is also the peculiar feature of capital spending decisions that most of the financing concern exhibited in planning and decision procedures as well as being voiced in literature on the matter refers to hardware investment decisions (construction, machinery etc.). Investments in R & D, marketing etc. often having a longer gestation period and requiring more financial "funding" than hardware investments were covered as a rule by different, separate, less elaborate and less CHQ controlled management routines (see further Chapter VIII).

Whatever our conclusion as to the existence of debt-aversion, external financing was no paramount feature among the "blue-chip" companies realizing high rates of return but more predominant with the average and below-average performers. Those firms which could speed up their (sales) growth rates above internal financing capacity and (at the same time) benefit from it were the average and below-average performers provided prospective returns to marginal investments stayed above borrowing rates. This particular feature of financing has been elaborated in a formal context in Supplement 4.

3. Cash management

a) Ex ante fixing of the cash-position

A preliminary determination of the "required" cash or liquidity position normally

preceded the fixing of needed external financing in the budget. However, once the extent of external financing had been entered into the budget or the plan together with other entries like dividends, interest, and amortization payments, the cash-position of the plan by definition had been determined in a residual manner. There is no logical conflict involved in this procedure. It only illustrates the step-wise planning methods normally adopted and how outputs from earlier "steps" are used as inputs in later steps. It should be noted that cash management involves here as well the decision to vary the utilization of bank-lines.

It is a quite well known feature of U.S. manufacturing industries that external financing plays a relatively unimportant role at the aggregate level, although marked changes in financing patterns in U.S. as well as European firms have taken place during the 1960:s When all external sources of funds (excluding commercial credits) on the cash flow balance have been summed up they usually represent small figures compared to internal retentions.

Again this pattern fits well into the picture of business financing sketched in the preceding sections. Borrowing long term in the organized creditmarket is usually a lump-sum decision, put into action now and then when market conditions are favourable and a future need can be foreseen. Available cash including liquid assets, bank deposits and bank-line facilities then provide plenty of financial leeway for a number of years ahead. As already mentioned a basic purpose of long-term planning seemed to be to provide an information basis for borrowing decisions to maintain such liquidity reserves. This practice was prevalent financial policy in the majority of firms (U.S. and others) interviewed and the plan was an instrument to predict financial needs in the long run to make the firm independent of erratic developments in its credit environment in the short run. Against the background of this "finding" it is not hard to find a reason for the current distress of general monetary policy, organized through the markets for credit and directed towards manufacturing investment.[1] One basic purpose of long-term planning is to make the firm independent of random demands for financing, unforeseen strains on the liquidity position and (probably) monetary policies in the credit markets.

If so, any attempt to approach the problem of business cash management by way of a simplified inventory theoretic model is doomed to failure from the beginning if

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1) See e.g. The reports from the commission on money and credit, and impacts of monetary policy (Englewood Cliffs, N.J. 1963) in particular. Also see Eliasson op.cit. 1969.

the purpose is to explain observed behaviour as registered ex post. Adequate consideration of bank-line arrangements and business liquidity provisions for the future has to be made and this makes for a rather complicated theory if the theory aims at explaining statistical time series data on the liquidity position of firms.

We have already noted that basic conservative traits mark the work on the formal plan from its initiation to its final authorization (if any) by the Board. Numerous sessions, meetings, telephone contacts, etc. guarantee that no final "fixing" of plan variables allows any crucial parameters of firm planning (like investment or borrowing) to stray off past patterns in any substantial and uncontrolled way. By this method also the residual determination of the demand for internally accumulated funds (liquidity and external finance) is quite well controlled. Surprises are normally expected to be minor and well contained within the margin of liquid reserves. If not, a series of backward revisions in the formal plan will usually be initiated before final authorization is granted. Final authorization of the annual budget also normally involves an explicit numerical estimate of the ex ante cash (liquidity) and bank-line utilization position - this time as it has been residually derived in the budget.

One could argue that the rough and step-wise procedure adopted in cash or liquidity planning should be capable of substantial improvement in the direction of cutting costs for maintaining excess reserves. This was a question that I always brought up during the interview if the reasons or answers did not come forward voluntarily. Practically no one questioned considered the precision of the annual budget good enough to make it useful for more elaborate attempts to cut down on cashrequirements. The reasons always given were that input variables in budgeting were surrounded with wide margins of uncertainty. The numerical structure (the "model") of the budget was too unstable and - more important - the step-wise "suboptimization" procedure regularly applied made the annual budget inappropriate even in principle for overall cash-minimization analysis.

This did not mean that efficient cashmanagement was impossible or absent. Quite in keeping with the step-wise procedure of planning already described, cashmanagement comes in separately after work on the plan is finished. Cashmanagement is a good example on how actual decision making is based on and interact with the plan - this time the annual budget.

Cash management will be covered under three headings. First, it has to be recognized that most companies except the very small ones fullfill internally several

functions that one normally tends to associate with a commercial bank. Second, the basic purpose of cash reserves is to serve a buffer-stock function. Part of cashmanagement can be accomplished by making adjustments in the budget itself. Also, the cost for maintaining liquidity buffers is an insurance premium for unforeseen financing demands. However, (third) in some industrial nations and in the U.S. in particular, there exists an alternative to elaborate cash-minimization procedures; namely the option to earn an income on excess cash reserves by short investment and borrowing operations in the money markets. Even though well-developed domestic money markets are lacking or hampered by regulation in many European countries, recent years have witnessed the creation of a quite efficient substitute in the form of the so called Eurodollar market.

b) Corporate banking

Economies of scale is a concept that has most often been considered with reference to production activities. Without engaging in an extensive discussion of the merits of the concept as such, it is easily recognized that, when interpreted broadly, typical benefits from economies of scale on the financial side can be derived within the large business organizations of today. Most firms of medium size and above consist of more than one production establishment. This holds for all firms interviewed in this study, and in several firms interviewed the number of production establishments exceeded one hundred. The contrast between the large, western business enterprise and the classical notion of "a firm" (= a production unit) probably could not be made sharper.

A remarkable development of recent years is the extent to which the typical functions of commercial banks and investment institutes have been merged with the more traditional functions of the manufacturing company. The financial function is normally concentrated in CHQ and this tends to isolate the separate entities of the organization from the financing side of the market environment. To some extent, long range planning may serve as a substitute for the investment-institute function that one would find in a different world with only small firms identical with production units. Plans, however, also serve as an instrument to coordinate financial data for the company. The banking function enters when it comes to deciding on how, when and where to distribute funds, or rather available resources, within the organization. In some U.S. firms that I visited the use of money as an internal medium of exchange (within domestic U.S. operations) had been drastically reduced. All payments (outgoing and ingoing) were centralized in CHQ, or funds were immediately transferred to CHQ when received except for minor cash balances.

Even wage payments could be centralized. Internal sales and purchases within the business organization were cleared automatically by way of CHQ accounts and interest on internal credit transactions was calculated for the purpose of obtaining proper profit records on a division basis only.

Cash requirements of such an organization are of course drastically reduced. The firm can make use of the law of large numbers in the same way as a commercial bank. Few externally-imposed liquidity requirements apply, and except for the effects on the corporate organization as a whole, the firm is virtually isolated from credit market policies. If internal deliveries within the organization are extensive - and this is often the case in multiple product firms that are vertically integrated from the market and distribution stage and far down into the production process - the well known credit multiplier of a commercial bank may be strong indeed although not easily observable. In such a firm one should also expect high self-financing ratios for the simple reasons that external financing, except for CHQ-borrowing, takes the form of "internal credit extensions". To a varying degree the description given above is valid for the U.S. firms; less so for the Swedish firms partly because they are smaller and partly because of the prevalent feature of more independently managed subsidiary companies in Sweden compared to the U.S.

c) The buffer-stock function

The residual determination of the cashposition in the plan also indicates its function (ex post) as the basic financial shock-absorber. The history of most firms at times reveals quite violent swings over time in certain crucial variables such as sales, investment, and, still more so, profits. To an important extent, account of such swings has already been taken ex ante in the short-term plan or budget. Once finally authorized, a not unimportant degree of rigidity has been imparted to the budget and to some crucial elements in particular. Over the span of one or two quarters at least, the sales-production plan is fairly rigid in most firms. Raw materials, intermediate goods, and man-power have been contracted, and the production plan usually has to be carried through even if sales projections turn out to be seriously off the tune of the market. The decision may have to be either to lower prices and dump the goods on the market or to pile up finished goods inventories. Whatever combination of market strategies chosen, both an unplanned-for decrease in the cash inflow and an unplanned-for increase in the demand for funds is involved and the impact as a rule is transmitted in full to the cashposition.

d) Cash-management

What is usually referred to as cashmanagement is the day-to-day management of the buffer-stockfunction that has been described above. Cashmanagement is the responsibility of the Treasurer office of the firm. As already mentioned, the short-term plan or the budget of the firm is normally broken down on a monthly or at least a quarterly basis. Cashmanagement involves the careful watching of the current realization of the short term plan (budget) in its most updated version; to keep funds available for spending as planned for, to keep a satisfactory margin for unplanned-for surprises, and finally to keep what is left invested as profitably as possible. This involves for one thing a very delicate balancing of amounts to be drawn from the bank-line and investments (and disinvestments) on the day-market for money. Practically every U.S. firm in the medium or large size group reported that it made extensive use of the moneymarket on a day-to-day basis. Whenever large enough sums of excess cash have accumulated, they will usually be invested in treasury bills or in commercial bills as soon as possible, and quite often for very short periods of time. Most probably due to less developed moneymarkets and perhaps also differences in size, this kind of cashmanagement was less developed among the firms outside the U.S.

Two observations are worth making in this context. The Eurodollar market was mentioned by several European firms as providing day-to-day facilities far more speedy and efficient than those at hand at home. This was an advantage not only for firms with production establishments abroad but also for firms engaged in foreign trade in general when short-term trade credit extensions were needed. Secondly, several Swedish firms resorted to the "non-institutional" so-called "grey credit market" when it came to earning a return on excess cash. This term is defined to cover all direct inter-firm credit transactions with or without a link to a simultaneous sales transaction.[1] The typical feature of this market as of today is the relative absence (compared to the U.S.) of intermediary credit institutions and hence a relatively inefficient market performance in particular in short-term transactions.

Investments in treasury bills provide a convenient way for U.S. firms to bridge gaps between the inflow and outflow of capital over seasons within the year. As a rule the extra profits reaped from these day-to-day operations are negligible compared to profits generated from current productive activities. However, the firm being large enough, it was usually considered well worth while to employ one or more persons (professional) to manage this particular detail. Again, cashmanagement

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1) cf. Eliasson (1969, Chapter V).

of the kind described above is another example of the step-wise or recursive decision process within large organizations. In theory one could argue that optimal policy would be to take the entire budget set-up into numerical consideration when deciding upon optimal (i.e. minimum) cashbalances required. Given the basic inaccuracies of the budget as such and in particular the difficulties involved in estimating the residual impact of errors on the cash-position, a different approach seems to have been taken; ample excess cash reserves are deliberately maintained. However, the costs of maintaining such reserves are reduced by short-term lending and borrowing operations in the money markets. Unlike money, there are no such temporary market opportunities for stocks of inventories. Here, instead, emphasis was on calculating minimum inventory levels to reduce storage and other costs (see Section VI.1 b).

It should be mentioned in addition that in some firms[1] collections and payments are higly centralized to CHQ. With the help of modern computer technology, this is a highly flexible and remunerative management instrument. For one thing, it allows a more efficient use of liquid resources; and secondly, the overall manpower demand in treasurers' departments is reduced. As a consequence, it also involves the concentration of larger amounts of money to one administrative unit, which in turn makes it worth while to apply more elaborate day-to-day investment routines. In short, even though the ex ante determination of the cash position in the budget or the plan seems to be a matter quite free from intricacies, an explanation of the development of the cash position ex post not only requires the proper specification of all relevant components of firm liquidity (cash, bank deposits, bank-lines, short term investments and interest rates) but also various data from the comprehensive corporate budget at various stages of realization.

4. Asset and debt structure

Although the formal planning procedure normally includes the projection of a cash flow balance, a complete income statement and a balance sheet for a sequence of future periods, balance sheet considerations typically enter as external, ad hoc constraints. As a rule some "policy statement" as to the availability of financing for growth is issued from CHQ prior to the start-up of the planning cycle. The first, preliminary consolidation of the plan results in a preliminary

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1) The frequency in the sample is impossible to determine, since this matter only, came up for detailed discussion in about one third of the interviews.

estimate on the future appearance of the balance sheet. This may - or may not - prompt a backward revision of the plan in order to trim spending plans and sources of financing into a desired balance sheet structure.

There is no automatic procedure or no formulae to adhere to for planners except rather loosely stated guidelines that may be adjusted as a result of the preliminary plan.

This is the confrontation of the plan by decision makers depicted by the empty square (broken lines) just below the centre of Table 7:2. As mentioned, comprehensive planning has a typical financial bias, and the dominant purpose of long range formal planning seems to be to serve as some kind of guidance for the timing of decisions to borrow. Since quite obviously debt and asset considerations are of importance to firm decision makers, the adjustments made within the empty box in Diagram 7:2 have a bearing on the final appearance of the corporate long run and short run plans, even though the exact nature of the constraints imposed are decided outside what is called formal planning.

The importance of debt-asset relationships for the behaviour of share prices of the firm was emphasized frequently as an important consideration. One U.S. firm in the sample for several years had been transforming itself from a semi-public utility status to a manufacturing company oriented towards commercial markets. This transition involved gradually lowering the leverage position of the company to a level more in keeping with a typical manufacturing business. This further involved a deliberate policy to pay off debt and hence a restriction on the capacity to finance growth. Stock market investors were often said to apply different debt-asset rules-of-thumb to public utility and manufacturing companies irrespective of risk and profitability prospects. Hence this market feature had to be considered in planning by a company concerned about its capacity to aquire external funds both of the equity and nominal type.

5. Foreign subsidiaries and foreign currency planning

The planning and management of foreign subsidiaries have not been systematically covered in the interviews. However, most firms interviewed (and the European firms in particular) had a large part of their current operations outside the country of domicile and a substantial export trade. Similarly, the build-up of an extensive international credit system during the sixties meant that most firms

also had acquired non-negligible amounts of debts and assets in foreign currencies. Hence, the stability of exchange rates was of some concern to planners in most companies already in the first interview series of 1969 and this concern was of a quite alerted kind in later interviews during years characterized by international monetary turmoil, floating exchange rates and rapid rates of inflation. A few scattered observations from the interviews will therefore be entered here.

For one thing, long term plans after 1971 usually included some kind of assumptions as to the future development of exchange rates. In most big U.S. and European firms visited after 1971, at least one person (often within a so called economics department) had been assigned the task of watching the international monetary development and of preparing assumptions for the future in this respect.

The immediate impact of a parity change is in the form of capital gains or losses on assets and debts in foreign currencies in the consolidated balance sheet of the firm expressed in the domestic currency. Once the parity change has taken place, this change in capital values cannot be avoided although rules differ between countries as to how fast the corresponding adjustments have to be entered in the books of the firm. As to the effects on current profits (and costs), the impact can - if considered commercially wise - be softened by corresponding price adjustments in terms of foreign currencies.

This meant that concern about foreign currencies entered planning (1) in the making of price assessments for the future and (2) in the structuring of the balance sheet of the firm. As a rule, both these tasks were handled outside what has been currently termed formal planning. Practically all firms in the "giant" size class[1)] maintained a so-called economics department that handled the analytical and forecasting side of these matters in close cooperation with the planning and treasurers' departments.

An interesting and prevalent precautionary arrangement in handling the foreign currency accounts is worth taking note of in this context. Once the over-all financial budget for the next few years had been approximately decided upon at the corporate level, the people at the treasurers' department started planning the details of the asset and debt structure. Part of their concern at this phase was to achieve a combination of in- and outgoing payments and assets and debts

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1) A dozen U.S. firms and 3 or 4 of the non-Swedish Europeans.

that was approximately neutral vis-à-vis the domestic currency with respect to those currency realignments that were envisioned as most probable. If long term sales or credit contracts were stated in dollar values, attempts were made to sign purchase contracts or borrow also in dollar denominations or to move into currencies that were expected to move in phase with the dollar. In a company operating subsidiaries in many countries, local borrowing was normally a possible option. Since many companies operated large production subsidiaries abroad, the assets of which were valued in local currencies and entered the consolidated group balance sheet at current exchange rates, the overall outcome could be a very complex fabric of precautionary arrangements indeed.

One should keep in mind here that such arrangements are in fact identical to the services that a well-functioning market for forward currency transactions is supposed in theory to perform. So far such a market has not been developed. However, firms operating in many countries can in practice provide the same kind of hedging or insurance internally if they are large enough.[1] If expectations as to future parity changes are systematically in one direction, the company can of course bias its arrangements with a view to earning a profit from the expected parity change. In a forward market such one-way expectations would be reflected in the costs for forward coverage, often making such coverage prohibitively expensive for all except those who maintain a set of expectations that differs from those of the market.

The complexities involved on the risk-taking side are well illustrated by a Swedish company thinking of borrowing medium term on the Eurodollar market. The company was offered the choice of changing denomination between six currencies (at the market interest rate) every sixth month. However, it had to decide now in what currency to terminate the contract five years from now.

6. Closing the future accounts - the investment budget

We have now accounted for the determination in the plan (short term or long term) of all entries necessary to close the accounts on the planning horizon. In order

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1) Incidentally, some large firms in the sample operated similar internal "insurance" schemes for buildings, machinery, cars and other equipment. When ten or more production plants were being operated insurance costs had been found to be so high as to suggest that the company plan to absorb the risk internally only identifying major risks to the entire corporate entity in their insurance contracts.

to straighten out somewhat the conceptual framework of planning, I intend to extract from the comprehensive plan an element often met with in management literature, namely the investment plan. The observant reader will have noticed already that within the comprehensive plan properly closed and consolidated in the way described above, no investment budget or plan can exist as an entity independent of all other elements of the plan. Also, the concept of an investment plan is often confused with the appropriations plan or the appropriations procedure, which is something quite different.

Overlooking the fact that the final determination of the plan is often an iterative process sometimes involving several steps (trials), we repeat here the causal approach in reaching a first approximation to the plan. Table 7:2 provides the blueprint for our analysis. It is in fact a further breakdown of Diagram I:1 B in Chapter I.

The initial step taken in work on the plan - the most frequent one met with - is the determination of the sales plan by a proper balancing of the cost-sales relationship for various sales-level alternatives. Once this "decision" is taken, planners proceed on the basis of a fixed, single-valued sales and costprojection. This was the initial confrontation with the world external to the firm. Then followed a number of endogenous steps based essentially on internal data on the mechanics of the firm's organization. To the right in the diagram gross business profits appear as the difference between sales and costs. After provision for taxes and dividends etc[1] have been made, gross business saving (plowback, internal retentions) is arrived at.

To the left in the diagram the sales and costprojection gives a preliminary investment plan including the net accumulation of trade assets and debts (to the right and to the left).

All these elements of the plan tie in with one another quite rigidly. This is usually the core of the plan, normally left untouched by later revisions. Sometimes this part of the spending side (the left hand side) is termed mandatory in the planning documents.

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1) We overlook the fact that some tax-deductible interest payments will result from later borrowing decisions. This interdependency was usually overlooked in the formal planning routines I had the opportunity to study.

Rather independently of the cost and sales projections, additional spending proposals are entered with the purpose of providing capacity for production and sales growth beyond the formal planning horizon. They obviously bulk larger on the spending (cash-outflow) side the closer at hand the horizon, and the difference is apparent if comparison is made between the budget and the long-term (usually 5 year) plan.

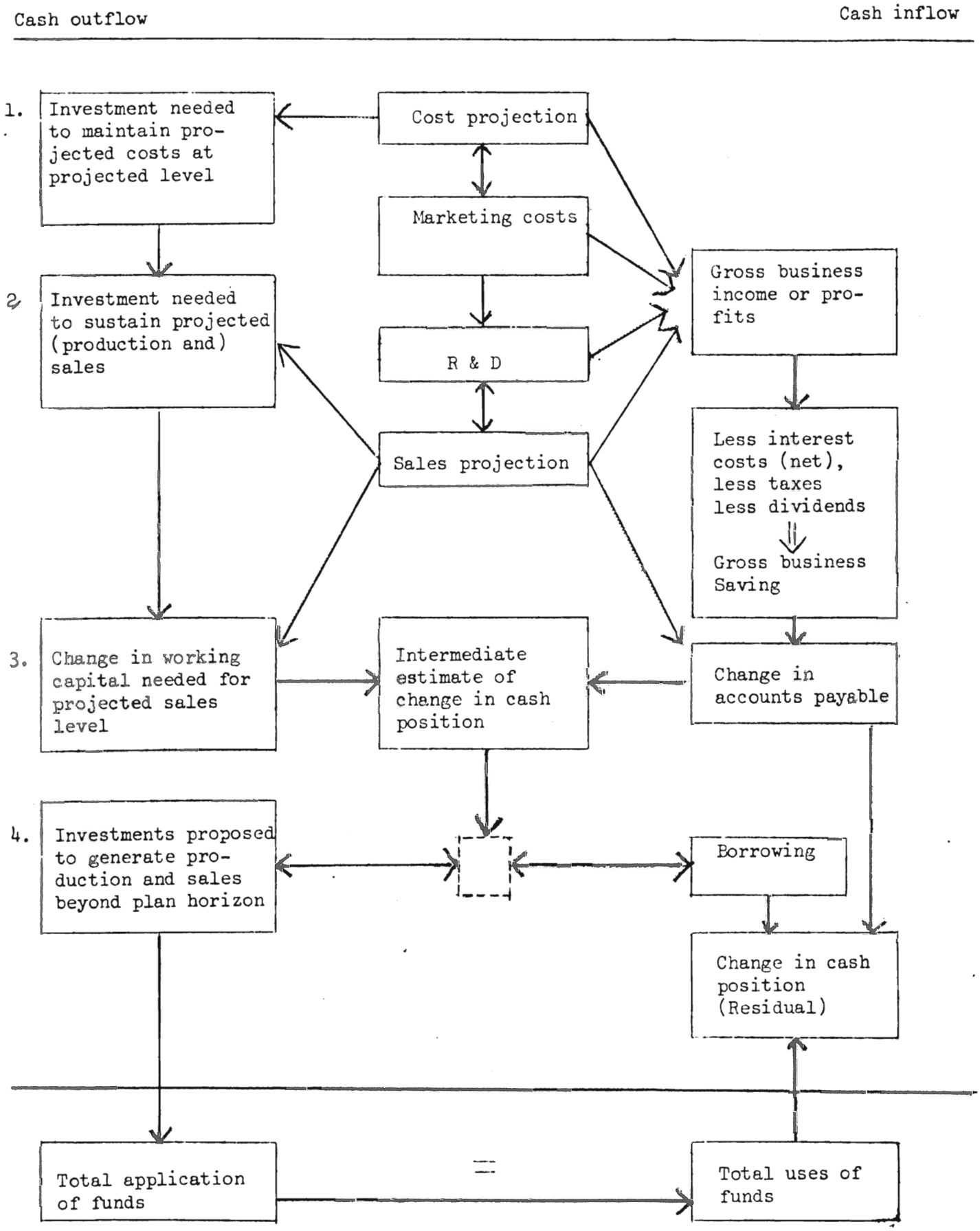
For one thing, this last bundle of spending proposals is a flexible element on the spending side. Secondly, the sum total of spending proposals - at least in the first iterative step - has a tendency to exceed available internal resources expected to be generated on a current basis; i.e. gross saving.

To equate the two sides, provisions for external finance or a reduction in liquidity has to be planned for on the financing side, or a reduction in spending has to be enforced, or both.

Again, this is a confrontation with the world external to the firm. We noted already in the previous section that external financing, for one thing, was a matter normally settled outside the planning department. Secondly, it was a decision much influenced by the current situation in the markets for credit and balance sheet considerations. There were exceptions to this rule, of course, but common practice was to establish a certain minimum cash position and to make known to planners in rough terms the amount of external finance available for allocation to the divisions. Then followed, as a rule, a series of dialogues between planners and profit-centre managers until investment proposals had been fitted into the frame of available finance. The nature of this trimming procedure and the methods applied will be described in Chapters VIII and IX.

Sometimes this trimming procedure involves the employment of rather sophisticated and numerically specified rate-of-return considerations, but normally various rules of thumb constitute the basic method. This is probably a rather convenient and labour-saving device for running the planning system if management is confident enough - or rather if there are reasons for management to be confident enough - in the future; i.e if there are no reasons other than management and technical ones to bother about which opportunities should be exploited and in what order since they all yield returns above required rates. This is all fine for firms happening to be located in booming product markets. The same method may be disastrous in the long run for firms operating in stagnating markets, if not discovered in time by other means than a faulty planning scheme. And above all, such a deficient

Table VII:2 Ex ante flow-of-funds chart



planning scheme is devoid of one of the important prerequisites for the proper functioning as an efficient allocation guide into the future - and yet its presence is all too common.

In conclusion then, a basic investment program can - and usually is - derived from the sales projection, which is fixed at an earlier stage in the work on the plan. On top of this investment program there is an additional investment plan primarily affecting capacity and sales beyond the plan horizon. If revisions have to be made, investments incorporated in the production and sales program are usually the last to suffer. At the same time we have indicated the sensitivity of the additional investment provisions for the future (beyond the horizon) to the expected (or planned) availability to the firm of external finance. The closer the plan horizon, the larger the relative proportion of such provisions for the future, and hence the larger the possibility that such investments will be postponed beyond the plan horizon.

SUPPLEMENTS TO CHAPTERS IV THROUGH VI

S 1 Managing the comprehensive CHQ plan

In this supplement we will illustrate in more detail how a comprehensive CHQ plan may be put together. We proceed through three stages of simplification. First a rather detailed account of how basic data collected at division level is put together and consolidated into a comprehensive plan at CHQ. The account starts with the set of standard forms that divisions are normally required to complete at least one, often several times a year and calculation procedures used to consolidate the plan are illustrated.

The standard forms given as illustration do not by far give the details of the standard forms actually used. Still the standard forms and the calculation procedures shown represent a rather sophisticated version of a planning set-up joining together several facets of planning procedures only met with in its entirety in a small number of the firms studied. This is the same as to say that the degree of sophistication in planning has very little to do with the amount of detail of the data assembled in the planning process but rather depends on how the data are analysed and put to use.

Second, the contents of the standard forms are formalized in a block-recursive scheme with external decisions, checks and revisions indicated by open ends and loops. In principle this second step represents a rather involved formal simulation model of planning. With some further specification it is fully capable of numerical application. One such very simple instance of specification constitutes the third step. Loops and open ends are eliminated from step two. This allows an "analytical" formulation of some properties of the "model" illustrating the case when the plan is always realized as planned ex post.

It should be emphasized that we are still concerned with the making of a plan only. The relationship between planning, decision making and behaviour has not yet been treated.

Costing is crucial when the initial sales-profit plan is put together. We have mentioned already that this procedure is an ingenious short-cut (applied 100 percent) that allows planners to by-pass a number of intricate problems associated with the specification of the aggregate production set-up of the firm organization (e.g the treatment of "capital" and the transformation from a purely

profit-financial growth plan expressed in current prices to the specification of an aggregate production system). We illustrate by deriving from an actual case of costing met with the aggregate production function that is compatible with this particular costing procedure.

We conclude the supplement by a brief section on computers and financial models in planning.

S2. A set of standard forms - division level

A. Sales and cost plan

(Break down of (1) - (3) in profit plan B. below.)

1. Sales plan;

	year									
	1		2		3		4		5	
	quantities (q)	prices (p)	q	p	q	p	q	p	q	p
Product										
1										
2										
.										
.										
.										
.										
.										
n										
Total sales value										

2. Cost plan - estimates of cost inflation

	(1)	(2)	(3)	(4)	(5)	(6)
Nature of expense percentage change in unit price	Percent of total costs, present year (weights)	Percentage change in unit price per year times (1)				
		1	2	3	4	5
A Raw materials, semi-finished products and services etc (+)						
B wages and social charges a) increase in charges per unit of input (+) b) calculated increase in productivity (-)						
C Purchased finished products (+)						
D Total increase in costs per unit of input ($\Delta C/C$ in (4), S, 5A)	100 %					

Comments; Cost plan 2 is sometimes made up for each individual product or group of products (manufactured at the same production line) in section 1. However, normally table 2 applies to a division. If consolidated for a section or division of the firm or for the entire firm it yields (at the bottom line) an index of cost-inflation corrected for productivity improvements (see S5) and defined for a fixed level of production. As long as a cost-plan designed as a linear input-output system with no substitution possibilities on the input side is a fair description of the firm production set-up no problems occur. However, the input quantities, for one thing, have to be approximately consistent with the composition of output. Secondly, besides being dependent upon investment spending in the past, productivity change also depends on the composition of output.

If now -for each individual product - expected quantities to be sold are explicitly entered, knowledge of the existing production structure should yield input quantities needed (raw-materials, people etc.). Applying the factor price inflation index from section 2 expected costs to produce the quantities in section 1 can be calculated and for each product a consolidated sales- and profit plan may be put together. For further explanation of table 2 see supplement 5.

3. Consolidated plan

Product		year 1	2	3	4	5
1	Sales value					
	- costs					
	Gross profit (or profit margin)					
2	etc....					

Total Division profit plan

Total Sales Value					
Total costs of goods sold					
Total operating profits					

Comments: The implications of a frequently used costing principle for this table will be discussed in section S5.

B. Profit plan

Section (1) - operations

	Year				
	1	2	3	4	5
1) Sales net					
2) Cost of goods sold					
3) Gross profit (1)-(2)					
4) Selling and administrative expenses					
5) R & D expenses					
6) operating income ((3)-(4))					
7) operating income in percent of sales					
8) (cost) calculated depreciation+)					
9) net operating income ((6)-(8))					

Section (2) - financing

	Year				
	1	2	3	4	5
10) interest income					
11) other non-operating income					
12) Total non-operating income					
13) interest expenses					
14) other non-operating expenses					
15) Total non-operating expenses					

Section (3) - consolidation

16) operating income net (=(9))					
17) + adjustment for non-operating income and expense ((12)-(15))					
18) profit before taxes					
19) provision for taxes+), ++)					
20) Net profit+), ++)					
21) Dividends++)					

+) This form applies to U.S. firms in particular were calculated depreciation on depreciable assets normally were the same as those estimated for taxation purposes.

++) Note that entries 19), 20) and 21) do not apply to divisions.

C. Cash-flow-plan

Sources

	Year				
	1	2	3	4	5
1) + operating income					
2) + non-operating income (net)					
3) - Taxes					
4) - Dividends					
5) Total internal sources (see form B)					
6) increase in issued share capital (cash-payments)					
7) New long term loans					
8) New short term loans					
9) increase in accounts payable (decrease (-))					
(10) Total borrowing ((7)+(8)+					
11) Total sources ((5)+(6)+(10))					
Applications					
(12) amortization payments					
(13) increase in accounts receivable (decrease (-))					
14) increase in inventories (decrease(-))					
15) increase in other current assets					
16) increase in current assets total ((13)+(14)+(15))					
17) plant and property acquisitions (investment plan (see form D)					
18) investments in capital assets total ((12)+(16)+(17))					
19) change in liquid accounts ((11)-(18))					
(20) liquid accounts, stocks end of period					

D. Investment plan (examples relating to plant and property aquisitions)

Example 1

	Year				
	1	2	3	4	5
1) Necessary to realize sales and production plan					
2) Other					
Total					

Example 2
expenditures necessary to

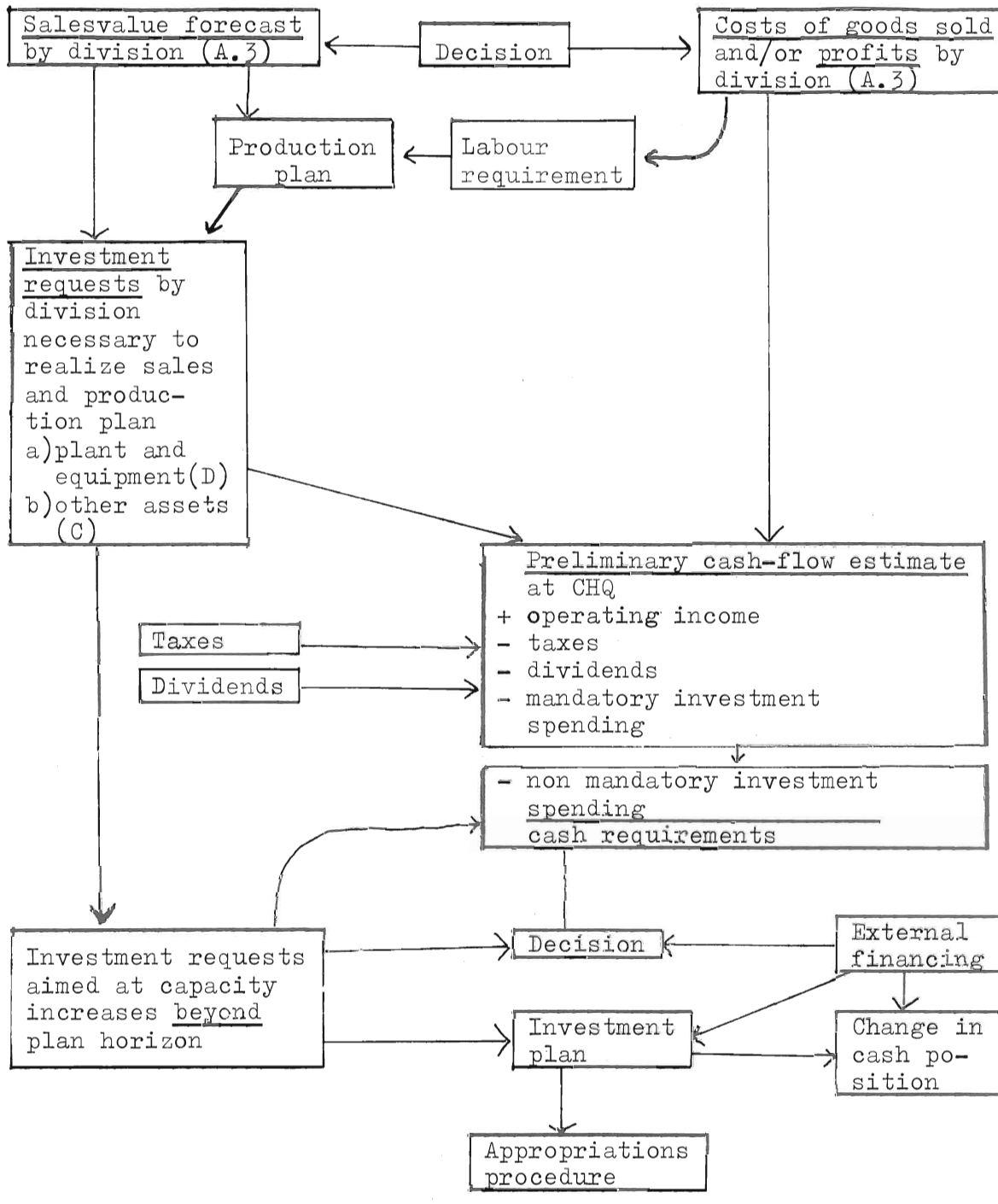
	Year				
	1	2	3	4	5
1) Keep plant operating (marginal operation)+)					
2) Meet sales requirements (volume)					
3) Equipment for new products					
4) cost reducing investments					
5) Non operating upkeep and improvement					
6) Contingency					
Total investment expenditures					

+) defined e.g. as reinvestment spending needed to preserve the present cost structure at the present output level and present wages and prices. Normally, instructions accompanying the forms to be completed at division level were not as explicit as this. Reference was rather given to "established practices" that might vary between divisions but were "known by experience to CHQ planners".

E. Consolidation at CHQ

In this section we will illustrate how division data collected on standard forms similar to those presented in the previous section may be used and consolidated at CHQ. For simplicity we work with an abstraction of a firm with no equity financing (planned for), no overhead expences separated from current costs, no spending of investment nature (e.g. on R & D) other than plant and machinery acquisitions and no current income and costs other than what is associated with sales and production and interest on loans.

Capital letters and figures within brackets refer to the standard forms above.


Salesvalue forecast by division (A.3)
Decision
Costs of goods sold and/or profits by division (A.3)
Production plan
Labour requirement
Investment requests by division necessary to realize sales and production plan
a)plant and equipment(D)
b)other assets (C)
Preliminary cash-flow estimate
at CHQ
+ operating income
- taxes
- dividends
- mandatory investment spending
Taxes
Dividends
- non mandatory investment spending
cash requirements
Investment requests aimed at capacity increases beyond plan horizon
Decision
External financing
Investment plan
Change in cash position
Appropriations procedure

§3. A formalized CHQ-planning model

3. A. Symbols and definitions

(1) $m = \frac{S-C}{S}$ profit margin

(2) $\Pi = S - C$ operating profits

(3) $A = \theta S$ current assets

(4) $K = \xi S$ production equipment

(5) $\Delta K^T + \delta K^T = I$ gross investment spending on production equipment

(6) $I = I^o + I^{oo}$

(7) $A^T = A + K^T + L$ Total assets valued at replacement prices

(8) $R = m \frac{S}{A^T} - \delta$ rate of return on total assets

(9) $IN = r_1 A - r_2 D$ interest costs net

(10) $T = S(\Pi - \delta K - IN)$ corporate income tax bill

i; number of division

t; time period

δ; depreciation factor

H; time Horizon

S^p; sales (value) plan

C; operating costs

I^o; plant and equipment acquisities needed to realize S^P

I^{oo}; additional plant and equipment acquisitions needed to sustain operation at "desired" levels beyond H.

p; investment goods price

r_1; average lending rate

r_2; average borrowing rate

D; debt

L; level of liquid assets

$X \longrightarrow y$ stands for "y follows from X" in the plan.

$X \dashrightarrow y$ indicates that a decision external to the formal plan is needed to determine y from X

3. B. Block recursive planning model

I. Planning step I (Sales - profit plan)

$\{S^p_{i,t}\} \leftarrow\!\!\!\!\!\!\!\!\!\!\!\quad + \rightarrow \{S^p_{i,t}, m_{i,t}\}$ $\quad t = 1, \dots T$, $i = 1, \dots N$

Decision: Evaluate $\{S^p, m\}$ against pre-set profit standards

II. Planning step II (Capital resource use plan)

$\{S^p_{i,t}\} \longrightarrow \{I^o_{i,t}, \Delta A_{i,t}\}$

$\longrightarrow\!\!\!\!\!\!\!\!\!\!\!\!+\!\!\!\! \quad \{I^{oo}_{i,t}\}$

III. Planning step III (Division cash-flow plan)

a) cash outflow

$$\underbrace{I^o_{i,t} + I^{oo}_{i,t}}_{I_{i,t}} + \Delta A_{i,t}$$

b) cash inflow

$$\eta^p$$

c) division investment budget

$E^x_{i,t}$=External contribution needed = $I_{i,t} + \Delta A_{i,t} - \eta^p_{i,t}$

$\longrightarrow\!\!\!\!\!\!\!\!\!\!\!\!+\!\!\!\! \quad \{E^x$, prior requirement$\}$

Possible decisions: 1) OK (Rare)

2) Go back to stage II. Adjust I^{oo} and possibly I^o (frequent)

3) Go back to stage I. Revise sales and profit plan (very rare)

IV.*) Planning step IV (preliminary R o R check)

$\{S^{p}_{i,t}, m_{i,t}, I_{i,t}, \Delta A_{i,t}, \delta_i\} \longrightarrow \{R_{i,t}\}$

possible decision; 1) Evaluate R against pre-set (R o R) profitability standards.

2) Compare R_i

3) Go back to step II and revise

4) Go back to step I and revise

*) In the majority of interview cases this step was passed over. The m check in step I was considered sufficient. This step will be discussed in detail in chapter VIII.

V. Planning step V (CHQ consolidation of step III)

$\dashrightarrow \{r_{1t}, r_{2t}\} \longrightarrow \{D_{-t}, A_{-t}, E^{x}_{t}\} \longrightarrow \{IN\}$

$\{\eta_t, IN_t, K_t, \delta_t\} \longrightarrow \{T\}$

$\dashrightarrow \{DIV\}$

$\left\{\begin{array}{l}\text{Investment financing}\\ \text{available from in-}\\ \text{ternal sources}\end{array}\right\} = \Psi_t = \eta_t - \Delta A - IN - T - DIV$

$\{I_t\} \longleftrightarrow \{\Psi_t, \Delta \bar{L}, B\} \longrightarrow \{I^{p}_{t}, B_t\}$

Possible decision; a) If $\Delta \bar{L} + B < \Psi$ go back to step II and revise (frequent)

b) Go back to step I and revise (extremely rare)

S4. Further simplification - CHQ plan

Step I (profit function)

$$\Pi = m\,S \tag{1}$$

Step II and III (capital requirement plan)

$$K_1 = k_1\,S \qquad \text{production equipment} \tag{2}^{*)}$$

$$K_2 = k_2\,S \qquad \text{current assets} \tag{3}$$

$$A = K_1 + K_2 \tag{4}$$

$$\left\{\begin{matrix}\text{gross-}\\\text{invest-}\\\text{ment}\end{matrix}\right\} = I = I^{o} + I^{oo} = p\Delta\bar{K}_1 + \delta K \tag{5}$$

Step III (Cash flow analysis)

$$\left\{\begin{matrix}\text{Total appli-}\\\text{cation of}\\\text{funds}\end{matrix}\right\} = \Delta K_2 + I \tag{6}^{**)}$$

$$\left\{\begin{matrix}\text{Internally gene-}\\\text{rated funds}\\\text{available}\end{matrix}\right\} = \Pi - (DIV) - (T) - (rD) \tag{7}$$

$$\left\{\begin{matrix}\text{Internal funds available}\\\text{for investment in pro-}\\\text{duction equipment}^{***)}\end{matrix}\right\} = \varphi = \Pi - (DIV) - (T) - (rD) - \Delta K_2 \tag{8}$$

Step IV (external financing)

$$I = \varphi + \Delta D \tag{9}$$

---

*) Note that this simplification means that the value of assets is supposed to be directly proportional to sales - not to the volume of assets and sales respectively. When expressed in volume terms and when S` represents value added rather than sales k_1 would stand for the capital-output ratio. Note, however, that we have not assumed k_1 (or k_2) to be constant over time. If prices on investment goods and products develop differently and when the capital-output ratio is constant one could of course also let k_1 change. For the purpose of this exposition, however, we disregard this complication.

**) Note here that assets of type K_1 may appreciate in value (capital gains). We assume that this does not happen as far as current assets (K_2) are concerned.

***) Note that formulation (8) presumes that investments in current assets is regarded as a mandatory investment expenditure. Cf. section VII:4.

RoR and growth, no taxes and no external financing

$$\left.\begin{matrix}\text{Rate of return}\\ \text{on total assets}\\ \text{(before tax)}\end{matrix}\right\} = R = \frac{\Pi - \delta K_{-1}}{A_{-1}} = m\frac{S}{A} - \delta\frac{K_{-1}}{A_{-1}} \qquad (10)$$

(5), (6) and (7) gives the following cash-flow identity:

$$\underbrace{\Pi - (DIV)}_{\text{saving}} = \underbrace{\Delta K_1 + \delta K_{-1} - \Delta p\bar{K}_{-1}}_{I} + \Delta K_2$$

From (2), (3) and (10);

$$R = \frac{\Pi - \delta K_{-1}}{A_{-1}} = \frac{\Delta A}{A} - \frac{\Delta p\bar{K}_1}{A} + \frac{DIV}{A}$$

or;

$$\frac{\Delta A}{A} = R + \frac{\Delta p\bar{K}_1}{K_1+K_2} - \frac{DIV}{A} \qquad (11)$$

if $k_2 = 0$ and all assets appreciate in value (11) simplifies into:

$$\frac{\Delta A}{A} = R + \frac{\Delta p}{P} - \frac{DIV}{A} \qquad (11B)$$

i.e. the value growth in total assets is the rate of return realized plus capital gains on assets minus the proportion of total assets distributed as dividends.

RoR and growth, no taxes

$$\left.\begin{matrix}\text{Rate of return}\\ \text{on net worth}\end{matrix}\right\} \quad R^W = \frac{\Pi - \delta K_{-1} - rD}{\underbrace{A-D}_{W}} = R\frac{A}{W} - r\frac{D}{W} =$$

$$= R + (R - r)\frac{D}{W} \qquad (12)$$

Cash flow identity:

$$\underbrace{\Pi - rD - (DIV)}_{\text{saving}} + \Delta D = \underbrace{\Delta K_1 + \delta K_{-1} - \Delta p\bar{K}_{-1}}_{I} + \Delta K_2$$

$$R^W = \frac{\Pi - \delta K_{-1} - rD}{W} = \frac{\Delta A}{W} - \frac{\Delta p\bar{K}_1}{W} + \frac{DIV}{W} - \frac{\Delta D}{W}$$

but: $\Delta A - \Delta D = \Delta W$

Thus; $$\frac{\Delta W}{W} = R^W + \frac{\Delta p\bar{K}_1}{W} + \frac{\Delta D - (DIV)}{W} \qquad (13)$$

S 5. Costing and Production Structure

5 A. An illustration of a costing principle used frequently

Suppose (for simplicity) that total costs (C) are defined by;

$$C = wL + r\,I \tag{1}$$

w = wage level per unit of labour input L

r = price per unit of input goods I.

For the purpose of deriving a standard cost estimate per unit of Q fix the level of production to $\bar{Q}$ and consequently the volume of input goods needed to $\bar{I}$.

Thus from (1);

$$\Delta C = \Delta wL + \Delta Lw + \Delta r\ \bar{I} =$$

$$= \frac{\Delta w}{w}(wL) - \frac{\Delta L}{L}(wL) + \frac{\Delta r}{r}(r\bar{I})$$

since $\Delta\left(\frac{Q}{L}\right) = (-1)\frac{\bar{Q}}{L}\cdot\frac{\Delta L}{L}$ one obtains;

$$\delta_{C,\bar{Q}} = \delta_w\left(\frac{wL}{C}\right) - \delta_{\ddot{a}}\left(\frac{wL}{C}\right) + \delta_r\left(\frac{r\bar{I}}{C}\right) \tag{2}$$

where δ denotes growth rates and more specifically

$$\delta_{\ddot{a}} = \frac{\Delta\left(\frac{\bar{Q}}{L}\right)}{\frac{\bar{Q}}{L}} = -\frac{\Delta L}{L} \tag{3}$$

or the change in average labour productivity when Q is fixed.

(2) is the same as;

$$\delta_{C,\bar{Q}} = (\delta_w - \delta_{\ddot{a}})\frac{wL}{C} + \delta_r\frac{r\bar{I}}{C} = \alpha\,(\delta_w - \delta_{\ddot{a}}) + \delta_r\beta \tag{4}$$

Under the assumptions of this example percentage changes in wages and labour productivity may be netted as in table A 2. in supplement S 2. δ_w and δ_r denote price changes under A and B a) respectively; $\delta_{\ddot{a}}$ productivity change under B b) and $^{wL}/_{C}$ and $r\bar{I}/_{C}$ the weights in column (1) assumed to be constant. $\delta_{C,\bar{Q}}$ stands for the total weighted cost change per unit of input at a fixed level of production.

With the assumptions used one can construct a measure of cost inflation (a "price index") without estimating the hypothetical reduction in employment possible by way of productivity improvements by inserting instead a direct estimate of productivity change. Cost-shares (α and β) during a previous period can then be used as weights.

5 B. A production volume index

A common practice is to measure the change in production volume for individual product lines or production aggregates by a so called standard cost index. The idea is to compute an index of total costs net of changes in input prices. Suppose we apply the method of measuring change in input prices given above. Let both Q and I change. After total differentiation of (1) we obtain;

$$\delta_C = \frac{\Delta C}{C} = (\delta_w + \delta_r)\,\alpha + (\delta_L + \delta_I)\beta \qquad (5)$$

where $\alpha = \frac{wL}{C}$, $\beta = \frac{rI}{C}$, $\alpha + \beta = 1$

Since Q is no longer held constant ΔC and ΔL is different in (5) and (2). Subtracting (4) from (5) one obtains the cost change associated with production change only, input prices being held constant.

$$\delta_C - \delta_{C,\bar{Q}} = \alpha\,\delta_L + \beta\delta_I + \alpha\delta_{\ddot{a}} \qquad (6)$$

So defined, "production change" is represented by a weighted average of changes in labour input, changes in input I and productivity change $\delta_{\ddot{a}}$, cost shares being used as weights.

Even though this may sound reasonable, it should be of some interest to check how this measure deviates from the proper one. Thus by definition:

$$pQ = \pi + C \qquad (7)$$

π stands for profits, p for product prices and Q for production volume.

After total differentiation and division by pQ we obtain:

$$\delta_Q = \frac{\Delta Q}{pQ} - \delta_p + \alpha(\delta_w + \delta_L) + \beta(\delta_r + \delta_I) \qquad (8)$$

Consequently, the difference between "production indexes" (6) and (8) is defined by:

$$\delta_Q - (\delta_C - \delta_{C,\bar{Q}}) = \frac{\Delta\pi}{pQ} - \delta_p + \alpha\delta_w + \beta\delta_r - \alpha\delta_{\ddot{a}} \qquad (9)$$

This can be demonstrated to be equal to zero under several sets of conditions. One such condition is the case when there are no profits in the system ($\pi = 0$), when no change in inputs I is associated with production change and when product prices change in direct proportion to the cost inflation index (4). The problem with "no profits" can be solved by letting I represent capital inputs in the production of Q and r the cost of capital. Then β will represent the profit margin and total costs exhaust production value. If now w, L, r and I are defined in such a manner that α and β become constant coefficients we know from a basic theorem that (8) corresponds to a power function of the kind:

$$Q = C\, L^{\alpha} I^{\beta} \qquad (10)$$

where C is an integration constant. (10) is usually called a "Cobb-Douglas" production function in a context like this one.

However, as a rule one would expect the relative movement of product and factor input prices to be such that (9) differs from zero. Also, one could not expect α and β to remain stable over time which means that the cumulation of "production growth" rates (6) over time will be seriously biased if changes in α and β over time are systematic.

S 6 Corporate model building and computer applications

Any formal or numerically specified representation of a corporate budgeting or comprehensive long term planning systems accords with what could reasonably be called a "corporate model". For instance, a corporate budget system can normally be broken down into a number of interrelated numerical sub-routines that can be stored in a computer and that are as well tractable for analysis and simulation. The basic requirement of a corporate model is that it be a reasonable (formal or numerical) description of the business organization.

However, in the language of business economists, the term "corporate model" seems to have been reserved for something much more restricted than the formalization of the budget or the formal planning system.

The term "model" often carries the notion of a simplified description of the firm; simplified both in the sense of abstracting from details of the corporate structure and from the description of the company given by the structure of the budget or long-term planning system. Often, but not always, the term is applied to an aggregate and usually grossly simplified representation of the financial accounting system of the firm. For these and other reasons it is quite useful to keep formal budgeting or planning under the same heading as corporate model-building. We may refer to the typical corporate model as a self-contained model system which automatically produces a decision or a plan from a specified set of input assumptions. The budget or planning process on the other hand can be viewed as an open model system where management has to interact for a solution or a plan to come forward.

Principally, two different purposes of model building can be distinguished; simulation and optimization.

In the simulation model a set of structural and numerically specified relations are used to simulate consequences for the firm (liquidity, profitability, etc.) given various alternative sets of assumptions (sales forecasts, profit margin estimates etc.). The formal language used often is differential calculus or a system of difference equations. The level of aggregation is high.[1] The approach is dynamic in the sense that final outcomes from the simulations are a series of time-paths into the future and that the output for one period usually is based on the outputs of the immediately preceding period. Since (1) a "recursive"

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[1] In Gershefski (1968) a good example of this type of model is found.

structure of the type illustrated i Diagram I:1 B seems to dominate such models and since (2) typical interdependence links such as i.a. the links between investment spending and production capacity are usually taken care of outside the model, feed-back features play a relatively unimportant role in simulation models built so far. They are usually tied on-to an exogenous input variable (e.g. sales) that is assumed not to be affected by the simulation results. The main feed-back element occurs in the calculation of available financial resources. Since "models" of this kind are often applied to estimate the future needs for external financing from one (or several) future growth/profit paths, that are exogenously given such models often figure under the heading of "financial models".

In at least 10 U.S. and 6 non-U.S. firms some such "model" had been, or was being developed. A couple of firms reported that the usefulness of such models had turned out far below expectations (they were "too simple" or did not answer "relevant questions" etc.) and further work on the model had been discontinued. However, two firms also reported that they were very satisfied with their integrated company - environmental models.

It should be emphasized that these "models" in practice had very little or nothing to do with computerization of budget or planning work.

Very frequently in U.S. firms and often in non-U.S. firms, data compilations in planning work was administered through a computer much in the same way as in accounting work. Data were, however, all the time taken out of the computer for checking, discussion, revision and rechecking again in the way illustrated in section B of supplement S 3. "Computerization" was more a matter of facilitating detailed and laboursome numerical computations than using the planning system for analytical purposes. To "identify" the planning or decision systems in use to-day with existing computer systems[1] thus seems at least somewhat farfetched in connection with current planning technology.

Besides the fact, that calculation procedures were much more aggregated in "financial models" than in budget or planning work "intermediate external decisions" were always passed over in a very superficial way.[2]

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[1] As e.g. in Glans, Grad, Holstein, Meyers and Schmidt, Management Systems, New York 1968.

[2] Even though a computer technology exists to accomodate far more sophisticated and involved decision problems than those met with in budgeting and planning work the present status of formalization of decision procedures internal to the plan and before actual commitment decisions have to be taken leaves a long way to go before we reach the well structured world depicted in Simon's The Shape of Automation for People and Management (1965, Chapter 3) even among very sophisticated firms.

If designed for such purposes models of the kind described above can be employed for optimization purposes by a series of trial and error simulation runs. However, practically all models met with in this interview series were too aggregated to serve any useful such purpose. The choice between crucial variables as sales growth and investment spending was always settled outside the model. At best, simulation experiments could be used to illustrate the profit and financial consequences for the entire firm of alternative sales-growth mixes at division level.[1] The most beneficial application of corporate models so far seems to be at the initial case of planning work in a manner similar to that reported in a case on p. 201. Planning to a large extent consists in negotiations aimed at reaching a compromise between CHQ requirements and division capabilities. In order not to be owerpowered by shop-floor details CHQ needs an instrument to support their arguments. The simplest of such instruments - used frequently among U.S. firms - is an analysis of historical performance trends. In some 6 or 7 firms of the sample, however, a divisionalized corporate financial model was employed for such purposes.

Optimization has to be viewed in at least two dimensions. It can take place internally between divisions in a divisionalized model or over time in the same model or in an aggregate model. In effect, optimization means applying automated search or decision rules to simulation models. The same optimization procedure can also be engineered through the budget (or planning) routines by making several budgets on the basis of alternative input assumptions. The amount of detail that enters into budget work would perhaps make such budget simulations very informative. However, the management work-load involved practically always prevents alternative planning in this sense. It should be remembered that alternative planning or budget simulation nevertheless takes place currently in one very important sense. In all firms interviewed the budget was revised entirely at least once a year, often every half year, sometimes every quarter and in a couple of U.S. firms every month. This time-iterative process combined with an elaborate control and checking-against-the-budget probably is a most efficient procedure since it allows an extensive management involvement of a kind that is impossible with a pure model approach. The problem of allocation and optimization will be dealt with further in the next two chapters.

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1) This seems to be at variance with Hammonds (1972) suggestion that the reason why "so many planning models" have been only partial successes or outright failures "lies on the managerial rather than the technical side". The answer suggested by evidence from this study is rather that the computer systems people and the CHQ people have failed to build company models that meet the specifications and handles the problems of planners or decision makers. The reason for this can hardly be the "technical state" of computer art. Also cf. Budgetering och planering i USA - en reserapport (Stockholm 1973, p. 32).

Besides the types of "optimization procedures" described above, optimization models at the level of the entire business organization seems to be extremely rare or non-existing.[1] Formal systems approaches by the help of which a computer is allowed to trace down the best solution to a well structured problem, without human involvement during the optimization process, seems to be restricted almost entirely to subroutines within the budget or planning process or to current operating problems of the firm. As such they fall outside the scope of this study. However, rapsodic evidence from the interviews indicate their freuqent presence in e.g. inventory management, production scheduling, distribution and transports - and at times cash-management. Here, again, output variables from the comprehensive budget figure as input assumptions or "forecasts" for the optimization procedure.

It should finally be mentioned that routine check-ups against the budget by quarter or month through the computer were frequent practice in U.S. firms. Often print-outs were standardized into a format convenient for analysis or comparison. Sometimes the computer was programmed to select "important" deviations between budgeted entries and realizations according to pre-set criteria and to weed out all other numerical information.

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1) This is also a conclusion reported by Hammond (1972, p. 114). The difficulties involved are well (and perhaps unintentionally) illustrated in Rapoport-Drews (1962). On the other hand a good example on how a well defined and well structured decision problem referring to one particular, operational aspect of the firm can be successfully "computer solved", is reported on in Anderson-Gilmartin-Milam (1968). American Airlines (a centralized and almost single product company) combined its demand forecast and so called schedule evaluation models to determine the "optimum" desired features of a new aircraft (passenger capacity, speed, needed airport facilities etc.).

PART III

ANALYSIS AND COMPARISON

VIII PROFITABILITY AND PLANNED PERFORMANCE

So far we have only touched upon the ways by which rate-of-return considerations enter planning. The reason is that such considerations, if formal normally fall outside of or have not been systematically integrated with comprehensive planning. Usually, systematic rate-of-return considerations enter the formal planning scheme indirectly by way of proxies. We noted i.a. in Chapter 5 that the sales plan frequently was fixed on the basis of profit margin criteria. The first section of this chapter will be devoted to an analysis of the implications of this procedure.

In a comprehensive plan the ex-ante data collected may be used for a more elaborate ex-ante profitability analysis of various product lines or entire divisions within the company organization. In some, not many, firms such an analysis was used as a basis for consolidating the total plan as an alternative to the fixing of certain planned variables through profit-margin criteria. In section two of this chapter we demonstrate how such a trimming procedure was performed in two cases and compare the implications from an allocation point of view with the earlier profit-margin method.

Still, formal or numerical rate-of-return considerations occurred most frequently in respect of individual investment projects and within the appropriations procedure in particular. Even though these matters were in fact peripheral to this study they have to be commented upon.

The different ways by which various types of investment proposals were treated as far as rate-of-return considerations go are important for an understanding of firm policies woven into planning routines. The peculiar emphasis placed on investments in machinery and construction evident from the appropriations procedure is at times hard to understand in full. For instance, in one firm where a $ 10.000 machinery purchase had to go all the way to the Board for authorization, at the same time 10 highly qualified persons could be hired to work for a year or two on a R & D project without any permission being asked outside the division or profit centre. Two sections are devoted to matters like these and the chapter winds up with sections on alternative planning, transfer pricing and the frequent practice of treating large, investment proposals separately from comprehensive planning.

1. Profit margin criteria

The particular emphasis on profit margin criteria in the fixing of the sales plan recorded in the majority of planning routines deserves special mention. The parallel and frequent practice of informal management interaction with the formal planning processes and backward revisions at various stages of planning (see Chapter 9) make systematic observation on this practice almost impossible. However, a few notes on formal procedures operated can be given and some conclusions as to the rationality of these procedures can be offered.

One argument frequently met with was that the profit-margin is a satisfactory measure or proxy of "profit performance" or of profitability. We have noted already that the fixing of the sales level for the plan is a matter often decided at the level of an individual product line. At this level the profit margin is defined before all overheads. Normally, however, the "profit set up" of production or the amount of capital tied up in production as well as the amount of intermediate deliveries in the sales value is well known to the division or profit centre manager. For him it is fairly easy to evaluate - within the range of his experience (the division) - from the gross profit margins the prospective rate-of-returns to be derived from allocating resources to various lines of production. On the other hand, his experience and his position normally does not enable him to make the same evaluation vis-à-vis other divisions. His sales plan suggestions, however, are seldom passed through the CHQ planning department without some scrutiny and it may perhaps be so that CHQ management has the ability to provide a proper ranking of divisions by profitability from the knowledge of gross profit margins only. At least some notion of this kind must be implicit in the frequent practice of using different and numerically specified gross margin criteria for each profit centre when determining the levels of sales for the plan. By these standards we can talk of allocation decisions in planning; one between product lines within the division and one between divisions at CHQ. However, we report already here (see next section) the experience from those firms going one step further and producing proper rate-of-return estimates, that such a proxy approach by way of gross margins may lead seriously astray if the ultimate purpose is to improve overall profitability.

A more theoretical justification for the application of gross margin criteria can be supplied, however. The proposition is best illustrated for the case where the decision is to vary the level of production without having to apply any new equipment but only currently available factors (material, man-hours etc.). Irrespectively of whether the original investment was a "good" or a "bad" investment

the proper decision of how to make the best use of the equipment should be based on its capacity to cover currently incurred costs. If initial capital stock does not require maintenance or replacement investments before the date of scrapping the decision is easy enough and gross margins provide a satisfactory indicator of the marginal rate-of-return on variations in the rate of activity of the firm.

If such unlikely conditions do not prevail the proper measure would be the gross margin (after correction of sales for intermediate deliveries), gross profits being defined net of repair, maintenance or additional investments needed to maintain or to increase the level of production. I found some variations or partial approaches to measures like these in firms (usually small ones) placing heavy emphasis on profit margin criteria in fixing a division sales level for the budget or the long-term-plan.

When applied at the level of a subsidiary, division or profit centre, profit margin criteria sometimes were designed to approximate average returns to total assets. For one thing profits at this level of aggregation often were computed on a net basis, i.e. net of overheads and depreciation. (See Table V:1 in Chapter V.) If total assets grow in proportion to the level of sales - which was often said to be roughly the case - and equipment life is the same between divisions the two rate-of-return criteria yield identical rankings. It might be helpful to have this demonstrated formally. Let Π represent gross profits, S the level of sales and A total assets. Assume that:

$$A = \alpha S \qquad (1)$$

where α is a proportionality factor, defining the relative amount of capital (assets) tied up per unit of sales value. Define:

$$\Pi = \beta \{....\} S \qquad (2)$$

where β is the gross profit margin. β { }is identified as an action parameter for each production process and (consequently) for each division or profit centre. It may be dependent upon the level of as well as the change in sales and numerous additional factors.[1] Our observation is that firms try to estimate the sales growth, sales level combination that yields a desired β.

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1) We overlook the possibility that β can be raised by the application of more production equipment per unit of output or sales. This of course, would raise α as well.

Also define a measure of the current return to total assets as the ratio between net profits and total assets:

$$R = \frac{\Pi - \rho A}{A} = \frac{\beta - \rho\alpha}{\alpha} \qquad (3)$$

ρ is the fraction of A (the depreciation factor) that is used up each period. Evidently the level of sales (S) can be eliminated from R. However, if β is dependent on S also R is dependent on S.

It is fairly easy to demonstrate that if ρ and α are the same for a number of production lines or divisions and if $(\beta-\rho\alpha) > 0$ then a ranking by β would be identical to a ranking by R. The same is true for the net profit margin $(\beta-\rho\alpha)$ if α (the asset sales relation) is the same between production lines or divisions.

Obviously, both measures β and $(\beta-\rho\alpha)$ disregard variations in capital requirements per unit of sales value (α) and the life of capital equipment between production lines and divisions. In case such measures are used as criteria on where to invest in order to speed up production - which was reported during several interviews - this neglect may be important.[1)]

If ρ and α are known numerically, however, it is fairly easy to adjust the margins according to (3) in order to attain a more reliable ranking yardstick. One only needs to know the approximate numerical properties of ρ and α between divisions. In several firms adjustment formulaes like these were in fact put to use, and when planners said that they knew the profit "set-up" of the division they must have had something similar in mind.

For comparisons over time for one division, rather than between a number of divisions at one point in time the profit margin measure must be more useful. If one can argue that ρ and α remain approximately constant over time for a product line or a division the gross profit margin would be a rough but still biased indicator of average net returns to total assets over time. For positive R a change in β will underestimate a change in R up or down by a factor $\beta/\beta-\rho\alpha$[2)].

Still, any criterion like β, $(\beta-\rho\alpha)$ or R involves a comparison between average returns to invested capital. Past low-profit investments will keep the average down even if new investments on the margin yield very high returns. If the fac-

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1) Note the resemblance between profit margin and "pay-off period" criteria.

2) From (3) $\frac{\Delta R}{R} = \frac{\Delta\beta}{\beta}\left(\frac{\beta}{\beta-\rho\alpha}\right)$.

tors β, ρ and α vary significantly over time this is liable to affect the usefulness of the profit margin as a proxy for profitability. Furthermore there is the intricate problem of how vintages of equipment invested in the past should be valued in money terms and compared with purchase costs for new investment in a measure like R. We will return to this subject later on.

The often present reliance on profit margin criteria in fixing sales levels for the plan no doubt are rather unreliable indicators of profitability if they are the only guidelines. As a rule they are not, however. Nevertheless there is an apparent logical conflict between these formal criteria and the equally often, and normally parallel, presence of sometimes very elaborate formal profitability criteria imposed when it comes to screening individual investment projects. The conflict of logic refers to the consistency between methods used in fixing the investment plan needed to realize the sales plan decided upon on the basis of profit margin criteria and the returns on these derived investment requirements when screened by various profitability criteria in the plan, the budget or the final appropriations procedure. Some such consistency tests may be performed, but I found very little of this in my interviews. On the other hand I found several formal ways of bypassing the problem. We will return to this matter in section 3 below on profitability calculations on individual projects.

Case; Net profit margin criteria (large non-U.S. firm)[1]

The profit margin method employed in a large non-U.S. firm provides a good illustration of the different profit concepts involved and an introduction to the topic of the next section. Profit margins were here calculated at division and subsidiary levels by stages. The first stage was to calculate gross profits Π net of currently incurred variable operating costs in the sense defined by (2) above,[2] and divided by sales to obtain gross profit margins. Next CHQ overheads including R & D spending etc. were apportioned to divisions and subsidiaries by some distribution formulae to arrive at what was called operating income (cf. Tabel V:1).

Step three included the subtraction from operating profits of depreciation charges (D). The depreciation charges were calculated on the basis of life length estimates ($1/\rho$) on the repurchase value of individual equipment (A). Net profit-margins are consequently defined as:

$$\text{Net profit margin} = \frac{\Pi - \rho A}{S} \qquad (4)$$

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1) The description has been somewhat modified for didactic reasons.

2) Incidentally, sales levels (and consequently also profits) at this first stage were calculated under the assumption of "normal" capacity utilization rates. At the next step a cost correction factor for the expected capacity utilization rate was entered explicitly. We pass over this feature in order not to blur the point to be made.

In the fourth calculation step an internal rate of interest charge was subtracted from net profits defined as above. This interest charge was also calculated on total capital employed at division level including an allowed proportion of CHQ overheads. Capital was estimated at repurchase values (A) and a uniform interest rate (r) was applied to all divisions to make interdivisional comparisons possible. r was tied on to the expected long-term borrowing rate. The new net profit margin (m) consequently is defined as:

$$m = \frac{\Pi - \rho A - rA}{S} \qquad (5)$$

Introducing (3) above we obtain:

$$m = (R-r)\frac{A}{S} = (R-r)\,\rho \qquad (6)$$

Consequently the sign of the net profit margin m will indicate whether planned profitability of the division is above or below the interest rate applied. However, m still is no perfect indicator of relative profitability since the factor A/S usually varies between division. As long as the m's are both positive the higher m might very well correspond to a lower rate-of-return R if capital input requirements α are high enough.

Three further comments may be appropriate at this stage. First, implicit in formulae (5) is a capital cost definition:

$$(\rho+r) \qquad (7)$$

per unit of capital input A applied. Since, however, (7) has been defined with respect to A valued at current replacement costs this formulae is slightly misleading. Capital costs are boosted each period by the factor $(\rho+r)$ times the inflationary upgrading of already invested capital and the proper capital cost charge per unit of A employed should in fact read;

$$(\rho+r)\ (1+\text{percentage price change}) \qquad (7B)$$

as it in fact does in the calculation procedures applied in the firm choosen for illustration. This, however, also means that R in (6) has been defined as a real rate of interest net of inflation since no corresponding addition to profits on inflationary capital gains realized on A has been made.

Third, by this calculation method the net profit margin m (in 6) of the entire firm to be positive requires that the real rate-of-return (R) be at least as high as the nominal (inflation dependent) long term borrowing rate r.

2. Rate-of-return criteria - the division level

We concluded in the preceding section that ex-ante gross-profit-margin criteria were commonly used for fixing sales-level estimates to be entered into the budget as well as long run plans. Common practice was to couple this estimation procedure with a later screening of individual investment projects by way of sometimes elaborate but normally rather crude ex-ante rate-of-return estimates. At the profit centre level in about 25 per cent of the U.S. cases some additional criteria were put to use at least partially by way of sub-routines either before profit

centre sales levels were finally fixed or before capital requirements were determined. This holds for formal, or numerically specified, procedures within the planning system. Such formal sub-routines not being put to use in at least another 50 per cent of the U.S. cases informal reviews were superimposed upon the formal planning system in order to attend to the above matter.

In a quarter of the U.S. cases the liquidity consequences arising from a certain sales growth plan were analysed numerically before the sales levels of the plan were definitely fixed for the planning period. This liquidity or rather flow-of-funds analysis being completed the data needed for a rather satisfactory ex-ante profitability analysis at the division level were as a rule (already) compiled. However, such a final ex-ante rate-of-return analysis was very seldom followed through for the purpose of fixing the planned sales level.

Instead, the usual reason for carrying out the profitability analysis at the level of the division or profit centre, was to estimate rather passively the capital requirements arising from the sales plan (already fixed) and if possible to trim them down to pre-set profitability standards. This was fairly systematic practice in about a quarter of the U.S. firms interviewed as long as we refer to the budget. In long-term planning this practice can be reported on in 3 U.S. cases only. Only in two of these the numerically estimated long-term profitability outlook for the profit centre was systematically put to use as a criterion for channelling total available funds to various divisions in the short-run plan. I found evidence of partial approaches combined with ad hoc considerations in 3 more U.S. cases (of the above 6). More than three of these firms produced goods having an average life span shorter than the long term planning period.

As far as I could gather in 17 U.S. firms interviewed no ex-ante rate-of-return estimates at the profit centre level were carried through within the long-term plan until after all relevant variables (sales, investments, etc.) had been more or less definitely fixed for the long term plan as well as the budget. If carried through they appeared as a consequence calculation of the assumptions and judgements entered into the plan. Sometimes the results of such a calculation had come as a surprise to planners out of the work on the plan, and I took note of several remarks on the necessity to improve upon matters in this respect.

As for the remaining 13 U.S. firms I got no information, vague information or I cannot tell from what I got to know. As for non-U.S. firms interviewed evidence of systematic ex-ante rate-of-return calculations at the division level as a means of making decisions on input and output variables of the plan was even more

rare. The same holds for rate-of-return calculations in general at division level including also the determination of the RoR consequences of the plan already fixed.[1)]

Normally, spending proposals delivered to CHQ from profit-centres to be entered into the plan were exaggerated to a varying extent. Normal practice in trimming down such spending proposals to "adequate" levels was to use non-formalized experience on past behaviour of profit centre management to decide upon various "cut down" ratios for the different divisions. One division might be told to "get investments down by 20 per cent", and to come back with a new proposal. The choice in the plan on where exactly to exercise the "cuts" was normally left with the profit centre manager. Within such a routine the problem to allocate resources between divisions and to account for peculiar reporting biases of profit centre managers were mixed in a to me rather confusing way. Surprisingly enough, most planners felt that - nevertheless - this procedure "worked out all right". With investments in this context I mean investments in machinery, equipment and to some extent minor structures. In the plan (short-term or long-term) working capital components were usually derived by the application of predetermined ratios to sales and purchases.

However, in 4 U.S. and 3 non-U.S. cases ex-ante profitability estimates for the profit centre were applied as guidelines to slim down total spending proposals until "satisfactory" levels of ex-ante profitability had been reached. The first stage was to demand from profit centre managment a proposal or account for how this could be achieved. Note here that fixed sales levels were usually left untouched at this first stage. As long as excess spending proposals had been delivered profit centre management in two of the U.S. cases also had to take all the extra trouble to explain in detail and in writing where and how cuts could be made. Besides the constraint of leaving the sales plan untouched they were also urged to leave proposed investments for future production (beyond the planning horizon) untouched in this first step. Proposals submitted might involve a speeded up collection procedure or delayed replacement investments etc. These procedures were comparatively new in all the (4+3) cases cited. Experience was

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1) It should be mentioned here, however, that the interviews span a time period of 5 years. In three of the Swedish firms interviewed after 1971 I found that some very sophisticated ex-ante RoR estimation methods at division level had been introduced recently. So far, however, for two of these firms difficulties were reported (by planners) in getting these methods accepted - or rather understood - at the level of the decision makers (see case below).

told to be that a few planning cycles after the introduction of this method, CHQ planners had noticed a remarkable increase in the "sense of realism" in the making of preliminary plans and spending proposals at the profit centre level. If satisfactory RoR standards could not be met in the first round of cuts in the total investment "plan", a next step might involve a revision of the sales projection and/or postponements of investments for production beyond the planning horizon.

In the first two years after the introduction of this method, CHQ planners felt satisfied not to apply pre-set standards too rigorously. After the introductory years, the experience was that there was no need for any second step nor for the first step, since profit-centre planners had learned from the extra labour imposed upon them by the revisions to present realistic plans from the very beginning.

Before leaving the problem of aggregate ex-ante rate-of-return measurements there are some additional things to comment upon briefly. Only in a couple of cases where such RoR measurements were performed were the calculations marginal; i.e. the return on the additional capital accumulation (including replacements) planned for was not related to the extra generation of profits from that particular application of capital. We conclude this section with a case description of such a "marginal" calculation at division level. However, the calculation was instead an average one relating total profits generated (ex ante) to the application of initial capital and planned additions including investments for production beyond the horizon. A number of cogent reasons for these seemingly unsophisticated methods can be listed. First, and maybe most important, a systematic appraisal of returns to investments on the margin at division level not only requires a grand calculation effort. It also presupposes that a meaningful alternative investment plan be defined for reference. The alternative to "do nothing additional" is utterly meaningless at the aggregate level of a division (cf. the case below). Since average RoR measurements have a rather doubtful information content, this may be the important reason why also such marginal measurements seem to be very rare. Second, one should not forget that marginal considerations do enter informally and in an ad hoc manner when plans are discussed and decided upon. Third, the profit margin may be looked upon as being closer to a marginal RoR estimate than the average RoR traditionally computed in the sense that it "disregards" past investments or interdivisional differences in capital requirements. Fourth, individual investment project evaluations of course involve a kind of marginal analysis (see next section) and the rather frequent practice of taking large investment project (groups) out of the comprehensive plan for separate study is a good example of a particular kind of marginal analysis at

the level of aggregation of a profit centre or division where not only the investment object is considered but also additional capital requirements such as inventories, trade credits etc. (see Section 8).

As we will see in Section 4 the typical way of carrying out marginal comparisons is by way of calculating returns on individual projects. The problem is, however, that this procedure is seldom formally consistent with the formal procedures adopted in the comprehensive plan.

Another problem relates to the ever present application of informal considerations on top of the formalized planning routines. This was one of the ways by which subjective rate of return criteria and other non-explicit considerations entered planning routines as additional constraints. This usually took the form of joint reviews between CHQ and profit centre management at various stages along the completion of the formal plan. As is easily understood it was impossible for me to appreciate in full the significance of these reviews even for the formal plan and still less so for final decisions. This internal reviewing process was regarded as very important in most U.S. firms and I will return to it in Chapter IX.

Thirdly in two instances I entered upon a long-winded discussion on the proper methods to compare performance between new acquisitions (firms) with existing profit centres. In both cases the amount invested valued at purchase costs was used as the base in the rate of return measure. In one instance in particular, a recent acquisition figured very favourably in the comparison, for the very reason that the denominator of the performance variable (the amount invested) was "too low" and estimated by a method different from that applied for existing profit centres.

Case; Marginal profitability analysis at profit centre level (one U.S. and one Swedish firm

The basic problem of marginal analysis is to find a meaningful reference alternative with which to compare the results of the decision contemplated. Above the level of a well defined investment object the alternative "no change" usually has no operational meaning. Substantial changes in product prices, product mixes, factor prices (e.g. wages) and production schedules take place currently and are often prompted by changes in the external environment of the firm. To compare a planned course of action with a case where no such changes occur or where no action to counteract such changes are taken was not considered very informative. The case now to be accounted for in a somewhat modified form (met with in one U.S. and one non-U.S. firm) refers to a division within a multidivision firm. For some years division products had been subjected to severe competition and profit performance had deteriorated sharply. Large capital values were tied up in and a very large number of workers were employed by the division. For a number of reasons discontinuing operations altogether over a few years was considered out of question. Two alternatives were compared. The first consisted in a long run

strategic solution in the form of a large scale investment program aimed at recapturing a competitive lead in the market. Quite in keeping with what has been said already this was the alternative decided for the long range plan already before the analysis below had been carried through. The reference alternative choosen was a minimum-cost operation of the entire division and a gradual phasing out of its dominant production plant over some 15 years. This "minimum" alternative required substantial amounts of new investment spending over the entire 15 year period not in the least in the form of large replacement investments. The typical feature of the minimum alternative was that very heavy losses on a current basis would be incurred in a matter of one or two years if a rapid modernization of production facilities did not take place all the time. The minimum, reference alternative choosen meant no profits whatsoever on already invested plant capacity. A somewhat less than satisfactory rate-of-return was expected on currently undertaken new - and replacement - investments.

In contrast to this the new, strategic investment program selected for the long range plan meant heavy losses over the next two or three years and at least (so was the risk evaluation formulated) satisfactory returns on total capital (past and new) invested after five years. The financial strains on the entire firm would be substantial and the two primary purposes of working with two alternatives seemed to be to evaluate the impact of the large strategic investment solution on the entire firm under its gestation period. Could the financing be accomodated? How would firm overall profit performance look during the gestation period?

It should be mentioned finally that building up these two alternatives for the entire division was no small planning effort. It meant putting a large number of technical staff personel on the problem of drawing a blue-print in detail also of the minimum alternative not seriously considered. To enter these kinds of calculations into long range planning in a routine fashion was not regarded as "feasible".

3. Inflation in planning

The numbers of the comprehensive plan whether being from the annual budget or from a longer term projection invariably stand for values. To separate out prices from volumes one as a rule has to probe below the data set available to CHQ planners. It is of very uncommon occurance to prepare and work with price indexes for product groups both as regards the past and the future (in planning) at CHQ.

On the output side price assumptions enter in the preparation of the sales plan but these data as a rule stay at the profit centre level or in the sales departments with the exception of firms producing only a few products (pulp and paper etc.). On the input side prices enter explicitly in the costing procedure but disappear again at the aggregate division or profit centre level to give way there for comparisons in terms of aggregate incomes and costs. Capital stock or capital cost estimates that enter balance sheet projections or RoR estimates usually consist of a delicate compound of apples and nails of various vintages the composition being for all practical and analytical purposes unknown at CHQ. At the same time the liabilities side is a jumble of items and valuation standards. Under such circumstances my insistent questioning of how exactly the

problem of inflation was taken care of in comprehensive planning regularly turned into an embarrassed joint effort to figure out how.

Price assumptions regularly enter into the sales plan in much detail as shown in Chapter V. They are as a rule explicit - in particular when it comes to wages - in costing. Corporate economists often provide "forecasts" as to the general inflationary outlook prior to the start of planning and such considerations of an ad hoc nature regularly enter into the various stages of reviewing that are part of the making of the plan. However, I have met with no numerical analysis of the impact on the accounts of the corporation of changes in relative and absolute prices of a kind similar to that illustrated formally in Supplements 4 and 5 although the data for such an analysis are in practice always available at the cost of some statistical research effort. One reason for the absence of this kind of analysis may of course be that no useful prototype methods have been developed at the academic level.

A second reason may be found in the frequent practice reported on throughout this study, namely to work with numbers as "targets" or "guidelines" rather than as the results of measurements according to some well defined method. Such methods are put to use - as we have seen - but if they yield numerical results that are considered "unreasonable", "undesirable" or simply "wrong" at various judgemental stages in the planning process the figures are simply adjusted in an ad hoc manner without consequent adjustments at earlier computation stages. This is one further illustration of the typically inconsistent manipulation of numbers in the planning process. The final estimates of the plan for this reason are not necessarily deprived of essential information. The numerical methods applied in planning may be regarded as too crude or biased. The numerical outputs at various stages of planning are supposed to have an operational significance. Hence, data that are regarded as distorted or biased are moulded, into "plausible" estimates by the people being part of the numerical mill producing in the end a different kind of bias.

The handling of inflationary assumptions may be a good illustration of this. If inflation threatens profit performance and planners are gradually growing aware of this from work on the plan something will have to be done about this before the plan is finalized. Adjustments are made. Most of the details of these adjustments are hidden in the costing procedure and this in combination with the frequent practice of imposing profit-margin targets in planning means that the exact nature of inflationary considerations in planning will not be tractable for observation. As mentioned already it is quite common to assume in planning that it

will regularly be possible to compensate wage increases above product price increases with improvements in productivity. If this can be achieved without altering appreciably the sales-asset ratio both the profit margin and the RoR will remain unchanged.

Thus the problem - and the dangers - of inflation appears most importantly at the early profit-targeting stage rather than in the numerical guiding of the planning-process. Only very few of the firms interviewed had developed systematic systems for determining profit targets to apply in planning, and if something was obviously missing at most of the CHQ:s visited in this interview series it was an agreed upon philosophy as to how to look at - not handle - inflation. Fortunately, inflation is not an altogether negative phenomenon for skilfully managed business organizations. This immediately brings in a number of problems, treated at various places in this study, like transfer pricing methods, how to measure capital balances, what discount rate to use etc. The cases in sections 1 and 3d. illustrate some of these problems. There is also a partial formal analysis in Supplements 4 and 5 with relative and absolute price changes made explicit.[1] The case given in Section 4 d. finally elaborates on a method of linking rate-of-return requirements at the investment project level with the corporate target of maintaining a minimum rate of growth in equity net of inflation.

4. Investment project evaluation

a) The appropriations procedure

We observed already in Chapter 6 that approval by the Board of the investment plan within the budget with one or maybe two exceptions did not mean authorization to make commitments. Commitments relating to the investment plan were controlled by way of the appropriations procedure. This is the link within the comprehensive planning system, where - if any - rate-of-return considerations entered in an orderly (methodological) manner. This is also the part of business planning systems that has been best covered by empirical investigations, so far. When looked upon in a superficial way the appropriations procedures met with all appear shaped into similar, standardized frames. At a first glance they also seem to fit neatly into the overall comprehensive planning system. This, however, is only the surface of the matter, and not until the details have been studied the significance of the appropriations budget can be evaluated.

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1) Inflationary expectations in an investment decision making have also been analysed in Eliasson (1974).

As pointed to in Chapters VI and VII, the investment plan (using our terminology) indicates the fraction of total future available funds planned to be allocated on capital account. The appropriations procedure in turn involves the final decision as to what individual projects are to be selected for the next planning period under the constraints imposed by the investment plan. The field work of this study being completed and an analysis of the comprehensive planning system having been carried out, however, one has to ask the question why this sub-routine has been hooked on at the very end of the comprehensive plan, instead of being carried through simultaneously with the work on the annual plan or budget. In a few firms this was in fact the case. In some additional cases it was partially so in a fashion to be described below. However, general practice was to have a second investment "plan" employed after, and separated from the comprehensive planning sequence; a second plan closer to the actual decision and hence of greater operational significance - as it seems - than the comprehensive plan.

When looking back into the history of the firm one is certain to discover that besides market projections the appropriations procedure represents the first step taken towards a short-term plan or the annual budget. Its purpose originally was to constitute a late management control mechanism before final, capital spending decisions are made. So it seems to have remained.

However, by degrees a comprehensive annual budget and later a long term plan has been added before the appropriations procedure. This means that numerous inconsistencies - some may be intentional - characterize the link between the annual budget (in particular) and the appropriations procedure.

Secondly, the rapid technological advances and structural changes within the economies of industrialized western nations during the post-war period have radically changed the relative importance of the various components on the asset side of the balance sheet, again - as it seems - without bringing about any substantial change in the selection of spending proposals to be channelled through the appropriations procedure. The marked emphasis on "hardware" like machines and structures in the appropriations procedure was indeed surprising in some large firms where R & D investments ranged between once or twice the amount allocated to capital account. Similarly, investments in working capital may be as large as twice or three times the amount spent on capital account. The diminishing relative importance of "hardware" investment spending is further illustrated when one adds the vast sums invested by many firms in such nondepreciable assets as marketing or various types of "goodwill".

I can find two reasons for the lingering importance of the appropriations procedure. The first and most probable one is the impact of tradition and a feeling of insecurity when a traditionally established and well-known control mechanism is delegated out of reach at an early stage of the decision process. The second reason is that CHQ management wants to have a final say before commitments are made and before production consequences cannot be reversed. In the case of large, lump-sum investments in new plants etc. this control mechanism probably is very efficient. However, this does not hold for the ever present attention paid to minor investment spending proposals and to the nowadays frequent cases where major and often irreversible production decisions are tied down long before decisions to invest in production facilities have to be taken.

In at the most five firms interviewed the appropriations routine was taken care of within the annual budget; the only requirement being, that later changes in the capital spending budget - including the timing - had to be authorized again by CHQ. Within these two firms a very careful, individual project evaluation was carried out before the final authorization of the budget. As for the remaining U.S. and non-U.S. firms practice varied substantially. In all of them the appropriations procedure was levied on top of and after the budget. As a rule each profit centre had a fraction of its investment budget, say 20 per cent, reserved for free disposal for minor investments. Sometimes this fraction was characterized as a contingency appropriation and also carried this name (cf. Table VI:1).

b) Rate of return calculations

As a rule the appropriations procedure is a typically bureaucratic process carefully regulated by written instructions. Elaborate standard forms have to be completed for every single project. With a couple of exceptions a rough "pay back period" estimate at least had to be entered on this form. Quite frequently, for larger projects, a complementary "capital value" or an "internal rate-of-return" estimate was required as well. Several times I found that project evaluations by different methods were required as a routine for each project. The purpose of such elaborations, however, was seldom altogether obvious.

In about one third of the 58 firms interviewed these standard forms had to be completed already at the budgeting stage. Economic conditions remaining unchanged, these estimates only were submitted for an additional review at the appropriations stage together with new or revised project proposals.

Delegation in the appropriations procedure was well routinized. Final say on minor projects often rested with the profit centre manager. Medium sized projects were authorized at the vice president level at CHQ. Sometimes there was a series of intermediate decision layers. Large projects went all the way up to the President and/or the Board. In four U.S. firms (one very large) and two Swedish firms I discovered that every single, independent construction project, regardless of size, had to pass by the scrutiny of the Board at least as a token ceremony.

c) Cut off rates

Usually, each firm had settled for one or a series of "cut off" rates. The numerical range between firms was substantial. A 20 to 40 per cent, pre-tax rate-of-return requirement was the normal range. However, I even met with some on 50 per cent. Even tens seemed to be preferred.

The base on which rate of return calculations are made and the kind of criterion choosen obviously is important for the determination of the "cut off rate". Common practice was to base the calculation on the purchase value of the investment project itself, excluding all further capital bindings such as inventories and trade credit extensions associated with the later productive use of the equipment considered for investment. An argument often met with was that this disregard for working capital requirements motivated high "cut off rates" (see below).

Cut-off criteria, however, were seldom rigorously applied to screen spending proposals. In several firms I found that a number of additional rules for evaluation and project screening entered into planning manuals - and in much detail. Priority ranking should be given e.g. to projects promoting growth in markets and technologies traditional to the firm. Investment proposals leading to expansion into new product lines or being loosely associated with existing product lines should be reviewed with extra care. Sometimes these "constraints" on the choice open to planners and management were formalized in terms of differently sized "cut off rates". I found six U.S. cases where investment proposals considered necessary for a sustained long-term growth within a well defined range of technology traditional to the firm should be passed at rate-of-return standards substantially below those required for other projects. The stress was here on long-term growth. It seems to me symptomatic that such criteria were most common in very capital intensive firms producing a set of homogenous products or firms characterized by a typical joint production set up.

There is nothing illogical in a valuation practice like this. For a firm emphasizing long-term survival as an organizational unit there are apparent reasons to treat investment proposals supporting this motive more favourable than others. The length of the planning period (decision period) involved and the increasing uncertainty with time provide another argument for the same practice. It is easy to see that a rigorous application of a high "cut off" rate over a prolonged boom period, i.e. by reaping short term profits at the cost of neglected basic investments for the longer term future, involves a serious risk of loosing out on the survival premise.

On the other hand the danger faced by the firm rigorously promoting the basic survival idea by intentionally restricting the options open to planners and decision makers is the inflexibility built into the decision structure of the organization. If available financial resources are currently (and by decree) plowed-back into the firm with the purpose of expanding and improving existing production technology, the firm at the same time rids itself of the option to exploit alternative and perhaps more profitable long-term opportunities at least as far as the options open to planners are concerned. If the firm happens to be in the "wrong" market or technology the consequences may be serious in terms of survival as well as success. A conclusion I would like to draw from the interviews is that such constraints are commonly imposed upon planners. They often appeared in writing in planning manuals.

There is one additional argument for a low cut-off rate for basic long-term investments combined with high cut-off rates for short-lived investment projects. A basic long term investment can be, and usually is, designed to accomodate a series of later complementary investments, sometimes involving a piecemeal expansion of productive capacity; sometimes highly profitable cost-reducing improvements. Appreciation of this in beforehand of course can be systematized in terms of a series of appropriately sized (dimensioned) "cut off rate" criteria.

d) Case (large Swedish firm)

In one large Swedish firm CHQ planners were attempting at the time of the interview to enter a new way of thinking into establishing the appropriate cut-off rates for project rankings by relating it to required rates of return on equity capital. The method which will be presented in a somewhat simplified fashion clearly demonstrates how cut-off rates in the neighbourhood of 30 per cent can be made compatible with a 7 per cent RoR realized on total capital applied. So far as my interviews go the case represents an exception to corporate planning practice. Also, experience in the Swedish firm was that it was difficult to make the method understood and accepted as a planning tool among management people.

The starting point is that a RoR requirement on equity capital is fixed. In this case this requirement was composed of two parts:

(a) a (minimum) preserved, inflation corrected value on equity as shown on the balance sheet.
(b) a minimum dividend pay out in per cent of equity.

The demonstration - that is somewhat involved - is based on the fact that investments down at production lines normally only represent a minor fraction of capital requirements that follow with an expansion of productive capacity and sales. Profits generated at the level of the production line would have to cover a risk premium, corporate taxes, overhead charges for administration, marketing, R & D etc. and costs for maintaining inventories and other assets (such as trade credits extended) that often yield no income.

By adding corporate taxes and a small risk premium to the dividend and inflation requirements mentioned above we arrive at a RoR requirement or growth on total assets of roughly 13 per cent. To cover costs for CHQ and sales and financing functions this requirement had to be raised to 22 per cent at the level of the production division. Down at the individual investment project level the RoR requirement had to be boosted to 28 per cent for screening investment proposals in order to be compatible with the overall firm profit target defined above. The following algebraic representation gives the outline of the calculation procedure.

The two requirements on protection of equity from erosion by inflation and on dividend pay-outs mentioned above can be formulated;

$$\text{a)} \quad \frac{\Delta W}{W} - \frac{\Delta p^x}{p^x} \geq 0 \tag{8}$$

$$\text{b)} \quad \frac{DIV}{W} = d \tag{9}$$

W stands for the current value of equity, P^x for the relevant price deflator and DIV for dividends. By making use of formulae (13) in Supplement S 4 we now get;

$$\frac{\Delta W}{W} - \frac{\Delta p^x}{p^x} + \frac{DIV}{W} = R^w + \frac{\Delta p\bar{k}}{W} - \frac{\Delta p^x}{p^x} + \frac{\Delta D}{W} \geq d \tag{10}$$

since from (12) in Supplement S 4 we have;

$$R^w = R + (R-r)\frac{D}{W}$$

we get;

$$R + \underbrace{(R-r)\frac{D}{W} + \frac{\Delta D}{W}}_{A} + \underbrace{\frac{\Delta p\bar{k}}{W} - \frac{\Delta p^x}{p^x}}_{B} \geq d \tag{11}$$

The first step in the "decision process" can now be formulated as follows: suppose the firm wants to change the scope of its operations, what minimum requirements should be put on R that are compatible with (11). Several considerations enter already at this stage. The firm may have a very high proportion of production assets (K_1) on its balance sheet compared to the value of equity (W). If these assets are subject to a rapid price inflation (P) compared to the deflator (P^x) protection of equity for inflation may be secured automatically. Normally this is not considered for several reasons. Technological change makes production plants obsolete very rapidly in a large part of the manufacturing sector. Even though new equipment prices are on a steep upward grade the company might prefer to apply a lower price index in order not to upgrade its old equipment. Secondly, fiscal depreciation

rules in most countries do not recognize inflation as an economic phenomenon. A large part of "capital gains" on old equipment due to inflation appears in the form of hidden reserves that are not shown on the asset side on the balance sheet and that causes a potential, not realized tax burden. Thus one would expect the component (in (11)) $\frac{\Delta p\bar{K}}{W} - \frac{\Delta p^x}{p}$ to be negative and not negligibly so. This consequently would raise the requirement on R.

The next consideration has to do with the financing structure of the firm. If the interest on debt (r) is higher than R, requirements either have to be raised or requirements on R may be lowered by amortizing debt. However, this works in two directions. Lowering debt makes the factor $\frac{\Delta D}{W}$ negative and lowers the financing potential for growth. (R-r) $\frac{D}{W}$ on the other hand would become less negative. The normal state of affairs for a company that is concerned with preserving the value of its equity net of inflation would be to exhibit a positive factor (R-r). In inflationary times this contention would be even more strengthened by the fact that debt is practically always nominally contracted while purchased assets as far as production equipment goes in effect appreciates in value with the rate of inflation even though this does not show in the balance sheet for reasons mentioned above.

Another circumstance may be even more important when considering the application of more or less debt. The decision formulae implicit in (11) is a marginal one. Usually current investment budgets mostly include projects that are additional or complementary to an existing "basic" production facility. Normal experience is that such marginal, additional investments yield much higher prospective returns than average returns realized on total operations even in terms of a R that includes all new assets tied up with the new investment. Such higher returns are sometimes conditional upon the fact that a large production set-up already exists. Sometimes the reason is that the existing production set-up has gradually become technologically obsolete while new investments represent modern technologies and hence can be applied at high returns. Thus the normal state of affairs probably is that average R can be improved by applying more debt to marginal investments. If this is true access to external, financing sources restricts the firm's ability to meet its requirement on dividend distribution and protection for inflation. Considering this the presence of very high cut-off rates defined as R that much exceed the size of d would not be consistent with rational behaviour on the part of the firm as long as marginal investments yield a return higher than the borrowing rate r.

Let us assume (from (11)) that

$R \gtrsim d - A - B$

means that $R \geq 0$ and probably substantially larger than $R \gtrsim d$. Suppose the dividend pay-out rate decided upon is 4 per cent. Suppose firm decision makers neglect inflation gains on old equipment. With the dividend pay-out follows (roughly) an equally large corporate tax levy which means that the after tax dividend requirement adds 8 per cent to the RoR requirement before tax. We expect that the inflation mark-up on equity can be taken care of by the creation of hidden reserves that causes no corporate tax charge and that such hidden reserves show up in full in the stock market value of equity that the share owner can realize in cash. This would mean - in effect - an underestimate of the profit requirements since sooner or later some mark-ups on book-valued equity will have to be made and the consequent corporate income taxes postponed will have to be paid. The deflator P^x is assumed to follow a 5 per cent trend. A reasonable estimate of A would then be

- 4 percentage points. Suppose furthermore that the application of new debt enhances the rate of growth of equity through the leverage effect by 1 per cent. With these cautions assumptions a decision to expand capacity would require a marginal rate of return on all new assets employed of 11 per cent.

Furthermore add a premium of say 2 per cent for risks. The ex-ante RoR requirement in terms of R would then be;

$R \geq 13$ percent

Suppose furthermore that the firm is divided up in three divisions organized predominantly as production divisions. The sales, marketing and administrative function is vested with CHQ. 30 per cent of total current costs are normally charged on CHQ. Besides 40 per cent of total financing requirements originate in the building-up of trade credits that earn no interest income. Since

$$R = \frac{S(ales) - C(urrent\ costs) - D(epreciation)}{A(ssets)} \geq 7$$

we know that minimum RoR requirements at the division level will have to be;

$$R^D \geq \frac{S - 0.7\ \ C - D}{0.6\ \ A} = \frac{10}{6}\ R + \frac{C}{2.A} \approx 22$$

Suppose furthermore that all inventories are kept at division level and that they account for 20 per cent of total assets. Furthermore all R & D expenditures are charged on the divisions. They account for 10 percent of total costs applied. Inventories as well as R & D costs will have to expand proportionately to sales and costs as the firm invests to grow. Suppose the firm considers an investment project that would expand total operations of the firm. What RoR requirements should be applied to that project considering risks involved and taxes?

Applying the same procedure again raises the ex-ante RoR requirement on the individual project to roughly 28 per cent. Thus for the type of investments that expand the capacity to produce and to sell of the firm and that carry with them a cascade of overhead requirements within the firm organization after consideration of risks and corporate taxes a cut-off rate of 28 per cent would result in a before tax RoR on total assets of no more than 7 per cent in the long run if now and then investment decisions go wrong. This is so as long as the firm insists on distributing dividends at a rate of 4 per cent counted on an equity base that is currently indexed upwards for inflation.

5. Project rankings

There are of course many important objections to the rigid application of screening procedures for individual investment projects by way of standardized rate of return criteria. We observed earlier that normal practice was to fix one single valued sales plan or sales projection in the short term (budget) as well as the long term plan. This fixing normally took place long before planners had had the opportunity (and seen the data necessary) to appreciate in full the profitability and (sometimes even) liquidity consequences that would follow from the realization of the same plan. We noted furthermore that gross profit margins were stand-

ards commonly applied at this stage. The very realization of a plan normally required a number of commitments to be made at an early stage. As far as commitments on current account (inventories, accounts receivables etc.) go, authorization is automatic whatever amounts involved once production has been started. Commitments on capital account, however, mostly had to be cleared through the appropriations procedure.

It happened often that projects mandatory for the fulfillment of production and sales plans would not be passed by appropriations standards when rigidly applied. Since these standards - as we shall soon see - were not always consistent with those applied in fixing the sales and growth plan an apparent logical conflict is closing up in the planning process. The first is concerned with the decision as to what standards are the most appropriate ones. To my knowledge no firm interviewed had resolved this intricate question in any definite way. The second conflict refers to the very fact that once completed in numbers (even at a preliminary stage) a not negligible amount of work has been invested in basic planning. To revise the plan all the way back to its roots - the components of the sales projection - is something only undertaken for manifest reasons and - even so - only in those firms that had managed to get their numerical planning routines into the computer. In other words, plan revisions, caused by late discoveries in the light of a final analysis of the comprehensive plan, tend not to go all the way down to the basic input data of the plan but to stop somewhere on the way. As a consequence a not negligible portion of investment spending proposals measured by the amount of money involved (not necessarily the particular selection of objects) is tied up simultaneously with the fixing of the sales growth plan.

A common device adopted to make such projects pass through the appropriations procedure is to list them under a heading such as "mandatory" or simply file them by purpose such as; necessary to keep plant operating, to meet sales requirements or to maintain planned profit margins (cf. Table D in Supplement S 2). What is left for a more rigorous screening by way of rate-of-return criteria (besides projects "necessary" to realize the sales plan) are those entered into the plan for purposes of future production beyond the budget or plan horizon - normally the end of the next accounting year.

In some U.S. firms part of the appropriations procedure had been shifted into the comprehensive short-term plan (budget). This meant that individual project proposals including required motivation had to be submitted already at the planning stage and furthermore that part of the screening procedure was completed before the in-

vestment budget was properly decided. This again usually took place after the fixing of the sales plan. It meant, however, that the later appropriations procedure was fairly automatic as far as authorization of already considered projects was concerned and tended to concentrate on additions or revisions in the budget.

6. Cost-shares

A control practice met with in budgeting routines of several both U.S. and Swedish firms was to review cost-shares such as salaries, wages, EDB, R & D or even office equipment expenses in per cent of sales. Often this cost-share analysis was very detailed and when some such cost share moved above a targeted or a previously experienced level frequent practice was to order cut-backs to the original level. When all current costs had been added up this practice is of course synonymus with the application of profit margin criteria in the way we have already described.[1] When applied at lower levels of aggregation, its usefulness, however, is subject to much more severe limitations. If applied rigorously it means that improvements or plans that involve a changing cost structure are disallowed even though such changes may result in reduced overall costs per unit of output. It was reported in several firms that purchases of office or computer equipment had generally been held back regardless of the reason for wanting to acquire this equipment when cost shares suddenly went up in a business downswing because of slackening sales. Most probably cost-share control was used as a complementary criterion and not applied rigorously as a rule. However, in several firms I was told that in period of slowed down sales growth and shrinking profits, requirements to keep previously established cost shares could be voiced when the new budget was to be drawn up.

7. Alternative plans

Common practice was to work with single valued plans at most levels of aggregation in comprehensive planning. Choices between machine types etc. were often considered within the appropriations procedure after the need for a particular kind of machine had been established. The choice between alternative rates of sales growth at division level was made before fixing the single valued sales plan. In so far

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1) However, cf. in section 8 the practice adopted by a big multinational company to attain a method of measuring relative efficiency between profit centres joined together by a biased transfer pricing system.

as growth in one division was traded for growth in another division a definite decision was practically always made before the sales plan was fixed. Even though sales prospects were generally considered uncertain normal practice was to settle for one single valued plan although a few large U.S. firms that had computerized a large portion of planning work had introduced probability estimates for certain crucial input variables like sales. In some firms so called financial models were used as an instrument parallel to budgeting and long range planning work. These financial models - usually an extremely simplified version of planning routines employed - could be used for simulation on alternative set-ups of input data.

Even though simulation in principle could be applied on budget routines the amount of detail involved practically always made such simulation practices impossible. A well managed planning system in a U.S. firm in the size class of the interview sample meant that hundreds of people were involved at various stages to look at, to assess and to adjust the numbers that passed through their offices. These people would have to take part in each simulation. In those few firms where all calculation work had been computerized simulation runs on alternative input data were nevertheless made difficult by the circumstance that the processing of numerical information was not centralized to one place and that routines were organized so as to allow informal external inputs at a large number of places. To repeat the whole process for the sake of a simulation experiment was not considered practicable (see supplement 6).

Thus the plan or the budget very seldom contained any specification of alternative actions to take if input variables went off forecasts or expectations. In this sense the budget or the long term plan was no analytical tool for decision making. The final, single, valued plan rather constituted a decision in itself or a series of more or less integrated decisions. Frequent revisions of the budget (often by quarter or even by month in some U.S. firms) and annual revisions of the long term plan were normally considered sufficient for analytical purposes. If unforeseen events of sufficient importance took place between revisions partial updatings were made. Cut backs on the investment budget or the application of higher profit standards in the appropriations procedure are examples.

Two examples of the employment of alternative plans should, however, be mentioned at this point.

First, on the basis of the fixed, comprehensive plan a number of "partial" plans or decisions are made up. The sales plan is a basic input variable for production planning. For large firms many optional allocations of production between

plants (and within plants) and delivery structures were possible. Several firms employed very sophisticated programming and scheduling techniques for the purpose of minimizing costs and securing a steady output flow at low levels of "slack". Inventory and cash management are other examples. Common to them all is that they constitute sub-routines within a fixed "numerical environment" (the comprehensive plan). The outcome of such "suboptimization" is always at variance with some basic structural data of the plan. Furthermore, the profits to be gained from reducing such slack are always minor to the potential losses from being less well adopted to the environment of the business organization.

Second, rate of return calculations on the basis of plan data were normally of the "average" type and not particularly relevant to decisions as to what to do next with the plant and equipment set-up existing when plans were made. We have noted already that profit margin requirements and knowledge of past sales/asset relationships were used as substitute indicators for such decisions. In a couple of U.S. firms and one (maybe two) Swedish firms an intermediate method of marginal analysis was applied partially. The most clear-cut example met with in two firms has already been accounted for as a case at the end of section 2 of this chapter. In principle the method involved comparing the outcomes of two alternative decisions; (1) when the contemplated investment-growth decision was realized, (2) when a minimum investment program was adopted and operations continued at present productive capacity allowing in principle for maintenance and cost-reducing investments only. The two data set-ups then allowed the calculation of the marginal rate of return or outcome of the new investment project planned. This is, however, something fundamentally different from what one normally associates with the term alternative planning.

8. Transfer pricing

A basic purpose of planning seems to be to build a system of measurement for control purposes. Hence the methods of transfer pricing adopted become more and more important the larger the organization and the more insulated its internal parts from direct external confrontation with (competitive) markets. Hence planning cannot be treated separately from control and transfer pricing as well as the organization of the firm becomes a part of the planning system at least with the definition of comprehensive planning adopted here.

For practical reasons the details of transfer pricing methods have been left out of this study as far as the empirical side goes. Some scattered evidence

will however be reported on.[1)]

One particular observation is the large variability of internal pricing methods adopted even within the same organization suggesting that measures on divisional performance are seldom of the unbiased kind suggested as the proper ones in theorizing on the matter. Rather the interpretation of the numerical signals emitted form a comprehensive corporate planning and control apparatus indicate that a very delicate and stable intuitive screening and correction device is needed in the back of the head decicion makers for the planning system to be of any use to them.

Whatever rate of return criteria put to use the character of any evaluation of performance between integrated parts of a business organization rests importantly on the methods applied in pricing intracompany transactions of goods and services. If the difference in productive efficiency between internal and alternative external production varies a lot from plant to plant or from division to division then the application of say cost-plus or arms-length pricing methods will mean two widely different allocations of profits within the firm. This is of importance in planning as well as in ex-post profit control.

Cost plus pricing in the sense that internal prices are indiscriminately applied as total unit cost plus a prefixed "profit margin" automatically means an income (profit) redistribution from high-efficiency parts of the firm to low-efficiency parts. Arms-length prices (if possible to apply) puts a premium on being efficient that is shown in the internal accounts. For CHQ the allocation of book profits within the firm is of interest only in so far as this information is put to use in decision making. If this information is put to use either for cutting down on or reorganizing unprofitable activities or for deciding on where to invest the quality of the information immediately becomes very important. Cost plus pricing tend to hide information in the example given above. Arms-length pricing tends to bring out the information if relevant, external prices are available.

A common obstacle to "efficient" transfer pricing is that comparable products or services traded in external markets do not exist or that such markets are too

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1) Some further thought on this matter is found in my study on taxes and capital transfers in multinational corporations. See Eliasson (1972, Chapter IV).

small or too monopolized to reveal the desired information. Various substitute measures such as profit margins in comparable, external transactions etc. are often put to use.[1] Alternatively, various techniques of so called shadow pricing have been deviced and suggested for this purpose. The optimum internal trade-off ratios are defined when the organization operates under profit maximizing, cost minimizing conditions. When these conditions are "operationally" known, the optimum set of transfer prices ceases to be of interest as information to determine the optimum points. Thus the basic disadvantage of such methods is that in practice they will have to be based on the existing income-cost structure of the firm and the method boils down to some kind of cost-plus pricing method anyhow, which will be off the optimum point to an extent that cannot be determined.[2]

Generally speaking the best transfer pricing method to use can only be determined with reference to the purpose the price information is supposed to serve, and prices should be biased accordingly. For CHQ management adequate transfer pricing methods normally mean methods that reveal profit-cost projections based on the most efficient action alternative in the plan, and that show ex post where profits in fact originated. In the first case of planning for the future a competitor sometimes possesses the most efficient production technique. In the second case the information is distorted if prices levied on internal transactions involve an element of subsidization between profit centres. External, reference pricing seems to be recommended procedure in literature. However, applying a mixture of external and other pricing methods may be even more hazardous a method for inter profit centre comparisons. A few examples from the interviews may illustrate this.

Case 1. U.S. firm

If substitute products were externally traded, divisions were required to pay internal production up to the market price plus an additional mark-up of say 10 per cent. If internal suppliers were not willing to go below that upper margin purchases from external sources were allowed. The reason for applying such a mark-up requirement was stated to be the importance of maintaining this kind of internal production in the long run, the importance of securing a stable flow of deliveries etc. and - in addition - the gains in the form of reduced storage

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1) For a survey of this discussion and (in particular) an account on arms-length criteria applied and tested in courts by the U.S. internal revenue service. See Eliasson (1972 a). Also see Arvidsson (1971).

2) cf. The Critism levied at mechanical interdivisional methods of comparison in Henderson - Dearden (1966).

costs since vertical integration made efficient production scheduling methods possible. In effect this meant a form of internal subsidization of less efficient production performance.

Case 2. Swedish firm

In this firm the profit margin allowed in internal transactions was applied as a policy parameter. The following transfer pricing formulae was used:

$$\text{price} = \left\{\begin{matrix}\text{unit}\\ \text{production}\\ \text{costs}\end{matrix}\right\} + \left\{\begin{matrix}\text{common unit}\\ \text{overhead costs}\end{matrix}\right\} + \left\{\begin{matrix}\text{allowed}\\ \text{profit}\\ \text{margin}\end{matrix}\right\}$$

If CHQ wanted to support some activity it allowed a high profit margin (raised the transfer price). If it wanted to discourage some internal business e.g. because of high production costs the allowed profit margin was slimmed down (price reduced). However, the "profit centre" had virtually no say as to how to make use of these profits. Neither were divisions allowed to choose between external and internal sources of supply. CHQ figured importantly in these two types of decisions. It is hard to say what came out of this approach to transfer pricing besides distorted profit accounts.

Case 3. Large multinational company (U.S.)

This company operated in a large number of countries performing similar production services in many of them. Production facilities were joined together by a complex vertical distribution network. For various reasons it had not been found practical to operate a standardized transfer pricing system on internal deliveries. External markets where almost 100 per cent spotmarkets for marginal transactions and hence price information from these markets was not useful as reference measures. Standardized cost plus pricing methods were not considered adequate. Instead various ad hoc costing methods were applied. This meant that the same return to assets employed in two identical production processes estimated by the same formulae could mean two entirely different things. Besides, subsidiaries had no choice to shop for inputs where prices were at the lowest to improve their profit records. They were all tied together in a centralized logistics network. The result was that recorded profitability at various places in the company was no reliable indicator of relative profit performance of the various entities of the business organization and hence of economic efficiency in a broad sense. In essence the hierarchical decision structure of the organization meant that the part of efficiency managed and controlled at profit centre level basically was restricted to efficiency in production. Hence, in order to have a control apparatus for this performance aspect of the company a complex system of cost comparisons, between production processes, had been devised.

Case 4. Several U.S. and European firms

In several firms, (U.S. or others), among mechanical engineering industries with a wide spectrum of complementary products, the ability to provide customers with a full line of qualities and specifications often required that several lines of unprofitable production had to be deliberately maintained. Sometimes production profit centres were allowed to charge full unit costs plus a mark up and losses showed up on the sales side. Sometimes sales profit centres were allowed to pay no more than for substitute, external products (possibly with a required mark-up) and losses showed up on the production side. Sometimes mixed methods were applied depending upon whether external products were available or not. A good portion of intuitive adjustment capabilities was needed for profit records based on such pricing methods to make sense or not to be misleading.

In most large firms, financing was a centralized CHQ function. An important transfer price then was the price charged to divisions or profit centres for capital contributions.

On this point methods varied substantially. Some firms applied an arbitrarily fixed interest rate to all contributions from CHQ that had not been changed for years. At the time of interviewing when the rate of inflation both in the U.S. and in Europe had been on an upward drift for a few years the rate applied often seemed very low (4, 5 or 6 per cent). Sometimes an externally determined interest rate for medium term borrowing plus or minus some correction factor was applied. Sometimes this rate was the same as the cut-off rate applied in investment project selection; often not. Sometimes CHQ applied such an interest rate on all capital employed by a profit centre, sometimes only on accumulated contributions from CHQ while profit-plow-back at division or profit centre levels carried no interest charge. In some instances the profit centres made up their own income statements and balance sheets with "equity holdings" by CHQ entered. I met with several (both U.S. and European) firms that had followed this idea to the very end and in fact had made divisions or profit centres into fully owned subsidiaries with CHQ bein legally a holding company that charged subsidiaris for its services. Not seldom no particular arrangements or charges on the capital side were applied at all. (Also cf. the case reported in section 1 of this chapter.)

A general impression from the restricted group of firms questioned on this matter (about half the number of firms interviewed) was that whatever principles of transfer pricing that were applied these principles were usually very mixed and had been adhered to for a long period of time.

Long usage is also what one would expect as a necessary requirement for the mazy transfer pricing methods adopted in large companies to be intelligible. Profit centre or division profits seldom gave what is sometimes called a "true reflection" of profit performance. Long usage and (consequently) long experience must be needed for decision makers at all levels to adjust intuitively and interprete the information concealed in the book-figures.

Two mutually offsetting conclusions can be drawn. For large business organizations that apply such unsystematic pricing methods either (1) centralized profit control is absent or (2) stability of method is a must for CHQ management to get used to the misleading information signals they receive. Any short term manipulation with transfer prices meaning changes in methods of pricing must be

utterly confusing for those who use plans, budgets or accounting data to guide or to control decisions. As a corollary to this observation it might be of interest to note that a couple of firms interviewed maintained two books with internal accounts, transfer pricing methods being designed for each book to yield information pertinent to two different purposes.

9. Investment project groups

In the preceding sections we have been concerned with the selection of individual investment objects as manifest in the appropriations procedure. One of the unsolved problems in designing a general procedure for the "optimal" selection of investment objects is the interdependency problem. It all boils down to the question of how to apportion income and expenditure streams to one particular investment object that belongs to a group of projects joined together in one or several production processes. The wide-spread divisional or profit centre organization of U.S. firms is a rough approach to a method of segmenting the whole organization into fairly homogenous components by some criterion such as production technique or type of final output. In this setting the investment budget of the individual division is the investment project (group) the prospects of which should be compared with those of other divisions. We found earlier that rate-of-return considerations at divisional level - if existing - were rather unsophisticated and usually consisted in the application of some kind of profit margin criteria. We also found that the methods of transfer pricing put to use often - not to say normally - yielded profit allocation patterns in ex ante planning as well as in ex-post control functions that did not reflect profit performance as "truly" as would be desired for a proper ranking of various aggregate activities according to profit performance. Both profitability evaluation at the investment project level and interdivisional profitability comparisons seem to suffer from this bias, if intuitive and informal adjustments cannot be made when the data are interpreted.

There are, however, intermediate decision problems between the level of the individual investment object and the division or profit centre. In several large and small firms interviewed the problem had been approach by way of an intermediate type of planning between long range planning and individual investment project evaluation.

The approach taken was to work with an extended comprehensive budget covering 2 or 3 years in detail combined with a number of special project "investigations"

instead of a long-range comprehensive plan. In these special investigations a very distant future was usually covered. Sometimes the special investigations were systematized in terms of a "strategic" or a "prospective" plan. A special investigation or a special project usually consisted of a new plant, the development of a new product or the penetration of a new market etc. including all activities considered from the development and production end to the final market. The technique was to investigate this project on its own merits as if the decision was to start a new firm.

What is new with this planning pattern is that the financial and profitability consequences of the "project" for the entire corporation were not taken into account until at a fairly late stage; i.e. when spending commitments or necessary financial arrangements fell within the horizon of the extended budget. I feel inclined to call this approach a rather sophisticated application of marginal reasoning in comprehensive aggregate planning at the firm level. The practice - in its simplest form - in fact means that larger additions to the total activity-set of the firm organization are evaluated isolatedly on their own merits and viewed against the background of a very distant future. At the same time traditional production lines were consolidated and planned in a much more nearsighted fashion. Such a dichotomy in planning is fully adequate if planners and decision makers feel confident that no drastic and unforeseen changes in the economic environment of existing activities will take place just beyond the horizon of the existing comprehensive long-term plan.[1)]

10. Allocation

In the introductory Chapter 2 we noted as one of the possible basic purposes of planning the motive of allocating total financial resources of the firm in an "optimal" way by some chosen definition. As distinguished from the other purposes listed this standard of classification was not suggested by the interviews but rather stemmed from the a priori view taken in literature on planning and the theory of the firm.

When we talk about allocation in this section we restrict ourselves to the ability or the systematized desire of the firm to plan to "shift" or reallocate its

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1) In those (very) large firms working with horizons below 5 years in their comprehensive plans, however, this was not the reason stated for keeping the planning period short, but rather that the planning period chosen was the longest they could think of within which existing markets could be foreseen with "satisfactory accuracy".

activities in order to attain certain specified goals on the planning horizon as defined to-day; i.e. against the background of planners' appreciation of the future development of the economic environment of the firm. Such goals of a business organization are liable to be associated with some purified notions like maximizing profits or returns to invested capital. As should be apparent from the preceding chapters there is very little to be found of optimization procedures of this kind in the formalized planning systems. In effect the numerical information flowing out of the budgeting and planning system did not possess the quality and was not arranged in such a way so as to allow any mechanical optimization rules to be applied. Besides major decisions were not taken within the framework of planning nor based on the information processed within the comprehensive planning system. The special project plans of the previous sections are one illustration of this.

In a small number of firms systematic, but partial, optimizing devices were applied within the formal planning routines to improve performance in terms of profitability in the short-term plans (budgets). Similar practices were almost entirely absent in the long-term planning routines. This of course does not mean that such considerations do not enter indirectly and informally and we will return to this in the next chapter. This conclusion primarily rests on the observation that the character and quality of the numerical information assembled during the course of planning does not allow an assessment of what are the best future activity paths to gear the firm onto, given known initial circumstances. Such judgement might very well enter informally but they fall outside the scope of planners' responsibility. Also, optimization in comprehensive planning should be viewed with respect to the entire operation of the firm and should not be confused with the large number of subplanning routines that precede comprehensive planning or are based on the comprehensive plan. In such sub-routines formal optimization routines are sometimes applied. Inventory planning and production scheduling have been quoted as examples.

At best corporate planning and budgeting systems are devices that help to "automate" CHQ operations management and if well design also to improve profit performance within the domain of traditional operations. If so it also performes the useful purpose of freeing top executive management from short term operational problems.

There are planning systems that are very efficient in shaking out information at lower management levels that would otherwise surface at CHQ much later.

The very circumstance that CHQ has a system to communicate with the rank and file of lower level management often scattered over the entire globe means an element of exhortion that would otherwise be absent.

Control seems to be the fundamental purpose of formal planning. An efficient control system must be viewed as a crucial element in a management system aimed at maximum performance in some short term operational sense. "Control" enters in the making of plans ("reviewing") as well as when it comes to checking the realization of plans ("reporting").

However, major decisions that wrench a business organization into new markets or production processes, the major allocation problem, is something that takes place outside and on top of what we have called formal, comprehensive planning. Even though a well designed, such planning system means that top management may devote more time to such decisions one may still argue that if the special talent needed is missing efficient operations management may make such major changes more difficult to envision and bring about.

IX PLANNING AND DECISION MAKING

There are three corporate activities that should not be confused in a context like this; (1) formal planning that as far as the results go is a method of compiling numerical information, (2) decision making that may or may not be based on data from the plans and (3) behaviour that need conform with neither plans nor decisions although it certainly is affected by the decisions taken.

The links between formal planning and decision making will be discussed in this chapter under three headings; the time dimension of planning, management participation in planning and corporate policy making. For obvious reasons the discussion gets more rapsodic as we proceed and the more we leave the matters that can be subjected to some kind of "objective" observation. The onward link to behaviour is left out for the time being.

1. Time dimension of planning - The horizons

It might seem odd to account for the time element in planning in this late chapter. There are reasons, however, and they all hinge on the validity of keeping two such integrated concepts as a short-term and a long-term future in separate sections of the book. It is indeed a very artificial procedure to chop up calendar time in a near and a distant future by arbitrarily inserting a borderline say one year hence. It is done, in formal planning, but more by practical necessity than by purpose, and the borderlines drawn vary substantially between firms. Actually, when looking at those firms that apply the complete three stage planning apparatus of rolling one to three year budgets, rolling 5 to 10 year plans and superimposing some prospective or strategic planning device on top of all this the horizons rather tend to fade away as the degree of detail and comprehensiveness in coverage gradually diminishes into the future. Besides, the methods applied in making up the short-term and the long-term plan have so many similar characteristics as to make a separate treatment an unduly repetitive excercise. So this is the place to let the problem of periodization enter.

We start by describing the different kinds of planning horizons entered into formal planning systems and continue to account for the frequency in revising plans of different kinds.

After that the two main control instruments reviewing of the plan and reporting against the plan are discussed. Here the question of management participation in

formal planning enters in a natural way. After this loop the two basic iterative processes of formal planning have been treated. The first, referring to the sequence of subroutines, that make up the structure of the plan, has taken up most of the previous chapters (cf. Diagram I:1 B). The second, iterative process refers to the continuous onrolling of the plan characterized by planning, reporting, revising and the making of the next plan.

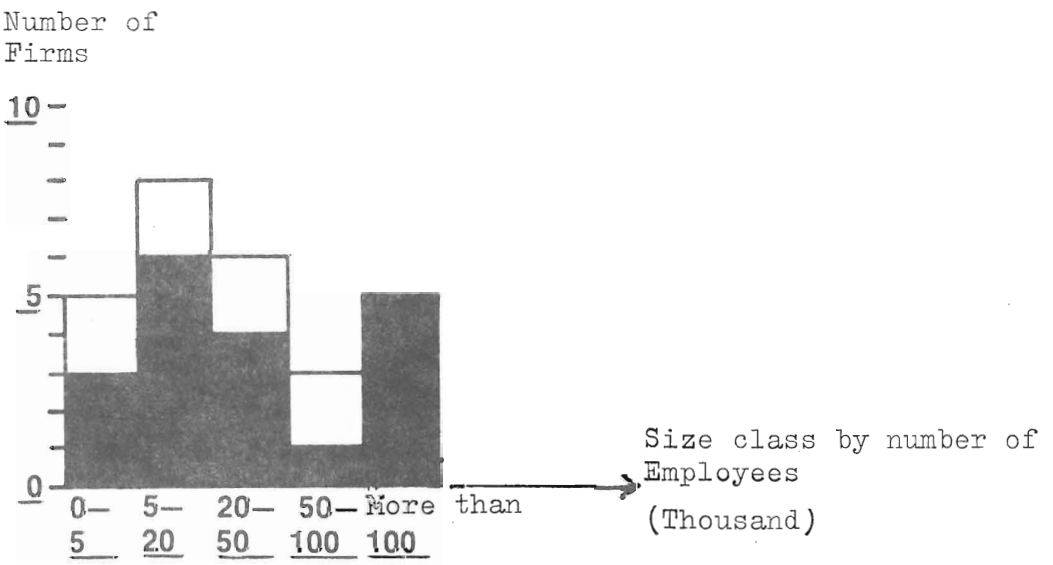
a) Links between budget and long-term plan

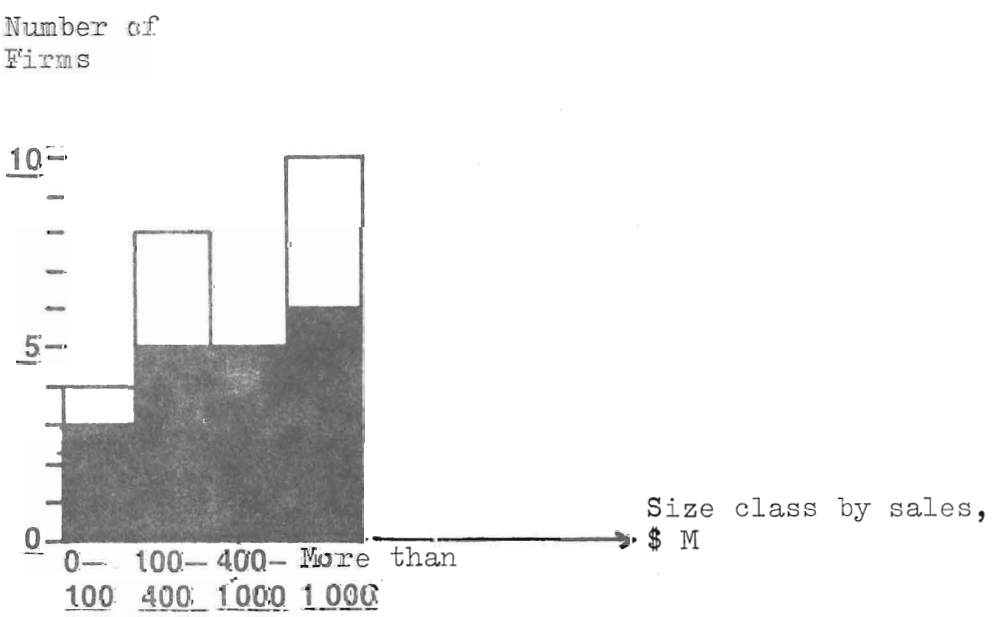
In some firms the difference between the distant and the near future was a matter of mere planning detail, the annual budget only being an explosion of the long term plan. On the other hand, in several firms, the two plans were in fact two separate things, made up by different groups of people, the activities of which being loosely coordinated or not coordinated at all. As a rule further work on the annual budget meant deviations from the first year of the long-term plan. In some firms ("observed cases") the short term (annual) budget was completed before the long-term plan.

Normally the operational content was more pronounced in the budget than in the long-term plan, the budget being concerned with the immediate future. However, this distinction is only a matter of degree. The budget practically never meant automatic CHQ authorization to go ahead with decisions organizationally vested with CHQ. The second, third etc. years of the long-term plan contained many consequences of decisions that had to be taken now. Nevertheless, current operations management (on the presumption of given production facilities) was the dominant concern of the budget and long-term investment and financing problem were key issues in long-term planning. Thus, numerical consistency between the annual budget and the first year of the long-term plan was seldom considered important. The argument often was that if such consistency had been enforced in planning the "myopic" concern with the next year would spread to the 5-year plan as well. Thus for instance several firms (U.S. and European) reported that the sales people making up the short term sales plans for the budget were bad planners when it came to projecting sales for the long-term plan. Hence, this task had been taken away from these and vested with a separate, divisional staff-group or with CHQ. In one large firm, with very frequent updatings and on-rollings of the budget, the long term planning input in budget work was a plan that was between 1/2 and one year old, even though a new long-term plan was made up two times a year. In another large European firm with a two year budget, long-term planners were asked to start from the third year and not concern themselves with the current year and the immediate future.

Diagram IX:1

The frequency of comprehensive long term plans. U.S.-firms (1968)

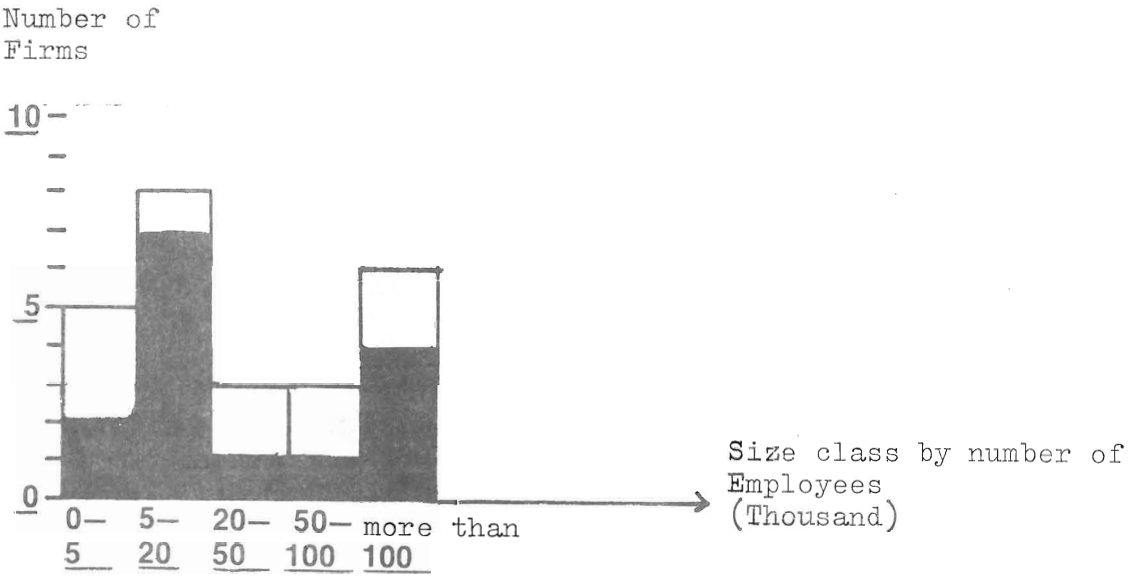


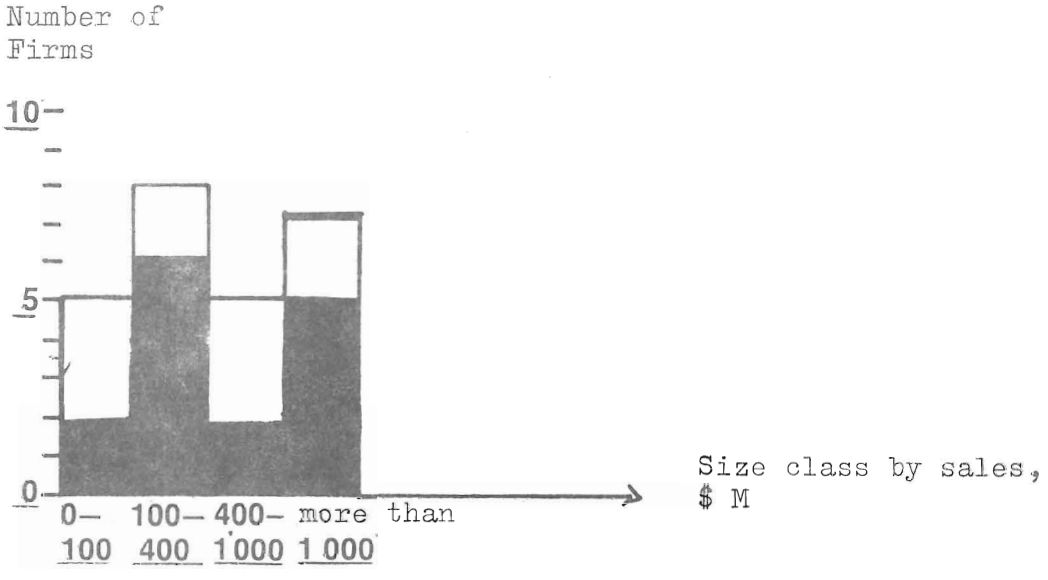


With a comprehensive Long term plan covering at least the parent company. Minimum horizon 5 years. Revision at least once a year.

Diagram IX:2

The frequency of comprehensive long term plans; Non-U.S.-firms





With a comprehensive Long term plan covering at least the parent company. Minimum horizon 5 years. Revision at least once a year.

Note: As in the corresponding Diagram VIII:1 for U.S. companies all data refer to the year 1968. The sample does not include Adam Opel AG, which is a subsidiary of GM, Detroit.

It may be useful to recall here the three types of purposes listed in Chapter II. Formal planning as it has been described in this study is neither an analytical instrument for deciding on what to do nor an implementation plan or program. Control including targeting, performance rating and coordination on a well-structured, numerical reference basis is a prime purpose. When so, a slight "myopic" inclination and emphasis on adherence to past patterns of performance (stability) should be expected. Furthermore major decisions requiring far-sightedness and bold new approaches are practically never part of or even imitated in the formal planning process. These two circumstances in combination may explain why procedures in budgeting and long-term planning are so similar. It also explains some of the difficulties experienced in previous chapters of pin-pointing exactly what useful purpose long-term planning in fact serves. It exists, however, as an empirical phenomenon and we proceed to describe some of its features.

The typical long-term plan in a U.S. firm works with a five year horizon. A comprehensive plan with a five year horizon existed in 19 of the 27 U.S. firms interviewed in 1969 and within 15 of the 26 non-U.S. firms studied. The distribution of size groups by employment and sales of the U.S. firms is illustrated in Diagram VIII:1 for the U.S. firms and Diagram VIII:2 for the non-U.S. firms. The frequency of (at least) 5 year comprehensive plans is higher in the U.S. than in the non-U.S. sample. Also the requirement of coverage for the comprehensive plan in practice has been higher for the U.S. firms, a circumstance that makes a mechanical comparison between the diagrams biased. In fact, making full coverage of subsidiary operations, a requisite of comprehensive planning, would reduce the frequency of such plans drastically in the non-U.S. sample but not so in the U.S.-sample (see further next chapter). To this comes the circumstance (not shown) that non-U.S. 5 year plans were of a more recent origin.[1] We repeat, that the definition of "comprehensive" is that a complete profit-and-loss statement and a complete balance sheet should be projected for each year up to the five year horizon. The presentation not being complete, the necessary data for such a presentation should be compiled and easily available. Among the 19 + 15 firms, however, the amount of detail entered into the formal plan varied substantially.

Besides, when looking at the process of building up the formal plan, at least two different categories could be separated out, the one involving participation

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1) The number of 5 year plans in the non-U.S. sample should in effect be reduced by 3 to account for the fact that all U.S. interviews took place in 1969 while non-U.S. interviews have been spread over the period 1969-1973. These three planning systems were started up after 1969.

of all organizational units of the corporation, the other being a pure CHQ product. These features are of importance for an appreciation of the links between planning, decision making and behaviour to be considered in Section C. Besides, it should be emphazised again that the very circumstance that a long term (say a five year) plan is "comprehensive" does not make it a "good" plan. There are more important aspects of planning to take into account than the amount of detail in presentation.

A typical 5 year plan usually shows the accounts on a consolidated basis for each of the five years. The preceding Chapters V-VIII give a fairly accurate account of the order in which the elements of the typical plan are put together. As far as individual entries go it is normally more detailed than the sketchy presentation of the preceding chapters might indicate.

In most cases the long term plan is completed one or two months before the end of the fiscal year. The work on the annual budget starts from a preliminary or completed projection for the next fiscal year as it appears in the long term plan. Sometimes this was all there was to it. The annual budget was completed simultaneously with the long-term plan and constituted its first year, perhaps with some extra detail added. If not, the basic first year entries of the long-term plan were normally treated as input data (assumptions) for the work on the budget which was completed one or two months after the long term plan.

The basic difference in format between the budget and long-term plan lies in the time specification and the amount of detail. These differences also corresponded with differences in purpose between the two types of plans. The entries of the budget were usually specified on a quarterly basis and sometimes on a monthly basis. However, there were some exceptions notably between U.S. and non-U.S. firms. In three (not small) European firms specification in the budget was by year only. If the long term plan and the annual budget are well integrated the work on the budget - after completion of the long-term plan - mostly consists in the further breaking down of various entries and the timing of planned activities within the fiscal year. In addition the analysis of the consequences of the complete budget for liquidity, rates of return on various activities, etc. may be carried one step further than what was done at preliminary stages. It appared to be a rather uncommon procedure to revise the budget in the light of such further analysis. As a rule surprises were understood to be few.

b) Plan revisions

Normal procedure is to revise the long-term plan once a year for an additional, complete planning period. It is also normal practice to revise the budget once a year only. In most cases this practice, however, was combined with a current updating of some crucial entries in the budget for the rest of the fiscal year. Sometimes this was made on a rolling basis always maintaining a one year horizon. This two-way approach in budgeting was always explained in terms of the various purposes of planning. Revised estimates on budgeted entries were needed e.g. for a reliable numerical re-appraisal of current liquidity demands from the operation of the entire corporation. E.g. the treasurers department needed such updated figures to perform its cash-management function in an efficient way (cf. Chapter VII). Here the forecasting and control purpose of planning enters. At the same time widespread experience reported in the U.S. firms was that a stable standard of comparison is needed to excercise efficient short-run control. This is the reason for the common practice of "living with" the original (annual) budget throughout the fiscal year whatever the ex-post outcome of the original, basic assumptions of that budget.

There are some notable exceptions to the above descriptions that will be summed up in the next chapter. The difference was large between the U.S. and the non-U.S. sample, the U.S. firms exhibiting on the average more detail in their budgeting routines and revising their budgets more frequently. In at least 22 of the 27 U.S. firms interviewed in 1969 budget specification was at least by quarter. Among them 12 were by month. In at least 9 U.S. firms an almost complete up-dating and on-rolling of the budget was made every quarter. Three U.S. firms revised and rolled its budget 18 months ahead every month. In one giant U.S. firm the entire budget was revised every quarter for a future 36 month period with monthly specifications. There was no non-U.S. firm even in the proximity of the last mentioned 4 examples.

In most U.S. firms deviations between originally budgeted amounts and ex-post outcomes were currently analysed and causes for deviations established in terms of the budget. This is in contrast to current practice in external analysis, namely to analyse firm records in terms of data for the previous year, i.e. in terms of growth rates, percentual changes in profits, investments etc. Experience also seems to be that to analyse these deviations against the most recent updating of the budget would create more confusion than insight. In firms where the updating was made on a monthly basis the number of time-dimensions involved towards the end of the year would make such an analysis impossible. A person

travelling back and forth over the U.S. continent in one day having one meeting on each datum line provides a good case in point. He wouldn't think of having his wrist-watch currently set on local time and all appointments as well.

One might of course ask the question what all these compilations of data at this kind of extreme detail is good for. Common sense suggests that there is no "detached" method available to lend any kind of realism to most of these figures. The answer - as far as the anthor's judgemental capabilities go - is that "realism" is no prime objective in planning. In a well managed planning system - as we shall see in the next sections - much of the numerical part consists of negotiated figures. This again hightlights one important feature of the number game called planning, namely a systematic method of making people responsible for numbers, responsibilities that are exactly defined and require compliance that is easily and exactly measured and checked. Such a reference-number system must be fairly stable not to create confusion. Compliance furthermore requires participation in the fixing of responsibilities by those who are later to be made accountable.

2. The control function

a) Management participation

Even though top executive decision makers were often said to be actively exercising the control function with the help of formal reports, reporting is not the only instance of management participation.

I was repeatedly told during the course of interviewing that it was not the final planning document that mattered so much but rather the process of arriving at it.

Very often I met with the statement: "You have to look beyond the numbers." The plan should be a management tool, not an objective in itself. As a tool it was liable to be replaced by other means of gathering information if it did not work properly. The attitude to formal planning as such varied a lot between firms as well as (within the firms) between the kind of firm officer interviewed. During the course of interviewing I gradually acquired some experience in classifying the person(s) interviewed as to his particular attitude.

To take the second kind of variation first, it happened in one fairly large U.S. corporation in particular - and also in a medium sized firm - that the person

interviewed did not concede the existence of a fairly comprehensive long-term plan until rather late during the interview. Again, this concession was accompanied by the remark that the long-term plan was more of a play-tool than a decision instrument. It wasn't of "very much use" but the firm could afford it. It should be added, that the person interviewed in both cases carried a high rank in the organization and definitely belonged to the group of top decision makers.

The variation in attitudes to planning between firms was of a somewhat different kind. Its basic feature had to do with the amount of management participation in the making of the plan. My conclusion - which is neither surprising nor remarkable - is that the importance of the formal plan as an instrument for decision making is directly linked to the degree of management participation in the making of the plan. However, in appraising the degree of management participation one has to distinguish between CHQ management involvement (including the top decision makers) and management participation in general. The first kind is usually a prerequisite for the rank and file middle management to be actively involved and "interested" in the planning process.

First and most important, the degree of management participation in short term planning was closely associated with the emphasis placed on the control purpose. The control function was excercised in two ways (a) during the course of planning work through so called reviewing and (b) by way of reporting against the plan. Both activities will be discussed in detail below.

Similarly and secondly, management participation was important in the appropriations procedure, where final decisions as to individual investment projects were made.

Third, management participation as a rule was much less obvious in long term planning and exploratory planning, even though some notable exceptions can be reported on.

As already mentioned most comprehensive planning systems investigated had a strong financial bias. However, only when planning was made to interact in a systematic (integrated) fashion with operations management did it seem to impose a leverage on actual financial decisions. One instance of this is the use of the budget as a "forecast" for cash-management and the long-term plan as a forecast on the basis of which major borrowing decisions were taken..

Obviously the more of management involvement and the more pronounced the control purpose the more important the plan has to be as an information and decision instrument. However, it takes time to "break in" the routines of a comprehensive planning system and not until such routines have become established within the organization and become familiar to firm officers the planning system begins to function as a guide of any importance for decision making. Most U.S. firms have had a comprehensive budget procedure at least since the end of the war and the appropriations procedure as a rule was still older. As for the non-U.S. firms short-term budgeting dated back to the early fifties or before. On the other hand long-term planning and planning of the "loose" explorative kind (in particular) are very recent things even in the large U.S. firms. Consequently, the practice to think and work in terms of a systematic and numerically specified long-term plan has been established only in a fairly small number of firms, the U.S. firms typically being ahead of the Europeans. An example might illustrate the point. Several firms having started on a long-term plan recently still had difficulties in making division management understand the point in completing numerous standard forms for the long term plan. This was so, even though no complaints were heard when even more detailed forms for the budget were sent out. In the beginning it was equally hard for division management to understand how to complete the form for the annual budget process.[1)]

As has been accounted for already in Chapter II methods of putting together the plan vary a lot. To a large extent these methods also define the character of management participation. The typical shop-floor approach where CHQ collects plan-input data and estimates from bottom and upwards normally places the responsible planner-manager at each hierarchical stage in an upward negotiative position. Since the allotment of funds (in the budget) for investment and growth is always decided at the top it is in the interest of each planner-manager to present as convincing budget proposals as possible. A shop-floor build-up of the plan invariably, and for practical reasons, meant large management involvement at all stages. This was the only method applied in budgeting and in most cases in long term planning. A pure "synthetic" CHQ plan was the only long range planning in-

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1) An instance of this is provided by the giant U.S. firm who asked for three probability estimates as for three alternative outcomes for sales, profits etc. Since 1962, when this kind of specification was introduced, a number of management staff members amounting to almost 1,5 per cent of total present employment had completed an extensive course in mathematics and statistics in order to acquire the competence needed to understand the questions posed.

strument in 2 U.S. and 2 non-U.S. cases. This invariably meant that management participation was low and restricted to a small group of CHQ people who were not authorized to make decisions of any consequence.

However, the degree of involvement is still determined by the degree to which budget and plan data figure as an information input for decisions at CHQ. If the attention paid by top corporate decision makers is great, extensive management involvement far down in the corporate hierarchy is an automatic consequence. The extensive CHQ attention put to ex-post reporting against the budget in U.S. firms was in itself enough to spur substantial management interest in budget work. This was even more so in those firms where CHQ as a matter of routine prepared a separate and sometimes quite detailed CHQ plan in order to improve their bargaining position vis-ã-vis divisions. This is an example of extensive planning practices that one would expect to find only among the very large business corporations that dominate the U.S. sample.

Some large firms also had constructed so called (financial) models that simulated the comprehensive planning sequence in a very simplified way. Such model work was practically always supplementary to the comprehensive planning process and tied in with it at times in a systematic fashion.

Case (U.S. firms) environment interaction with simulation model

Many of the U.S. firms interviewed had reached a size making it impossible for them to operate without interacting with its environment in a substantial way even at very high levels of aggregation. In one such firm a corporate planning - financial model that interacted with an econometric environmental model of the U.S. economy had been constructed. The interview did not allow a satisfactory evaluation of the importance of this joint model in planning work. However, the presence of the model is interesting enough to warrant a brief description of its supposed place in the Planning process.

The environmental model was a modified version of a model of the U.S. economy provided by a well known consulting firm. An up-dated version of the model was always kept easily accessible on a time-sharing system.

During a five year period an elaborate imitation of the planning and budgeting process had been built up in the form of a corporate model. This model was specified to the detail of the set of profit-decision units that made up the organization of the firm and also the organization of the planning procedure. This firm model was integrated with the economy wide model and stored in the same computer. Impacts from specified exogenous environmental changes on the firm could be simulated in a routine fashion from a terminal at CHQ. Similarly the impact on the U.S. economy of some, substantial changes in the operation of the firm could be simulated in the same routine fashion. The most important interactive features had to do with the demand side. Price/quantity trade-offs on established product markets could be run through the models.

The environment model was of the input-output type with demand functions specified for end products of each sector. The corporate model was a simplified replica of the planning set up. There was a separate input-production-profit model for each profit centre and the model could be instructed to simulate with an optimum five year plan for each profit centre under a minimum profitability constraint.

The use of this model structure in planning was described as follows. Early in the year top executive people (chairman, and all VP) set down in a two day meeting to decide on their preliminary environmental beliefs for the next few years. Planning people then started to work on these preliminary thoughts in order to come up with an operational specification of environmental assumptions. In a second meeting in February an agreement was reached on these environmental assumptions and (furthermore) a number of strategies were suggested for each profit centre.

From these sessions two parallel planning sequences followed: Each profit centre was asked to provide suggestions for operations planning on the basis of these strategic suggestions. Second, CHQ planning people sat down to work out an operational formulation of the environmental assumptions and the suggested strategies for model simulation purposes. From these data a set of simulated plans was produced by the model.

The next session at the administrative level consisted in a confrontation between profit centre plans and simulated plans. From the CHQ view-point the simulated set of plans served two basic purposes; (1) as a reference point to ask questions from. It improved the negotiating position of CHQ vis-à-vis profit centre planners; (2) a means of testing the consistency of profit centre plans.

The experience was that simulated plans as a rule were way off profit centre plans. The reason usually was (a) that profit centres neither wish nor can plan to adjust to an optimum economic structure at the rate the model prescribed. Second (b), even though this may be possible at times, the very simple representation of reality that the model represents makes it produce unreasonable or extreme results as a rule. Third (c) since basic environmental assumptions have a tendency to change substantially from year to year it is never optimal in terms of the complete planning system to adjust fully and immediately to new optimum levels even though the model may advice so.

The confrontation between preliminary profit centre plans and simulated plans, however, normally resulted i compromise decisions as to how exactly profit centres should revise their plans. These revised plans were later approved tentatively as the long term plan for the next five years.

With and without separate CHQ plans at least half of the U.S. firms applied - as a matter of routine - very elaborate informal procedures of imposing CHQ views on the final plan. Normal practice was to have a small team of CHQ planners circulate among the divisions each quarter for one or two day sessions at each stop or to bring division planners together at CHQ at regular intervals or both. With or without such meetings extensive telephone contacts between division and CHQ were always practiced before any formal documentation was completed. Often such telephone contacts meant that a CHQ planner tried to bargain down budget request from divisions.

It should be noted that so far we have only been talking about the efforts spent on fixing the entries of the planning document before presentation to the Board for approval. It should also be remembered that approval of the Board is not the same thing as a decision to start making financial commitments.

Most often (in U.S. firms) some responsible person at Board level was actively engaged in planning work at CHQ level with the authority to fix certain overall guidelines for planning. Often a separate sub-committee of the Board had been instituted particularly for supervising planning work. If not, CHQ planners normally checked upwards for guidance if need arise. Thus, when conforming to the above description, the basic assumptions of the plan had been checked, approved and ground into the plan in all its details before finalized. If so, the passing of the final planning document at a Board-meeting was normally a matter of form only.

As far as work on the annual budget goes this description of management participation seems to be relevant for most U.S. firms interviewed (at the time of interviewing N.B.). As for the European firms interviewed even in budget work top management participation at an early stage was less obvious and in several firms absent. Hence the importance of the formal budget was smaller than was normal in U.S. firms and presumably also management interest and participation at lower levels. This conclusion is further strengthened by the much less stringent reliance on formal reporting and control against the budget in non-U.S. firms observed. Hence, again the importance of budgeting as a tool for decision making diminishes.

Even for most U.S. firms the above picture of active management involvement becomes less relevant when we leave budgeting and look at long-range planning or extended budgeting. For non-U.S. firms active management involvement in long range planning beyond the passive filling in of standard forms and presenting the figures in a CHQ memorandum seemed to be absent. One reason may be that the time distance between the long range plan and the time when decisions to start making commitments have to be taken is much longer than for the budget. It seems to be an ever present circumstance of corporate life that current operations management and the immediate future takes up most or all attention even among those who carry titles that suggest otherwise.

The long-range plan is normally geared towards the compilation of an information basis for long-range financing or investment decisions but these decisions are normally delayed or shifted away from the planning people. The final investment

decision is practically always taken within the so called appropriations procedure - that always (within U.S. as well as non-U.S. firms) attract great top-management attention. Long-range plans are seldom put together in a form that make them suitable for decisions regarding where - within the business organization - to allocate available funds. The main use to which long-range plans are put seems to be to estimate the future need for long term financing and among several Swedish firms I met with overt skepsis as to the need for plans even in this context. Two Swedish firms had begun work on planning beyond the budget horizon at the peak of the business cycle 1964/65. However, the outcome in 1966 and 1967 was so "far below" the figures in the planning documents that they outright abandoned all planning of this kind for several years. Similar experiences were reported in both U.S. and non-U.S. firms during the last few inflationary years, and the international monetary turmoil of 1971 and 1972.

In contrast to this experience several executives in large U.S. firms interviewed expressed the opinion that without the 5 year plan regularly made up and revised every year it was very difficult both to coordinate preparations for major investment decisions and to keep top management informed in sufficient detail of the directions in which the various parts of the gigantic organization were heading and as to what problems lay ahead.

Also, in a few of these giant U.S. corporations planning even beyond the 5 year horizon was as involved as budgeting work in many of the smaller firms interviewed. In some of these firms the long range plan came very close to what one could call a remote steering instrument, through which top level policy decisions were imposed upon the organization allowing at the same time a far reaching delegation of decisions and incentives to divisions or subsidiaries. To achieve such results an enormous effort had had to be spent on standardizing and organizing the data flows from bottom and upwards and vice versa and to check through an elaborate reporting system that departures from the plan were always under current CHQ control. Here the adoption of an adequate or at least stable transfer pricing system was of paramount importance. In a way the planning procedures, adopted in the two U.S. firms I have in mind when writing this, represent a peculiar mixture between the detailed ordering of outputs characteristic of eastern planned economies and the remote and general policing of mixed, industrial nations in the western hemisphere where much of incentives and the taking of initiatives are left far down in the economic system. The principal difference seems to be that top corporate policy makers have better tools (methods) and are much better informed about the "economy" they are manipulating. They possess data for coordination and

control of a far superior quality. In one of these U.S. firms the planning system was referred to frequently as the instrument by which top management "communicated" with the organization.

b) The reviewing system

The informal authorization schemes in budgeting usually carries the name reviewing. To some extent the same reviewing is applied to long-term planning as well. Reviewing is the part of the overall control function that takes place before the numbers of the plan have been decided on. Reviewing is also the typical way of imposing informal constraints on the formal planning routines. The formal planning routines are normally organized to accomodate reviewing as data compilation proceeds (cf. the "blocks" in Supplement S 3). This is also the main reason preventing the use of the plan or the budget for computerized simulation experiments.

It will have to suffice in this monograph to indicate the main steps in the work on the plan where reviewing is most typically imposed.

We restrict our attention here to reviewing practice at the stage of planning and postpone to the next section the control function excercised at the later reporting stage. Reference is made to Diagrams I:1 A-C in Chapter I. A distinction is made between a centralized and a decentralized CHQ control of planning by way of the reviewing procedure. The concept of centralization of reviewing used here has to be kept apart from the degree of centralization of decision making and of the organization. As we shall see a centralized reviewing process tends to be associated with a decentralized decision system.

We begin with the centralized system which here means that CHQ reviewing is imposed already at the early stages in the making of separate division or profit centre plans.

The fixing of the sales and profit projections is the first and prime focus of CHQ attention. One person at CHQ was usually responsible for several divisions. The larger the firm, however, the larger the number of persons involved and the more difficult coordination between divisions at this first stage. The next CHQ reviewing stage took place when data for a cash-flow analysis had been prepared. At this stage a consolidation for the entire organization usually took place. The result might be a request to make cut-backs in the investment and profit plans. As has been mentioned already revisions seldom went as far back as to the sales projection.

A third stage (seldom met with) was a performance (profitability) analysis for the entire division. Comparison this time was with past division performance as well as with planned performance between divisions.

The fourth reviewing stage is defined by the appropriations procedure. Cut-backs or revisions this time only concerned spending on capital account.

The typical feature of the decentralized planning system is that coordination between divisions at CHQ level does not set in until the stage when data have been fixed and compiled for a complete cash-flow analysis of the entire business organization. Revisions again seldom go as far back as the sales-profit projections.

In thdecentralized system divisions or profit centers or subsidiaries are authorized to make up a complete plan on their own. CHQ reviewing starts at the cash-flow analysis and - more seldom - at the performance rating stage. Formal consolidation of the future accounts usually takes place, but in several instances a simple summation is all there is to it before the completed plan (budget) is handed over to the Board for approval. Usually, however, some kind of CHQ authority was excercised.

The liquidity position of the entire corporation or the result of the performance (profitability) analysis might give rise to recommendations to revise e.g. cash flow demands downwards in some divisions. It seemed to me that current practice in a planning arrangement like the decentralized one was to leave it with division management to decide where and how to excercise the cut-backs.

An arrangement frequently met with was to have a series of reviewing sessions between CHQ and division people; one division at a time. Sometimes a group of CHQ people did the travelling, sometimes division management was brought in to CHQ. In at least two firms practice was not to close the reviewing session until decision on a final division plan had been reached.

Two consequences from the application of the two types of reviewing methods are apparent. They both refer to the coordination potential of the two approaches. The early grass root involvement in the centralized procedure means that CHQ management exert their influence from the very beginning when the final outcome of planning in all other divisions is unknown. Complete CHQ coordination is impossible without a number of trial and error iterations since it has to be based on incomplete information. Such iterations take place over time but not within each planning sequence.

The decentralized reviewing system has the potential of good coordination at the consolidating stage either by way of sending out guidelines or directives prior to the start of planning or by having division management revise their plans on the basis of one or several consolidations of the plans.

In practice decentralized reviewing seems to mean the same as a passive CHQ involvement in planning with a more or less mechanical summing up of division plans. The "plan" has not been properly worked over and cannot be used effectively as a reference for reporting and control. Some other means of steering and control are needed as a complement. This description is more representative for the European sample of firms than for the U.S. sample.

Early shop-floor reviewing on the part of CHQ almost by definition means extensive management involvement and a more accepted system of numerically specified responsibilities that facilitates effective control by reporting. The decision process of the next year or years has been well rehearsed and top management can delegate a larger portion of current operations decisions, relying more on the final control through reporting for compliance with the "agreed upon" plan. This is what was meant by the earlier statement that centralized reviewing often was associated with a more decentralized or delegated decision structure.

c) Reporting

Among the U.S. firms interviewed detailed reporting and ex post checking on performance was 100 per cent present. Reporting against the budget was probably the most important use to which the budget was put. This practice also explained the surprising degree of detail of timing in the budget of U.S. firms. Normally all major entries in the budget were broken down on a monthly or a quarterly basis. This was so regardless of whether information of sufficient quality was available to plan in such detail. Forms for requesting advance budget data, budget presentations and forms for reporting were quite often standardized 100 per cent to allow automatic computer handling. In a few firms computers were programmed to signal by month ex-post deviations from budgeted entries that exceeded pre-set criteria and responsible division managers sometimes were required to report and explain currently major deviations before such signals reached CHQ.[1)]

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1) Also cf. the control linkage procedure reported for Raytheon Corp. and General Mills in Dix - Kaffenberger - Withers (1969, p. 171).

Among the manifest differences between U.S. and European firms met with during the interviews the extent of reporting and control was one. Even though all Swedish firms had an annual budget it normally covered the parent company only while subsidiaries (also 100 per cent controlled ones) made up separate budgets. Group control frequently was by way of Board representation only. The very fact that comprehensive budgets at group level were not made up, made systematic group control by reporting against the budget impossible in the majority of Swedish firms. Even within the parent company numerical reporting up to CHQ was by far less frequent, less detailed and less comprehensive than in the U.S. firms interviewed. In one large Swedish firm no comprehensive numerical information on the state of affairs was available until the final closing of the accounts at the end of the fiscal year and controls mainly consisted in a hierarchical informal procedure where good memorizing capabilities expecially at the very top played a crucial role. Probably a large part of this difference is explained by the enormous difference in size between most of the U.S. and Swedish firms interviewed - but not all. Even the smallest U.S. firm interviewed revealed formal control and reporting systems much more thoroughgoing than in larger Swedish firms studied. The impression of not unimportant differences in business philosophy left is strong.

d) Authorization stages

Planning methods and degree of management participation both have a bearing on the stages of authorization imposed on the plan. The structure of the plan, type of management participation, the reviewing system, the authorization steps and the reporting procedure are all different sides of the same multidimensional thing; planning. They all reflect the purpose to which the plan is geared and they also to some extent (such is the author's conclusion) mirror the decision process in the firm. In principle authorization is the formal part of the reviewing process.

In most instances the exploratory plan was not subjected to formal authorization at the top executive level at all. It was rather considered as an informative document containing an appraisal on the very long-term outlooks; usually shaped in terms of alternative courses of action open to the firm and including no or little in the form of numerical specification. The few exceptions to this rule were those few U.S. firms in which the long term plan was well integrated as a temporary choice from a strategic plan.

Usually, at least one final authorization by the Board or a sub-committe of the Board was required for the long term (3-10 year) plans. Often, a formal Board mem-

ber clearance was needed at several stages in the work on the long term plan (see below) and the frequence of Board contacts at several check-points increased with the degree of precision and comprehensiveness in the plan and the shortness of the planning period. This probably reflects the fact that some decisions that involve later commitments may be taken on the basis of the long-term plan notably on the long-term financing and investment sides.

Again Board authorization was not involved in 2 of the U.S. cases where long term planning consisted in the application of a numerical model simulation or some simple trend extrapolations at CHQ only. In these cases the final plan was regarded as a document (like the exploratory plans) to be presented to the Board members for information only.

In short term budgeting decision making is much closer in time. Here the authorization procedure consequently was much more elaborate. Various members of CHQ top management were normally responsible for different stages in budgeting. Vertical contacts were frequent and travelling extensive in the large firms with world wide operations. Even though final authorization of the budget document was normally a token ceremony it reflected the fact that the Board had also accepted the budget procedure that led up to it.

3. Corporate policy-making

The presence of explicit or implicit "policies" that guide the business organization into the future has frequently been referred to. Firm policies or desired objectives are by definition demonstrated in the decisions taken. Since they always mix with the factual circumstances they are nevertheless hard or impossible to derive without access to written documents specifying the policies that apply.

Firm policies being explicit and presented in written documents, on the other hand, they did not necessarily represent an accurate image of actual, top management policy guidelines. To express policies in a format relevant for a particular decision is a difficult task indeed. In principle such a task demands all the information required for the decision itself. It is partly and importantly a question of intuition on the part of the decision maker, and such intuition may change substantially in quality from time to time. Consequently policy documents prepared for circulation through the entire organization and - sometimes - to a still wider circle of readers were often so vague as to convey very little of substance as a

basis for understanding actual decisions. One often found sentences like "dynamic behaviour", "flexible adaptations to a changing environment", "our great responsibilities to society at large" etc. One often had the feeling that the purpose of such "public" documents primarily was to create a becoming image of the corporation rather than to unveil its basic policies as to the future or to create a comfortable feeling of working for something good but as yet undefined by deliberate management indoctrination.

To interprete firm planning and behaviour with reference to such documents would be at best speculative. These documents being the only evidence available perhaps one should go no deeper into the matter.

The reason why the policy problem has been given a separate section is that the matter was so often brought up as an "important thing" during the interviews. A second reason is that earlier students on planning and adjacent subjects often have devoted a surprisingly large proportion of their efforts to firm policy making rather than the means by which policies are being implemented.

Firm officers or planners often wanted to think of their work as planning for growth. At closer questioning, however, I usually found that "growth" was a multifaced matter. It included not only growth in sales (a traditional concept of growth) but also in profits and firm size; often measured by total assets but in a few cases by net worth at market value. Usually a number of profitability and precautionary constraints were imposed on the growth plans, and if maximum long run growth of net worth (rather than sales growth) was the stated objective, it is very easy to reconcile with the idea of profit maximization.

The questions one should in fact ask are these; given all this emphasis on policy making wouldn't one expect that firms deliberately planned for a future program of action that would not maximize shareholders wealth or firm profits in some operational sense? If maximization of net present worth of the firm or profits is the only policy component would there be any need for further elaborations on firm policies? The targets are (then) simple enough. The task for planners is to draft a proper and operational plan to reach the target, which is a "technical" business problem rather than a policy matter.

However, the problem is not quite as simple as the questions might suggest. As indicated in the previous chapters it is hardly possible to reconcile the numerical routines met with in formal planning with a systematic pursuance of pure non-

comprimizing profit maximizing rules in any sense of the word. In most cases (US or non-US) comprehensive planning is not even operational in the sense of relating decisions to targets. The use of rate of return requirements in investment project selection provides a case in point. If these requirements are rigidly adhered to (which is never the case) they in fact would constitute an automatic decision mechanism. However, in principle such decision criteria can be directly related to its consequences for the firm. These consequences would be called targets, goals or even policies in an ex-ante planning context (cf. the case in Section VIII.3). A set of rate of return criteria for a firm in effect embodies a choice i.a. between growth and profitability. In effect then; a policy document should be a manual of decision criteria. This was the observation that introduced this section. However, corporate policy making is usually not thought of as criteria for choice and decisions and the reason may be that policy documents are regularly phrased and put into writing in the public relations departments of firms.

This discussion leads to two conclusions (1) corporate policy making to be an operationally meaningful concept is the same thing as what has been described as targeting in Chapter II. In many firms in the U.S. sample targets are very obvious and well defined things. However, the exact nature of these targets are practically never available to outside observers.

The principles of building up and applying a system of targets have already been described (see Section II.3). It remains (2) to make some comments on what factors might influence the setting of targets. The first of these comments refers to the impact of tradition and the second to the impact of past experience; and then past mistakes in particular. We are now concerned with policy making as it might be read out of decisions actually taken or observed in planning manuals, and hence involved in speculation as much as observation.

4. The impact of tradition

The impact of tradition seems to me paramount in planning. The basic effort at the early stages of planning was directed towards the problem of staying on and performing well in established markets and maintaining established positions (market shares). Suggestions in preliminary planning documents by planners to do something entirely new in some areas even on a 10 year horizon was probably weeded out in the reviewing process. This was not considered a matter for plan-

ners. With a few exceptions (firms with conglomorate features), I found very little effort (even in very long range plans) spent on planning to enter entirely new markets and still less (i.e. practically nothing) on direct efforts to contract in and leave (gradually) long established markets. This observation has got very little to do with the systematic planning routines frequently met with that were directed towards a continuous product change; the introduction of new product variants and the phasing out of old ones. Such partial adaptations are normally carried out within the realms of established markets or technologies or more generally; within the domain of what was often called "present business experience".

Such a focussing on the past in planning for the future is not hard to understand. Over a long stretch of years a wealth of experience had been stored within the organization and was currently put to use in the technology as well as the markets in which the firm was currently operating. A large business organization normally carries with it a not negligible amount of organizational inertia with respect to sudden adjustments to a new market and technological environment.

Sometimes I was given the "rough" answer; "we have been producing on the basis of these raw materials for more than 50 years with success and we have made it a policy to continue to do so".[1] Often I heard statements like; "We expect traditional markets to grow at a rate that can sustain any desired growth on our part. We have a lot of overhead skill in our present and traditional technology and we have made it a policy to exploit that only, and not to diversify into risky and unfamiliar activities that may seem more profitable on the surface". "If we go into markets or products where we have no market or technical experience we become bankers only and we want to contribute more than money." Even more powerful was the argument presented by a high level executive in a large U.S. multinational firm; "When you have the entire world to work in it is necessary to limit your sphere of interest to make possible an active search for and development of skill".

However, the economic environment of one single firm is dependent on a number of exogenous factors such as the behaviour of competitive producers, a product demand that will normally exhibit changes over time and sometimes sudden changes in technology. If pursued inflexibly for long periods a firm policy directed towards staying put in established markets and technologies will create a risk for

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[1] This "policy" was in fact stated more elegantly but with no other content in a policy handbook published and made public by the firm.

the firm of suddenly being caught unprepared in a new environmental situation where management no longer can control the firm. Some firms had previous experience of dramatic incidents of this nature, that had brought on to them a drastic reorganization, leaving them after a while to adapt to an entirely new technology and market environment. In one such firm (U.S.) I was told with emphasis that the prime purpose of long range and strategic planning was to warn the firm in good time for the dangers of a repetition of such a situation. Also, in a U.S. firm of "medium size" the long-range planning effort was currently being concentrated on getting out of the traditional market because of heavy Japanese competition. These instances, however, represent exceptions rather than prevalence in corporate long-range planning.

In another U.S. firm a recent liquidity crises had produced the result that the major planning effort was geared towards regaining liquidity control as fast as possible neglecting in fact the long run outlook, returns to investment and growth. Planners were aware of this unfortunate bias but attempts to reorganize planning routines into a more well proportioned effort met with resistance from the Board of Directors. In still another U.S. firm, operating in an adjacent market, conditions were reversed. The firm had been floating on top of a booming market for a decade. Growth as well as profits were excessive and top-management delegation of responsibility indeed generous, in the very sense of the word. A long-term plan had recently been instituted with the explicit purpose of keeping top-management informed of what was going on more exactly within the organization. So far, divisions decided on their own budgets and plans. However, consolidation took place at CHQ and a rather sophisticated liquidity and rate of return analysis followed. The amount of information required from divisions was impressive and the result of the analysis at CHQ generated a series of dialogues between divisions and CHQ. One result of this procedure was that problems at the lower management levels were brought to top management attention at a very early time. Still, however, the basic policy of a generous delegation of responsibility in planning as well as decision making was preserved. Resources in the form of personnel etc. were generously provided if a requested and top management interest in planning was markedly positive.

One could easily imagine the blessed mixing over time of the two features of policy-making; tradition and experience. Experience generates efforts to avoid mistakes and to repeat successes. Gradually such efforts are transformed into traditionally maintained policies. By degree new experience from an ever changing environment of the firm means a transition into new policies etc. An instance of

this is the previously referred to policy by some firms not to resort to external long-term sources of finance. In some instances this policy seemed to me the result of a realization that in the past the firm had not been able to grow faster than what could be sustained by internal finance only. Alternatively, the same policy might have been the result of a past liquidity crisis. The danger inherent in such a slow adaptive process is that sufficient changes in basic firm policies might require drastic set-backs in performance to take shape; or at least such changes take time and once enforced may be long overdue and not called for to cope with the current situation.

There are also reasons to quote in favour of constraints on planners that are based on past tradition and experience. The imposition of such policies on planners and decision makers creates (1) stability in behaviour. The same constraints on planners could also be motivated as a (2) precautionary measure to guard the organization when making commitments for an uncertain future. The precautionary arguments for policy constraints on planners in turn fall back on the basic - and not well substantiated - premise that top management, the President or the Board always possess the relevant and superior insights into the future. Top-steering so defined, however, also means that slight errors in foresight on the part of final decision makers are transmitted through the entire organization and may because of a chance coincidence of unlucky circumstances result in serious set-backs. Another back-side of the stability and precautionary motives being enforced by top-management policies are the possible, destructive consequences for initiative at lower management levels and an increased degree of organizational rigidity. The more elaborate and regulative policy making from top down the more open to bureaucratic inflexibility the organization.

X COMPARISONS AND CONCLUSIONS

After so many pages some kind of a summing up is a fair demand. Also, since corporate planning has been studied in several countries some attempts at a comparison would be a required task. Both demands will be catered for. There are conclusions to be drawn and there are differences in approaches to planning systems on both sides of the Atlantic that the author cannot reasonably think of as being attributable only to a biased sample or non-systematic interviewing. However, there exists no well defined measuring instrument with which to distil out distinct answers and the reader will have to be satisfied with the combination of speculation, impressions and observation that the author might muster - or refuse to believe.

1. Conclusions

No instrument can be evaluated without reference to the purpose for which it has been designed. A lightmeter is no good when it comes to assessing the time of the day and although an ampèremeter may be used for estimating the voltage of a current, you need at least an extra scale or some basic knowledge to get at the appropriate figure.

Comprehensive planning as a management instrument represents no exception to this. Since the reader is now familiar with the structure of the comprehensive planning instrument as described in the previous chapters, we might as well sum up some of the basic properties of the instrument in terms of the various purposes of planning introduced in Chapter II.

Numerical information processing is the key phrase to describe what is usually meant with a formal, comprehensive planning system. However, when it comes to providing information for guiding decision makers to the best decisions in terms of profit performance etc. (allocation purpose) the instrument does not yield the relevant information. Consequently it is not used for that purpose. Major decisions usually seem to be taken on the basis of information that is external to or precedes comprehensive planning. Planners may not possess the relevant competence to handle such information. If decision makers themselves (in addition) do not take an active part in the planning process this very circumstance undoubtedly plays down the importance of comprehensive, formal planning.

Comprehensive formal planning is an instrument of internal two-way communication

and top-down control rather than a means for analysing vironmental futures and assessing their impact on the business organization.

Planning as a method of "making distant consequences a cause for immediate concern" - a purpose often quoted in literature - does not seem to be a paramount purpose of comprehensive, formal planning observed in this study.

The build-up of the plan is made in a recursive, step-wise fashion in a way illustrated in the previous chapters. Hence, several basic plan-decisions are taken before their overall impact on the firm has been analysed. Such final analyses practically never prompt more than partial backward revisions of previously fixed input variables. Consequently the final result (the plan) consists of a structure composed of elements (sub-routines) that normally do not match properly. For one thing this means that the information output of the plan is to some extent distorted and interpretation by decision makers presupposes knowledge of such distortions. Second, the very fact that the solution of the system (the plan) is made by way of a sequence of normally inconsistent sub-routines, the procedure as such by definition means a loss of information, however sophisticated the sub-routines. The final result, however acceptable it looks, reveal little of the existence of a better or more efficient solution.

Comprehensive planning practically always is of the single valued type. Normally there is no prepared alternative for contingencies or unexpected events. In principle the structure of the comprehensive planning system represent what is sometimes called a "corporate model" and can be used in theory at least for simulation experiments. However, the planning system is much too complex and requires too much ad hoc judgemental input (management participation) to allow such analysis on the basis of the plan. Hence, if revisions in the comprehensive planning system are not frequent it represents a rather inflexible management instrument.

What has been said so far holds for short-term budgeting as well as long term planning. In both instances the final solution (output) of the budget or the plan is geared towards a financial format. The financial bias of practically all comprehensive planning systems reveals the prime area where plan data serves as information inputs for decisions. The future cash-flow analysis on the basis of the plan may give rise to back-ward revisions in the plan itself. The short-term budget is often put to use as a basis for short-term liquidity planning and the dominant purpose of the long term plan is to foresee in good time future financial needs of the firm. Here the term an "early warning system" may be warranted.

In general the resources devoted to planning grow with the size and the degree of diversification of the firm. The larger and the less homogenous the firm the more pieces of information to consolidate at CHQ and the more difficult (or hazardous) to rely on intuition and memorizing capabilities to make decisions. In this sense comprehensive planning provides information for coordinating the activities of the firm. If designed to bring relevant grass root information to the attention of CHQ by bureaucratic procedure (rather than by direct observation and personal contact) one finds that reviewing and management participation in planning at all levels is extensive.

The structure vertically and horizontally of the comprehensive plan is such that people at various places in the corporate hierarchy can be made responsible for numbers (targeting). For the same reason a similarly structured accounting system allows a current check of performance against these targets (reporting). Targeting seems to be a use to which the planning instrument is frequently put. The negotiating process between management personnel responsible for the targets and CHQ that normally precedes the completion of the final document is often called the reviewing process. Reviewing and reporting together represent the control function of the planning instrument. The more important the targeting purpose of planning the less useful is the numerical information handled in the planning process for analytical purposes in the sense discussed above (allocation, preparedness for contingencies etc.) and the less important the element of forecasting in planning.

Thus, rather than being used as an analytical instrument the plan usually consists of a numerical statement on the future performance of the firm. This focuses attention on the process of arriving at the plan or more specifically on the problem how decisions taken during the course of planning (reviewing) links with actual decision making.

It seems appropriate to liken the planning process with a rehearsal of a future decision process. In elaborate planning systems where targeting and control are actively imposed the principal actors (the decision makers) usually participate. If not, the rehearsal is more of a shadow stand-in practice by staff personnel.

The closer in time the horizon and the more frequent the repetitions (revisions) the more like the final rehearsal the planning process and the closer the ties to actual decisions taken. In a well managed planning system one would expect the planning process to result in a set of decisions that deviate from the plan. When viewed this way it is not the formal planning system that is important but rather the informal preparatory decision process imposed upon it.

Besides, providing "information" on future financial needs the long run planning systems studied were quite void of operational content with one exception. In the set of firms (predominantly U.S. based) where the target motive of planning ruled, long term planning was much oriented towards finding a preliminary selection of long run targets (directives) on the basis of which short term (and numerically specified) operational responsibility targets of the budget could be fixed. This required extensive top management participation. Targets were practically always arrived at by negotation. Thus the ex-ante decision on what to do (the targets) was to a large extent taken outside the planning system. The planning system rather provided a convenient reference format for control and a vehicle for communicating the targets to those responsible for their implementation.

Planning is often viewed as an internal replacement for the market mechanism. There are two sides to this hypothesis. The market process both inform firms by way of price signals about what to do and forces firms out of business if they do not respond to these signals. The first "analytical" purpose plays no important role in planning.

The dominant purpose of targeting and control of comprehensive planning probably explains the relatively little emphasis paid to the plan as an analytical information instrument. This may also explain why major decisions are usually settled outside the context of comprehensive planning rather than on the basis of an analysis of the information processed in planning routines.

However, in so far as such decisions enter comprehensive planning as input variables or targets the overall control function very much contributes to the allocation mechanism in the sense of seeing to it that decisions are realized and indicating currently (early warning system) when performance is off the plan.

The implementation side is practically 100 per cent absent from what has been called comprehensive, formal planning.

The planning systems examined in this study can roughly be classified in either of two groups. The first is the management oriented CHQ remote control system where targeting, control and coordination by way of reviewing and reporting are the dominant purposes. Information on performance as well as on intentions and suggestions of division management is forced into a numerical and standardized format and brought to the attention of CHQ. The informal procedure of putting together the plan rather than the final plan document is important.

Planning in this fashion meant that facilities existed for effectively imposing CHQ views all the way down the business organization and for making grass-root information flow upwards. The relative emphasis put on the first order-giving or the second "democratic" process varied, but usually both processes were at work.

The second mode of planning was represented by the analytical systems approach. Emphasis was on handling the information contained in the numerical structure of the plan. Management participation was not frequent. At lower levels it consisted in the passive reporting of data on standard forms to CHQ. On the one extreme, CHQ planning consisted in the passive adding up of these figures only. On the other extreme, CHQ collected no data but rather operated some simplified numerical model of the firm. Targeting was typically absent. Reviewing consisted in non-committing consultations between CHQ and divisions. As a rule each division made up a plan of its own and this plan in turn entered the CHQ plan intact. Reporting was not related to the plan. Normally top decision makers did not get involved until the plan was almost completed. Despite its analytical inclination only a very small number of firms so far had managed to make such a planning system operational for simulation purposes.

Even though short-term budgeting normally falls under the first heading and long-term planning under the second analytical systems approach, most firms nevertheless could be roughly classified in the same fashion. The conclusion to be drawn in fact is that the majority of comprehensive planning systems studied consisted of a budget where the characteristic features of the second type planning system dominated. The long term plan was either missing or was typically of the second type. The reader should remember that we are talking of the comprehensive budget or the comprehensive long term plan with emphasis put on the process of keeping its parts together in a systematic fashion. Top management involvement no doubt could be both active and extensive in such sub-functions of planning as the appropriations procedure even if missing in the comprehensive budgeting process. It should also be remembered that the results reported on rest fundamentally on observations from 1969 (U.S.) and 1970 (Sweden). Later check-ups in several Swedish firms have all revealed changes in the direction of more comprehensiveness and emphasis of coordination, targeting, new and more detailed formal routines and more management involvement; i.e. as we shall soon see a drift in the direction of U.S. planning methods.

Irrespective of which of the above planning types we study or whether we look at the long term plan or the budget, the basic formal structure of the making of

the comprehensive plan looks the same when isolated. This structure has been presented already in the first chapter (Diagram I:1 A-C) and need not be repeated here.

It is sometimes argued that a planning system is an instrument of stability that makes the organization less dependent on the particular individuals that just now happen to be managing it. The system allows the people to move in and out freely and facilitates the learning and individual "retooling process".

Two observations contradict this hypothesis; (1) Planning systems do not exhibit any particular stability. Several of the U.S. companies revisited in 1973 and 1974 had reorganized their planning systems entirely. (2) Major decisions as a rule are neither shaped as a part of planning or on the advice of planners.

One should rather restate the hypothesis to say that well functioning planning systems may have the capacity of freeing top management from some current operational decision making to concentrate on major and long run problems that are handled outside the formal planning procedure. Indications are that this use of planning was more pronounced among the U.S. sample than the non-U.S. sample. Planning then is a way of economizing on the number of strings that top management has to pull to guide and control short-term operations, in short a method of delegation.

It is probably an error of some magnitude to believe that planning in big commercial organizations - like the firms investigated in this study - is a process of compiling and evaluating in a systematic fashion the tremendous volume of information that exists within a large corporate body with a view to arriving ultimately at an optimally informed decision. Methods of compiling the data do exist but not methods of evaluating the data.

It is almost equally mistaken to believe that automated information screening and decision systems to handle major, top management problems will be there in the foreseeable future and - as well - that we (or someone) should strive in that direction. Decision makers' problem is not the absence of information but rather to keep their heads above a constantly increasing flow or irrelevant information.

The ways of knowing for what information to look for each time and where and when to turn off the information flow is esential. This is a task that requires more of intuition and experience than analytical talent. Once the problem has been

understood one knows whether relevant information can be gathered and to what extent - and the analysis needed as a rule turns out quite simple.

It is always a challenge to extract an important, distant and possibly erroneous broadcast from one of several interacting stations that is also cluttered with noise. This is the art of decision makers and planning is a method of ordering the signals and reducing the noise level up at the executive top.

Once, you have learned the way to work with a vague, noisy and faulty information system and to make informed decisions without exactly knowing how you may be satisfied with a rather crude albeit improved system. Rigorous definitions, completeness and consistency may have the quality of being charming. It possesses, however, no absolute value in itself. Professional jargon is always ugly to the ear and most often unintelligible to the outsider. It is, however, an efficient means of communication to those tuned to decode the signals. The planning systems that have been described here at times must have looked incomprehensible and hardly useful to anyone that has not been involved in making them up and using them. They definitely have not exhibited the analytic beauty that is so dear to many of my colleagues of science.

The above summary has suggested a number of questions in addition to a few empirical conclusions. They all point to the next section on a comparison between U.S. and non-U.S. firms where they are most appropriately answered - if possible.

2. Comparisons

Irrespective of firm size, nationality or length of planning horizon the stepwise sequence of assembling data illustrated in the previous chapters and summarized already in the first chapter was in principle the same, once a comprehensive long range plan or a budget had been introduced.

The first difference between U.S. and non-U.S. firms that is easily and fairly exactly recorded is that comprehensive planning had been started up much earlier in the U.S. and that more manpower resources (standardized for firm size) was put into planning. All but one of the 30 U.S. firms interviewed carried out comprehensive numerical planning beyond the short-term (usually annual) budget and had done so for several years. Three of the 15 Swedish firms had no more than an annual budget. By a more demanding criterion the majority of the Swedish firms

and several of the other European firms had no comprehensive plan at all. Whereas practically all U.S. planning systems covered the entire operation of the business organization, planning outside the U.S. was typically restricted to the parent company even excluding at times fully controlled subsidiaries.

The larger average size and the more diversified type of operations of the firms in the U.S. sample compared to the European firms (with a few exceptions) probably explains part of the difference in coverage and to some extent the earlier introduction of formalized planning systems. Formal planning as a coordination and control instrument becomes a necessity rather than an auxiliary to no-formalized management the larger and the less homogenous firm operations.

This, however, cannot be the full explanation. Several characteristics of the U.S. planning instruments compared to the non-U.S. ones at least suggest a difference in management philosophy.

While participation of management was active at all stages of planning in the majority (not all) of U.S. firms in the majority of European firms, CHQ planning was more of a passive adding up of numerical data requested on standard forms from the various organizational units of the firm. The lively and sometimes nervy reviewing process of the U.S. firm was typically absent from the European planning sequence. This plays down the targeting motive in European firms relative to the U.S. firms and also the rationale for an elaborate reporting system against the plan.

Typically again, the degree of elaboration of the reporting system of most U.S. firms interviewed had practically no counterpart on the other side of the Atlantic (see further below).

Reporting in U.S. firms was systematically structured to the format of a comparison with the budget, normally by month and not seldom fully computerized with automatic screening for relevant information. European reporting was less detailed, less frequent, predominantly manual and only rapsodically related to the budget. Typically again, unexpected deviations from the budget (if detected) did not seem to prompt the same kind of management action as in the U. S. firm in the form of requests for explanations.

Extensive management participation at all levels in planning, a dominant purpose of targeting, and a systematic reporting against the budget of course enhances

the importance of the planning instrument measured by the attention paid to the numbers therein when it comes to making decisions. By this criterion planning must be considered to be more important in the U.S. sample than in the non-U.S. sample.

This observation is even more strengthened by the extensive top excecutive involvement in U.S. corporate planning as contrasted with the typical European firm of the sample. Here the difference seems more pronounced in long-range planning than in short-term budgeting. Normally a Board member and often a subcommittee of the Board took an active part in the reviewing procedure that was imposed on all stages of budgeting and long-range planning in U.S. firms. The budget and the long range plan was the reference guide for the frequent and normally costly sessions when a group of CHQ people circulated among the profit centres of a firm or when profit centre people were brought in to CHQ from all over the world for hearings. In some U.S. firms of the sample CHQ planners had prepared themselves with an extra plan alternative to match the proposals and requests presented during these hearings. Procedures like these were of course not lacking altogether among the European firms. They were, however, typically less frequent, less extensive and less elaborate and at least as far as the Swedish firms go top management interest in long-range planning was often either lacking or passive.

Any further comment on this difference in attitude immediately boils down to the question; how useful is the U.S. system of planning or control for the firm? Does it contribute better to the pursuance of good profit performance or some other goals than the more intuitive European management style? One heretic comment I would like to interject here is that the U.S. instrumentation of planning no doubt contributes to a persistant and systematic element of responsibility-stress in the business organization.

The typical comment of the persons interviewed in U.S. firms was that they liked the U.S. planning methods once they had got used to them. The normal reaction in an European firm to the elaborate U.S. number systems was a sceptical comment. This at times was more like a sneer when I contrasted the amount of detail in a U.S. planning system (that was in large parts brought all the way up to CHQ) with the rather crude data assembly of a European firm.

In a typical U.S. budget the annual entries were broken down on a monthly basis. The horizon was between one and three years off in time. Partial updatings or

complete revisions were often made once a quarter. The budget process was very standardized in the sense that each profit centre had to supply the same data-set using identical definitions. Reporting (usually by month), standardization to the same format as the budget and analysis of differences between budget entries and realizations were a matter of routine.

It was never argued that detailed entries, such as, say, sales of product x with specifications (y, z) in April next year constituted a reasonable prediction. However, not unfrequently some partial decisions dependent upon this detail (e.g. relating to the scheduling of production or purchasing) had to be taken next month and someone was to be made responsible for the figure. This very usage made the figures important. However, if uncertainty as to the future factual circumstances was high, strategic considerations on the part of responsible persons were likely to bias the figures and much argument would be wasted later to defend a detail that was not estimable from the beginning.

Thus if there is anything that distinguishes U.S. planning systems from planning systems in the European part of the sample it is the existence of an efficient CHQ reporting and control apparatus, where controls are applied at a very early stage of planning in the form of an active reviewing of preliminary plans. However, if one wants to think of planning in terms of a future guidance - as contrasted with control - system one finds very little of this among both the U.S. and non-U.S. part of the sample in the part of planning that we have observed and labelled comprehensive formal planning.

While later follow-up interviews (after 1972) seem to indicate that the non-U.S. firms are catching up on the ex-post control side I have noticed very little change on the analytical or guidance side.

If the detailed figures planned for are not unduly distorted and are presented to top CHQ management in a pedagogically condensed form the planning system of the U.S. type just described might mean CHQ access to shop-floor information that would otherwise not be available until much later or too late. This may be the basic merit of the U.S. type planning system that engages substantially more management resources than in comparable non-U.S. firms.

To measure the amount of resources put into planning is an almost hopeless task. Planning mixes with other functions of the management and the extra work input due to formal planning can only be estimated very approximately. Nevertheless, 17 of the U.S. firms interviewed, were willing to give a rough estimate of the extra manpower resources put into formal planning routines at all levels of the

firm. A few firms could draw on separate investigations made recently to estimate the costs incurred. Estimates given below include professional as well as non professional work input in comprehensive budgeting and long range planning, excluding sub-planning routines such as production, inventory and R&D planning and what is sometimes called prospective planning. Among these firms between 14-15 man-years per $ 100 M in sales were devoted to such planning 1968.

A similar estimate of ca 8 man-years could be approximated for 6 Swedish firms. It should be remembered that this figure is strongly biased upwards by the three Swedish firms that displayed the most extensive and sophisticated planning set-ups. The average size of the 17 U.S. firms measured by sales in 1969 was $ 706 M. The corresponding figure for the 6 Swedish firms was $ 275 M.

Two additional observations will have to finalize this somewhat impressionistic summary of observations. For one thing the U.S. planning systems were better designed for interdivisional comparisons both as regards the ex-ante planning stage and the later reporting stage. This may be due to the fact that the firms of the U.S. sample were far ahead of their European colleagues in having the entire firm or at least its accounting system systematically organized along profit-centre or division lines. The fact that foreign subsidiaries and even at times fully controlled domestic subsidiaries often were not incorporated in the budget process in Swedish firms may be a reflection of this.

Secondly, by substantiation from the relative amount of paper handling and calculation work in formal planning (budgeting as well as long-range planning) the impression is left that U.S. firms devote relatively more resources to the market and income side while Swedish firms are relatively more production and cost oriented in planning. In U.S. firms this is exhibited by elaborate schemes of tracking down and phasing out non-profitable products as early as possible. These activities are facilitated by well designed and detailed accounting, reporting and control systems; devices that were not present to any comparable degree in Swedish firms. One reason for this may of course be the larger dependence on export markets of Swedish firms and (hence) smaller possiblities of controlling the market. The implication is that the relative absence of such planning devices in European firms makes planning more concerned with mechanical projections of existing product mixes. At the same time small possibilities of "manipulating" market behaviour and a rapid domestic cost-inflation may have pushed management's attention in Swedish firms to the remaining, controllable variables, namely productivity and to some extent wages.

PART IV

S U G G E S T I O N S

XI SUGGESTIONS TOWARDS A THEORY OF FIRM BEHAVIOUR

(To be written)

S7 List of participating firms

A. U.S. interviews (30 firms, 38 interviews)

1.	Allied Chemical Corp.	New York, N.Y.
2.	Ampex Corp.	Redwood City, Calif.
3.	Beckman Instruments, Inc.	Fullerton, Calif.
4.	CBS, Inc.	New York, N.Y.
5.	Crown Zellerbach Corp.	San Fransisco, Calif.
6.	Cutter Laboratories, Inc.	Berkeley, Calif.
7.	Del Monte Corp.	San Fransisco, Calif.
8.	Dymo Industries, Inc.	Berkeley, Calif.
9.	Dynalectron Corp.	Washington DC
10.	Easco Corporation	Baltimore, Maryland
11.	Electronic Communications, Inc.	St. Petersburg, Florida
12.	Fibreboard Corporation	San Fransisco, Calif.
13.	General Electric Company	New York, N.Y.
14.	General Motors Corp.	Detroit, Michigan
15.	General Telephone & Electronics International	New York, N.Y.
16.	Genesco	Nashville, Tennessee
17.	Hewlett-Packard	Palo Alto, Calif.
18.	Honeywell, Inc.	Minneapolis, Minnesota
19.	IBM	Armonk, N.Y.
20	Jim Walter, Corp.	Tampa, Florida
21.	Kaiser Aluminium & Chemical Corp.	Oakland, Calif.
22.	Litton Industries, Inc.	Beverly Hills, Calif.
23.	Standard Oil Company of California	San Fransisco, Calif.
24.	3M Company	St. Paul, Minn.
25.	Varian Associates	Palo Alto, Calif.
26.	Xerox Corporation	Rochester, N.Y.
27.	U.S. Steel Corp.	New York, N.Y.
28.	Exxon	New York, N.Y. (1973)
29.	Boeing	Seattle, Wash. (1974)
30.	Tenneco, Inc.	Houston, Texas (1974)

Note; 30 interviews were carried out in 1969. 8 in November 1973 and June 1974. Three new firms were included in the sample in 1973 and 1974.

B. Swedish interviews (15 firms, 22 interviews)

1.	AGA Aktiebolag	Lidingö (1970)
2.	ASEA	Västerås (1969)
3.	Bahco Ventilation	Enköping (1969)
4.	Electrolux AB	Stockholm (1969)
5.	Eriksbergs Mekaniska Verkstads AB	Göteborg (1969)
6.	KemaNord AB	Stockholm (1970)
7.	Gränges	Stockholm (1969)
8.	Götaverken AB	Göteborg (1969)
9.	Hvilans Mekaniska Verkstads AB	Kristianstad (1974)
10.	Mo och Domsjö AB	Örnsköldsvik (1972)
11.	Sandvik AB	Sandviken (1970)
12.	Stora Kopparbergs Bergslags AB	Falun (1970)
13.	SKF	Göteborg (1971)
14.	Telefon AB LM Ericsson	Stockholm (1969)
15.	Volvo AB	Göteborg (1970)

Note; Year of first interview indicated.

C. Other non-U.S. firms (13 firms, 13 interviews)

1.	British Leyland Motor Corporation, Ltd	London, England (1969)
2.	Robert Bosch GmbH	Stuttgart, Germany (1973)
3.	Fiat	Turin, Italy (1974)
4.	Guest, Keen & Nettlefolds Ltd	Worcester, England (1971)
5.	Hitachi, Ltd	Tokyo, Japan (1970)
6.	Farbwerke Hoechst AG	Frankfurt/M, Germany (1973)
7.	Kone AB	Helsingfors, Finland (1971)
8.	Mitsubishi Heavy Industries, Ltd	Tokyo, Japan (1970)
9.	OY Nokia	Helsingfors, Finland (1971)
10.	Adam Opel AG	Rüsselsheim/M, Germany (1973)
11.	Philips	Eindhoven, Holland (1971)
12.	OY Strömberg	Helsingfors, Finland (1971)
13.	Sumitomo Chemical Co Ltd	Tokyo, Japan (1970)

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