THE IMPACT OF EXTERNAL AND INTERNAL ENVIRONMENTAL FACTORS ON THE DESIGN OF MANAGEMENT CONTROL SYSTEMS.

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ABSTRACT

This paper contends that certain factors both internal and external to the organisation have an impact on the design of the organisation's management control system.

The paper has as its foundation the contingency theory of management accounting which is based on the premise that there is no universally appropriate accounting system applicable to all organisations in all circumstances.

Particular emphasis will be placed on the implications of contingency theory for the design of management control systems in respect of organisations operating in a European environment.

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INTRODUCTION

The paper initially considers the nature of management control systems and the distinction between the management control structure and the management control process. It then looks at the results of a study that assessed the key characteristics of management control in three European countries.

The paper proceeds to discuss how internal and external environmental

factors can impact on the design of management control systems. Throughout the discussion emphasis will be placed on the implications of the statements made and research and empirical studies considered for organisations operating in a European context.

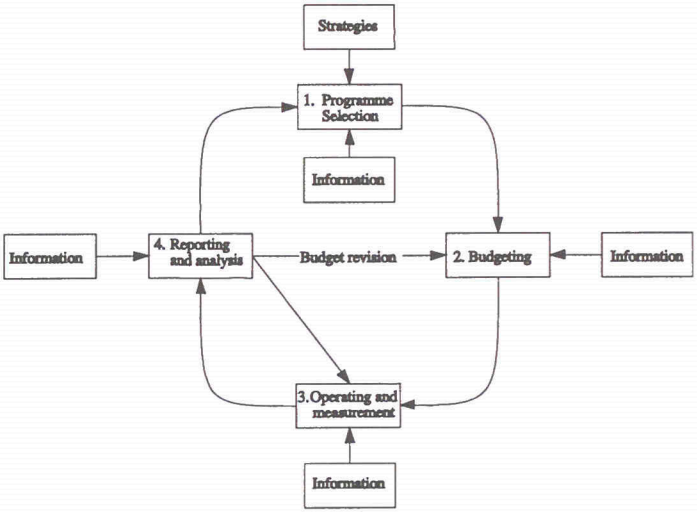
The Management Control System

The management control system consists of both the control structure and the control process. The control structure is concerned with the organisational arrangements in place and the information that flows between responsibility centres. The control process considers the action that responsibility centre management takes on receipt of critical information. The control structure is concerned with establishing responsibility centres (that is, an organisational unit under the control of a particular manager). The control process consists of both formal and informal activities. The informal activities include meetings and informal group discussions. The formal part of the process includes the phases of programming, budgeting, operating and measurement and reporting and analysis. **Figure 1** illustrates the elements of a formal management control system.

Anthony, Dearden and Bedford (1989, p. 13) consider that management control systems have the following characteristics:

- They are coordinated systems in that data collected for a variety of purposes should be capable of being reconciled
- They are normally built around financial data because the monetary unit is the most convenient method of aggregating together a series of dissimilar transactions and events. However, non-monetary measures are also extensively used in a management control system
- Management control systems deal with both responsibility centres and programmes (for example, a product line) as shown in **Figure 2**. Therefore, in a management control system information on actual and planned costs and revenues must be gathered both by responsibility centre and by programme
- Activities related to planning in a management control system tend to follow a definite pattern year after year. An example of this relates to the preparation of the annual budget where the activities to be carried out and their timing can be presented in budget manuals
- Both planned data (for example, programmes and budgets) and actual data are relevant in a management control system
- A management control system is concerned with the entire organisation rather than with individual departments or products. The management control system is concerned with planning, coordinating and control in an organisation-wide context.

Figure 1: Phases of management control system



From: "Management Control Systems" by R. N. Anthony, J. Dearden and N. M. Bedford, Homewood, 1989

Figure 2: Inter-relationships between programmes and responsibility centres in a management control system

Programmes	W	X	Y	Z	Total
A	£2,000	£4,000	£1,000	£0	£7,000
B	£4,000	£4,000	£6,000	£2,000	£16,000
C	£1,600	£0	£1,400	£0	£3,000
Total Costs	£7,600	£8,000	£8,400	£2,000	£26,000

A study carried out by Horovitz (1978, pp. 16-22) looked at the management control systems of local, indigenous firms of approximately the same size and in the same range of industries in France, Great Britain and Germany. Based on his study Horovitz concluded that managers in the three countries differ significantly in what they try to control and in the way they go about it. **Figure 3** illustrates this.

Horovitz concludes that much of the observed variation in control practice can be attributed to differences in managers' expectations about subordinates' behaviour, to the engineering orientation of control and to cultural distinctions between the three countries. He also notes that control practices are related to the organisation structure and planning processes in use.

IMPACT OF EXTERNAL AND INTERNAL ENVIRONMENTAL FACTORS ON MANAGEMENT CONTROL SYSTEMS DESIGN

Emmanuel, Otley and Merchant (1990, p. 57) state that:

> 'The contingency theory of management accounting is based on the premise that there is no universally appropriate accounting system applicable to all organisations in all circumstances. Rather a contingency theory attempts to identify specific aspects of an accounting system that are associated with certain defined circumstances and to demonstrate an appropriate matching.'

In the context of the design of management control systems we are suggesting that certain factors both internal and external to the organisation will have an effect on the design of the organisation's management control system.

Early empirical studies assumed that contingent variables influenced the design of the management control system only by way of influencing organisational design. **Figure 4** sets out the model underlying these early studies.

However, organisation structure is only one feature of the control package; other features should also be considered because they will have a substantial impact on organisational effectiveness. Also, it should be noted that organisational effectiveness is only meaningful when it is related to some measure of organisational objectives. Moreover, the various features of the control package will interact with one another; in particular,

Figure 3: Key characteristics of top management control in three European countries

	Great Britain	Germany	France
Uses of control			
To stick to the plan	Medium	High	Low
To police operations	Low	High	High
To reward and/or sanction	Low	Low	Low
Primary functional emphasis	Finance	Production	Production
Control substantially decentralised	Yes	No	No
Degree of detail	Overall	Very detailed	Detailed
Time orientation	Future	Past	Past
Degree of quantification	Some qualitative	Quantitative	Quantitative
Frequency	Month	Week	Week
Involvement of central staff	Low	High	High
Degree of systematisation and standardisation	High	High	Low

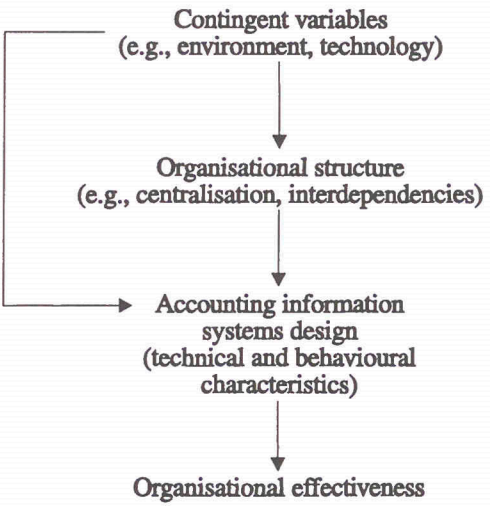
From: Horovitz, 1978, p. 17

organisational design and management control systems design are interdependent. For example, a centralised organisation structure may be used in an organisation with the specific objective of avoiding the accounting complexities associated with decentalisation.

In 1980 Otley (pp. 194-208) put forward what he considered to be a minimum necessary contingency framework in which the entire range of organisational controls (not just the accounting controls) would be considered together. This framework is presented in **Figure 5**.

In this model, the contingent variables are considered to be outside of the control of the organisation (for example, government regulations).

Figure 4: Basic contingency theory model



From: "Organisational Behaviour: Strategy, Structure, Environment and Technology" by D. Otley and C. Wilkinson, 1988)

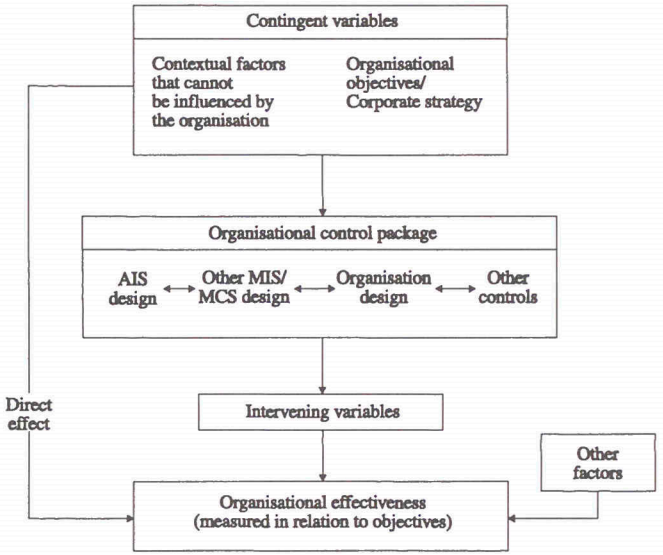
Variables that are under the organisation's control are not considered to be contingent variables but are included as a part of the organisational control package. The organisational control package (AIS design, MIS design, organisational design and the other control arrangements of the organisation: for example, personnel selection, promotion and reward systems) must be considered in its entirety.

We will now consider some of the specific contingent factors that can have an impact on the design of control systems in organisations. The factors that will be considered are:

- Organisational design
- Environmental uncertainty
- Technology
- Strategy
- Size
- Culture.

Figure 6 provides a summary of the various studies that have been carried out in the contingency theory tradition in recent years.

Figure 5: A minimum necessary contingent framework



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Organisational Design as a Contingent Variable

The firm's organisation structure is an important control device. An issue that management must decide on in the design of the organisation structure is the extent to which they wish to decentralise decision-making powers to sub-unit managers. In practice, total centralisation and total decentralisation are extremes and there are a range of options available to management in between these extremes. Typically, as an organisation grows in size top management make a decision to decentralise decision-making responsibility to lower level managers for a number of reasons.

- Tactical decision-making. Managers of decentralised units, because they possess a substantial amount of information about local conditions, can make better and more timely decisions than top management could
- Top management can concentrate on strategic planning and major policy matters leaving sub-unit managers to make detailed operating decisions concerning their responsibility centres

Figure 6: Comparison of major contingency theory studies

Study	Contingent variables considered	Organisational design	MCS/Other control arrangements	Dimensions of organisational effectiveness considered
Bruns and Waterhouse (1975)	Organisational context (origin, size, technology, dependence)	Structuring of activities Concentration of authority	Control system complexity and perceived control leading to budget-related behaviour, inter-personal and administrative control strategies	Not considered
Daft and MacIntosh (1978)	Technology (task variety; search procedures)	Not considered	I.S. style (amount, focus and use of data)	Not considered
Dermer (1977)	Organisational objectives Technology Managerial style	Decentralisation Differentiation	Choice of AIS or MCS techniques	Not considered

Gordon and Miller (1976)	Environment (dynamism, heterogeneity and hostility)	Decentralisation Bureaucratisation Resource availability	Technical characteristics of accounting IS	Not considered
Hayes (1977)	Environmental factors Inter-dependency factors Internal factors	Not considered	Appropriate performance evaluation techniques	Departmental effectiveness
Khandwalla (1972)	Type of competition faced	Not considered	Sophistication of accountancy controls	Not considered
Piper (1978)	Task complexity (product range and diversity, variability between units)	Decentralisation of decision-making	Financial control structure (for example, use of financial planning models, frequency of reports)	Not considered
Waterhouse and Tiessen (1978)	Environmental predictability Technological routineness	Nature of sub-units: operational or managerial	Management accounting system design	Not considered

Figure 6 (continued)

Hirst (1981)	Task uncertainty	Not considered	Reliance on accounting performance measures in evaluating subordinate performance	Tendency towards dysfunctional behaviour
Flamholtz (1983)	Organisational culture and values	Structure	Core control systems including MCS	Effectiveness of MCS
Brownell (1981)	Locus of control	Not considered	Participation in budgeting	Managerial performance
Markus and Pfeffer (1983)	Culture, goals, environment	Structure	Design and implementation of AIS and other controls	Tendency towards dysfunctional behaviour
Gordon and Narayanan (1984)	Perceived environmental uncertainty	Structure: organic and mechanistic	Non-financial information	Not considered

Govindarajan (1984)	Environmental uncertainty	Not considered	Style of performance evaluation	Managerial performance (self-assessed)
Govindarajan and Gupta (1985)	Strategy	Not considered	Style of evaluation for rewards	Managerial performance (self-assessed)
Merchant (1984)	Production technology, size	Functional differentiation	Formality of budget use	Organisational performance (assessed by managers)
Merchant (1985 (a))	Uncertainty, strategy, economic performance	Not considered	Style of use of MCS and other controls	Extent of meeting budgetary targets
Merchant (1985 (b))	Predictability of task	Not considered	Participation in budgeting	Propensity to create budgetary slack

Adapted from Otley (1980) and Otley and Wilkinson (1988)

- Decentralisation and establishing divisions provides a useful training ground for the top management of the future. Also, giving people responsibility for the management of a decentralised unit can have a positive motivational effect.

However, decentralisation has a number of difficulties and problems. Top management in a given organisation will have to weigh the advantages against the disadvantages to decide whether it wishes to decentralise decision-making responsibility in its organisation. Among the perceived disadvantages of decentralisation are:

- Competition may replace co-operation. Decentralised units may blindly pursue their own interests and not co-operate with other divisions even though such co-operation may be to the benefit of the organisation as a whole
- Dysfunctional decision-making, where division managers make decisions that are optimal from the perspective of their divisions but sub-optimal when viewed from the organisation's perspective, is a major cost of decentralisation
- Solomons (1965) notes that a decentralised organisation structure requires a very extensive formal information system. Performance indicators have to be developed and monitored to ensure that the entire organisation is achieving its long range objectives.

Therefore, a decentralised organisation structure is a frequently used and important form of control in many large organisations. The extent to which decision-making in an organisation is centralised or decentralised will, in turn, have a major impact on the organisation's management control system.

Mintzberg (1979) hypothesises that as uncertainty increases, management control methods move from personalised behaviour controls to impersonal behaviour controls to short run output control with centralised co-ordination to long run output control with decentralised co-ordination. If output targets can no longer be set because of very high levels of uncertainty, controls must shift to control over inputs (for example, personnel selection and training).

In his study of management control in France, Great Britain and Germany, Horovitz (1978, pp. 16-22) found different organisational arrangements in the different countries. Most British companies in his study were holding companies in which a small central staff overlooked from 20 to 50 subsidiaries. Each subsidiary was headed by a managing director and had its own products, brands and markets and the necessary administrative

staff to operate. Many decisions were decentralised to subsidiary level and below while the central office staff shared policy decisions at the group level, provided finance for the subsidiaries and monitored the performance of the subsidiaries. At the group and the subsidiary levels, top executives met once a month to review performance and discuss policy matters. Horovitz concludes that such a structure allows for flexibility, autonomy of operations and entrepreneurship at the operational level while group executives and a small central staff exercise loose control.

In the German firms in the study there were very high levels of specialisation, even at top management levels. Although half of the companies were organised by divisions, the others were organised by functions. Even in those firms organised by division, each division was headed by two or more functionally specialised executives.

Central staff functions, support activities and services were extensive, providing assistance to local operations (functional and/or divisional), but also some decisions were centralised. Central control over production was tight and delegation of authority was far less extensive than in the British companies. The top management team normally met weekly to co-ordinate functional specialisations.

In France most companies were organised by functions. Central staff and services were as extensive as in Germany. Instead of operating under a divisional structure, chief executives preferred to head divisions responsible for the sales function only and product or geographical units were responsible for the production function. Many decisions were centralised at the top management level and committee management was scarce. In many instances, much of the control was left in the hands of the chief executive.

The organisational patterns indicated by the Horovitz study were as follows:

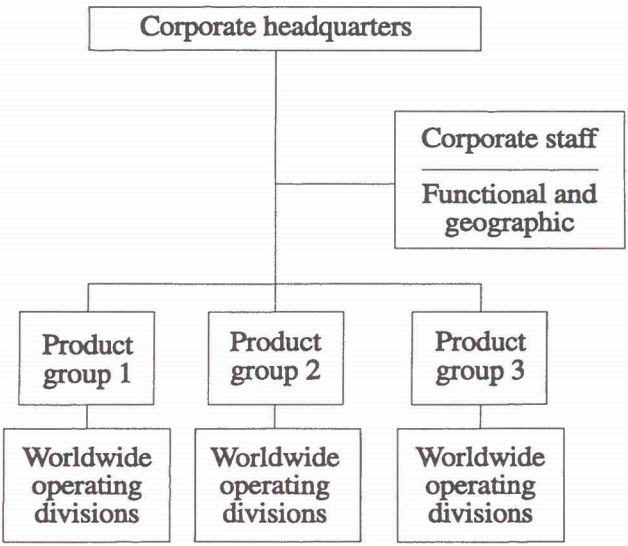
	Great Britain	**Germany**	**France**
Organised by functions	1	8	12
Organised by large multi-product divisions	4	6	3
Organised by product/market subsidiaries	11	3	1
Organised by region	2	1	0
Total	**18**	**18**	**16**

Arpan and Radebaugh (1985, p. 245) suggest that as an organisation's foreign operations expand significantly, the organisation may adopt a global product structure or a global geographic structure. In the product structure, product divisional managers are given responsibility and control over worldwide production and sale of their products. In the geographic structure, existing domestic and international operations become part of one of several geographic divisions.

Figures 7 and 8 illustrate the distinction between the global geographically oriented organisation structure and the global product oriented structure.

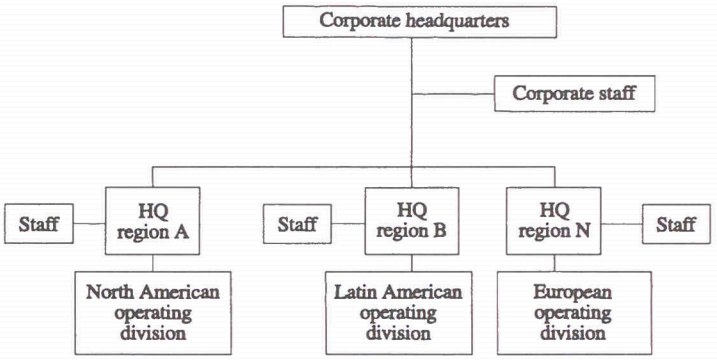
Companies with a wide product line or with complex products which are subject to rapid technological change often choose a global product structure. Global product structures are more likely to arise where there is a greater requirement for production co-ordination as in the case of vertically integrated firms or firms concerned with international

Figure 7: Global product-oriented organisation



From: Arpan and Radebaugh, 1985

Figure 8: Global geographically oriented organisation



From: Arpan and Radebaugh, 1985

production rationalisation. Companies with narrow, relatively simple and stable product lines often choose the global geographic structure. This structure works best when country or regional expertise is more important than product knowledge.

Emmanuel et al. (1990, p. 57) summarise the importance of organisation design as a contingent variable influencing the design of management control systems as follows:

> 'Organisational design is thus an important control device open to managerial choice and decision and includes both the choice of an organisation structure and the selection of appropriate matching information systems and other control systems. The design of an appropriate management accounting system is dependent upon the choices that have been made in these other areas.'

Environmental Uncertainty as a Contingent Variable

A number of studies have set out to assess the impact of environmental uncertainty on the design of management control systems. Gordon and Narayanan (1984, pp. 33-47) proposed an association between environmental uncertainty, forms of organisation structure and the use of non-financial, *ex ante* and external information for control purposes. Their results showed strong relationships between perceived environmental uncertainty, forms of organisation structure and types of

information systems in use. However, when the analysis was controlled for the effect of environmental uncertainty it was found that information systems and type of organisation structure were not related to each other to a significant extent.

This provides support for the hypothesis that organisation structure and information systems are both dependent on environmental uncertainty rather than information systems being determined by structure. Govindarajan (1984, pp. 125-135) also considered environmental uncertainty in his study. He obtained data on perceived environmental uncertainty, on the way in which the study group felt they were evaluated and rewarded by their superiors (the styles of evaluation considered were similar to Hopwood's (1974) budget constrained and profit conscious styles; the budget constrained style places far greater emphasis on the achievement of accounting targets than does the profit conscious style which is more flexible) and on the performance of the business using a self-assessment technique. When the study sample was divided into the higher and lower performing groups, the higher performing (that is, more effective) group showed a greater relationship between uncertainty and the more objective (that is, profit conscious) style of evaluation. This result supports Hirst's finding (1981, pp. 771-784) that high reliance on accounting performance measures (that is, the budget constrained style of performance evaluation) in conditions of high uncertainty will not lead to effective performance.

Khandwalla (1972, pp. 275-285) found that the degree of sophistication of a firm's control system was influenced by the degree of sophistication it faced in its external environment. He also found that whether the competition faced by a firm was of the price, marketing or product variety, had an impact on the use that the firm made of accounting information. Amigioni (1978, pp. 279-292) found that a high degree of turbulence in a firm's external environment often necessitates the replacement of accounting control tools that have become obsolete with new ones. Otley (1978, pp. 122-149) concluded that when the firm's external environment was 'liberal' or relatively favourable a rigid or budget constrained style of performance evaluation was effective but when the environment was 'tough' or relatively unfavourable, a flexible, profit conscious style should be used.

Gordon and Miller (1976, pp. 59-70) set out three characteristics of the environment which, they suggest, should influence the design of control systems:

- Frequent change in the environment suggests the need for control

reports including both financial and non-financial information and focusing on forecasted results
- If the company serves a large number of different product markets, then this suggests the need for a decentralised management control system
- If the company faces severe competition in the market, this suggests the need for a very sophisticated information system providing information on critical threats facing the company.

Choi and Mueller (1978, p. 252), among others, contend that environmental factors in different countries require special information for foreign managers to operate effectively. Others, such as Morsicato and Radebaugh (1979, p. 77) note that foreign managers may tend to operate in accordance with home country standards imposed by the standardised accounting system rather than concentrating on their own special circumstances. This, they argue, may result in a sub-optimisation of economic resources.

A number of implications can be drawn from the above studies for organisations operating in a European context:
- The environmental uncertainty faced by an organisation will have an impact on both the form of organisation structure and the information system that it adopts
- In conditions of high environmental uncertainty substantial reliance should not be placed on accounting performance measures. The budget constrained style of performance evaluation is not suitable in these circumstances
- The use that a firm makes of accounting information will vary depending on the type of competition (price, marketing or product) it faces in its external environment
- A high rate of change in the firm's external environment will result in a need to replace obsolete control tools with new, more relevant ones.

Technology as a Contingent Variable

Management accountants have long recognised that technology has an impact on the design of control systems; this is why job costing techniques are recognised as being relevant in certain production situations while process costing techniques are more appropriate in other situations. A large number of studies have looked at the impact of technology on the design of control systems (Woodward, 1965; Waterhouse and Tiessen, 1978, pp. 65-76; Perrow, 1970; Hofstede, 1968; Daft and Macintosh, 1978, pp. 82-92). How, precisely, technology impacts on the design of control

systems is not clear; this arises due to the fact that different researchers have used different concepts of technology in their studies. A number of conclusions from the main studies in the area are presented below:

Merchant (1984, pp. 291-307) found that as the degree of automation in a production process increased, the formality of the budget system used also increased. He (1985a, pp. 201-210) also found some support for the proposition that, as the degree of predictability in the production process increases, the tendency of production managers to create budgetary slack decreases. Piper (1978) found that the complexity of the task that a firm faces influences the financial control structure that it should adopt. In his study of retail organisations he defined task complexity as comprising the range of products sold, the diversity of the range, seasonal variations and variations in the type of outlet. Waterhouse and Tiessen (1978, pp. 65-76) see responsibility centres having predominantly task control functions or management control functions. They suggest that management control functions are best appreciated by focusing in on environmental variables while task control functions are more related to technology variables.

Macintosh (1985) puts forward the following argument for including technology as a contingent variable influencing information/control systems design:

> 'Still, if you think about it, technology should influence information system characteristics; after all, information systems help people to do their work. Technology, in the sense used here, is one way of describing different types of work.'

A number of general propositions can be put forward in relation to the impact of technology on organisations operating in a European environment:

- The degree of automation and the degree of predictability in the production process have an impact on characteristics of budgetary control systems
- The task complexity of a firm's operations influences the characteristics of its financial control system
- The structure and operation of responsibility centres primarily concerned with task control are influenced by technological variables.

Strategy as a Contingent Variable

A number of studies have considered the impact of strategy on control systems design. Govindarajan and Gupta (1985, pp. 51-66) looked at the

relationship between strategy, evaluation style and effectiveness. They ranked strategy along a continuum ranging from 'pure harvest' to 'pure build'. 'Pure harvest' normally consisted of a high market share and maximisation of short term earnings and cash flow while 'pure build' was represented by a drive to increase market share; this could result in low short term profitability and negative short term cash flow. They summarised the results of their study as follows:

> 'Greater reliance on long run criteria as well as greater reliance on subjective (non-formula) approaches for determining the strategic business unit (SBU) general manager's bonus contributes to effectiveness in the case of build SBUs but hampers it in the case of harvest SBUs.
>
> 'The relationship between the extent of the bonus systems reliance on short run criteria and SBU effectiveness is virtually independent of SBU strategy.'

Merchant (1985 b, pp. 67-86) used a similar approach in classifying strategy but his findings were at variance with those of Govindarajan and Gupta. He found that spending decisions in high growth situations were curtailed to a greater extent by short term criteria (for example, monthly income targets).

Otley and Wilkinson (1988, p. 156) argue that the findings of the two studies are not necessarily inconsistent. They suggest that it is reasonable to manage resources carefully in conditions of scarcity and at the same time to take a long term perspective in judging managerial effectiveness when trying to maximise market share in a competitive environment. They support their contention by citing two quotations from managers interviewed in Merchant's (1985 b, pp. 67-86) study:

> 'I don't think the answer is necessarily to loosen up the controls over the growth business. I think these businesses just need shorter planning cycles to stay realistic.
>
> 'We certainly adjust our controls according to the strategy of the profit centre. But it is possible, even likely, that the growth businesses will feel a tighter squeeze because we're following their progress more closely and because they have greater needs.'

With regard to an organisation operating in the European context, the effect of strategy on the design of management control systems is not clear. In this context the time period under consideration is very important. In the short run, a strategy represents a response to environmental conditions and circumstances while in the long run the environment is itself determined by strategic decisions made by

organisations. From a management control perspective, in the short run the environment is 'given' and the management control system can be designed to help the organisation exploit environmental opportunities to the maximum extent possible.

Size as a Contingent Variable

The impact of size on the development of an organisation's control systems has been considered by a number of researchers.

A study by Bruns and Waterhouse (1975, pp. 177-203) showed that an increase in an organisation's size is associated with increasing structuring of activity and decentralisation of control.

Merchant (1981, pp. 813-829) looked at differences in the budgeting systems of 19 electronics firms. He found that in larger organisations there was more formal participation in budgeting, less inter-personal interaction with subordinates or superiors, and managers held the view that meeting the budget was important for their career progression. He also found that performance was highest in small firms that used an interpersonal approach to budgeting and in large firms that used an administrative approach. A further study carried out by Merchant (1984, pp. 291-307) was concerned with departmental rather than organisational data. His results showed that an increase in size, functional differentiation and degree of formality in organisations resulted in an increase in the degree of formality associated with budgeting.

Jones (1985, pp. 303-328) looked at the role of management control systems following takeovers and mergers. In looking at the pre-acquisition practices of acquired companies he found greater use of capital expenditure controls and formal planning techniques in small and large companies compared with medium sized companies. He found that large companies used monthly management accounts to a far greater extent than small or medium size companies. Following acquisition, the acquired companies had to adhere to the practices of their new parent and the observed pre-acquisition differences in control practices between different sized companies virtually disappeared. Williamson (1970) contends that as an organisation grows it will initially organise on a functional basis. However, further organisational growth and increased exposure to a variety of product-market environments will cause the organisation to decentralise and divisionalise. This will have implications for the organisation's control system because now the problems associated with divisional performance measurement, including inter-divisional trading, will have to be explored in depth.

Jones' study (1985, pp. 303-328) has particular relevance for companies operating in the European environment. His results seem to indicate that there is pressure on subsidiary companies to conform to overall corporate management control systems. This could result in a situation where subsidiary companies are forced to operate control systems that are not particularly well suited to their environmental circumstances. With an increase in the number of large, complex organisations operating in a variety of product-market situations, great care will be required in the design of control and information handling systems to ensure that optimal group decisions are made.

Culture as a Contingent Variable

Hofstede (1980, p. 25) defined culture as 'the collective programming of the mind which distinguishes the members of one human group from another'.

Perera (1989, p. 43) notes that culture is considered to be one of the most powerful environmental factors affecting the accounting system of a country. This view is based on the premise that accounting is a socio-technical activity involving both human and non-human resources as well as the interaction between the two. The technical aspect of accounting is less culture-dependent than the human aspect but because of the interaction between the two aspects accounting cannot be culture-free. Perera (1989, p. 51) showed that the continental European countries, in particular France and Germany, were high on the uncertainty avoidance scale while Anglo-American countries were relatively low on this scale. In countries that are high on the uncertainty avoidance scale, behaviour tends to be more rigidly prescribed either by written rules or unwritten social codes. He contends that in the accounting sub-culture of Anglo-American countries there is a preference for the exercise of individual professional judgement, the maintenance of professional self-regulation and flexibility according to the perceived circumstances of individual countries. On the other hand, in the accounting sub-cultures of continental Europe there is a preference for compliance with prescriptive legal requirements and statutory control, the maintenance of uniform accounting practices between countries and the consistent application of such practices over time.

Flamholtz (1983, pp. 153-169) considered that organisational culture and values should be considered in designing an organisation's control system. He stated that 'the failure to design a structure or core control system which is consistent with the organisation's value system is likely to create resistance and produce a motivation to defeat the purposes of

the structure and/or core system'. Markus and Pfeffer (1983, pp. 205-218) contend that the assumptions regarding organisational goals contained in control systems must coincide with the organisation's dominant culture; if this is not the case, they argue that the control system will ultimately fail. They also point out that the introduction of a new control system must have regard to the existing power relationships in an organisation; if it does not, the control system could be deliberately undermined by those who believe that their position of power within the organisation might be threatened by it. Pfeffer and Salancik (1978) argue that the design of an organisation's control system depends on the power relationships existing between the organisation and its environment. They suggest that increasing environmental complexity leads to increasing complexity in the organisation's internal power relationships and this fact must be recognised by the designer of an organisation's control system.

For a company operating in Europe, failure to consider the organisation's culture, values and power relationships in designing a control system could have serious consequences. Markus and Pfeffer (1983, pp. 205-218) present a number of case studies on the introduction of computerised control systems into organisations; these control systems were very technically sophisticated but they were unsuccessful because they threatened existing power relationships in the case study organisations.

SUMMARY AND CONCLUSIONS

This paper is concerned with the external and internal environmental factors that should be considered in the design of an organisation's management control system. The theoretical underpinning of the paper is the contingency theory of management accounting which contends that there is no universally appropriate accounting system applicable to all organisations in all circumstances.

The paper presented Otley's (1980) recommendation for a minimum necessary contingency framework in which the entire range of organisational controls, and not just the accounting controls, are considered together. A summary of the various studies that have been carried out, in recent years, in the contingency theory tradition was presented. A number of contingent factors that can have an impact on the design of control systems in organisations were considered – organisational design, environmental uncertainty, technology, strategy,

size and culture. The implications of the paper's findings for organisations operating in a European environment were discussed.

Although the contingency theory of management accounting has great appeal, Otley (1980) notes that a number of reservations should be considered:

- The nature of the appropriate contingent variables requires greater theoretical as well as empirical effort
- Futher research effort needs to be expanded on exploring the nature of organisational effectiveness
- The components of the organisational control package are interconnected. This suggests that management accounting information must be considered in its wider context, in particular, the design of the organisation structure and the design of the management control system are interdependent.

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