

FINANCIAL MANAGEMENT AND PLANNING IN HIGHER EDUCATION INSTITUTIONS

A thesis submitted for the degree of Doctor of Philosophy

by

Tony Holloway

School of Information Systems, Computing and Mathematics
Brunel University

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Abstract

The aim of this dissertation is to examine whether there is a better way in which higher education institutions might approach financial management, including the way in which they choose to allocate resources within their institutions. Why do I ask this? On the basis that higher education institutions exist not only to educate students, but also to contribute to the development and furtherance of knowledge, as well as making a contribution to the national economy in terms of expertise and commercialisation of intellectual property, I considered the way in which my own institution addressed these issues from the perspective of seeking to ensure that the resources available to it were allocated in a manner that may best facilitate the achievement of these objectives.

I was not convinced that my own institution's relatively 'simple' model of allocating resources in relation to student numbers, based on the model used by the Higher Education Funding Council for England (HEFCE), was the best way of achieving the objectives set out in the preceding paragraph. A number of questions sprang immediately to mind. How does the model address the issue of quality? How does the model address the achievement of the institution's strategic objectives? How does the model address the issue of directing resources to areas identified as key to the institution's academic offering? The list was endless.

The dissertation draws on my own experience across a range of sectors, and I chose the National Health Service as a comparator group that exhibits many of the characteristics of higher education institutions. It is a large consumer of public resources, is labour intensive, and needs to prioritise the allocation of resources to deliver strategic and national objectives. In light of this, I believe that it is legitimate to draw on the experience of the review of the National Health Service from 1974, particularly in the 1970s and early 1980s, that review being based on the applicability of two financial management techniques, Rationalism and Incrementalism.



Preface

Before embarking on my PhD I reviewed a considerable number of PhD dissertations to get a feel for what was required. I have to say that I was daunted by the length of a lot of them, and wondered whether I would ever have time to produce a similar document.

I have always believed that something said in simple language is likely to be understood, whereas something that is not said simply is liable to lead to confusion. My dissertation is intended, therefore, to be expressed in a simple and straightforward format. I hope the reader will not be minded to conclude that because it is not a hugely lengthy document, it cannot be considered worthy of a PhD.

In support of this approach, I shall quote the words of an academic colleague friend, Professor Ray Paul. Professor Paul produced what he termed his Law of Knowledge. This states 'Something is understood if it can be expressed simply, and if it cannot be expressed simply, it is not understood'.

My research studies and dissertation have used this as a guiding principle, and I hope I have achieved my aim of producing a dissertation that is expressed in simple language, and that demonstrates an understanding of my chosen topic.



Acknowledgments

It would be very remiss of me if I failed to acknowledge my gratitude to those who have helped, encouraged, cajoled and enticed me into completing the research for my PhD dissertation. Without their combined support, I feel I may have waned in my desire to put my research above the other demands competing for my time. I am extremely pleased that I did persevere, as I have gained a significant amount of pleasure and sense of achievement in having completed my dissertation.

My thanks are due to my principal supervisor, Dr Jasna Kuljis and my second supervisor, Professor Len Skerratt, for all the help and advice given freely along the route to achieve a successful completion of this dissertation. Above all, my especial thanks must go to Professor Ray Paul who was originally my first supervisor. He gave me a real sense of direction and purpose, and was instrumental in making sure that I knew what research was really all about, rather than what, in the early days, I thought it was about. I am indebted to him for his patience and perseverance, as well as to his undying failure to capitulate to some of my more extreme moments of frustration. He truly has been an inspiration to me.

Lastly to my wife, Patricia, for her patience during those moments when the only time I seemed to have was devoted either to work or my research. I shall make it up to her now that the journey is at an end.



Dissemination

As a consequence of the consideration of the applicability of this research to higher education institutions, my own university has decided to adopt the incrementalist approach to the allocation of resources. It has also decided to move away from the mechanistic model of resource allocation, and it has implemented an expenditure-based budget allocation model for the allocation round 2005/06 rather than continue to follow the HEFCE national formula. I believe my institution has taken a very positive step in the right direction, and will be able to ensure that its resource allocation process can indeed be aligned with the delivery of its strategic objectives. Its adoption across the institution has not been without a degree of pain, since the academic community, whilst quick to criticise the existing, is not too keen to move into the unknown. The process took over two years to implement, but the hard work has now been done.

Whether the wider academic world would be prepared to adopt this approach is an unknown, but I hope that this dissertation will encourage others to tread what is seen by many in the academic community as a dangerous path.



Table of Contents

Page

Chapter 1 - Objectives and Background	
1.1 Objectives	1
1.2 Background	2
1.3 Problems	6
1.4 Approaches to the problems	8
1.5 Research objectives	9
Chapter 2 - Higher Education Funding Council for England's Resource Allocation System	
2.1 Background	12
2.2 The funding method for teaching	13
2.3 Standard resource	13
2.4 Assumed resource	14
2.5 Migration	14
2.6 The funding agreement	15
2.7 The funding method for research	15
2.8 Moderation of teaching and research	17
2.9 Calculation of standard resource	17
2.10 Calculation of assumed fee income	18
Chapter 3 - Brunel University's Resource Allocation Method to 2005/06	
3.1 Introduction	19
3.2 Allocation of teaching funds	20
3.3 Allocation of research funds	21
3.4 Application of levies	21
3.5 Non-pay costs	21
3.6 Potential consequences of the HEFCE-based method	22
3.7 Alternative allocation scenarios	24



Chapter 4 - Theory of Rationalism	
4.1 Introduction	27
4.2 Types of rationality	28
4.3 Policy analysis	31
4.4 Planning, programming and budgeting system	38
4.5 Factors affecting decision making	42
4.5.1 Bounded Rationality	44
4.5.2 Artificial Intelligence	46
Chapter 5 - Theory of Incrementalism	
5.1 Introduction	48
5.2 Management by objectives	48
5.3 Traditional budgeting principles	51
5.4 Incrementalism	51
5.5 Concept of 'Muddling Through'	57
5.6 Concept of Logical Incrementalism	60
5.7 Strategic Planning	64
Chapter 6 - Financial Management in the National Health Service	
6.1 Introduction	70
6.2 Background to the National Health Service Planning System	71
6.3 Principles of the National Health Service Planning System	73
6.4 Limitations of the National Health Service Planning System	75
6.5 Review of the National Health Service Planning System	76
6.5.1 Speciality costing	77
6.5.2 Clinical involvement	79
6.5.3 Standard accounting system	80
6.6 Outcome of the review of the National Health Service Planning System	81
6.7 Subsequent developments	82
6.8 Review of subsequent developments	87
6.9 Planning and Priorities	88



Chapter 7 - Conclusions	
7.1 Analysis and conclusions	92
7.2 Critical review of the thesis	97
Chapter 8 – Brunel University’s Resource Allocation Method from 2005/06	
8.1 Overview	99
8.2 Principles driving change	99
8.3 Features of the new method	100
8.4 Process for implementing the new method	101
8.5 Operational timetable for implementation	104
8.6 Academic and Non-Academic Panels	105
8.7 Further research	105
Chapter 9 - Personal Reflections	
9.1 Overview	107
9.2 Securing change at Brunel University	108
9.3 Outcomes achieved	109
9.4 Criticism of the Incrementalism approach	109
9.5 Action Research	110
9.6 The Future	112
References	114
Declaration	118
Annex A	Resource Allocation Questionnaire
	A-1
Annex B	Resource Allocation 2004/05: Summary of Net Allocations – Actual Model
	B-1
Annex C	Resource Allocation 2004/05: Summary of Net Allocations – No Library or Media Services Levies
	C-1



Annex D	Resource Allocation 2004/05: Summary of Net Allocations – No Library, Media Services or Academic Service Levies	D-1
Annex E	Resource Allocation 2004/05: Summary of Net Allocations – Comparison of Outcomes	E-1



Table of Figures

Page

Figure 1	A simplified management cycle	33
Figure 2	The Rational model	41
Figure 3	Comparison of Rational-Comprehensive and Successive Limited Comparisons models	53
Figure 4	Strategies form in subsystems	62



CHAPTER 1

OBJECTIVES AND BACKGROUND

1.1 Objectives

I joined the higher education world in April 2001 as the Finance Director of Brunel University, a pre-1992 university, having previously held senior finance positions in further education, social housing, the National Health Service and the private sector. I soon became intellectually challenged by the way in which my own University, and other higher education institutions that I visited, approached financial management. The result was that I undertook this research with the objective of examining whether there is a way in which higher education institutions might better approach financial management.

The dissertation first reviews the way in which the Higher Education Funding Council for England (HEFCE) allocates to higher education institutions the resources made available to it by the Government, this being the basis of the model used by many higher education institutions to allocate those resources within their own institutions.

The dissertation then reviews the way in which my own University allocated resources, using the HEFCE model as a basis, across the various academic, academic support and administrative departments, and considers the effect of applying such an approach.

During my career, I have experienced a number of different financial management techniques. This dissertation will review the two that have been chosen, that is, Rationalism and Incrementalism, to gain an understanding of their principles as financial management techniques. I chose these two techniques as I have experience of them from previous working environments, I can see the potential for their application in the world of higher education, and I believe they are worthy of investigation in the context of this dissertation.



It will then examine the way in which the National Health Service approached financial management from 1974, particularly in the mid 1970s and 1980s, outlining the problems involved with the attempt to introduce a Rationalism approach. The National Health Service was chosen as it exhibits many of the characteristics of higher education institutions, comprising of a similar mix of 'academics' and administrators, having areas of activity that compete for resources, and also being required to respond to, and deliver, a number of Government objectives. It provides a good comparator in terms of the potential application in higher education institutions of the theories examined in the earlier part of the dissertation, drawing on the experience of the National Health Service.

1.2 Background

The higher education world consists of a diverse range of organisations (Ramsden, 2001) sharing the basic aim of providing higher-level teaching and research to students from a range of backgrounds, academic achievement levels and cultures. At the present time, there are 129 higher education institutions and 147 further education colleges in England in receipt of HEFCE funding (HEFCE, 2005a). They are diverse, ranging in size, history, subject mix and mission. This very diversity amongst higher education institutions may pose a significant challenge to some of them in the context of the resources that can be devoted to the areas of activity that produce effective financial management.

Higher education institutions are consumers of significant public sector resources; some £6.3 billion of public funding is being provided in 2005/06 by HEFCE (HEFCE, 2005b), and total revenue for higher education institutions for 2004/05 was around £18 billion (HESA, 2006). If higher education institutions are to maximise the contribution they make to the advancement of knowledge, and thus to the United Kingdom economy, it is essential that the resources available to them are allocated in a strategic manner, consistent with the delivery of institutional objectives.

When I took up my post as Finance Director of Brunel University, I was surprised to find that the resource allocation method used appeared to take no account of



the University's strategic objectives, but was a purely mechanistic model based on student numbers. My surprise was based on the fact that, when I was the Finance Director of the Further Education Funding Council for England (FEFC), I stressed the need for further education colleges to ensure that the resources made available to them were used to deliver their strategic objectives. I did not believe that the FEFC model for calculating grant allocations to further education colleges was appropriate for use as an internal allocation model, since it was based necessarily on very high-level criteria that could be used as the basis for a national formula.

I was interested to know how many other higher education institutions adopted a resource allocation method similar to that used by my own University. I visited, during 2001, six universities that featured in the upper quartile in The Times league tables. I found that, they too, used the same mechanistic model. I raised my concerns about the use of such a mechanistic model with a number of my fellow finance directors at meetings of the British Universities' Finance Directors' Group (BUFDG) and, as part of my research, I circulated a questionnaire to all higher education institutions to ascertain what resource allocation model was used, and also to find out whether, if they used a similar model, they thought it facilitated the delivery of their institution's strategic objectives. The results are set out in annex A.

In terms of selecting the most appropriate form of survey, I was mindful of the fact that the topic for my dissertation could be relevant to a significant proportion of higher education institutions, as well as having potential advantages in terms of a more inclusive approach to the allocation of resources and a more effective use of them. I decided, therefore, to survey all higher education institutions in receipt of HEFCE funding. Such an approach offered the opportunity to ensure that the results would be based on a sufficiently large and representative return from the target institutions, thereby avoiding the risk of a biased result. There are a number of survey techniques that may be used, including personal interviews, telephone surveys, mail surveys, each having its own advantages and disadvantages. I chose an e:mail survey not only because of the advantage of speed and low cost, but also because the two questions that I wanted answering were very

straightforward, and could be answered with a simple Yes or No. The choice of this type of question enabled the data to be converted into binary notation, thus facilitating the analysis of the information provided in the responses.

The response rate of 62% was good, particularly as it included the majority of the larger higher education institutions. On the basis of the returns, 73% of the respondents use a resource allocation model similar to that used by my own University, and 71% of those that use such a model believe that it facilitates the delivery of their institution's strategic objectives. The issue that I am researching is relevant, therefore, to a significant proportion of higher education institutions. If there is a better way of allocating resources to maximise strategic objectives, there is a considerable prize to be won in terms of increasing the effectiveness of the use of resources consumed by higher education institutions.

Over the past years, higher education institutions have operated with the aim of providing higher education more cost effectively within a climate of a reduction of resources in real terms (Universities UK, 2004). It is widely accepted that size offers significant opportunities for increased efficiency, particularly in terms of administrative support structures. Those higher education institutions that are too small to take advantage of such efficiencies of operation face a significant challenge in terms of effective financial management. Despite this, they are still expected to cope with changes in Government and/or HEFCE policy, and also with the increasing number of specifically targeted funding initiatives. The use of such initiatives runs the risk of reducing the ability of higher education institutions to respond to their own particular circumstances, as it forces them to use resources for specific purposes rather than for purposes that they consider to have a higher priority.

Higher education institutions have also had to operate during this period under a climate of increasing student expectations, particularly since the introduction of student tuition fees in 1998. These expectations are likely to increase with the introduction of higher fees in September 2006 (Higher Education Act 2004, 2004). Whilst some may argue that differential fees could lead to a range of expectations, it is probably the case that all students will have higher expectations than at



present, but those paying higher fees are likely to have higher expectations than those paying lower fees.

Higher education institutions have responded to these challenges primarily by introducing organisational change. As the government does not enjoy a direct relationship with higher education institutions, it has sought to influence the planning and budgeting processes by introducing targeted funding, this being one of the only ways available to it to seek to ensure that its manifesto promises are met. Such an approach could be seen as confusing the terms 'priorities' and 'planning', priorities being the concern of government and planning the concern of higher education institutions. The two terms are not synonymous and the methods of producing 'priorities' and 'plans' are normally quite distinct.

This could lead to confusion within higher education institutions if they choose to adopt the same process for the internal allocation of resources as HEFCE uses to allocate resources to the higher education institutions to which it provides funding. This will be explored as part of this dissertation.

The process of organisational change requires higher education institutions to review their curriculum offer and, for research-intensive institutions, also to review those areas that are regarded, or could become regarded, as world-class fields of excellence. This is extremely important in light of HEFCE's future more selective approach to the funding of research activity (HEFCE, 2003). The success of this process relies, to a significant extent, on the existence of a robust process by which higher education institutions can direct resources to areas identified as key to the future success of the higher education institution. An effective financial management and decision making system should be capable of supporting this process, thereby enabling the achievement of the objective. The challenge for higher education institutions is to deliver their strategic objectives by identifying courses of action that are supported by relevant and pro-active resource allocation models.

Financial management, in terms of planning and budgeting, involves choice, and this dissertation seeks to examine two of the ways by which choices can be made,

as well as the ways in which they are subsequently implemented via the financial management process. The dissertation also seeks to examine the assertion that it is important for any financial management system to ensure that it does not introduce significant disillusionment amongst the higher education institution community, an aspect to which much attention should be paid, since it is the academic community that will ultimately have a significant bearing on the success of a higher education institution.

In this context, the dissertation examines the way in which higher education institutions might approach the allocation of resources. The dissertation first considers the theory of rationalism in decision making and looks at the methods adopted, primarily originating in the United States, and their relative success and failure.

The dissertation also considers the theory of incrementalism, outlining the problems of rationalism and seeking to identify how incrementalism can help.

The dissertation looks at the way in which financial management has been undertaken in the National Health Service, and outlines the problems involved and possible solutions. The dissertation also looks at the applicability of those solutions to the problems faced by higher education institutions.

The dissertation explores what type of decision making may be more suited to higher education institutions under existing conditions, and whether the adoption of such a decision making process is likely to have a positive impact on the improvement of financial management in higher education institutions.

1.3 Problems

Higher education institutions range in size and complexity, and adopt different academic and management structures to enable them to deliver their stated objectives and mission, but they all share the common aim of providing a learning experience. They operate in an increasingly competitive environment, and are constantly facing fresh challenges outside of the basic challenge of maintaining



academic excellence. One of the most difficult challenges for senior management is how to manage an organisation that consists of a collection of academics, working in a number of departments, many of whom may be pursuing their own set of objectives and goals, which may or may not be consistent with those of the institution. Not only could this introduce tension between departments, but also between individual academics. Such tensions could result in polarisation within the academic community, making it difficult for the institution to operate as a coherent organisation. This could lead to a breakdown in management resulting, in the extreme, in the demise of the higher education institution.

There is not only competition between academic departments, but also between academics within departments who may feel that their particular area of expertise is of prime importance and should be supported in preference to another area. Add to this the additional need to provide funds to support the non-academic areas of activity within higher education institutions, and it can be seen that there is significant potential for things to go wrong.

The challenge facing higher education institutions is one of balancing a set of competing objectives to secure the future existence of the higher education institution and the retention of key academics. This is very much the case in the context of the financial management of higher education institutions, particularly in the current climate of scarce resources and increasing competition. The solution advocated by some is to introduce more private sector practices into higher education institutions.

Whether this really is a solution is debatable, since the majority of private sector organisations operate in a completely different environment where process is the order of the day, and employees are driven by very tangible benefits or outcomes.

That is not to say that higher education institutions should not operate in a 'business-like manner', but it must be remembered that, in general, they are not driven by the same 'profit' motive as the private sector. Can higher education institutions, by their very nature of being a collection of academics pursuing excellence, particularly in the field of research, be managed in the same way? A



tremendous culture shift would be required, and it is important for this to be recognised in any system of financial management. In this context, the recognition of the human behavioural aspects within an academic community is likely to be as important as the application of financial management techniques. My review of the National Health Service will explore this concept.

Competing time pressures are becoming a significant problem in the context of management in general, and there is increasingly less time to stand back, think, review and formulate ideas and policy. This pressure makes it all the more important for any effective system of financial management to recognise the need for early dialogue, and to adopt relatively simple and uncomplicated methods for achieving acceptable financial outcomes.

1.4 Approaches to the problems

In examining the problems facing financial management in higher education institutions, this dissertation will examine the theory that successful financial management in higher education institutions is unlikely to be achieved by the rigid adherence to traditional financial procedures and processes, but is more likely to be successful if particular attention is devoted to the human behavioural aspects. In examining this theory, the dissertation will consider and compare the two theories of Rationalism and Incrementalism, drawing conclusions about their applicability to the higher education world, and also their potential for success.

The dissertation will also review the experience of the National Health Service following the 1974 reorganisation, particularly the attempt to introduce a National Health Service Planning System in the 1970s and 1980s. Whilst this is some 20 years old, there has been very little real change in theory and practice since that time; rather, all that has happened is that the Government has attempted to introduce the same principles using different words and phrases. It is well worth exploring a 'real-life' scenario in this dissertation. The National Health Service provides a relevant example, as it not only contains the same element of drive for academic excellence, in terms of the aspirations of the diverse range of consultants working in very highly specialised fields of medicine, but it also has a

number of output measures that successive governments have sought to influence through the attempted introduction of traditional financial management practices. Whilst this adds an additional dimension to the problem faced by higher education institutions, the basic issues faced by both are very similar.

The dissertation will look at the way in which the human behavioural aspects can exert influence over the success or otherwise of financial management, and also the extent to which private sector practices may work in environments like higher education institutions.

The dissertation will also consider the extent to which, because those employed in organisations such as higher education institutions are likely to be working in that environment for reasons other than financial, there is a need for successful financial management to recognise that, in adopting a 'business-like' approach, one also adopts an approach that may be described as 'operating with a social conscience'. In other words, is there a need for any system of financial management in the world of higher education to recognise that decisions cannot always be taken on the basis of pure financial outcomes, important as they may be, but rather they should be taken within the context of the wider social implications? This is very different to the world of the private sector that, in the main, is process driven, and operates within a very strict financial discipline geared towards the achievement of profit rather than social outcomes.

1.5 Research objectives

The objective of this research is very simple. It reviews HEFCE's funding model, reviews my own University's resource allocation method, reviews two methods of decision making, considers their effect in relation to the National Health Service, and attempts to determine whether either of these approaches, considered together with the experience of the National Health Service, might contribute to more effective financial management in higher education institutions. If there is anything to be found, the dissertation will attempt to identify it. It will explore the suggestion that far more attention needs to be devoted to the integration of human behavioural aspects into the financial management process if higher education

institutions are to make significant strides in delivering more effective financial management.

There are a multitude of aspects contributing to the term financial management, and it will not be possible in this dissertation to deal with them all. That is why I shall concentrate on what may be considered to be one of the most important aspects over which individual higher education institutions have control, that is, the interaction of human behaviour with the financial management process.

This dissertation may be likened to a series of Christmas boxes. Only when all the boxes have been unwrapped or read will you find that they fit together like a Petrushka doll.

Chapter 2 examines the system used by the Higher Education Funding Council for England (HEFCE) for allocating resources to the higher education institutions to which it provides funds. This sets a background for Chapter 3, since it is necessary to understand the basis used by HEFCE to allocate funds on a national basis, thereby enabling some form of conclusion to be reached as to its applicability for use as an institutional allocation mechanism.

Chapter 3 reviews the way in which my own University allocated the funds available to it, and seeks to identify some of the problems caused by following, at an institutional level, the HEFCE national model. My University's resource allocation model was changed for the 2005/06 allocation round, and the new method is explained in Chapter 8.

Chapter 4 examines the theory of rationalism, one of the two theories that are reviewed in this dissertation. This dissertation identifies the key principles of this approach, particularly in terms of the way in which the human relations school focuses on the rational nature of human behaviour informed by data evaluation, leading to the notion that rational or reasoned models can be adopted, therefore, when considering financial management systems.

Chapter 5 then examines the theory of incrementalism, the second of the two theories reviewed in this dissertation. This dissertation reviews the concept, inherent in terms of an incrementalist approach, that history offers the best guide to predicting the future and, therefore, is of greater use when considering financial management systems.

Chapter 6 reviews the way in which the National Health Service has approached financial management since 1974, particularly in the 1970s and 1980s, in terms of a consideration of the two approaches reviewed in Chapters 4 and 5, and the reasons behind the decision to continue with an incrementalist approach to financial management.

Chapter 7 draws together the previous chapters by comparing the experience of the National Health Service to that of higher education institutions, the two sectors sharing a significant number of similarities. A comparison of the two approaches enables the dissertation to consider their applicability to the way in which higher education institutions might best approach financial management in terms of the way in which they are structured and managed. The consideration of the funding approach adopted by HEFCE also enables the dissertation to consider, in conjunction with the two theories discussed in Chapters 4 and 5, the experience of what happened in the National Health Service, it being equally relevant to the higher education sector. The intention of this dissertation is to help inform the consideration of the approach to financial management by higher education institutions that may be of most benefit.

Chapter 8 sets out the basis on which I recommended that my own University should move away from a mechanistic resource allocation model to one based on the principles of incrementalism, and also the actual method adopted for the new model. It also suggests the further research that I believe should be undertaken to assess the validity of the proposed approach, and to enable a legitimate comparison of the former and new models to be made.

Chapter 9 is a personal reflection following the completion of the dissertation.

CHAPTER 2

HIGHER EDUCATION FUNDING COUNCIL for ENGLAND's RESOURCE ALLOCATON SYSTEM

2.1 Background

This chapter examines the system used by the Higher Education Funding Council for England (HEFCE) for allocating resources to the higher education institutions to which it provides funds. This sets a background for Chapter 3, since it is necessary to understand the basis used by HEFCE to allocate funds on a national basis, thereby enabling some form of conclusion to be reached as to its applicability for use as an institutional allocation mechanism.

The system used by the Higher Education Funding Council for England (HEFCE) to allocate grants to the higher education institutions that it supports is based on a number of criteria that can be applied on a national basis. Whilst HEFCE's formula calculates the grant of every higher education institution in some detail, HEFCE actually gives each higher education institution a single allocation of funds to be spent at the higher education institution's discretion. HEFCE's block grant funding system is based, therefore, on outputs and outcomes. This is in marked contrast with the system used by the former University Grants Committee which allocated grant funding on inputs.

Such a block grant system is inevitable, since it would be impractical for a national funding body to attempt to adopt individual institutional or regional criteria other than on a very selective basis. The most obvious example of such a criterion is the use of London Weighting factors to reflect the higher costs associated with operating in London. The system used by HEFCE is intended to operate, therefore, in broad terms, and to be as efficient as possible in distributing funds between higher education institutions; it is not designed as a mechanism for distributing funds within a higher education institution.

Other than funds that are provided for very specific activities, the funds made available to higher education institutions are conditional only on the funds being

used for eligible activities as set out in section 65(2) of the Further and Higher Education Act 1992. The system is described in the following paragraphs.

2.2 The funding method for teaching

The funding method for teaching was introduced by HEFCE for the allocation round 1998-99, and is based on the broad principle that similar activities should be funded at similar rates, with variations from these rates based on previously determined factors.

Under the method, HEFCE calculates a standard level of teaching resource for each institution. This is a notional resource level, based on the higher education institution's student profile and institutional characteristics, and covers both HEFCE grant and tuition fees. HEFCE compares this standard resource with what the institution actually receives in HEFCE grant plus HEFCE's assumptions of income from tuition fees, which together are referred to as assumed resource.

The principle of the funding method is that similar activities should be funded at similar rates, so HEFCE wants the assumed resource to come within an acceptable margin of standard resource for the higher education institution as a whole. This margin of 5% above and below standard resource is called the tolerance band. If the difference between the assumed resource and the standard resource is more than 5%, HEFCE will take action to ensure that the higher education institution comes within the $\pm 5\%$ tolerance band over an agreed period of time. This may be by changing HEFCE's grant funding level, or by requiring changes in the higher education institution's student numbers.

2.3 Standard resource

HEFCE calculates the standard resource by weighting students, expressed in full-time equivalents (FTEs), according to one of only four price groups, which are intended to reflect the relative costs of provision in different subjects. Since higher education institutions offer many hundreds of courses across a very wide range of subject areas, these price groups can reflect costs only on a broad national basis,

since it is likely that different higher education institutions will devote a different level of actual resource to the delivery of these subjects. Further weights are applied for part-time students, students on long courses and those on foundation degrees. Higher educational institutional factors are also reflected through weights applied to student numbers. These are for the additional costs of provision in London, and the extra costs of some specialist institutions, small institutions, and those with old and historic buildings. The standard resource is calculated for each higher education institution by multiplying its total weighted FTEs by a base price determined by HEFCE.

2.4 Assumed resource

Assumed resource comprises HEFCE grant plus HEFCE's assumptions of income from tuition fees. The starting point for calculating HEFCE's grant is the funding allocated the previous year. HEFCE then makes adjustments where appropriate for any holdback of grant (if the higher education institution has not met the terms of HEFCE's funding agreement), inflation, funding for additional student places, and other miscellaneous adjustments and transfers. HEFCE calculates assumed fee income by applying specified fee rates to the same student FTEs used in calculating the standard resource. The fee rates commonly reflect those specified by the Department for Education and Skills (DfES).

2.5 Migration

For some higher education institutions, the assumed resource differs from the standard resource by more than 5%. If this is as a result of the changes to the teaching funding method, then HEFCE will work with the higher education institution to help it come within the $\pm 5\%$ tolerance band over an agreed period by adjusting funding or student numbers. This process is called migration. If higher education institutions move further away from the tolerance band because of their own recruitment behaviour, HEFCE expects them to manage any process for recovering their position. In particular, if they move above it (become 'over-resourced'), they may be liable to an immediate reduction in grant. If they move

below it (become 'under-resourced'), they may need to reduce student numbers the following year.

2.6 The funding agreement

HEFCE has a funding agreement with each higher education institution. This specifies what HEFCE expects the institution to deliver in return for the funding provided.

If higher education institutions do not comply with the terms of their funding agreement, HEFCE may withdraw some of their funding for teaching. This is known as 'holdback'.

2.7 The funding method for research

The current funding method was first applied for 1997-98, and is described in HEFCE 4/97 *Funding method for research from 1997-98*, and in HEFCE 2003/29 *Funding Higher Education in England*.

There are six elements that make up HEFCE's research funding for 2006-07:

- mainstream quality-related research (QR) funding. HEFCE distributes this between the units of assessment (UoAs) used in the most recent Research Assessment Exercise (RAE), according to their volume of research weighted by the relative cost of research in different subjects. HEFCE distributes the total for each UoA between higher education institutions according to their volume of research weighted by their quality rating. The main volume measure for research is the number of research active staff submitted in the 2001 RAE. There are also minor volume measures (numbers of research assistants and fellows) that are updated annually;
- funds for the supervision of research students on Research Degree Programmes (RDP's). HEFCE distributes these according to the number of research students in departments rated 4 or above, weighted by the relative

cost of research in their UoA and London Weighting. There is also transitional RDP supervision funding for students in departments rated 3a in those UoAs that do not receive research capability funding, although this is being phased out, and will be zero in the year 2008-09;

- London Weighting premium. For higher education institutions in London, this is calculated as a proportion of the above two allocations;
- funding for the 'best 5-star' departments. These are the departments that either achieved a rating of 5* in both the 1996 and 2001 RAEs, or achieved a rating of 5* for the first time in the 2001 RAE and increased or maintained staff numbers between the 1996 and 2001 RAEs. The funding is allocated pro rata to London-weighted mainstream QR for the departments concerned;
- Research Capability Fund. This was new for 2003-04 and is allocated in proportion to the number of research academic staff in departments in specified emerging disciplines that scored 3a or 3b in the 2001 RAE, weighted according to the cost weight for the UoA; and,
- Charity Support Fund. This was new for 2006-07 and is allocated with reference to eligible charity research income for disciplines rated 4 and above, and 3a and 3b for those receiving grant from the Research Capability Fund, together with the volume of charity research income from the 2005 Research Activity Survey.

Public research funds are provided under a dual support system whereby the research funding provided by HEFCE is intended to support the cost of the salaries of permanent academic staff, premises, libraries, and central computing costs. The Research Councils provide funds for direct project costs and contribute to indirect project costs.

2.8 Moderation of teaching and research

To help maintain stability, HEFCE has a policy of phasing in changes by moderating the allocations. In general, no higher education institution will receive a reduction in resource for teaching and research in real terms compared with the equivalent, unmoderated figure for the previous year. HEFCE does not provide moderation funding if it amounts to less than £100,000 per higher education institution. HEFCE reviews its moderation policy annually.

2.9 Calculation of standard resource

In calculating a higher education institution's standard resource, assumed FTEs are weighted according to price group, and for the institutional and student-related premiums. The institutional and student-related premiums are expressed in FTE terms, and are calculated as a proportion either of the unweighted FTEs or of the FTEs weighted by price group. This depends on whether the additional costs that the premiums seek to recognise vary according to subject.

The price group weights are:

- group A – 4
- group B – 1.7
- group C – 1.3
- group D – 1.

The other factors of which account is taken are that part-time students are weighted (10%) as a percentage of an FTE, foundation degrees are weighted (10%) as a percentage of an FTE, small higher education institutions that have a total student FTE of 1,000 or less are weighted on a sliding scale, historic buildings are weighted on a sliding scale to eligible institutions with buildings constructed before 1914, long courses of 45 weeks or more are given an additional weighting (25%), London weighting is applied depending on whether the higher education institution is inner (8%) or outer (5%) London, and institution-specific weighting incorporates a premium for specialist institutions.

As stated previously, it can be seen that these factors are intended to reflect, at a high level, matters of which HEFCE believes account should be taken when considering how it should allocate funds to higher education institutions. It does not seek to mirror individual higher education institutional activity, and neither can it. Hence the overall requirement that funds made available by HEFCE may be used for any eligible activities. This leaves higher education institutions free to determine how to allocate those funds internally.

It is worth noting here that the price group weights quoted above are different from those applied by HEFCE in previous years. It can be seen, therefore, that a higher education institution's standard resource could change significantly purely as a result of changes introduced by HEFCE to its funding formula, even though the higher education institution's course and subject offering remained exactly the same from year to year.

2.10 Calculation of assumed fee income

HEFCE calculates for each type of student an average assumed fee per FTE student. This is then applied to the assumed FTE student numbers to derive the assumed fee income. Apart from those students for whom the fee is regulated, it is clear that HEFCE's assumptions do not reflect individual higher education institution practice, since higher education institutions are free to set their own fees in accordance with their perception of what the market will bear.

The next chapter will review the way in which my own University allocated funds within the University, and seek to identify the potential problems of using a national formulaic approach.

CHAPTER 3

BRUNEL UNIVERSITY'S RESOURCE ALLOCATION METHOD TO 2005/06

3.1 Introduction

This chapter reviews the way in which my own University allocated the funds available to it up to the 2005/06 allocation round, and seeks to identify some of the problems caused by following, at an institutional level, the HEFCE national model.

As stated in Chapter 2, HEFCE allocates a block grant to each higher education institution. Such a block grant system requires a higher education institution to have a mechanism for determining the way in which the block grant will be distributed within the higher education institution. The mechanism should be capable of ensuring that the higher education institution can implement its priorities as identified in its strategic plan and objectives.

The method used by Brunel University to allocate its resources amongst departments mirrored that used by HEFCE to allocate its grant to higher education institutions. It is worth noting that one of the general principles underpinning Brunel's resource allocation policy was to distribute resources to academic departments in line with the basis on which they accrued to the University, and in accordance with SPARC (Strategic Planning and Resource Committee) policy. This is not uncommon amongst higher education institutions; indeed, on the basis of 81 responses I received to the questionnaire that I sent to all higher education institutions, some 73% use a HEFCE-based model to allocate resources within their institutions. In reality, therefore, the allocation of resources across the University, and those higher education institutions using a HEFCE-based model, is related more to numbers of students than to the achievement of the University's strategic objectives. Despite this, some 71% of those higher education institutions using a HEFCE-based model believe it facilitates delivery of strategic objectives.

This statement implies a degree of pro-activeness in the allocation of resources, and it is highly questionable as to whether a formula-driven approach to the allocation of resources can satisfy such a principle. This dissertation seeks to

address this matter, but to do so requires an understanding of the way in which the University allocated the funds available to it.

Brunel University's allocation cycle for an academic year begins with an evaluation of the various funding councils' allocation of grant notifications received around March time. The University identifies those elements of grant funding that are available for general distribution, and which can be used, therefore, in the general resource allocation process, and also makes an assessment of the likely tuition fee income that will be received in the academic year in question. The total of these is then used as the sum to be allocated to departments across the University.

3.2 Allocation of teaching funds

In determining the way in which the funds available for teaching were to be allocated, a model was run that calculated for each department the level of student activity in terms of module and credit counts. These were then weighted, using HEFCE's subject and student weightings, to arrive at a weighted student activity level. It can be seen that for a higher education institution that follows the HEFCE model to allocate internally the resources available to it, any change that is introduced by HEFCE will have an immediate effect on the internal distribution of resources from one year to the next. This is not conducive to effective planning; in fact, quite the contrary. It could actually introduce significant instability from year to year, not particularly helpful in achieving effective financial management.

These data were captured, out of necessity, as a snapshot from the student database in early December. It can be seen, therefore, that the resultant allocations for the following academic year could not take account of any policy steers that may have been determined by, for example, SPARC, and neither could they take account of the appropriate level of funding required by any particular department. The achievement of these principles could only be secured, therefore, by pro-active action on the part of those responsible for determining the final allocation of funds. As the allocations were determined by a mechanistic

model, based on HEFCE's national formula, it was impossible to deliver these two fundamental principles.

3.3 Allocation of research funds

The same mechanistic approach was taken in relation to the allocation of HEFCE's research grant, whereby the allocation process mirrored the same national formula used by HEFCE to determine the distribution of research grant funding to higher education institutions. Whilst such an approach will distribute funds on the basis of current activity, it is extremely difficult for it to take account of the two guiding principles of strategic policy steers and appropriate levels of funding.

3.4 Application of levies

Having determined these departmental allocations on the basis of a mechanistic formula, the University then levied departments for the costs of academic support services, for example, Library, and also for space occupancy. The result was a net allocation that supported the pay and non-pay expenditure of each department. It was possible for a department to increase the funds available to it by demonstrating that it could secure additional income through either charging higher fees than the base fee levels assumed in the model, and/or by the generation of other income through, for example, consultancy work.

3.5 Non-pay costs

Once the net allocations had been determined, the costs associated with the employment of the current levels of staffing were computed, and the difference between the two was available to fund non-pay costs. It is probably evident that when setting non-pay spending plans, departmental heads had no option other than to produce proposed spending levels for the constituent elements of the non-pay budget that did not exceed the sum available. Whether they bore any relationship to the level required to run their departments effectively, or to deliver

service improvements or contributions to the achievement of the University's strategic objectives was, quite frankly, in the 'lap of the Gods'.

3.6 Potential consequences of the HEFCE-based method

This can be evidenced by the fact that the calculation of HEFCE's block grant for teaching is based on high level assumptions, one significant example being the use of just four price categories for different subjects. Whilst this can be seen to be consistent with a block grant allocation system, it can also be seen that the result of a higher education institution allocating the grant across the higher education institution using a similar system could result in some subjects that are expensive to deliver being funded at the same level as others that are less expensive. This has the effect of some subjects receiving funding at a potentially lower level than the cost of provision.

The effect of the use of such a funding model within a higher education institution could be that decisions relating to subject offerings may be taken on purely financial grounds, these grounds being based on the outcomes produced from the operation of a high level funding model. In extremis, it could be argued that the adoption by higher education institutions of HEFCE's funding model could actually contribute to the withdrawal of subject offerings and/or the closure of departments, with potentially adverse consequences for the economy.

Such a process can be seen, from a human behavioural perspective, to be at variance with the delivery of stated objectives, and can only lead to heighten disillusionment amongst the academic community, since it offers no route whereby departments can secure additional resources other than through growth in the student population. This is exactly what happened at Brunel, and there was significant resentment amongst the academic community about the way in which funds were allocated to departments via the use of a mechanistic model.

In fact, if the University's additional resources for a particular year remained static, or worse still decreased, there was no way that any improvements or

developments could be delivered other than possibly by those departments that had grown their student activity level.

As stated previously, increases in student activity levels may be completely at variance with the areas in which the University wishes to focus its future development, perhaps for the purposes of securing higher RAE outcomes in the future. It was almost impossible, therefore, for a department whose student activity level remained constant to be able to find the necessary funds to implement a strategy that would deliver higher RAE outcomes. As the resource allocation model was based primarily on student activity levels, it was very difficult indeed for any department that was not growing its student population to find the additional resources necessary to enable it to improve its research and/or teaching performance.

Brunel University has a stated objective to become more research-led, although it did not have, until recently, any policy on minimum entry standards. Under the mechanistic resource allocation model it can be seen that, so long as a department recruited additional students, that department stood to secure a higher proportion of the available resources, all other things being equal. This introduced yet another undesirable consequence of the mechanistic resource allocation model.

Not only was it possible for a department with students of lower academic ability to secure a greater share of available resources, but it could also be the case that a department that was not seen as critical to the achievement of the University's stated objective to become research-led could, nevertheless, continue to secure a greater share of resources simply by continuing to grow its student numbers. This at the expense of a department that may be seen as critical to the achievement of the University's stated objective, but which could not grow its student population.

It is of little surprise, therefore, that many academics became frustrated with what they saw as two opposing objectives. On the one hand they were being asked to secure better RAE outcomes, but on the other hand, they were not being provided with the means of achieving such an outcome because the resource allocation

model recognised only student population growth, irrespective of whether that growth was in the areas identified as critical to the future of the University, and also because there was no way that a department that had historically had a small share of the resources could secure the additional resources necessary to raise its research grading.

The use of a mechanistic resource allocation model that has no way of pro-actively addressing the legitimate needs of departments that are seen as critical to the future success of the University, and that contribute to the achievement of the University's stated objectives, may be seen as an abrogation of the responsibility of senior management, and one that may contribute significantly to the disillusionment of the academic community.

Indeed, the potentially undesirable effects of changes introduced by HEFCE can create a destabilising position within a higher education institution that follows the HEFCE model. A very good example is the change in subject weightings introduced by HEFCE for the 2004-05 allocation round. For my own University, this could have resulted in a reduction in funding of some £1 million for the Department of Information Systems and Computing, representing some 20% of its income, simply because HEFCE decided to change its subject weightings. Such an outcome cannot be seen as rational, and it is extremely unlikely that any department could cope with a 20% year on year cut in its funding. This type of practice is bound to introduce further antagonism amongst the academic community against the use of a mechanistic model.

3.7 *Alternative allocation scenarios*

This dissertation has referred previously to the way in which the University's model levied departments for the costs of academic support services. It did this by relating the levy to the usage of the service or facility. Such an approach may be perfectly rational in the context of the need to apportion expenditure across cost centres, the accountant's dream, but it has been argued by many within the University that it had the effect of disincentivising individuals to make use of a service or facility.

A good example is the use of a Library. My own University and, I suspect, most other higher education institutions, would encourage staff and students to make the maximum possible use of Library facilities. If one has a regime that then seeks to increase the levy on a department if its use of the facility increases, there is a direct disincentive introduced to make the most use of that facility. That potential outcome cannot be in the best interests of either the higher education institution or its students if the policy steer is to encourage the maximum use of the facility.

This is another area that has the capacity to cause significant friction within higher education institutions, and one where there is a serious misalignment between the policy steer and the adverse financial outcome of following that steer. Whilst such a levying regime may suit the needs of accountants, it should not interfere with the delivery of the higher education institution's policy objectives. A serious review of this practice, perhaps along the lines of the cost of such services being treated as a single levy before determining the funds available to individual departments, may yield beneficial results. Whilst it would be necessary, in this example, for the Head of Library Services to be able to support the level of resources required to run the Library, if the cost of providing the service were taken as a charge at the higher education institutional level, there would be no disincentive in using the Library to its maximum potential.

As part of this research, and also to inform the debate within the University regarding the applicability of the HEFCE-based model to secure the achievement of the University's strategic objectives, I carried out analyses to compare the allocation of resources across academic departments for the academic year 2004/05 using three scenarios:

Scenario 1: existing allocation method (see annex B);

Scenario 2: no levy for Library and Media Services (see annex C); and,

Scenario 3: no levy for Library, Media and Academic Services (see annex D).

The results are summarised in annex E. It will be noted that, were the three areas of activity to be funded by means of a top-slicing of funds rather than on a levy basis, there would be a shift of resources from the Faculty of Technology and

Information Systems to the Faculty of Arts and Social Sciences. Such a shift of resources would be particularly important for the Faculty of Arts and Social Sciences given its relative share of the total available resources. The availability of these additional resources could have a significant effect on the continued viability of subject areas within the Faculty.

It should be noted that the revised approach would have no effect whatsoever on the total amount of resource made available to the three areas of activity, but it would have a significant effect on the distribution of resources across the academic areas. It may not be altogether surprising, therefore, that the allocation model was viewed by many academics within the University as unfair, and not supportive of the University's stated objectives.

The next chapter reviews the theory of Rationalism, one of the two theories chosen for consideration as part of this dissertation.

CHAPTER 4

THEORY OF RATIONALISM

4.1 Introduction

This chapter examines the theory of rationalism, one of the two theories that are reviewed in this dissertation. The chapter identifies the key principles of this approach, particularly in terms of the way in which the human relations school focuses on the rational nature of human behaviour, leading to the notion that rational or reasoned models can be adopted, therefore, when considering financial management systems.

When looking at the behaviour of organisations one is faced with the problem that their composite behaviour involves multiple types of rationality. Concepts used in the contexts of multiple types of rationality are necessarily ambiguous, and theories ignoring the full range of types of rationality are necessarily partial. Richard Hartwig (1978) propounded the central thesis that the five types of rationality described by Paul Diesing (1962a) could be used as a comprehensive framework of ideal types around which to organise administrative theory. Our explicit or implicit understanding of the nature of rationality affects the meanings of the words we use, and an improved understanding of the different modes of rationality may help academics and practitioners alike to clarify their language and their theories.

Paul Diesing's (1962b) analysis is directed against the view, common to many social theories, that rationality is identical with efficiency: technical rationality being the efficient achievement of a single goal, economic rationality being the maximum achievement of a plurality of goals and no other types of rationality being admitted. Such a conception of rationality is severely limited as the criterion of efficiency is applicable only to means, not ends, and thus the most basic decisions are not subject to selection or choice by rational procedures. Diesing defined rationality in terms of effectiveness, it being defined as a wider concept than efficiency, and referring to the successful production of any kind of value.

Diesing distinguishes between three aspects of rationality viz. substantial, functional and a third aspect deduced by abstraction from the other two. That is, since decisions are made according to principles, and organised structures embody principles of order, principles can also be thought of as rational.

A decision or action is substantially rational when it takes account of the possibilities and limitations of a given situation, and reorganises it so as to produce, or increase, or preserve, some good. This definition includes two points: the decision must be an effective response to the situation in that it produces some possible good, and the effectiveness must be based on intelligent insight rather than on luck. An organisation is functionally rational when it is so structured as to produce, or increase, or preserve, some good in a consistent, dependable fashion. The consistently good results must be based primarily on an internal structure that is able to continue effective operation through variations of personnel and through changes of environment.

4.2 Types of Rationality

The five types of rationality were identified as being the outcomes of what S. C. Pepper (1958) calls 'natural selective systems'. That is, through the largely unconscious decisions of millions of people, choice is exercised on cultural traits - techniques, rules, beliefs, and values.

Technical rationality appears in actions undertaken in order to achieve a given end. The means-end construct is fundamental to technical rationality, and also to the closely related form of economic rationality, they both being concerned with efficiency. Organisations that achieve their ends efficiently are functionally rational, while decisions leading to efficient goal achievement are substantially rational. The best means to an end is that which makes the greatest contribution at the least cost, but this cannot be determined until comparative costs have been set. The basic principle of technical rationality is 'adapt means to ends'.

This principle is also applicable to economic rationality, where it is more usefully put in terms of the principle of economising. Economising is an evaluation and

selection of ends, and it occurs when two or more ends are in competition with each other. For example, "Should I do this or that?" or "What order of priority shall we assign these tasks in case we are unable to do all of them?"

Economising is necessary when the achievement of one end implies the sacrifice of another, and economising is possible only to the extent that ends are comparable on some scale. Economic progress facilitates economising by increasing the alternativeness of ends through the removal of moral limitations on ends and on the use of means, and by the development of media, measurement and comparison.

Social rationality is the rationality of social systems. A social system is an organisation of cultural roles, including expectations, obligations and ideals. Only by sharing a common social system that provides individuals with complementary roles can people understand and relate to one another. Integration is a logical precondition for the successful completion of any social action, and an integrated social system is thus a rational one as it is effective in making action possible and meaningful.

Socially oriented decision making attempts to change personalities and social relations in the direction of greater fundamental harmony and stability. The means-end scheme is essentially irrelevant, because neither means nor ends can be treated as fixed or independent, let alone measurable. In contrast to a maximising decision, which begins with given ends, the integrative approach treats ends as symbolic of hidden values, fears, strains etc. Means and ends may change unpredictably in the course of problem solving, and only very general goals such as integration or tension reduction are at all relevant. Social and economic rationality are thus clearly opposed in many respects, yet each form of reason presupposes, and is entirely dependent upon, the other. For example, the integration made possible in social organisations and in personalities provides the stability that enables calculation and technically rational action to occur.

Legal rationality is the rationality of fundamental rules. The fundamental rules in a society may consist of the constitution and the laws, the moral order and perhaps the status system. Rules serve to produce predictability and formal order.

Legalism occurs only in the presence of clear and permanent differences of interest. In tightly integrated social systems, conflict is avoided without the need for intricate, formal rules. Indeed, from the standpoint of the integrative ideal, law is a distinctly inferior solution because it stabilises conflicts without resolving them. Nevertheless, a legal order can provide solutions and prevent disputes when other methods fail. This is its claim to rationality.

Political rationality is the rationality of decision making structures. Political decisions are concerned with the preservation and improvement of decision structures. All decisions occur within some sort of decision structure, but the identifying characteristic of political decisions is that they have decision structures as their special subject matter.

There is a sense in which political rationality encompasses the other forms of rationality. If political decisions are concerned with decision structures, then they are also concerned with what decision criteria are to prevail in different areas of life, for example, a policy decision to keep an unprofitable mine open may be in contradiction of economic rationality, but in line with social rationality.

Diesing concluded his book with an overall definition of reason. "Such a definition must have two parts: one to correspond to the rationality of organisations (functional rationality) and the other corresponding to the rationality of decisions (substantial rationality)." Functional rationality is seen simply as order, and rational norms are therefore principles of order. Technical rationality is an order of production. Economic rationality is an order of measurement and comparison of values. Social rationality is an order of interdependence or solidarity that exists when people understand one another, act together and share common experiences. Legal rationality is an order of availability. It specifies which resources are available to each legal entity and which persons correspond to which actions and roles. Legal rationality exists when each person knows what he can do and must do. Finally, there is the political rationality of discussion and decision. Structures of this type are rational to the extent that they adequately provide for the gathering and processing of information, for taking decisions and for checking the effectiveness of such decisions.

Now if functional rationality is order, Diesing (1962c) writes, substantial rationality can most simply be conceived as the making of order, or creativity. Substantially rational decisions of various types ultimately create the different orders of functional rationality. That is, under favourable conditions, economically rational decisions will (indirectly) create a viable economic order: legal decisions will (indirectly) create legal order: and so forth. Thus, economic order arises out of the constant measurement and comparison of values which occurs as individuals seek the most desirable alternatives: legal order arises, given propitious circumstances, as a result of the continual application of rules to cases: and so on.

All five types of rationality in decision making, on both the functional and substantial levels, are to be found in administrative behaviour. Although each mode of practical reason is related to, and is dependent upon, the others, each still reflects a distinct and independent source of evaluative criteria, and there are many situations in which the criteria of technical, economic, social, legal and political rationality conflict. The study of complete organisations necessarily involves multiple aspects and types of rationality, which means that an entirely successful analysis and evaluation of rationality would require the existence of an integrated theory of the social sciences.

4.3 Policy Analysis

Policy analysis normally assumes the perspective of substantial rationality. The purpose of policy analysis is to define, and subsequently achieve, certain objectives without causing unacceptable changes in background variables. A bureaucracy, however, is simply a means to an end, and one organisation is as good as another. Most students of bureaucracy take the organisation as given and attempt to improve its performance. Thus they tend to adopt the perspective of functional rationality. This is important because it complements the necessarily partial perspective of policy analysis.

It is not uncommon for analysts to consider only the substantial or only the functional levels of rationality, or to confuse the two. Thus, as Mouzelis (1967) concluded, the supposedly integrative character of organisation theory disappears

when one moves from the individual level to consideration of the organisation as a whole.

The human relations school focuses its attention on the informal aspects of the organisational structure, and human behaviour is predominantly explained in terms of sentiments, motivations and personal values and goals that are often in conflict with formal regulations and organisational objectives. But this emphasis on sentiments minimises the importance of rational problem solving activities in the organisation. It neglects the problems of planning and co-ordination, the fact that an organisation is predominantly a system of consciously co-ordinated activities geared towards the achievement of collective goals. It relegates the formal structure, with its problems of design, to the background by treating it as an external variable of the informal system, not to be studied in itself.

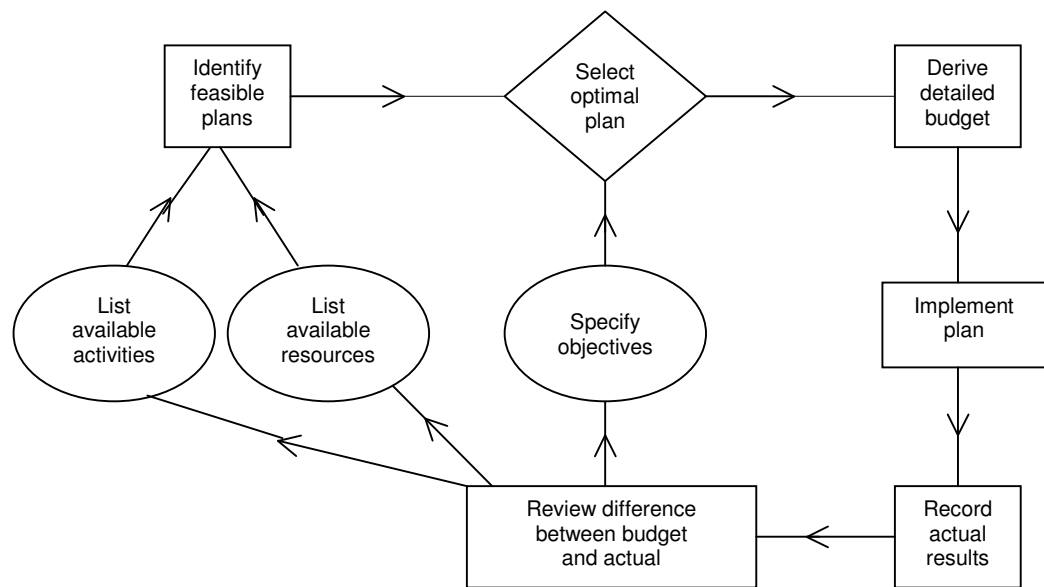
On the other hand, those social disciplines that take into consideration the rational aspects of human behaviour go to the other extreme. They give us an ideal, non-empirical picture of a human actor; totally rational, with no bounds whatsoever to his capacities for computation and problem solving. The economic man, when he makes a choice in pursuit of a goal, is supposed to know in an omniscient way all the possible alternatives of action, be able to foresee the set of consequences which will ensue from the eventual choice of each alternative (or the probabilities of the appearance of each consequence), and have a complete and consistent system of preferences (a utility function), enabling him to rank all consequences, from the most to the least preferred, thus making an optimal choice.

The model above is not the way in which people actually decide, but the way in which they should decide if they were one hundred per cent rational and if their computational capacities were unlimited. As to the classical management theory, rational elements are analysed in a similar fashion. Whether the universalists consider structure designing or other management problems (budgeting, planning, etc.), they are not preoccupied with finding out how the manager really takes decisions. They are rather preoccupied with how the manager ought to take decisions if he wants optimal results.

It can be seen that a polarisation is evident in the various approaches to organisational behaviour. The human relations school neglects the rational aspects of behaviour whilst the economist and management science theorist take into consideration rational elements. But, as they are not empirically minded, they do not only confine rationality to the top of the organisational hierarchy, but they also neglect the non-rational elements of behaviour that drastically limit ideal rationality.

Carsberg (1975a) believes very strongly that scientific methods, in the form of a 'model-building approach', will greatly assist in helping management to solve its problems and make decisions more effectively. He views the management of an enterprise as the undertaking of a sequence of activities, which are repeated in a cyclical manner:-

Figure 1 A simplified management cycle



In a new enterprise, senior management must first determine an objective for their operations. This would be followed by a consideration of the details of activities that might be undertaken during a selected period. An assessment would be made of the likely level of resources that are required, and all these factors would be combined to produce a number of feasible plans, that is, the identification of those activities that could be carried out within the resources available.

It would then be necessary to choose from the various feasible alternatives the optimal plan, that is, the plan that best satisfies the objectives of the enterprise. Once this has been achieved, one would move into the control phase. The detailed consequences of the chosen plan are expressed in the form of budgets showing the quantities of resources required and corresponding income and expenditure. Actual results are recorded in a similar form and compared with the estimates in order to identify differences and assess the reasons for them. Managers thus obtain information that may help them in the formulation or implementation of the next plan.

In practice the process of management is not as straightforward as the above description suggests. The selection of the optimal plan may be viewed as an iterative process rather than a simple sequence of actions as described above.

The essence of the scientific method is well captured in the expression 'the model-building approach'. An organisation applies the model building approach if it decides first what it wants to achieve, and then devises an expression for the relationship between these things and matters that can be influenced directly by its decisions. Such an expression is known as a model. Whenever a decision is taken, some relationship must be assumed at least implicitly. Only if the assumptions about the relationships governing the effect of business decisions are made explicit, however, can a consensus be reached as to whether they are the best possible. Even then, the assumptions must often remain the subject of considerable uncertainty. In that case a decision need not, and normally should not, be made on the basis of one set of assumptions. The model-building approach provides a good basis for exploring the effect for a particular decision of different assumptions. It provides a sound basis for decision taking, that is, it provides a rigorous framework within which managers may exercise their judgment (Carsberg, 1975b).

Anderson (1991) proposed that the best method for analysing human cognitive behaviour lies in the analysis of the task rather than in attempting to analyse the methods used by the human to solve the problem. He implied that researchers had confused the analysis of tasks with the analysis of mechanisms because of

the existence of signature data, a subject-universal invariant measure of performance for some task or group of tasks. He argued that the appearance of these data had been taken as evidence indicating constraints on the architecture of human cognition, rather than indicating constraints of the task. He proposed three advantages that rational analysis provided:

- an understanding of the nature of the problem can provide strong guidance in the proposal of possible mechanisms;
- the task domain provides a rationale for constraining the architecture; and,
- mechanism-focused modelling faces critical indeterminacies that can affect computation or memory mechanisms such as serial versus parallel processing. Analysis of the task domain need not consider these directly.

Anderson proposed the following six steps for describing the rational analysis approach to the behaviour of a cognitive system:

- specify precisely the goals of the cognitive system;
- develop a formal model of the environment to which the system is adapted;
- make the minimal assumptions about computational costs;
- derive the optimal behavioural function considering the above criteria;
- examine the empirical literature to see if the predictions of the behavioural function are confirmed; and,
- if predictions are off, iterate.

Porter's approach (1980) was directed to the way in which organisations could achieve long-term competitive advantage, and was based on surgical precision, the dissection of the vital organs of companies. He asserted (Porter, 1987) that

strategic thinking rarely occurs spontaneously and that, without guidelines, few managers know what constitutes strategic thinking. His work set about constructing those guidelines, work that brought him into conflict with a number of other leading thinkers. Indeed, Henry Mintzberg, the champion of spontaneity and intuition, has been critical of Porter's 'enthusiasm for generic strategies and checklists of all kinds' (Mintzberg, 1994).

Porter managed to absorb the concepts of, on the one hand, competitive advantage being achieved by organisations adapting to their particular circumstances and, on the other, competitive advantage being based on the simple principle that the more in-tune and aware of a market a company is, the more competitive it can be. By analysing a number of companies, he developed generic strategies. Whilst not being an instant template for competitive advantage, Porter insisted that, though the generic strategies existed, it was up to each organisation to select carefully which were most appropriate to them, and at which particular time.

Porter's generic strategies for competitive advantage were:

- cost leadership – a firm sets out to become the low cost producer in its industry;
- differentiation – a firm seeks to be unique in its industry along some dimensions that are widely valued by buyers; and,
- focus – the choice of a narrow competitive scope within an industry. The focus strategy has two variants: the cost focus whereby a firm seeks a cost advantage in its target segment, and the differentiation focus whereby a firm seeks differentiation in its target segment.

A five competitive forces model used to analyse an industry backed up these generic strategies. The five forces are:

- competitive rivalry – if entry to an industry is easy then competitive rivalry is likely to be high;
- power of suppliers – suppliers are essential for the success of an organisation;
- power of buyers – buyers or customers can exert influence and control over an industry in circumstances where there is little differentiation over the product and substitutes can be found easily, where customers are sensitive to price, or where switching to another product is not costly;
- threat of substitutes – if there are alternative products that customers can purchase over your product that offer the same benefit for the same or less price, the threat of substitute is high when the price of that substitute product falls, it is easy for consumers to switch from one substitute product to another, or buyers are willing to substitute; and,
- threat of new entrant - the threat of a new organisation entering the industry is high when it is easy for an organisation to enter the industry, that is, entry barriers are low.

The above five main factors are key factors that influence industry performance; hence it is common sense and practical to find out about these factors before you enter the industry.

Porter advocated the use of a 'value chain' analysis of a company's internal processes and the interactions between different elements of the organisation to determine how and where value is added. Porter argued that viewing everything a company does in terms of its overall competitiveness is a crucial step to becoming more competitive.

For managers, Porter's framework may be considered seductive, clear and the logic irrefutable. The trouble is that, while Porter suggests that the model should only be used to stimulate thinking, organisations often regard it as a direct route to competitive advantage.

It is perhaps interesting to note that, in a volume of over 500 pages, it is easy to miss Porter's one reference to human resource management, it occupying only two paragraphs.

4.4 Planning, Programming and Budgeting System

In the early 1960s a Planning, Programming and Budgeting System (PPBS) was introduced to the United States Department of Defense. Its intellectual kinship to the rational model is clear from the summary of its requirements:

- identify and examine goals and objectives in each major area of government activity;
- analyse how well a given program meets these objectives;
- measure total program costs for several years;
- formulate long-range goals and policies beyond the year in which the budget is submitted;
- analyse alternatives to find the most effective and least expensive means of reaching program objectives; and,
- make these procedures part of the program and budget review.

There is an emphasis on the analysis of goals and programmes and on the measurement of costs and benefits for a multi-year period. This technique was an attempt to rationalise policy-making but it has several constraints.

These are that:

- the data collection and data analysis requirements of a comprehensive PPBS are huge. Much of the data is usually not immediately available from 'traditional' systems of gathering policy-relevant information. Data on interactions between programmes were (and usually are) particularly difficult to come by;
- the relationship between values, goals and operationally defined targets is far from simple. The intellectual operations represented by box 1 in Figure 2 are actually both subtle and contentious; and,
- the existence of a consensus over values, and the relevant weight to be given to them, is exceptional rather than normal. Thus to 'identify and examine goals and objectives in each major area of activity' is not a simple process of detached analysis. Economic and technical rationality can be applied after goals have been established; they offer no formula for deciding whether one value is more important than another. That fundamental decision is a non-rational one, typically entailing distinctively political argument and bargaining.

The Study Group on Local Authority Management Structures (1972) raised the issue of corporate planning in local government and assumed two things. These were that:

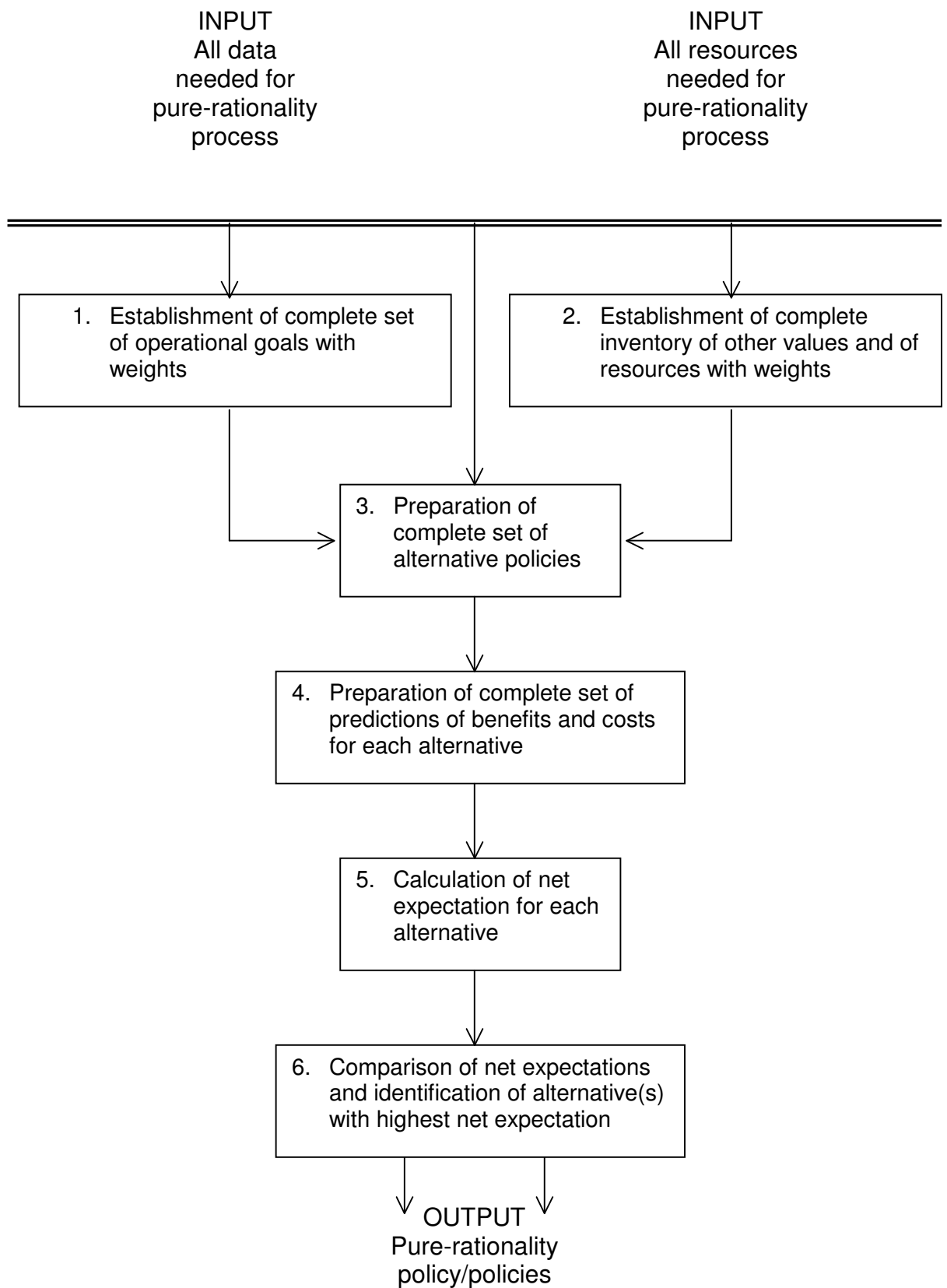
- rationality consists of establishing priorities and allocating resources between them; and,
- the values of the authorities' activities can, and should be, weighed together.

When looking at the allocation of resources in a limited situation, the Study Group report (1972) commented "In many authorities this process is still totally irrational. Committee estimates are cut all round in order to keep within what is regarded as

an acceptable level of total expenditure, with no attempt made to evaluate the relative consequences of cuts in different services which those estimates represent”.

The chief emphases of the corporate approach were usually on the setting of the objectives of the authority in relation to the needs, present and forecast, of the individuals, groups and organisations that live and work within its area, the consideration, evaluation and taking of decisions on alternative plans for achieving those objectives, the setting of targets as a guide to action, and the feedback of data on performance so that objectives, plans or action can all be modified.

Figure 2 The rational model



The emphasis on increasing the attention paid to policy formulation and forward planning represents a now familiar echo of the 'rational-comprehensive' model.

Like PPBS, corporate planning had its origins in the management processes of large (United States) private sector companies. Experience of applying these approaches to real life policy problems seemed to indicate some common limitations. These were that these approaches offer only limited help in understanding the nature of values and value conflicts, they do not seem to deal directly with the questions of the distribution and exercise of power, and for the analysis of complex policy problems they are very data-hungry and calculation-intensive. These may cause problems for laypersons who need to evaluate PPBS etc. analyses.

4.5 *Factors affecting decision making*

Herbert Simon (1957a) insisted "organisations should be analysed primarily in terms of decision making, and analysts ought to direct their attentions to the problem of gauging levels of rationality in organisational decision making". He emphasised the objective of increasing the economic rationality of organisations and defined rationality in terms of efficiency. He recognised the psychological and other limitations on the rationality of isolated individuals. Simon, in his effort to account for both the rational and non-rational aspects of organisational behaviour, tried to construct a model of rational choice combining realism and analytic rigour, a conceptual framework that could refer to 'the actual properties of human beings, and at the same time retain some of the formal clarity of the economic model'.

The way in which a member of an organisation actually solves problems is very different from the one described in the economic model. In reality, perfectly rational behaviour does not exist; rationality is always limited and it is precisely by the serious consideration of such limits that the link between the rational and the non-rational can be achieved. Indeed, the environment of the decision-maker can be seen as a set of premises upon which his decisions will be based. Simon distinguishes two kinds of decision premises. There are factual premises subject

to empirical testing for the establishment of their validity, and value premises which are not subject to such tests. Roughly speaking the latter have to do with the choice of the ends of action, the former with the choice of means. From this point of view a rational decision can be seen as the right conclusion reached from these two kinds of premises.

In the economic model of perfect rationality, the decision-maker is supposed to have *a priori* a full repertory of all the factual premises (complete knowledge of alternatives and consequences) and the value premises (utility function or preference ordering) that are relevant to his problem. In reality these premises are not given, the decision-maker has to search for them. In the process of this search there are all sorts of limitations which reduce the quality and quantity of the premises on which he has to base his decisions. For Simon such limitations fall into three categories:

- skills, habits and reflexes are more or less unconscious, and determine automatically an individual's performance and the decisions, which precede it. It is precisely these types of limitation, most evident on the operative level of an organisation, with which Taylorism was preoccupied (Taylor, 1911). The various techniques of early scientific management can be seen as efforts to increase productivity by widening the boundaries of rational behaviour on the workshop level;
- a second group of constraints to rationality derive from the motivations, values and loyalties of the individual. In an organisational context, for example, an individual's strong identification with a certain group whose values diverge from organisational values might limit the individual's rational behaviour (when rationality is judged by organisational standards and goals). This sort of limitation was the main preoccupation of the human relations school; and,
- rational behaviour or rational decision making is limited by the amount of basic knowledge and information available. It is precisely this third class of

limitations that have been most neglected in the study of organisations, and which come to the centre of attention in organisation theory.

All the above limitations put boundaries to, or delineate in some way, the area in which rationality can be exercised. They determine which alternatives, of all the possible ones, can realistically be considered, to what extent the consequences of such alternatives can be predicted, and how accurately the evaluation and ranking of the predicted consequences can be effected.

If we now look at the same problem of limitations from the decision-maker's point of view, we may say that his choice is always exercised with respect to a limited approximate and simplified model of reality. His behaviour is rational or irrational not in an absolute sense, but according to his definition of the situation. Indeed his subjective frame of reference allows him the consideration of only a few of the decision premises. In turn, these limited premises perceived by the individual are themselves the outcome of psychological and sociological processes. Finally, on the basis of such premises, the decision-maker does not search for the optimal decision in the economic sense, but simply for a satisfactory one. He is not the maximising man of economics but the satisfying man: that is to say, as soon as he finds an alternative which will lead him to the attainment of his main goal and which, at the same time, satisfies a number of auxiliary requirements, he will choose it, thus abandoning the search for the best alternative.

4.5.1 Bounded Rationality

Simon (1956) described satisficing in the context that people will tend to make choices based on their most important current needs rather than through a rational process. Thus, for example, when people are stressed, they will choose the first thing that will reduce that stress, even though it may cause problems later. This is because people act within bounded rationality (Simon, 1957b), limited as they are by their finite mental capabilities in an infinite universe.

Simon (1991) was critical of Anderson's proposed rational analysis, and he believed that it was misdirected on the basis of three arguments:

- humans are not optimal and only in some cases locally optimal;
- assumptions made by cognitive modellers about how an agent performs architectural tasks, which Anderson labels unnecessary, are subsequently tacitly repeated by him in his analyses; and,
- data regarding human behaviour on isomorphic task domains explicitly denies the theory.

Simon expressed the view that, while rational analysis can yield some information about cognition, such as that a solution can be found, the particular solution found by particular subjects cannot necessarily be found. Without a uniquely defined solution, subject-specific strategies cannot be determined nor studied. Simon suggested that his notion of bounded rationality which is used to designate models of rational choice that take into account the cognitive limitations of both knowledge and cognitive capacity, better describes agent behaviours than Anderson's optimal rationality approach.

In considering bounded rationality, Simon suggested that researchers not limit their focus to signature data, but look for all the data they can in order to uncover the underlying processes. Bounded rationality is a central theme in behavioural economics, it being concerned with the ways in which the actual decision making process influences the decisions that are eventually reached. To this end, behavioural economics departs from one or more of the neoclassical assumptions underlying the theory of rational behaviour since, in neoclassical economic theory, it is assumed that decision makers, given their knowledge of utilities, alternatives, and outcomes, are able to compute which alternative will yield the greatest subjective (expected) utility.

4.5.2 Artificial Intelligence

In this context, Simon determined that the best way to study these areas was through computer simulation modelling. Simon concentrated on the development of heuristics, or rules of thumb, that humans use to solve geometry problems and that could be programmed into a computer. In conjunction with Allen Newell, he developed a programming language that could mimic human memory processes, and in December 1955 they succeeded in inventing a 'thinking machine', a term that has become known as artificial intelligence.

At that time, the digital computer was still in its infancy, but researchers and philosophers had been talking about using the still-crude device as an electronic brain, solving problems much as a human might. Without the benefit of actually having a computer, Simon and Newell worked through their own version of a thinking machine and put it in a form that could be programmed into a computer. Although it took eight more months for them to develop a program called Logic Theorist that would run successfully on a computer, they had helped invent artificial intelligence, and their work has inspired generations of researchers to work in this area.

Though many of the specific methods used by the pair have been superseded, a huge fraction of what we do today ties back to Newell and Simon's work. Language translation by machine, speech recognition, robotics; all embody or depend heavily on artificial intelligence. Their view of artificial intelligence – that knowledge and information can be programmed into a computer – is one of the two principles that have come to dominate artificial intelligence research, the other being that intelligence can be expressed as formal logic.

In the last decade or so, artificial intelligence has achieved great success with an approach that uses statistical tools rather than human-like reasoning. By comparing large amounts of text for which translations are available in one or more languages, computers can often identify statistical associations between

words and phrases that can be used subsequently to guide translation by machine.

One of the innovations of Simon and Newell (Simon, 1976) that remains to the present day is the concept of 'search space', a way of thinking about possible actions and reactions: establishing an objective, considering all the possible actions that could be taken, and then evaluating which actions are most likely at each step. According to the information processing theories of Newell and Simon, human reasoning about problems such as these takes place via searching some problem space. That search is controlled using the architecture of a production rule system. One way to test these assumptions would be to determine whether the human subject's verbal protocol can be reproduced using a production rule system appropriately tailored to the subject's representation of the problem.

At least for some cognitive tasks we can provide information about what we are thinking by describing verbally what is going through our mind while performing the task. This type of data is referred to as a verbal protocol. Newell and Simon pioneered and championed the use of verbal protocols. They felt that the systematic collection of these types of observations could be used to test information processing models of human reasoning. Of course, we may not always be able to access information relevant to a cognitive task that we are performing, for example, the understanding of spoken speech happens rapidly and usually without thinking about it. In contrast, we may sometimes think aloud spontaneously when solving puzzles. And verbal protocols have been used extensively in the development and design of expert systems.

Having looked in some depth at the theory of rationalism, the next chapter will concentrate on modifications to the 'rational-comprehensive' model by examining incrementalist theory, that is, incrementalism.

CHAPTER 5

THEORY OF INCREMENTALISM

5.1 Introduction

This chapter examines the theory of incrementalism, the second of the two theories reviewed in this dissertation. It reviews the concept, inherent in terms of an incrementalist approach, that history offers the best guide to predicting the future and, therefore, is of greater use when considering financial management systems.

The Oxford Dictionary defines rationalism as "rejection of doctrines not consonant with reason" but it does not intimate from whose point of view 'reason' is to be looked. If one takes a general organisation, it is clearly made up of different disciplines, for example accountants, administrators, technical staff etc. In many instances, especially where resources are limited or in decline, reason will mean different things to the members of the different disciplines within the organisation. In the case of higher education institutions, there are also specialists, for example, academics whose reason may be likely to conflict with that of the generalists.

5.2 Management by Objectives

The use of information systems in the rational process, for example, Program Evaluation Review Technique (PERT), seems to have become fixated on objectives due to the excessive dwelling on goals. Resources change objectives as much as the other way round. Each analytical iteration, as well as every practical application, should teach us as much about what we prefer as about how much we put in. Objectives are altered by resources, for we learn to choose by knowing what we cannot do as well as by what we might wish to try. Ends and means are chosen simultaneously.

There is no denying the attractive aspects of information systems. After all, analysis cannot be done without information. A number of questions arise from this. Isn't it better to manage by objectives rather than by procedures for which managers can hardly be held accountable? Shouldn't budgeting be done by programmatic outputs instead of administrative inputs?

Although there has been some scrutiny of these 'rational' information systems, they have not been compared critically as modes of problem solving. It is assumed always that their strengths lie in assisting rational choice, and their weaknesses in coping with the irrational features that self-interest brings to policy-making. A promise underlies policy: if the actions we recommend are undertaken, the good or intended consequences rather than the bad or unintended ones may actually come about. Since causal connections are strict, failure to match promise with performance is likely to be high, as is reluctance to acknowledge error.

Objectives are kept vague and multiply to expand the range within which observed behaviour fits. Goal substitution takes place as the consequences actually caused by programmes replace the objectives originally sought. Goal displacement becomes the norm as an organisation seeks to make the variables it can control, its own efforts and processes, the objectives against which it is measured. This is how organisations become justifiers of error instead of creators of knowledge. On all sides, theoretical requirements are abandoned - by considering inputs or outputs alone - until there seems to be no error (and hence no truth), and it becomes impossible to learn from experience.

Managing by objectives alone is better treated as a misguided effort to violate an analytic theorem - treating objectives apart from resources - than as a mode of analysis. The trouble with experts is not only that they may not know what they can and should know, but also that they may pretend to know what is unknown. Routines like PERT risk becoming the problem for which they were created to be the solution. Instead of discovering critical paths, they assume them, thus becoming the chief obstacle to undertaking a quest everyone now believes is over. The question never is whether there is a theory; there always is; but whether it is a

veneer, to mask error, or a hypothesis whose testing serves to uncover error. Economists call this a production function, specifying the mix of instruments or inputs that is expected (within some range of probability) to lead to the desired output. Programme budgeting makes huge demands on theory that probably cannot be met. Who is most misled by this, the proponents who sell these information systems or those who buy them, is debatable. But if these systems represent the best in rational analysis, as many believe, and if this presumptuous rationality is doomed to failure, as it probably is, then the loser is policy analysis, with its idea of applying intelligence to policy problems.

The tension between analysis, which seeks out error and promotes change, and organisation, which seeks stability and promotes its existing activities, is inevitable. Better information alone will not matter without incentives making it worthwhile for organisations to use it.

To say that contemporary information systems are a-historical is to conclude that they increase the sources of error while decreasing the chances of correcting mistakes. If history is abolished, nothing is settled. Old quarrels become new conflicts. Both calculation and conflict increase exponentially, the former worsening selection and the latter correction of error. As the number of independent variables grows, because the past is assumed not to limit the future, ability to control the future declines. As mistrust grows with conflict, willingness to admit, and hence to correct, error diminishes. Doing without history is a little like abolishing memory, momentarily convenient perhaps, but ultimately embarrassing.

The ideal a-historical information system is zero-base budgeting. The past, as reflected in the budgetary base, is explicitly rejected. Nothing is taken for granted, but everything is subject to searching scrutiny. As a result, calculations become unmanageable.

5.3 Traditional budgeting principles

By comparison, traditional budgeting is highly historical. A budgetary base is the routinised retention of old solutions. Clinging to last year's agreements is enormously economical of critical resources (particularly time and good interpersonal relations), which would be seriously impaired if all or most past agreements were re-examined yearly. If there is a mechanism for holding on to adequate solutions and sequentially proceeding to solve remaining problems, which focus on increases and decreases to the base, knowledge is more likely to result. Similarly, an agreement-producing process is more likely to work if past agreements can be retained, while the system works on unresolved issues.

Analysis aims to bring information to bear on current decisions that do have future consequences. Taking these consequences into account, acting now to do better later, is what all analysis is about. Because prediction comes at a premium however, analysis uses history, what has been tried in the past, how past patterns have led to present problems, where past obligations limit future commitments, as a source of both limits and possibilities.

Analysis uses the legacy of the past to make manageable the present, for creating a future is immensely more difficult when one simultaneously must invent a past.

5.4 Incrementalism

This is precisely what brought about the school of thought termed incrementalism, for its supporters propounded that history was the best guide to organisational policy making for the future. Incrementalism is particularly associated with the name of an American academic, Charles Lindblom. He (Lindblom, 1959) argued that his model was 'both a better description of actual policy making and a better normative guide to how policies ought to be made than the rational-comprehensive model'. When he originally put the model forward he did so with the assertion that the rational-comprehensive approach cannot be practised except for relatively simple problems, and even then only in a somewhat modified form. He put

forward therefore an alternative approach to decision making which he called the method of successive limited comparisons. Its features are compared in figure 3 with those of the rational comprehensive model.

Figure 3

Rational-Comprehensive Model

- 1(a) Clarification of values or objectives is distinct from and usually pre-requisite to empirical analysis of alternative policies
- 2(a) Policy formulation is therefore approached through means-end analysis: First the ends are isolated, and then the means to achieve them are sought
- 3(a) The test of a 'good' policy is that it can be shown to be the most appropriate means to desired ends
- 4(a) Analysis is comprehensive: every important relevant factor is taken into account

Successive Limited Comparisons Model

- 1 (b) Selection of value goals and empirical analysis of the needed action are not distinct from one another but are closely intertwined
- 2(b) Since means and ends are not distinct, means-end analysis is often inappropriate or limited
- 3(b) The test of a 'good' policy is typically that various analysts find themselves directly agreeing on a policy (without them agreeing that it is the most appropriate means to an agreed objective)
- 4(b) Analysis is drastically limited:-
 - (i) Important possible outcomes are neglected
 - (ii) Important alternative potential policies are neglected

(iii) Important affected values are neglected

5(a) Theory is often heavily relied upon

5(b) A succession of comparisons greatly reduces or eliminates reliance on theory

With later elaborations, the successive limited comparisons method has become known as incrementalism, the essential idea being that policy-making usually amounts to a continuation of past policies with the minimum of change (incremental change) necessary to meet new circumstances. This, said Lindblom (1959), was the way in which real-world policy making was usually carried out, and with good reason. It avoided 'leaps into the dark' and maximised the use of existing policy-making experience (precedent) and knowledge.

Lindblom (1959) subsequently identified a further characteristic feature of policy-making as being a bargaining process, which he labelled 'partisan mutual adjustment'. So common has this concept become among academic political scientists that it is sometimes referred to as 'PMA'. 'Policy' emerges from bargaining between groups with different aims, interests and values. They do, however, share acceptance of the bargaining (PMA) process itself, as the least objectionable one for reaching practical decisions about current problems. Thus, policy makers often do not realise they are creating new 'policies'. Rather they are simply seeking to deal with each new problem as it thrusts itself on their attention. Aspirations and group interests are gradually adjusted as things go along.

Incrementalism has been seen as the typical decision making process in pluralistic societies. It is argued that it is a method by which societal decision making bodies, acting as coalitions of interest groups, can make cumulative decisions, and arrive at compromises that can be made to work. They are the result of 'give and take' and might be thought of, in Diesing's terms, as an example of the operation of a distinctively political rationality.

Lindblom sees decisions based on consensus as avoiding some of the evils of undemocratic centralised decision making. There has been criticism of this viewpoint from those who see incremental policies as likely to keep other power holders happy, but possibly by neglecting groups that are politically weak. A not unlikely consequence of incremental policy making is that drastic changes are avoided. This says nothing about whether such changes are socially necessary.

There are two important elements in Lindblom's (1959) model to particularly note. The first is that only a limited range of alternatives - often those most familiar from recent experience - are usually considered by policy makers, and the second is that the resulting policy changes tend to be the least that are thought likely to 'get by' in the new situation.

Both of these remind one of the view of the individual as a 'satisficer'. Indeed, incrementalism as a descriptive theory of organisational behaviour is closely linked to satisficing as a theory of individual decision making, and (through the concept of partisan mutual adjustment) to pluralism as a theory of power in political society.

According to Anthony Hopwood (1974), because assembling a budget for a large organisation is a massive endeavour, and the persons engaged in the process have, of necessity, to use strategies that reduce both the uncertainty and the burden of sheer calculation, 'budgeting is usually viewed as an incremental activity, grounded on a firm historical base'. Because of, rather than in spite of, the complexity of the task, it is an activity that is invariably characterised by the use of the simplest rules of thumb.

The largest factor determining the size and content of any single year's budget is usually the previous year's budget. In fact, because of previous commitments and constraints, and of the impact of changing external conditions, there is often very little room for flexibility in budgeting. This is not to deny that lobbying, exhortations and friendships have a role to play. They do, but the debate is usually centred on the changes in the budget from one year to the next. These may be small in total compared with the budget as a whole, but they represent the main areas that can

be influenced. In this way, despite losing the opportunity for an overall appraisal of activities in relation to wider objectives, the magnitude of the task is brought within reasonable bounds.

An incremental approach reduces the burden of calculation and the breadth of debate, but these benefits are gained at the expense of focusing the remaining debate on the areas of particular uncertainty and controversy-changes. Is an increase justified? What of the overspending on last year's budget? Does it represent inefficiency, non-recurring conditions or an inadequate budget? Should this year's budget be lower, the same or higher? Careful analysis can, of course, provide some assistance, and the analytical procedures at our disposal are being continually developed, but since the basic problem involves the extrapolation of an uncertain past into an uncertain future, analysis alone cannot solve the problem.

In practice, senior management tackle the problem with the knowledge that difficult questions do not have to be solved once and for all on a year-to-year basis - the process is evolving. The budgeting cycle rarely precludes further action during the year when more detailed knowledge may become available, and although precedents are important in this context, it is still possible to adopt an idea in another year that was not considered in a previous year. Also, within the annual review, the process is usually organised so that experience and insights accumulate as the budget moves from department to department, and iterates between one level in the hierarchy and the next.

There still remains a need to simplify radically the complexity so, at times, personalities rather than activities may be appraised. Budgetary decisions can also be made within the context of a predetermined amount of resources that are to be allocated. 'How much can we afford?' then becomes more important than the objectives that can be attained, and organisational norms develop to guide the priority to be given to individual requests. There are a multitude of other similar simplifying strategies, but in the end, if all else fails, the 'big axe' approach may be used and just arbitrarily, without logic, dictate a cut of X% across the board. Such strategies are a response not only to the uncertainty and complexity that are

inherent in the budgetary process, but also to the fact that managers' budget demands reflect both organisational necessities and individual ambitions.

Due to the increasing discussion of the ideals of incrementalism by those writers concerned not only with extending or validating the original ideas of Wildavsky (1978) and Lindblom, but also with challenging their prescriptive basis, Greenwood et al (1977) took the concept of incrementalism and applied it to the budgetary practices of English local government. Their concern was to probe one of the assumptions which they believed to exist within the ideals of incrementalism, namely that of resource expansion or growth.

They came to the conclusion that a contraction in the supply of resources widens the parameters of budgetary review and introduces a greater measure of rationality, and whilst accepting that most of the budget is left untouched each year, and that the dominant mode of analysis is political and non-rational, the extent to which the parameters of budgetary review are restricted, and the extent to which the mode of analysis is non-rational, are at least partly affected by what happens to the supply of resources. Budgetary famine, at least for a time, decreases the likelihood of incremental budgeting, as authorities are forced to take a closer look at their 'inescapable commitments' and this involves a need to identify the additional expenditure built into the local authority's financial system over previous years.

5.5 Concept of 'Muddling Through'

Dror (1964), when examining Lindblom's concept, noted "unless three closely interrelated conditions are concurrently met, incremental change by 'successive limited comparisons' is not an adequate method for policy making". These three essential conditions are that:

- the results of present policies must be in the main satisfactory (to the policy makers and the social strata on which they depend), so that marginal

changes are sufficient for meeting an acceptable rate of improvement in policy results;

- there must be a high degree of continuity in the nature of the problems; and,
- there must be a high degree of continuity in the available means for dealing with problems.

When the results of past policies are undesirable, it is often preferable to take the risks involved in radical new departures. When there are no past policies in respect to a discrete policy issue, incremental change is in fact impossible. Changes in knowledge - technological and behavioural - put at the disposal of policy makers new means of action that, unless ignored, lead to radically new policies.

The three conditions essential to the validity of the 'muddling through' thesis are most likely to prevail where there is a high degree of social stability. Under conditions of stability, routine is often the best policy and, with change being at a slow rate, incremental policy change is often optimal. But, even in the most stable societies, many of today's qualitatively most important problems are tied up with high speed changes in levels of aspirations, the nature of issues, and the available means of action, and require therefore a policy making method different from 'muddling through'.

Taken together, the limited validity of the 'muddling through' thesis, and its inertia-reinforcing implications, constitute a very serious weakness. This criterion in no way diminishes Lindblom's pioneering role in pointing out the potential shortcomings of the 'rational-comprehensive' policy making model. This may well prove to be one of his most important contributions, since the counter-model of 'muddling through' is itself open to serious doubts.

To state the problem of policy making as a choice between the 'rational-comprehensive' and the 'successive limited comparison' methods is misleading and dangerous: misleading because other policy making models may be devised, and dangerous because it leads to either an effort to achieve the impossible or an encouragement of inertia and a continuation of the status quo.

The model presented in 'muddling through' can be considered inadequate, having limited validity, and constituting a barrier to the improvement of policy making. Its favourable acceptance, the result in part of its many merits, reflects the widespread disposition of administrators and students of public administration to accept the present as a guide to the future, and to regard contemporary practice as a norm for the future.

The broad acceptance of the 'muddling through' thesis indicates that inertia, and the tendency to 'incremental change', are in fact widespread phenomena. This is commonly referred to as Bricolage, so named by Claudio Ciborra (1996).

J. B. Quinn (1980a) found that when well-managed major organisations make significant changes in strategy, the approaches they use frequently bear little resemblance to the rational, analytical systems so often described in the planning literature.

Although the formal planning approach is excellent for some purposes, it tends to focus unduly on measurable quantitative forces and to under-emphasise the vital qualitative, organisational and power-behavioural factors that so often determine strategic success in one situation versus another. It can easily become a rigid, cumbersome routine, used primarily as a basis for financial control, rather than as a creative direction-setting challenge. The processes used to arrive at the total strategy are typically fragmented, evolutionary and largely intuitive. In well-run organisations, managers proactively guide these streams of actions and events incrementally toward conscious strategies rather than by the step-by-step formal systems planning approach so often espoused.

5.6 *Concept of Logical Incrementalism*

Quinn (1980b) found that although the processes used at first appeared to be disjointed or 'muddling', they actually embodied a strong internal logic that is consistent among companies and among action sequences within individual companies.

Quinn's (1980c) studies showed that:

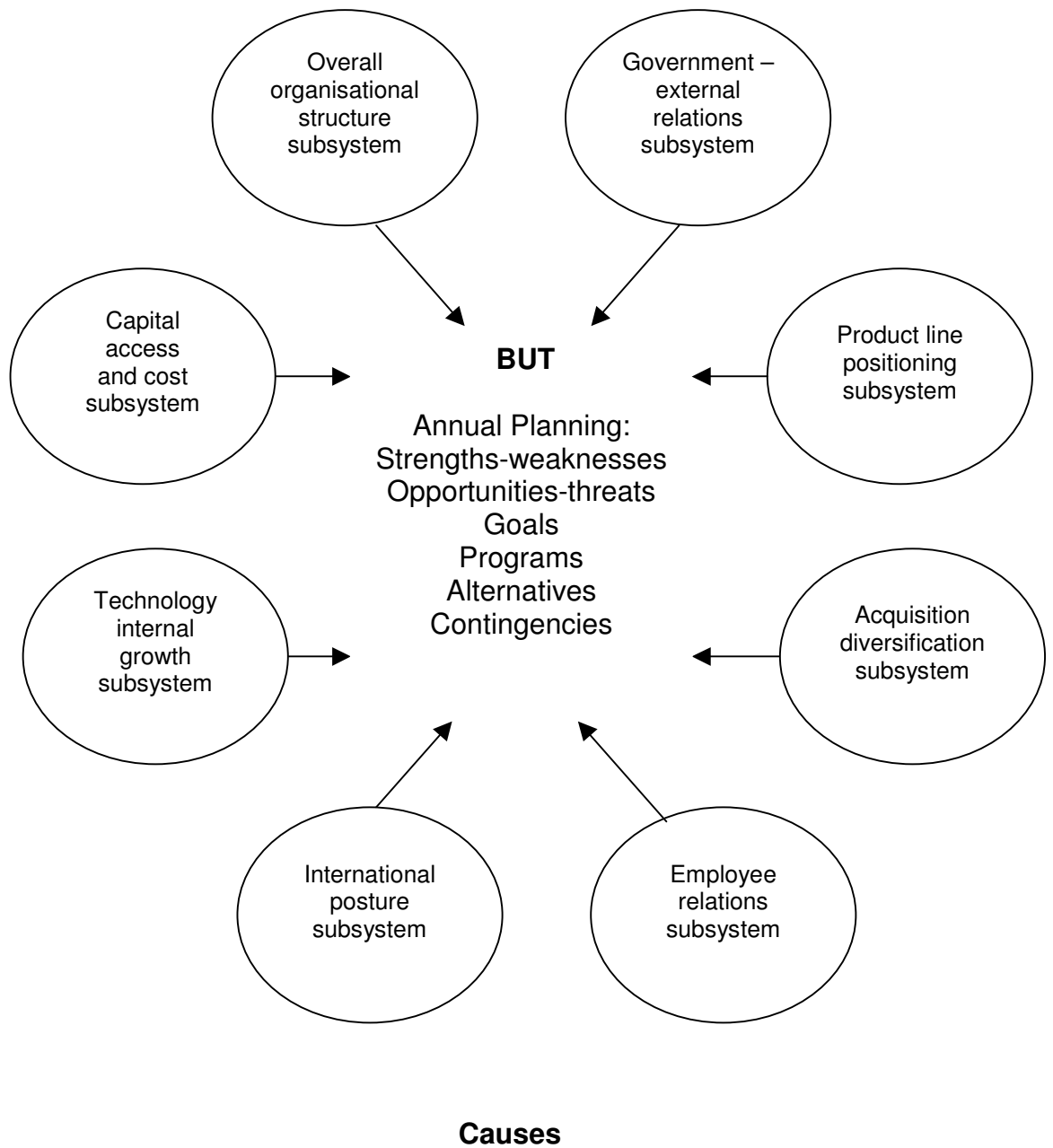
- effective strategies tended to emerge from a series of strategic formulation subsystems. Each subsystem involved a somewhat different set of players, information needs and time imperatives. Each attacked a specific issue of corporate-wide importance in a disciplined way. Yet for good reasons, optimal strategies within each subsystem tended to demand incrementalism and opportunism in their formulation;
- the logic patterns underlying the formulation of effective strategies for each subsystem were so powerful that they could serve as normative approaches for creating these key components of strategy in large organisations. Yet the timing imperatives and internal pacing parameters of each subsystem rarely matched the precise needs of other simultaneously active strategic subsystems;
- because each subsystem had its own cognitive limits and process limits, its strategies tended to be arrived at logically and incrementally. Consequently, the total enterprises strategy - which had to deal with the interactions of all the subsystem strategies - was also arrived at by an approach most appropriately described as "logical incrementalism"; and,
- in the hands of a skilful manager, such incrementalism was not muddling. It was a purposeful, effective, proactive management technique for improving and integrating both the analytical and the behavioural aspects of strategy formulation.

When executives were asked to "describe the processes through which your company arrived at its new posture", several important points emerged (Quinn, 1980d). These were that:

- few issues lent themselves to quantitative modelling techniques or perhaps even formal financial analyses;
- successful companies used a different subsystem to formulate strategy for each major class of strategic issue despite the fact that these subsystems were quite similar among companies even in very different industries (see Figure 4 below); and,
- no single formal analytical process could handle all these strategic variables simultaneously on a planned basis.

Top executives often consciously tried to deal with precipitating events in an incremental fashion. To improve both the information content and the process aspects of decisions surrounding precipitating events, logic dictates, and practice affirms, that they are normally best handled carefully and consciously incrementally, to make decisions as late as possible consistent with the information available and needed.

Fig. 4 Strategies form in subsystems



- Better communications
- Involves lower levels
- Extends time horizons
- Confirms commitments made
- Helps evaluate budgets/plans
- Protects long-term commitments
- Forces executives from daily focus
- Activates high-level planning
- Encourages horizon-scanning studies
- Helps sum and balance commitments
- Teaches executives future impact of decisions
- Provides a vehicle for negotiating operating goals
- Co-ordinates tactical, divisional, corporate, strategic plans etc.

One also finds that an incremental logic applies in attacking many other critical subsystems of corporate strategy. Conscious incrementalism often helps in three important process dimensions:

- coping with the varying lead times and sequencing arrangements demanded by interacting major decisions;
- overcoming important political and informational barriers to needed changes; and,
- creating the personal and organisational awareness, understanding, acceptance and commitment needed to implement strategies effectively.

Managers cannot isolate each of these processes and deal with their imperatives separately and in a completely orderly fashion. Instead, executives must move forward incrementally, integrating all three parameters each time a crucial step in any of the three processes allows.

Quinn (1980e) concluded that 'the most effective strategies of major enterprises tend to emerge step by step from an iterative process in which the organisation probes the future, experiments and learns from a series of partial (incremental) commitments, rather than through global formulations of total strategies'. Good managers use this process to improve the information available for decisions and to build the psychological identification essential to successful strategies. The process is both logical and incremental. Such logical incrementalism is not "muddling" as most people understand that word.

Properly managed, it is a conscious, purposeful, proactive, executive practice. Logical incrementalism honours and utilises the global analyses inherent in formal strategy formulation models. It also embraces the central tenets of the political or power-behavioural approaches to such decision making. Each approach becomes simply a component in a logical process that improves the quality of available information, establishes critical elements of political power and credibility, creates

needed participation and psychological commitment, and thus enhances both the quality of strategic decisions and the likelihood of their successful implementation.

Logic dictates that executives manage each subsystem incrementally in keeping with its own imperatives. Effective strategic managers in large organisations recognise the subsystems' unpredictable interactions with each other and try to proactively shape the development of both subsystem and total enterprise strategies in a logically incremental fashion.

5.7 Strategic planning

Henry Mintzberg shared many of the views of Quinn, and was critical of the notion that planning systems could produce the best strategies as well as step-by-step instructions for carrying out those strategies so that the doers, the managers of businesses, could not get them wrong.

In an article adapted from his book *The Rise and Fall of Strategic Planning* (Mintzberg, 1994), he suggested that, while certainly not dead, strategic planning had long since fallen from its pedestal. He suggested that few people fully understood the reason which, in his opinion, was that strategic planning is not strategic thinking. Indeed, strategic planning often spoils strategic thinking, causing managers to confuse real vision with the manipulation of numbers. And this confusion, he proposed, lies at the heart of the issue: the most successful strategies are visions, not plans. The following fuller review of that article will help to understand, and appreciate, Mintzberg's line of thought.

Mintzberg suggested that strategic planning, as it had been practised, had really been strategic programming, the articulation and elaboration of strategies, or visions, that already existed. Only when companies understood the difference between planning and strategic thinking, would they be able to get back to what the strategy-making process should be: capturing what the manager learns from all sources (both the soft insights from his or her personal experiences and the experiences of others throughout the organisation, and the hard data from market research and the like), and then synthesising that learning into a vision of the

direction that the business should pursue.

Mintzberg's view was that planners should supply the formal analyses or hard data that strategic thinking requires, as long as they did it to broaden the consideration of issues rather than to discover the one right answer. They should act as catalysts who support strategy making by aiding and encouraging managers to think strategically. And, finally, they should be programmers of a strategy, helping to specify the series of concrete steps needed to carry out the vision.

Mintzberg suggested that strategic thinking was all about synthesis, involving both intuition and creativity. The outcome of strategic thinking is an integrated perspective of the enterprise, a not-too-precisely articulated vision of direction, such as the vision of Jim Clark, the founder of Silicon Graphics, that three-dimensional visual computing is the way to make computers easier to use. Mintzberg's view brought him into direct conflict with the views of Michael Porter who, in an article published in 1987 (Porter, 1987), expressed the opinion that "strategic thinking rarely occurs spontaneously. Without guidelines few managers knew what constituted strategic thinking".

Mintzberg's view was that planning represented a calculating style of management, not a committing style. Managers with a committing style engage people in a journey. They lead in such a way that everyone on the journey helps shape its course. As a result, enthusiasm inevitably builds along the way. Those with a calculating style fix on a destination and calculate what the group must do to get there, with no concern for the members' preferences. But calculated strategies have no value in and of themselves; to paraphrase the words of sociologist Philip Selznick, strategies take on value only as committed people infuse them with energy (Selznick, 1957).

At lower levels in the hierarchy, the problem becomes more severe because planning has often been used to exercise blatant control over business managers. No wonder so many middle managers have welcomed the overthrow of strategic planning. All they wanted was a commitment to their own business strategies without having to fight the planners to get it.

An expert has been defined as someone who avoids the many pitfalls on his or her way to the grand fallacy. For strategic planning, Mintzberg suggested, the grand fallacy is this: because analysis encompasses synthesis, strategic planning is strategy making.

This fallacy itself rests on three fallacious assumptions:

- that prediction is possible, that strategists can be detached from the subjects of their strategies, and, above all, that the strategy-making process can be formalised. According to the premises of strategic planning, the world is supposed to hold still while a plan is being developed and then stay on the predicted course while that plan is being implemented;
- that if the system does the thinking, then strategies must be detached from operations (or “tactics”), formulation from implementation, thinkers from doers, and so strategists from the objects of their strategies. In her book *Institutionalising Innovation*, Mariann Jelinek developed the interesting point that strategic planning is to the executive suite what Taylor’s work-study methods were to the factory floor; a way to circumvent human idiosyncrasies in order to systematise behaviour (Jelinek, 1979). Ironically, strategic planning missed one of Taylor’s most important messages: work processes must be fully understood before they can be formally programmed; and,
- that systems do better than, or even nearly as well as, human beings. Formal systems, mechanical or otherwise, have offered no improved means of dealing with the information overload of human brains; indeed, they have often made matters worse. All the promises about artificial intelligence, expert systems, and the like improving if not replacing human intuition never materialised at the strategy level. Formal systems could certainly process more information, at least hard information. But they could never internalise it, comprehend it, and synthesise it. In a literal sense, planning could not learn.

Formalisation implies a rational sequence, from analysis through administrative procedure to eventual action. But strategy making as learning can proceed in the other direction too. We think in order to act, to be sure, but we also act in order to think. We try things, and those experiments that work converge gradually into viable patterns that become strategies. This is the very essence of strategy making as a learning process.

Whether formal procedures will ever be able to forecast discontinuities, inform detached managers, or create novel strategies, is a very interesting scenario. Far from providing strategies, planning could not proceed without their prior existence. In light of this, Mintzberg suggested, strategic planning has been misnamed. He asserted that it should have been called strategic programming, distinguished from other useful things that planners can do, and promoted as a process to formalise, when necessary, the consequences of strategies that have already been developed. In short, the label 'strategic planning' should be dropped altogether.

Mintzberg asserted that two important messages have been conveyed through all the difficulties encountered by strategic planning. But only one of them has been widely accepted in the planning community: business-unit managers must take full and effective charge of the strategy-making process. The lesson that has still not been accepted is that managers will never be able to take charge through a formalised process. Planners, on the other hand, have the time and, most important, the inclination to analyse. They have critical roles to play alongside line managers, but not as conventionally conceived. They should work in the spirit of what Mintzberg called a 'soft analyst' whose intent is to pose the right questions rather than to find the right answers. That way, complex issues get opened up to thoughtful consideration instead of being closed down prematurely by snap decisions.

Mintzberg stressed one point that must be emphasised, this being that strategic programming is not "the one best way" or even necessarily "a good way". Managers do not always need to program their strategies formally. Sometimes they must leave their strategies flexible, as broad visions, to adapt to a changing environment. Only when an organisation is sure of the relative stability of its

environment, and is in need of the tight co-ordination of a myriad of intricate operations, does such strategic programming make sense.

Mintzberg also suggested that plans could be used to gain the tangible as well as moral support of influential outsiders. Written plans inform financiers, suppliers, government agencies, and others about the intentions of the organisation so that these groups can help it achieve its plans. Some of the best models that planners can offer managers are simply alternative conceptual interpretations of their world. As Arie de Geus, the one-time head of planning at Royal Dutch/Shell, wrote in an article (de Geus, 1988), "The real purpose of effective planning is not to make plans but to change the....mental models that....decision makers carry in their heads".

Mintzberg went on in his article to suggest that it was not planning that planners should be urging on their organisations, so much as any form of behaviour that could lead to effective performance in a given situation. Sometimes that may even mean criticising formal planning itself. When they act as catalysts, planners do not enter the black box of strategy making; they ensure that the box is occupied with active line managers. In other words, they encourage managers to think about the future in creative ways.

Mintzberg concluded his article by suggesting that human beings seem predisposed to formalise their behaviour. But they must be careful not to go over the formalisation edge. No doubt we must formalise to do many of the things we wish to in modern society. That is why we have organisations. But the experiences of what has been labelled strategic planning teach us that there are limits. These limits must be understood, especially for complex and creative activities like strategy making. Three decades of experience with strategic planning have taught us about the need to loosen up the process of strategy making rather than trying to seal it off by arbitrary formalisation. Through all the false starts and excessive rhetoric, we have learned what planning is not and what it cannot do. But we have also learned what planning is and what it can do, and perhaps of greater use, what planners themselves can do beyond planning. We have also learned how the literature of management can get carried away and,

more important, about the appropriate place for analysis in organisations.

The story of strategic planning, in other words, has taught us not only about formal technique itself but also about how organisations function and how managers do and do not cope with that functioning. Most significant, it has told us something about how we think as human beings, and that we sometimes stop thinking.

Having looked at two theories of decision making, the next chapter will explore the way in which the National Health Service has reviewed since 1974, particularly in the 1970s and 1980s, its approach to financial management in the context of the application of these two theories.

CHAPTER 6

FINANCIAL MANAGEMENT IN THE NATIONAL HEALTH SERVICE

6.1 Introduction

This chapter reviews the way in which the National Health Service has sought to approach financial management since 1974, particularly in the 1970s and 1980s, in terms of a consideration of the two approaches reviewed in Chapters 4 and 5, and the reasons behind the decision to continue with an incrementalist approach to financial management.

The National Health Service has undergone several changes since its inception, but they have all had one aim in mind, namely that of Aneurin Bevan (1945) who said 'We have got to achieve as nearly as possible a uniform standard of service for all'. By way of illustration, the 1974 structure change created area health authorities to replace the existing hospital management committees. In the main the area health authorities were larger than the hospital management committees and it was necessary to create smaller district health authorities in order to achieve a unit of manageable size. The idea of the area health authorities was that, where possible, they should be coterminous with the local authority boundaries in order to achieve collaboration over common services, such as mentally handicapped services, whereby joint planning would eliminate overlaps of provision.

Before 1974, consultants and matrons had been in a position to influence decisions on the allocation of resources within hospital management committees, particularly those employed in 'acute' hospitals. The introduction of area health authorities diminished this influence in that the point of decision making became more remote from the hospitals, enabling those in long stay hospitals to have a greater chance of securing a fair proportion of resources. Because the area health authorities provided community services as well as hospital services, deficiencies in one service could be identified more easily than had been the case.

6.2 Background to the National Health Service Planning System

The introduction of the National Health Service Planning System further provided a means of identification of deficiency in services in that it introduced a national policy that embraced a multitude of factors in determining the development of health care. One part of this national policy was the appointment of the Resource Allocation Working Party which was set up to review the arrangements for distributing capital and revenue to health authorities, with a view to establishing a method of securing a pattern of distribution which would be responsive to relative need, such method to be objective, equitable and efficient. It must be noted that the Working Party was not asked to concern itself with the adequacy of resources, only on the allocation of the resources that were actually available.

The Report (DHSS, 1976) subsequently published is outside the scope of this dissertation; suffice it to say that it recommended five main criteria to indicate relative need:

- the size of population - clearly this must be the primary factor in establishing relative need for resources;
- the population structure - generally elderly people need more care than the young, women have different needs from men, etc.;
- morbidity - the greater the level of sickness in an area the greater the relative need for resources;
- relative cost - statistical evidence suggests that the cost of providing health services varies considerably according to the condition being treated; and,
- the cross boundary flow of patients - these flows are obviously important in determining the relative need for resources, and account must be taken of them.

The factors were combined to build up an overall measure of relative need for each regional health authority by breaking down the health services provided into seven different aspects and to treat each of these in a different way.

The result was that the four Thames Regional Health Authorities plus the Oxford Regional Health Authority were receiving more resources than their calculated target and would be expected to lose resources in favour of the under-resourced regions over a period of years.

The recommendations of the Resource Allocation Working Party provided the mechanism for inter-regional resource allocation in the National Health Service. The general reduction of growth in National Health Service resources, largely arising from successive policies of reduced public spending caused by the changing financial and economic scene of the early 1970s, meant that the rate at which the demands could be met was also reduced accordingly. Lack of revenue growth meant that the equalisation of services could not be achieved.

All these events led to pressure for the 1974 structure to be modified and the report of the Royal Commission on the National Health Service in 1979 supported this. The Government's response, *'Patients First'*, proposed urgent changes both in the structure and management of the National Health Service.

This was achieved in 1982 when multi-district area health authorities were replaced with single-district health authorities. This structure was a product of the belief that decisions should be made by those close to the local community and the patients. One effect worth mentioning here is that this negated, to some extent, the joint planning arrangements in that many local councils now had to deal with several district health authorities instead of one single area health authority.

Some of the district health authorities created by the 1982 re-organisation were very small, and the task of the regional health authorities in distributing funds on the Resource Allocation Working Party basis led to a mechanistic outlook on resource allocation owing to the much larger number of health authorities with whom they had to deal.

Another change was the proposal that delegation of routine decisions be made to the unit level, to be matched by a strengthening of management at the unit level by the introduction of a unit management team.

The 1982 structure did not seem to have an answer to the problem of financial stringency. If resources grow in limited degrees, or even contract, it is very difficult to achieve an equalisation of services without a severe contraction in the provision of acute and general services.

Guidance on the implementation of the 1982 changes was issued in Health Circular (80)8 *'Health Service Development Structure and Management'*. This dealt with organisational and financial implications, including such things as local arrangements for services which might cover the area of more than one district health authority, for example, ambulance services and family practitioner committee services.

The concept of consensus management was still preferred through the establishment of district management teams, the precise composition and function being the same as that of the former area management team. The Royal Commission on the National Health Service pointed to the risk that 'consensus management may sap individual responsibility by allowing it to be shared', and the Circular stated expressly that 'both authorities and team members must ensure that the personal responsibilities of individual managers are not blurred or qualified by their responsibilities as members of the management team'.

6.3 Principles of the National Health Service Planning System

'Patients First' included several proposals for change, one of the four main elements being the 'Simplification of the planning system in a way which will ensure that regional plans are fully sensitive to district needs'. The result of this was Health Circular (82)6 *'The National Health Service Planning System'*. The purpose of the planning system was to provide a framework within which health authorities could review and develop their services in the light of national policies

and priorities, assist Ministers in assessing progress towards national goals and in reviewing those goals, and help to achieve the best use of resources.

The system consisted of three elements, each being seen as important to the successful operation of the system. These were:

- the strategic plan – a comprehensive review of all services every five years having regard to the prevailing national policies and priorities, as well as to areas of local priority. A concise statement is prepared setting out the present conditions, perceived needs, policies and goals for the future in the form of a strategic plan, covering a forward period of ten years. Strategic planning will always be accompanied by uncertainty and plans must be constructed to take account of this. District health authorities would prepare strategic plans in the light of an outline regional strategy, reflecting national policies and priorities, resource availability and regional circumstances. District strategic plans would be submitted to the regional health authority, which in turn prepared a regional strategic plan for submission to the Department of Health and Social Security (the Department). The strategic plan would need to be kept under review and modified as circumstances changed;
- the annual plan - every year each district health authority would prepare and publish a programme setting out the action proposed for the two following financial years to carry forward the district strategy. The programme for the next financial year (the operational programme) would represent the authority's firm development proposals on the "latest available resource assumptions". The programme for the second financial year (the forward programme) would embody provisional proposals and would ultimately become the operational programme for the following year; and,
- the annual planning review - there would be annual planning review meetings between the Department and regional health authorities and between regional health authorities and district health authorities.

It can be inferred from the above that the revised system represented planning as a 'learning process' in that plans, both strategic and annual, would be prepared in the light of known and foreseeable factors, but that they would have to be modified and up-dated in the light of new factors and changes.

The old hospital plan and associated managerial reforms laid the emphasis on more rational decision making for its own intrinsic value and possibly for better cost control. The objectives for a better balance of health care and redistribution of resources led to the means - a more rational and efficient managerial structure and decision making system - to get firmer ends.

The new planning system can be seen to have been designed to improve the quality of managerial decision making by requiring health authority personnel to follow particular analytical processes in the preparation of plans. The model to be used as a sequence of thought in the new planning system came within the definition of rational decision making in that it started with the identification of objectives (needs) and ended with their implementation and subsequent review.

However, the new planning system remained primarily concerned with inputs rather than the quality of services (outputs) and their impact on health (outcomes). The new system was intended to enhance the importance attached to decision making, based first on the identification of ends (that is, needs, objectives or aims), second on the choice of the most appropriate means, and subsequently on the monitoring and review of progress towards those ends.

6.4 *Limitations of the National Health Service Planning System*

It is important to note, however, that the Royal Commission advocated an incremental change strategy. This was considered desirable owing to a number of factors. These were that:

- the best use of the resources of the National Health Service requires that its decision makers be provided promptly with relevant information on needs and on the volume and cost of resources used in meeting those needs.

Unfortunately the information available to assist decision makers in the National Health Service left much to be desired. Relevant information was not available at all, or in the wrong form. Information that was produced was often too late to assist decisions and was often of dubious accuracy;

- without explicit measures of the need of groups of patients for health care, rational decisions on priorities and geographical distribution of resources was impossible. The lack of outcome measures meant that judgements of the efficiency of service delivery rested on insecure foundations;
- if an organisation cannot keep track of its resources it is unlikely to be using them effectively, and decisions on how those resources ought to be developed are made much more difficult; and,
- sensible decisions at all levels in the service required information on the costs of resources used in providing services to patients, but the existing system of annual financial accounts (and linked functional 'cost accounts') did not appear to provide significantly valuable information for improved resource allocation or other decision making. Cost data necessary for planning, decision making and resource allocation was, therefore, difficult to derive.

The Department of Health and Social Security was obviously aware of the criticisms (or limitations) when they drafted and issued the National Health Service Planning System, which relied heavily on rational decision making in the planning and budgeting processes.

6.5 Review of the National Health Service Planning System

Those responsible for the system must have had the limitations in mind, and it must be assumed that they felt such a system to be the most desirable. We must look, therefore, to the subsequent period to see whether any of the limitations were to be examined with a view to improving them to the extent to which they could become useful and relevant to the rational decision making process.

Perhaps the three most important areas of investigation that were reviewed were those of speciality costing, clinical involvement and the redesigning of the Standard Accounting System.

6.5.1 Speciality Costing

The first was speciality costing. This area of speciality costing work, known as the Magee System (Magee and Osmolski, 1979), was developed at Bridgend Hospital. This system was replicated in seven trial centres throughout Britain to establish differences that occur at various types of hospitals. Basically, the system aggregated hospital expenditure to speciality groups. It achieved this by the direct allocation, where possible, of items of expenditure to discrete specialities, and then by apportioning expenditure between different specialities of departments where they could not be deemed to be exclusive. The Magee System was a low cost system that had the merit of needing very little clerical and accounting support to implement it. It provided an interesting development in making people at least more aware of the need to understand speciality costs. This in turn enabled questions to be asked about how resources were used, and enabled comparisons between specialities to be made. One particular disadvantage of it, however, was where one had to apportion expenditure that could not easily be identified across a number of different specialities.

This approach is not surprising since speciality costing is a form of activity based costing. Activity based costing offers an alternative to traditional accounting in that it can be used to identify, describe, assign costs to, and report on particular activities. It is intended to offer a more accurate cost management system than traditional cost accounting by identifying opportunities to improve business process effectiveness and efficiency by determining the true cost of a product or service. Activity based costing is used to focus management attention on the total cost to produce a product or service, and as the basis for full cost recovery. The most suitable areas to which activity based costing is relevant are those for which identifiable and measurable units of output can be determined (Cooper, 1988a; 1988b; 1989a; 1989b; 1990; Johnson, 1990).

The underlying attraction of an activity based costing approach for the National Health Service was that it was perceived to be a management tool that could be used to provide a better allocation of resources. It offered a cost accounting methodology that could be used to define processes, identify the cost drivers of those processes, and determine the unit costs of products and services. A major advantage of using activity based costing was that it sought to avoid or minimise distortions in costing that could result from arbitrary allocations of indirect costs.

Unlike more traditional budgets which could not be tied to specific outputs, the use of activity based costing techniques was considered capable of generating useful information on how money was spent, whether an activity was cost-effective, and how to benchmark for quality improvement.

The rationale for using such a technique is that it is possible to make clear connections between costs and outputs, thereby creating a more accurate and useful financial picture. Costs that are visible and explicit are essential to the effective allocation of resources, and activity based costing takes into account all of the costs involved in producing and delivering a service. The implementation of activity based costing involves four steps:

- identify activities - an in-depth analysis of the operating processes of each activity is undertaken;
- assign resource costs to activities - this involves the identification of direct costs, those costs that can be attributed directly to the activity, indirect costs, those costs that cannot be allocated to a specific activity but have to be apportioned across a number of activities, and general and administrative costs, those costs that cannot be related to any activity but would remain the same irrespective of the activity undertaken;
- identify outputs – identify all of the outputs for which an activity consumes resources; and,

- assign activity costs to outputs – use activity drivers to assign activity costs to outputs based on demand for the activity. Activity drivers could be transaction drivers linked to the number of times an activity is performed, or duration drivers linked to the length of time that an activity is performed.

The adoption of such an approach is intended to encourage managers to identify those activities that are likely to deliver a service best, or meet a customer demand by improving operational efficiency and enhancing decision-making through better, more meaningful cost information (Cooper and Kaplan, 1988).

It can be seen that an activity based costing approach relies heavily on the availability of robust data and information, something that was sadly lacking in the National Health Service in the 1970s and 1980s, and which remains the case today (Audit Commission, 2004a).

6.5.2 Clinical involvement

The second was clinical involvement. The clinical decisions that doctors make heavily influence National Health Service expenditure and whilst doctors have clinical responsibility, they are not usually accountable for the resource and financial implications of their decisions. No doubt many doctors are cost-conscious and careful, but the individual doctor normally has no direct incentive to economise. In view of this, the Clinical Accountability Service Planning and Evaluation (CASPE) research developed. The intention was to agree with clinicians the level of activity, and therefore the level of resources, for them to carry out an agreed and planned workload. By feeding back activity and cost information to clinical teams on a regular basis, and comparing this with the agreement first decided upon, it would be possible to see what had changed and to ask why it should be so.

An added benefit was that better information would be available to view increases or decreases in the provision of various services. Unlike the Magee System, this system really did involve the clinical staff in looking at the use of resources. It was an information-providing system and relied upon the commitment and enthusiasm

of all clinicians to make it work. One thing it did was to bring into the open the need to have a better understanding of how clinicians use resources and how changes in patient care can affect supporting departments.

6.5.3 Standard Accounting System

The third was a Standard Accounting System. The then Standard Accounting System enabled managers, with firmer budgetary control than in the past, to make decisions about spending based on full information regarding the present state of their budget. Basically, its special features centred around the philosophy that LOCAL management could decide just what information it wanted, and its features can be illustrated as follows. Financial information could be provided to all levels of National Health Service management, the information was in the form of narrative reports, printed directly by the computer, both routine management reports and a large variety of special ad hoc reports could be provided, the form and content of each report could be designed locally, budgets, workload and performance data could be included on reports, and budgets were phased and updated by facilities under local control.

The flexibility of the system was such that almost any report could be specified locally, input to the system without the involvement of programmers, and produced directly from the computer on a regular or ad hoc basis. For example, management accounts could be produced on a Functional Basis (to accord with the format laid down in the National Health Service Accounting Manual) (Appendix A), on a Personally Designed Basis (Appendix B) and/or an Exception Basis (Appendix C), that is, to report only variations which deviate from the budget by more than a locally specified percentage.

The potential benefits identified were that the budgetary information and associated statistics would be capable of being provided to each functional budget holder in exactly the way they desired, both in numerical and narrative form, as frequently as required, thus facilitating effective functional budgetary control, promoting cost-consciousness and achieving value for money.

Following the reorganisation, it became clear that the new 'Patients First' philosophy needed on-line integrated management information. The system was redesigned to meet the present and future demands of its users, and was called the Interactive Resource Information System (IRIS).

Consultation established that users wanted a system that retained the best features of the Standard Accounting System but that was substantially upgraded to provide a full on-line service, that was under the user's control and could be tailored to suit their needs and therefore must be versatile, that was competitive in price, and that took advantage of new technology.

Whilst all these attributes were important, the system's contribution to financial restraint would be judged on its ability to produce information that was accurate, relevant and timely for each and every level of management involved in ensuring effective budgetary control. It was also required to do this at a cost acceptable to the user.

The object of IRIS was that it would provide a database allowing districts to draw what information they require into patient, clinical and costing systems that have been designed locally. This was intended to at least enable health authorities more accurately to identify in advance the consequences of planned financial restraint rather than having to continue managing on a stop/go basis.

6.6 Outcome of the review of the National Health Service Planning System

In practice, it proved difficult to implement for a number of reasons:

- because it is difficult to quantify and value the benefits arising from organisational activities;
- because some services must be provided by statute, even though they may have a low priority, for example, the monitoring of private nursing homes is not a priority but the service must be provided;

- because it is not easy to discontinue certain activities, for example, manpower cannot be easily disposed of or redeployed; and,
- because zero-based budgeting techniques are time-consuming, bureaucratic and expensive to operate.

For these reasons, authorities kept to the incremental approach whereby budget preparation starts with the previous year's budget. Changes will be made but, by and large, these will only be at the margin. Any incremental activities might be reflected by an increased budget and vice-versa for reduced activities. The bulk of the budget is left unchallenged in that budget holders are not asked to justify each year the reasons for carrying out the various departmental activities, and thus incurring expenditure. Any inefficiencies or mis-use of resources is perpetuated, but because of the problems of zero-based budgeting, this is the form currently used, to a large extent, in the National Health Service.

The National Health Service Planning System and authorities' budget preparations were obviously not readily compatible in achieving the required outcome, because better service information was required, and until that information was available, it was inevitable that rational decision making could not properly and fully be implemented, however desirable it may have seemed.

Tom Evans, the Director of King's Fund, an independent charitable foundation working for better health, especially in London, and which carries out research, policy analysis and development activities, working on its own, in partnerships, and through funding, highlighted the need for systematic comparisons between what should happen and what actually happened, and he compared the management of the National Health Service with 'steering the boat by looking over the stern and watching the wake'.

6.7 Subsequent developments

The National Health Service experienced the most significant cultural shift since its inception with the introduction of the so-called internal market, outlined in the 1989

White Paper, *Working for Patients*, and which passed into law as the NHS and Community Care Act 1990. The internal market was the Conservative Government's attempt to address problems, such as growing waiting lists, which had arisen in the 1980s as a result of National Health Service resources being constrained while demand rose inexorably.

Before the 1990 Act a monolithic bureaucracy ran all aspects of the National Health Service. After the establishment of the internal market, 'purchasers' (health authorities and some family doctors) were given budgets to buy health care from 'providers' (acute hospitals, organisations providing care for the mentally ill, people with learning disabilities and the elderly, and ambulance services).

To become a 'provider' in the internal market, health organisations became National Health Service Trusts, independent organisations with their own managements, competing with each other. The first wave of 57 National Health Service Trusts came into being in 1991. By 1995, all health care was provided by National Health Service Trusts. Over the same period, many family doctors were also given their own budgets with which to buy health care from National Health Service Trusts in a scheme called GP fund holding. Not all GPs joined this scheme and their budgets were still controlled by health authorities, which bought health care 'in bulk' from National Health Service Trusts.

Patients of GP fund holders were often able to obtain treatment more quickly than patients of non-fund holders. This led to accusations of the National Health Service operating a two tier system, contrary to the founding principles of the National Health Service of fair and equal access for all to health care.

Observers credit the internal market with improving cost consciousness in the National Health Service, but at a price: that the competition it encouraged between 'providers' saw unnecessary duplication of services.

The election of a new Government in May 1997 brought a new approach to the National Health Service. Pledging itself to abolition of the internal market, the new Government set out an approach which aimed to build on what had worked

previously, but discarding what had failed. A new white paper issued by the Department of Health, *The New NHS. Modern. Dependable.*, put forward a “third way” of running the service - based on partnership and driven by performance. The paper set out an approach which promised to “go with the grain” of efforts by National Health Service staff to overcome obstacles within the internal market, building on the moves which had already taken place in the National Health Service to move away from outright competition to a more collaborative approach.

The white paper described this approach as "a new model for a new century", based on six key principles:

- to renew the National Health Service as a genuinely national service, offering fair access to consistently high quality, prompt and accessible services right across the country;
- to make the delivery of healthcare against these new national standards a matter of local responsibility, with local doctors and nurses in the driving seat in shaping services;
- to get the National Health Service to work in partnership, breaking down organisational barriers and forging stronger links with local authorities;
- to drive efficiency through a more rigorous approach to performance, cutting bureaucracy to maximise every pound spent in the National Health Service for the care of patients;
- to shift the focus onto quality of care so that excellence would be guaranteed to all patients, with quality the driving force for decision making at every level of the service; and,
- to rebuild public confidence in the National Health Service as a public service, accountable to patients, open to the public and shaped by their views.

As the National Health Service entered its 50th year, a new era had begun, and a new information strategy to support the process was proposed. The details were set out in an NHS Executive Circular HSC 1998/168 *Information for Health: An Information Strategy for the Modern NHS*. I would draw attention to one of the outcomes that the strategy was envisaged to deliver, and which had been highlighted as a deficiency in the attempt to introduce, in the 1980s, the rationalism approach, namely 'more effective use of NHS resources by providing NHS planners and managers with the information they need' (HSC, 1998a).

The Circular also made reference to the fact that the proposals marked a significant shift from the previous emphasis on management information, focusing on the need for information to support the core purpose of the National Health Service without undermining the need for effective management of National Health Service resources (HSC, 1998b).

Certainly, maximising the huge potential of IT was, and is, central to bringing to life the vision of a modern National Health Service. But it was only with the publication of the 10-year NHS Plan in July 2000 (NHS, 2000) that sweeping plans to transform the National Health Service into a health service fit for the 21st century came into focus. The NHS Plan promised:

- more hospitals and beds;
- more doctors and nurses;
- much shorter waiting times for hospital and GP appointments;
- cleaner wards, better food and facilities in hospitals;
- improved care for older people; and,
- tougher standards for National Health Service organisations and better rewards for the best.

But alongside this, the NHS Plan also promised greater power and more information for patients and the public. A lot has happened since the NHS Plan was first published, but every development and initiative coming after has its roots in the NHS Plan's core vision of creating a "patient-led health service". The vision was that, for the first time, services would be built on the needs and preferences of patients rather than dictated by the old barriers between professions and different parts of the system. This meant linking up all the services and care a patient needs to get better and stay well, and, wherever possible, offer these in convenient community settings closer to home.

This latest chapter in the history of the National Health Service is still unfolding, but already there are some important milestones which illustrate the scope and the speed of the drive towards patient-centred services:

- March 1998 - NHS Direct, the nurse-led health advice service, was launched to give people 24-hour health advice they could trust over the phone;
- April 2001 - the creation in 2002 of locally-based Primary Care Trusts - organisations which control 80% of the National Health Service budget and have the role of running the local National Health Service and improving the health of people in their areas. At the same time, 28 new Strategic Health Authorities replaced the former Health Authorities and took on a strategic role in improving local health services, while also making sure local National Health Service organisations performed well;
- April 2002 – hospital payment system to move to one based on payment by results using a standard national price tariff and regional tariff system (NHS, 2002a);
- October 2003 - consultants in England voted in favour of a new contract aimed at rewarding them more fairly so that more National Health Service patients benefited from their skills, while also encouraging them to embrace new ways of working in, for instance, multi-disciplinary teams;

- April 2004 - new contracts were introduced also for GPs and local family practices, accompanied by new, extra funding for local health services. The new contracts meant, for the first time, all practices were to be significantly rewarded for the quality of care they gave, and not just the numbers of patients they treated;
- August 2004 - early Patient Choice pilots were extended giving all patients waiting longer than six months for their operation a choice of an alternative place for treatment. This was called 'choice at six months'. By the end of 2005, everyone referred by their doctor for hospital treatment would be offered a choice of at least four hospitals and be able to choose a time that was convenient to them; and,
- December 2004 - the new Agenda for Change pay system began national roll-out. Designed for nurses, ambulance staff and all other directly employed National Health Service staff (except doctors, dentists and some senior managers) the new system was meant to ensure fair pay and a clearer system for career progression. For the first time staff would be paid on the basis of the jobs they were doing and the skills and knowledge they applied to these jobs.

6.8 *Review of subsequent developments*

The post 1980s developments were based on a fixation with target setting and, in keeping with the principles associated with the rationalism approach that was implicit in the developments, there was a requirement for an immense amount of information and data, not to mention the problems that arose in getting staff within the National Health Service, particularly the senior medical staff who are at the front line in the decision making process, to accept the consequences that would arise from such an approach.

This is probably best illustrated in a British Medical Association briefing in April 2003 (BMA, 2003) in which the British Medical Association complained that the

target and performance management culture of the National Health Service had resulted in around 250 targets for acute trusts and over 400 for primary care trusts.

The NHS Confederation, an organisation that brings together the full range of organisations that make up the National Health Service in the United Kingdom, regarded this as “a remarkable confession about the department’s (Department of Health) assessment of its own approach” (NHS Confederation, 2003), since it appeared to be completely at variance with the Department of Health’s own press release for the launch of Foundation Hospitals which promised that “the best hospitals will be freed from excessive Whitehall control” (DoH, 2002).

Pressure to meet targets can also result in unintended consequences and dysfunctional behaviours, such as deliberate manipulation of data, including ‘creative’ accounting, and ‘gaming’, that is, altering behaviour so as to obtain strategic advantage (Goddard et al, 1998). Indeed, the National Audit Office published in 2001 (NAO, 2001) a report on ‘inappropriate adjustments to waiting lists’, one of the findings being that patients were being offered admission during known holiday dates.

The British Medical Association also suggested in the briefing in April 2003 that the barrage of targets needed to be reduced to a smaller number of measures of structure and process that had been demonstrated to be linked to outcomes, and that this should be combined with a culture that trusts health care professionals to find innovative solutions to local problems. The need for accountability could be addressed through the use of external audit bodies that could provide a more comprehensive analysis of the performance of the local health system and, importantly, have been shown to produce improvements in quality (Klein and Day, 2001).

6.9 Planning and Priorities

All of the above, however, was concerned with planning and it is here that the basic problems arose. The terms 'planning' and 'priorities' are often used synonymously but they do in fact represent different concepts. Generally the

determination of priorities for the National Health Service falls to the Secretary of State as the policy maker, while planning is the province of the health authorities. Planning is the means by which the Secretary of State's priorities can be translated into strategies.

To a large extent priorities can be formulated on the basis of information currently available but ultimately, however, the National Health Service is restricted by the resources available to it, and consequently choices have to be made.

It is desirable that there should be some acceptable method for choosing between alternative priorities, and the question is frequently asked: How does the Secretary of State select those priorities to be promulgated within the National Health Service? Economists, for example, suggest a similar approach to cost/benefit analysis. For each option, the costs and benefits of implementation should be assessed and options ranked in order of greatest net benefit. However, sound information on costs is not always available and estimates may not be sufficiently reliable, so it is not always easy to calculate the costs of various options.

The assessment of benefits is infinitely more difficult because of the lack of information on matters such as precisely who benefits, how they benefit and to what extent. Although research was instigated into the provision of such measures, at the time there was nothing reliable on which to base decisions about priorities. Because of this difficulty in assessing options according to any scientific decision making process, it appears that choices at national level were not always made objectively, but were arrived at by the subjective views, feelings, prejudices and preferences of the relevant Secretary of State as advised by the Department of Health and Social Security.

This subjectivity is highlighted by illustrations of unpredictable and unstable priorities that can be attributed to political factors such as change in Government. One main cause is that the politicians responsible for the service are seldom in office for a sufficiently long period to fully implement their priorities. Hence a serious problem may arise when a change of policy or priority is immediately followed by a change in policy maker.

In an organisational setting, the ideas of planning and control are often seen as part of a continuous cycle. It is sometimes theoretically described as a series of events in which the planning system begins with setting priorities and results in feedback that can modify the original priorities. The merit of such an approach is regarded as rational and results in a well-structured approach to the management task of choosing between priorities. It also recognises that planning is a series of discrete but related events, and that appropriate techniques and expertise can be enlisted at various stages.

Finding such a process actually in operation may be an impossible quest. In practice, the distinction between the events may become blurred. Selected priorities may often be reactionary expedients, and more radical, and perhaps appropriate, options may never be devised.

The following summary of the events in the 1970s and 1980s will help make it clear why the model outlined above does not occur in reality.

Turning priorities into action can be dependent on many variables, the two most significant being linked: the first is the commitment to the priorities and the second is related to the resources available at the time of implementation. Commitment to priorities may be related to the degree of participation in their formulation and, as stated above, authorities tend not to participate effectively in the formation of National Health Service priorities in a way that allows them to put forward a view of their specific, directly assessed requirements.

If local priorities have eventually to be subordinated to national priorities over the long term, the local priorities are likely to assume a much greater significance to authorities in the short term. When demands on limited current resources were being considered by regional and district health authorities, they may have tended to favour their own local priorities where these differed from those of the Department of Health and Social Security.

The National Health Service Planning System could only be considered, therefore, as an instrument of control for the preparation of health authorities' strategic and



operational plans, and it did not function at the point where priorities were turned into the delivery of service. This role fell to the regional health authority in its monitoring capacity as an agent of the Department of Health and Social Security.

The former area health authorities were asked to take account of such national priorities as the shift of resources from the more glamorous work, such as surgery, to services like the elderly and mentally handicapped. The shift was not implemented owing to the power of the medical staff to determine the distribution of resources between patient groups. It appears that senior medical staff who provided acute services had more influence over the distribution of resources than those doctors who provided caring services for long-stay patients. This outcome arose even when priorities were fairly precisely defined in a document that specified the desired distribution of resources between the patient groups. The broader priorities elicited even less conviction where district authorities chose to interpret the required redistribution of resources to its favour.

The concept of rational decision making embraces that of zero-based budgeting whereby no part of a budget is automatically carried forward to a future year without justification. In its pure form it requires managers to attach not only a cost to each of the departments' activities or planned activities, but also a valuation of the benefits accruing from that activity. All the activities of the organisation are then ranked in order of desirability as measured by their net benefits. Given that the organisation has limited resources, not all the activities will be capable of implementation and so a cut-off point must be drawn. In this way, top management ensures that every year full consideration is given to the way in which the organisation uses resources, and ensures that only priorities are implemented.

The next chapter draws together the previous chapters in this dissertation with the object of concluding whether there may be a better way of approaching decision making, resource allocation and financial management in higher education institutions.

CHAPTER 7

CONCLUSIONS

7.1 Analysis and conclusions

The National Health Service spent about £63 billion in 2003-04 (NAO, 2005a), a significant proportion of which was consumed by pay. It can clearly be seen, therefore, to be a labour intensive service, the largest sector being the nursing staff. Although this sum appears very large, it must be remembered that it represents only about 5½% of the Gross Domestic Product (GDP) (ONS, 2006).

Because the National Health Service is a 'demand' service where the volume of treatment is controlled by the numbers of patients, the problems of achieving the optimal provision of services are magnified. All staff in the National Health Service, especially the clinician who is normally the first point of contact and, therefore, the generator of treatment and, by inference, of resources also, are confronted by the problems of having to manage set resources being consumed by a virtually uncontrollable demand.

At the present time, growth in funding in real terms lags behind the growth in demand, and the need for cost effectiveness becomes of critical importance. The focus then tends to fall on performance, especially in view of the fact that the National Health Service is a labour intensive service, and the question must be asked, "Is there sufficient data available to be able to carry out cost effectiveness studies?"

If we remind ourselves of the chapter on rationalism, the introduction of cost effectiveness studies involves the concept of 'rational management', including such techniques as Planning, Programming, Budgeting Systems (PPBS), Programme Analysis and Review (PAR) and Management by Objectives (MBO). All of these techniques involve an exhaustive system of evaluation, requiring a great deal of data.

If one looks at the experience of local government from the late sixties, corporate planning was seen as a means of unifying the activities of a local authority so enabling a shifting of resources in response to needs. It was an attempt to move away from traditional incremental planning and budgeting. It was not very successful as the main requirements of the rational model of decision making could not be properly met. These stages are that there needs to be an analysis of needs, issues and problems in the community, there needs to be a definition of objectives, a setting of priorities, a consideration of options, an implementation of chosen options, and the monitoring of activities to measure achievement and continuing review of the environment to assess appropriateness of policies.

This type of exercise can be linked with that outlined in the National Health Service Planning System, whereby the government, as provider of approximately 90% of National Health Service expenditure, sought to introduce a rational method of decision making into National Health Service planning and budgeting. It was inevitable that such a system would fail because, at that time, those necessary preconditions of such a system, for example, adequate management information, performance and workload data/statistics, were not available. Indeed, there was a great deal of work undertaken in some health authorities, for example Wessex Region, and a joint exercise between the Department of Health and Social Security and the Northern Region, into the provision of performance data, etc. to enable the successful implementation of rational methods of decision making.

However, until such exercises produce the desired, and necessary results, rational decision making in the National Health Service will probably fail and financial management processes will continue to be incremental.

It is also worth noting that Carter and Perrin (1983) found, when examining budgeting and management accounting in the National Health Service, that the incremental system does work 'at least to the extent that almost always district health authorities do manage to contain expenditure within their allocations, or at least to overspend by only some small amount which may be balanced out with underspends elsewhere in the region'.

The situation faced by higher education institutions is almost analogous to that faced by the National Health Service. Higher education institutions have to respond to demand, albeit a more controlled demand than that faced by the National Health Service, but against a background of real-terms reduced levels of funding. Higher education institutions comprise a collection of academics who, in the main, are following a social career path, and who are very personally focussed in terms of their aspirations and needs. The financial management of the resources of higher education institutions would appear, therefore, to have a need to take account of this fact, and any system should be very sensitive to human behaviour if it is to succeed.

A successful financial management system seems to need to embrace, therefore, the requirement that it be participatory, not confrontational, since academics are the prime consumers of resource, are not generally motivated by financial considerations, and do not operate in an environment that is geared towards the financial needs of the business. Unlike in the business environment, good academics are highly sought after, and the majority of them will be looking to work for an organisation that can deliver the resources they feel they require to undertake their research and teaching activities. If they perceive that the organisation cannot satisfy that need, they are likely to look to a higher education institution that can.

A higher education institution will find it very difficult to function effectively, in terms of academic success, without good academics, and it is inevitable that any financial management system should take account of this fact if it is to be effective. For this reason, a participatory approach is likely to be the most effective, and that approach is offered by the incrementalism approach. It should also probably be linked to a resource allocation model that is pro-active, and one that can translate a higher education institution's objectives into the proper and directed allocation of resources, rather than be linked to a set of pre-determined factors that might produce an effect that is in direct conflict with the higher education institution's objectives.

It is also extremely important for a resource allocation model to be capable of dealing with pro-active decisions, and one that can also reflect responsiveness. A resource allocation model such as that used by HEFCE and, by inference, most higher education institutions, is unlikely to be capable of delivering these two things, since it is based on a production line mentality whereby there is an assumption that there is a linear relationship between cost and level of activity. That is simply not the case in higher education, and the use of such a mechanistic model is likely to be doomed to failure or, at the very least, to introduce unintended adverse consequences as a result of applying national principles at an institutional level.

There is a significant challenge in the adoption of the type of approach suggested, but one that, I am pleased to say, has recently been adopted by Brunel University. Time will tell as to whether it is successful, but it is highly likely that management will no longer be able to hide behind a mechanistic model to defend the way in which resources are allocated across a higher education institution.

I would suggest that the current state of the finances of the National Health Service offers a stark reminder of the problems that can arise as a result of a failure to adopt a financial management system that takes proper and full account of the principles set out in this dissertation.

The reliance on the use of rationalism principles continues to produce adverse consequences for the National Health Service. One of the most recent developments introduced as a result of the adoption of the strategy set out in *Delivering the NHS Plan* was Payment by Results. This was intended to provide a transparent, rules-based system for paying trusts under which, instead of block contracts for hospitals, payment would be based on the elective activity that they undertook. This implied significant reliance, yet again, on the availability of robust data; indeed, *Delivering the NHS Plan* (NHS, 2002b) promised that 'significant new investment in IT systems will drive change'.

The Audit Commission published a report in 2004 (Audit Commission, 2004b) following its review of the new Payment by Results system. Whilst acknowledging

that the new system offered major opportunities and incentives, the Audit Commission also warned of the major risks which, if not well managed, would lead to financial instability and service difficulties (Audit Commission, 2004c). One of the key risks identified related to the quality of the data on which the new system relied. Not only would it be necessary for the Department of Health to have reliable cost and activity data on which to base the national tariff, but trusts would need good quality activity data for billing purposes and accurate knowledge of their costs.

The Audit Commission pointed out that, in a review at the end of 2003-04, auditors found inaccuracies of 5% or more in most trusts' reference cost submissions, some inaccuracies in costing information, and a significant weakness in activity data. Many of the problems arose from outdated Patient Administration Systems, lack of clinical involvement and weakness in the recruitment, training and leadership of clinical coding staff. The Audit Commission also concluded that 'the recording and coding of activity is less reliable than would be expected for payment purposes – both for provider and commissioner. What is more, there are currently no obvious safeguards to prevent adjustments in recording activity that are not the result of genuine clinical changes' (Audit Commission, 2004d).

The Audit Commission's review highlighted two of the same issues that were also identified in the review of the NHS Planning System that was undertaken in the 1980s as needing to be addressed, these being the availability of robust data and the need to involve clinicians in the decision making process. Is it any wonder, I would venture to suggest, that the continued reliance on a rationalism approach to reviews of the National Health Service, predicated on the basis of the availability of robust data that is clearly not available, has resulted in the current financial crisis in the National Health Service.

In a Press Release issued by the National Audit Office (NAO, 2005b), James Strachan, Chairman of the Audit Commission, said "Financial management is now a matter of major concern for the NHS.....Important reforms like Payment by Results and the new financial regime for NHS Foundation Trusts are also increasing the risks and demand first class financial management.....".

In a recent Press Release issued by the Department of Health (DoH, 2006), the Health Secretary acknowledged that, in 2004/05, the National Health Service overspent for the first time since 1999/2000 to the tune of £250 million, and recent mid-year financial forecasts projected a net overspend for 2005/06 of £623 million. The solution to the problem, as seen by the Health Secretary and the then NHS Chief Executive, was to appoint 'turnaround teams' to help those forecasting financial challenges provide more cost-effective services for patients!

Management take note and beware!

7.2 Critical review of the thesis

The strengths are apparent when one considers the objectives of higher education institutions. Every higher education institution that wishes to be, and remain, attractive to students, whilst delivering high quality teaching and research by a cadre of skilled and motivated academics, will need to ensure that it uses its resources to maximum benefit and effect. A financial management system that is capable of delivering these objectives through the effective allocation of resources is highly sought after, and those higher education institutions that can introduce, and operate, such a system will probably gain a competitive advantage. This is becoming increasingly important, and is likely to become even more so following the introduction in September 2006 of top-up fees. The proposed approach is one that is founded on the historical position, and is less likely, therefore, to prove an obstacle to those who are wedded to a system that is unlikely to produce significant changes in year on year financial positions.

The weaknesses are also apparent. The proposed approach is one that remains largely untested in the higher education world. It is also one that requires the commitment to embrace a system that does not necessarily reward those individual areas that generate additional resources, although that would be a likely outcome, but is geared towards the greater good of the higher education institution. Whilst the proposed approach is one that is based on the premise that such an approach is likely to be to the benefit of all in the medium to long term,

such a premise is likely to require great skill in its effective dissemination, especially amongst the academic community.

CHAPTER 8

BRUNEL UNIVERSITY'S RESOURCE ALLOCATION METHOD FROM 2005/06

8.1 Overview

This chapter sets out the principles on which I based my case for moving away from the mechanistic model used by Brunel University to one based on the principles of incrementalism. It also sets out the method by which Brunel University's resources were distributed for the allocation round 2005/06.

8.2 Principles driving change

In summary these were:

- i the Resource Allocation Model (RAM) was too mechanistic and did not help in the delivery of strategic objectives;
- ii the use of the Higher Education Funding Council for England's (HEFCE's) national model for allocating the grant to higher education institutions cannot (of itself) assist in the delivery of the University's objectives. It is formula rather than target driven;
- iii changes in HEFCE's funding method could cause instability if slavishly followed;
- iv there should be stability in base funding levels from year to year, subject to the need to respond to unforeseen adverse circumstances;
- v the allocation of central costs, especially where these are informed by usage counts, can discourage the use of key services, for example, the Library;
- vi the University must provide for a stable academic environment to the next Research Assessment Exercise (RAE);
- vii the University should allow for, and reward, **planned** growth; and,

viii the University should reward achievement against institutional objectives.

8.3 Features of the new method

These are:

- i the establishment of a base position with regard to pay and non-pay. For schools, this is based on an adjusted version of the 2004-05 departmental budgets;
- ii the pooling of all income above the agreed base costs for academic and non-academic areas;
- iii 3-year (macro-level) plans for academic and non-academic cost centres that allow for the award of additional income above base funding, subject to performance and prioritisation of plans in support of strategic objectives. Plans must be provided for each school, non-academic department, trading area and self-financing institute;
- iv the establishment of panels for the academic and non-academic areas to consider the prioritisation of plans in relation to the extent to which they maximise the achievement of the University's strategic objectives. The outcome of these panels will be used as the basis for making recommendations to the Vice Chancellor regarding the distribution of additional income above the agreed base level;
- v continuation of the current system of rewarding, in-year, schools that generate tuition fee income above that assumed in the allocation model. For academic areas, this is likely to be increased to X% of the net additional tuition fee income generated. This additional income will be made available subject to the approval of a plan for its use;
- vi move from the module activity counts of the RAM to a more simplified student population count; and,

vii in considering levels of funding, due regard will be paid to the need to comply with any contract conditions which define levels of provision, for example, Staff/Student Ratios.

8.4 Process for implementing the new method

i All academic, non-academic, trading and self-financing areas will be expected to complete, by the end of February 2005, plans detailing non-grant income, pay and non-pay expenditure for the period 2005-06 to 2007-08;

ii there is no intention to micro-manage, but plans will need to contain the following as a minimum:

- all pay for 2005-06 will be assumed as base (adjusted 2004-05) plus an agreed uplift for assumed pay awards;
- all non-pay for 2005-06 will be assumed as base;
- space allocations for 2005-06 will be assumed to be as they were in 2004-05. This is naturally subject to change because of, for example, planned moves of some Schools as a consequence of the consolidation onto the Uxbridge campus. It is also anticipated that a mechanism for reviewing space requirements will be developed; and,
- developments identified above the base level will be considered and prioritised by the panels. It is expected that macro-level plans will demonstrate how developments contribute to the delivery of the University's strategic objectives.

iii Schools, Non-academic, Trading and Self-financing Institutes Plans. A pro forma will be developed with the following sections:

- a staffing plan 2005-06 to 2007-08 (academic, non-academic, trading and self-financing institutes);

- each Head of School and Senior Manager for the other areas will receive a baseline pay budget for 2005-06 to 2007-08, incorporating the pay inflation assumptions. These will be used ONLY for the formal validation of the data. Any increase in staffing numbers or costs must be made as a completely separate development bid, and justification will need to be provided as to how, and to what extent, the changes proposed will contribute to the achievement of the University's strategic objectives. Development bids will be considered by the appropriate panel and, where approved, additional funding will be made available;
- Staff/Student Ratio comparisons with peer institutions (Schools only);
- student population plan 2005-06 to 2007-08 (academic only). Each Head of School will be asked to identify areas of growth (if any) in the School's numbers of Undergraduate, Post Graduate Taught and Post Graduate Research in terms of Home/European Union and International. This should be cross-referenced to Section 1 if there are any implications for staffing or costs;
- target populations for HEFCE contract and other populations - division of HEFCE population will be negotiated with each Head of School by the Vice Principal. Tuition fee assumptions will also be incorporated;
- an outline of the management and administrative structure of the School (academic only);
- space needs (academic, non-academic, trading and self-financing institutes). An opportunity for each Head of School/Senior Manager to identify amendments to space requirements due to anticipated changes in the period. Extracts will be provided to the Managing Director (Resources and Operations) for consideration;
- course portfolio and modes of delivery (academic only). It is assumed that all Heads of Schools will be actively reviewing their portfolios. Each Head of School will be asked to identify likely changes to future provision that might

impact on required resources beyond the period of the plan. Registry will provide a list of the University's approved courses;

- non-Pay 2005-06 to 2007-08 (academic, non-academic, trading and self-financing institutes). Each Head of School/Senior Manager will be asked to outline anticipated changes to the non-pay requirements of their School/area on a year to year basis. Non-pay base budgets will be issued at 2004-05 levels. Any increases sought must be made as a separate development bid, and justification will need to be provided as to how, and to what extent, the changes proposed will contribute to the achievement of the University's strategic objectives. Development bids will be considered by the appropriate panel and, where approved, additional funding will be made available; and,
- RAE 2008 (academic only). Each Head of School will be asked to summarise their plans for RAE 2008 in the context of the percentage of research-active staff in the subject groups.

iv 3 year Plan Review Process - each January within the period of the Plan, Heads of Schools/Senior Managers will be given the opportunity to revise the statement of needs agreed in the current plan in light of performance against the objectives underpinning the plan, and also against the University's strategic objectives. The pro forma will be re-issued with updated attachments. Panels will consider bids for additional funds for years 2 and 3 of the plan, and make recommendations to the Vice Chancellor;

v University income projections will be produced in March of each year; and,

vi base budgets cannot be guaranteed in circumstances where Schools have fallen below target student populations, or where non-academic, trading or self-financing institutes have failed to meet agreed objectives. Should a Head of School/Senior Manager believe the circumstance to be temporary, they will be given an opportunity, through the planning revision process, to make a case for a continuation of the current budget level.

8.5 Operational timetable for implementation

- i December 2004 - HESES student snapshot used to inform University income;
- ii January 2005 - Planning Office issues 3 year plan pro forma and attachments;
- iii End of February 2005 - Heads of Schools/Senior Managers to submit draft plans to Planning team;
- iv March/April 2005 – Vice Principal, Managing Director and Secretary & Registrar receive 3-year plans;
- v March 2005 - University receives Grant Letter - Finance to complete income analysis by subject (gross) for Senior Management Group (March);
- vi March 2005 - Progress report to Senior Management Group and Finance Committee. The progress report will contain the 2005/06 income analysis and the totals of the pay and non-pay base cost by School and administrative area and detail possible approaches to other payments such as Union subvention and Library. It will clearly state the unadjusted additional income that remains to be allocated;
- vii top-slicing - whilst the need for top-slicing should be reduced in the new scheme, there will be a requirement to top-slice for such items as contributions to capital expenditure. The Director of Finance will advise the panel on other provisions that must be a first call on the funds available for distribution;
- viii the Management Accounting team will produce an analysis of each School's contribution to income generation at the gross level for monitoring purposes. Similar analysis will be provided for other self-financing parts of the University to ensure Senior Management is aware of any activity that is not generating sufficient income to meet costs;
- ix April 2005 - Panels meet to discuss priorities;

- x May 2005 - Final Allocations. The Vice-Chancellor, Vice-Principal and Managing Director (R&O) with support from the Director of Finance meet to receive recommendations from both panels;
- xi Senior Management Group receives proposed budget totals;
- xii finance prepares final budgets for 2005-06; and,
- xiii June 2005 - School Plans to Strategic Planning and Review Committee, and recommended budgets to Finance Committee.

8.6 Academic and Non-Academic Panels

- i the academic panel (which will consist of the Vice-Principal, PVC (Research) and the Heads of Schools, with support from the Director of Finance) will agree the priorities for distributing any additional income above base in the context of School Plans, targets and performance to date and within the context of the Strategic Plan and the University's strategic objectives. The panel will also consider bids for top-slicing for any cross-school initiatives such as BRIEF or Research Leave; and,
- ii the non-academic panel (which will consist of the Managing Director and the Secretary and Registrar, with support from the Director of Finance) will consider and prioritise bids for additional expenditure in relation to the extent to which these bids support the achievement of the University's strategic objectives.

8.7 Further research

Whilst I am pleased, and proud, that my own institution has adopted the approach proposed in this dissertation, I am not naive enough to believe that this justifies the approach as one that, without further evidence of its impact and effect, should be embraced by all higher education institutions. The outcome of this piece of research may be regarded as the first stage in a piece of action research, since to establish the validity of the proposed approach, more research will need to be undertaken in terms of evaluating the success of the approach within my own University, identifying other

higher education institutions that may operate a similar system, and seeking to define ways in which the impact and effect of the proposed approach can be compared with those of the traditional HEFCE based approach. This would be a major piece of research, but one that, in my view, could deliver significant benefits to both individual higher education institutions and the wider higher education fraternity, not to mention a more effective use of the public and private resources consumed by higher education institutions.

CHAPTER 9

PERSONAL REFLECTIONS

9.1 Overview

When I embarked on my thesis, I very soon found that I began asking myself a number of questions:

“What will this contribute to the furtherance of knowledge?”

“Who am I to seek to change, through the encouragement of reflection, the habits and practices of higher education institutions that have existed for many years, and which are managed by people with, probably, a far greater intellect than mine?”

“Is this a crusade that is founded on personal beliefs rather than substance?”

I must confess that I did think very hard about whether, in light of these questions, I should continue with my studies, particularly as the demands on me from my working life were significant. As I continued with my research I soon found that my doubts were actually becoming challenges. In some small way, I may actually be able to influence the way in which the higher education sector develops in terms of ensuring that, arguably, the single most important element in any organisation’s armoury, that is, the resources available to it, are employed to maximum benefit and effect. The sums involved are enormous, and the benefits to be achieved could be very significant in terms of higher education institutions using those resources to develop at a faster and more productive rate than might be the case by following the perceived ‘tried, trusted and safe’ HEFCE based system.

This perception and belief drove me on, and I am very glad that I did not allow my initial doubts and scepticism to divert me from my goal.

9.2 Securing change at Brunel University

I suspect it is uncommon for a PhD student to be in a position that enables them to have an influence over the subsequent application of their research. I am pleased to be in such a privileged position in that, as the finance director of Brunel University, a member of its senior management team, and the co-ordinator of the resource allocation process, I was able to use my research as the basis for proposing that my own University should change its resource allocation process to one that, in my view, is 'fit for purpose', and able to respond pro-actively to the achievement of the University's strategic objectives.

I have set out, in chapter 8, details of Brunel University's revised approach to resource allocation, an approach that is based on the principles of incrementalism, together with the pro-active strategic assessment of the distribution of resources above the base level. I term the model an 'expenditure-based' resource allocation model.

The process for securing a change of approach was not without pain and considerable effort. I spent many months explaining the approach to colleagues within the University, and to lay members of the University's Council, through many meetings of the senior management team, Strategic Planning and Review Committee and Finance Committee. In my opinion, my colleagues have demonstrated considerable foresight in adopting my proposed approach, and I feel certain that their confidence in the ability of the new approach to facilitate better the delivery of the University's strategic objectives will not be misplaced. I believe the adoption of the expenditure-based model puts Brunel University at the forefront of financial management, in its widest sense, in the higher education sector, and that this model will prove to be used more widely over the coming years.

Perhaps this is the biggest reward for which I could have hoped, and the result has convinced me that, if you believe strongly in a concept, and are able to convince others of its worth, the rewards are well worth the effort and pain of the journey.

9.3 Outcomes achieved

The use of an expenditure-based model has enabled the University to use its resource allocation method to facilitate the achievement of its strategic objectives, whilst at the same time preserving, through the use of base budget levels, the financial position of academic schools, institutes and non-academic departments. In particular, the following outcomes would not have been possible under the former allocation model:

- the preservation of current year funding levels as a minimum allocation for the following year;
- the pro-active allocation of funds additional to the agreed base level to meet strategic objectives;
- the use of panels to determine and agree priorities for the additional funds;
- the agreement of the panels to allocate the bulk of the additional funds available for 2005/06 to two areas considered to be key to the strategy to become a research-led university. The two key areas were not growth areas, in terms of their ability to raise their profile and hence recruit more students, and would not have received any additional funds under the former model; and,
- the removal of levies to fund key services, for example, library services.

9.4 Criticism of the Incrementalism approach

The major criticism levelled at the incrementalism approach is that it perpetuates past inefficiencies or mis-use of resources. Whilst there may be an element of truth in this, the study of the National Health Service serves as a stark reminder that, unless one has systems that will provide accurate and comprehensive data to inform the decision making process, and the organisation is capable of both

identifying, providing and evaluating that data, the rationalism approach is doomed to failure.

I would also add that, in my experience, rationalism works only where there are limited choices to be made, and where those choices can be expressed in financial terms. I believe that in organisations that have multiple aims, and particularly in those that are concerned with the provision of services that can be regarded as having a social implication, the use of the incrementalism approach, coupled with the use of an expenditure-based allocation system, enables those organisations to address any such inefficiencies in a controlled and strategically planned manner. Such an approach is, in my view, more likely to be successful in avoiding the human behavioural problems created by the rationalism approach. The environment that exists in higher education institutions is one in which the built-in process of negotiation, bargaining and compromise among many legitimate participants in the policy arena is virtually the only way to get things done.

Having said this, I do accept that adverse circumstances may arise that some might argue would render the incrementalism approach untenable, for example, a significant reduction in resources. I would respond to this by suggesting that, even under these circumstances, an incrementalism approach to the identification of reductions in allocations is more likely to produce, in the case of organisations that operate in a social context, more acceptable outcomes than a rationalism approach that seeks to review the whole spectrum of activities on the basis of an evaluation that is likely to be incomplete at best.

9.5 Action research

Whilst this dissertation did not start life as a piece of action research, it developed into just such a piece of research. Action research is both a qualitative and quantitative research method, and one of the most widely cited definitions of action research is that of Rapoport (1970) who defined action research in the following way: “Action research aims to contribute both to the practical concerns of people in an immediate problematic situation and to the goals of social science by joint collaboration within a mutually acceptable ethical framework”.

The essence of action research is a simple two stage process:

- firstly, a diagnostic stage involving a collaborative analysis of the social situation by the researcher and the subjects of the research. Theories are formulated concerning the nature of the research domain; and,
- secondly, a therapeutic stage involving collaborative change. Changes are introduced and the effects are studied.

While this is a fairly conservative view of action research, it is useful because it stresses three things:

- that action research should always be grounded in the concerns of stakeholders and should be collaborative in nature;
- that it involves research as well as action; and,
- that it should contribute to our knowledge as well as work on particular issues.

The definition draws attention to the collaborative aspect of action research and to possible ethical dilemmas which might arise from its use. It also makes clear that action research is concerned not only with the application of social scientific knowledge, but also with adding to the body of knowledge. While action research has been accepted as a valid research method in applied fields, in information systems it has been mostly ignored. In an article published in 2004, Baskerville and Myers (Baskerville and Myers, 2004) suggested that action research aims to solve current practical problems while expanding scientific knowledge. Unlike other research methods, where the researcher seeks to study organisational phenomena but not to change them, the action researcher is concerned to create organisational change and simultaneously to study the process (Baburoglu and Ravn, 1992). It is strongly oriented towards collaboration and change involving both researcher and subject. It is an iterative process that capitalises on learning by both researchers and subjects within the context of the subjects' social

systems. It is a clinical method that puts Information Systems researchers in a helping role with practitioners.

9.6 The future

The implementation of the new model at my University has completed the first stage of the action research approach, but there now remains the need to undertake the second stage which involves a study of the effects of the new method. This will necessitate a review of the financial and human behaviour aspects, since my approach is based not only on the perceived advantages of an incrementalism approach to resource allocation, but also on the need for close interaction and collaboration between all of the stakeholders within the University in respect of the decision-making process.

In terms of the continued development of the expenditure-based resource allocation model within Brunel University, there remains a need to develop a process that will enable some of the activities that have been taken out of the former levy system to be assessed in terms of their effectiveness. One example is estate costs. These were levied according to the relative space being occupied, but this approach neither encouraged nor discouraged any area of activity from relinquishing space. There is a view that some system of penalty should be applied to those areas that are regarded as having excess space. This implies that it is possible to assess the amount of space that should actually be occupied by a particular area of activity; if this is the case, it should be possible to ensure that space is allocated to maximum effect without the need for the application of financial penalties through a levy system.

As the expenditure-based resource allocation method was only implemented at Brunel University this year, it is too early to draw a conclusion as to its effectiveness. I believe that such a model has to be adopted by higher education institutions and, I would suggest, establishments in other education sectors, if they are to stand any chance of being able to deliver their stated strategic objectives whilst maintaining financial stability and harmony amongst the academic and non-academic fraternities. In my opinion, the continued use of a mechanistic model, particularly one based on the use of national criteria, is an abrogation of

management responsibility for pro-active action in delivering strategic objectives. It will not facilitate the effective development of higher education, but will continue to produce potentially unwelcome and damaging outcomes.

References

- Anderson, J. (1991). Cognitive Architectures in a rational analysis. *Architectures for Intelligence*: 1991: pages 1 – 24.
- Audit Commission (2004a). Information and Data Quality in the NHS: Key Messages from three years of Independent Review. *Audit Commission*: 2004: pages 3 - 5.
- Audit Commission (2004b). Introducing payment by results: Getting the balance right for the NHS and taxpayers. *Audit Commission*: 2004.
- Audit Commission (2004c). Introducing payment by results: Getting the balance right for the NHS and taxpayers. *Audit Commission*: 2004: page 2.
- Audit Commission (2004d). Introducing payment by results: Getting the balance right for the NHS and taxpayers. *Audit Commission*: 2004: pages 3 - 4.
- Baburoglu, O.N. and Ravn, I. (1992). Normative Action Research. *Organization Studies*: (13.1), 1992: pages 19 - 34.
- Baskerville, R. and Myers, M.D. (2004). Special Issue on Action Research in Information Systems: Making IS Research Relevant to Practice – Foreword. *MIS Quarterly*: (28.3), 2004: pages 329 – 335.
- Bevan, A. (1945). Memorandum from the Minister of Health to the Cabinet. *Public Records Office*: CAB 129/3.
- BMA (2003). Briefing : measuring performance in the national health service. *British Medical Association*: April 2003.
- Carsberg, B. (1975a). Economics of Business Decisions: pages 17 - 18.
- Carsberg, B. (1975b). Economics of Business Decisions: pages 24 - 25.
- Carter, J. and Perrin, J. (1983). Budgeting and Management Accounting in the National Health Service.
- Ciborra, C. (1996). The platform organization: Recombining strategies, structures, and surprises. *Organization Science*: 7(2), pages 103 – 118.
- Cooper, R. (1988a). The Rise of Activity Based Costing – Part One: What is an Activity Based Costing System? *Journal of Cost Management*: Vol. 2, No. 2: pages 45 – 54.
- Cooper, R. (1988b). The Rise of Activity Based Costing – Part Two: When Do I Need an Activity Based Costing System? *Journal of Cost Management*: Vol. 2, No. 3: pages 41 – 48.
- Cooper, R. (1989a). The Rise of Activity Based Costing – Part Three: How Many Cost Drivers Do You Need, and How Do You Select Them? *Journal of Cost Management*: Vol. 2, No. 4: pages 34 – 46.
- Cooper, R. (1989b). The Rise of Activity Based Costing – Part Four: What Do Activity Based Cost Systems Look Like? *Journal of Cost Management*: Vol. 3, No. 1: pages 38 – 49.

- Cooper, R. (1990). Elements of Activity Based Costing. *Emerging Practices in Cost Management*. Boston: Warran Gorham & Lamont, 1990.
- Cooper, R. and Kaplan, R.S. (1988). Measure Cost Right: Make the Right Decisions. *Harvard Business Review*: September – October 1988: pages 96 – 102.
- De Geus, A. (1988). Planning as Learning. *Harvard Business Review*: March - April, 1988.
- DHSS (1976). Sharing Resources for Health in England: Report of the Resource Allocation Working Party.
- Diesing, P. (1962a). Reason in Society: Five Types of Decisions and their Social Conditions.
- Diesing, P. (1962b). Reason in Society: Five Types of Decisions and their Social Conditions: page 3.
- Diesing, P. (1962c). Reason in Society: Five Types of Decisions and their Social Conditions: page 240.
- DoH, 2002. NHS Foundation Hospitals to be freed from Whitehall control. *Department of Health Press Release*: May 2002, 2002/0240.
- DoH, 2006. Hewitt Announces Action to Turnaround NHS Finances. *Department of Health Press Release*: January 2006, 2006/0023.
- Dror, Y. (1964). Muddling Through: Science or Inertia. *Public Administration Review*: Volume 24, No. 3, September 1964: pages 153 - 157.
- Goddard, M. et al (1998). The NHS performance framework: Taking account of economic behaviour. *Centre for Health Economics Discussion Paper 158*. University of York: 1998.
- Greenwood, R. et al (1977). Incremental Budgeting and the Assumption of Growth – Wright, Maurice (ed): *Public Spending Decisions: growth and restraint in the 1970s*: George Allen & Unwin, London, Boston: pages 25 - 48.
- Hartwig, R. (1978). Rationality and the Problems of Administrative Theory. *Public Administration*: Volume 56, No. 2, Summer 1978: pages 159 - 179.
- HEFCE (2003). HEFCE Strategic Plan 2003-08. *HEFCE Circular 03/35*: pages 21 – 25.
- HEFCE (2005a). Funding higher education in England: How HEFCE allocates its funds. *HEFCE Circular July 2005/34*: page 4.
- HEFCE (2005b). Funding higher education in England: How HEFCE allocates its funds. *HEFCE Circular July 2005/34*: page 6.
- HESA (2006). *HESA Press Release PR98*: 24 April 2006.
- Higher Education Act 2004 (2004). *The Stationery Office Limited*: Part 3.
- Hopwood, A. (1974). Accounting and Human Behaviour: pages 54 - 55.
- HSC (1998a). Information for Health: An Information Strategy for the Modern NHS. *NHS Executive Health Service Circular 1998/168*: page 3.

- HSC (1998b). Information for Health: An Information Strategy for the Modern NHS. *NHS Executive Health Service Circular 1998/168*: page 4.
- Jelinek, M. (1979). Institutionalising Innovation: A Study of Organisational Learning Systems. 1979, page 139.
- Johnson, H.T. (1990). Activity Management: Reviewing the Past and Future of Cost Management. *Journal of Cost Management*: Vol. 3, No. 4, Winter 1990: pages 4 – 7.
- Klein, R. and Day, P. (2001). Auditing the auditors: Audit in the National Health Service. *Nuffield Trust*: 2001.
- Lindblom, C.E. (1959). The Science of Muddling Through. *Public Administration Review*: Volume 19, No. 2, Spring 1959: pages 79 - 88.
- Magee, C.C. and Osmolski, R.J. (1979). Manual of procedures for speciality costing. *University College, Cardiff*.
- Mintzberg, H. (1994). The Fall and Rise of Strategic Planning. *Harvard Business Review*: January- February 1994.
- Mouzelis, N.P. (1967). Organisation and Bureaucracy: An Analysis of Modern Theories: page 137.
- NAO, (2001). Inappropriate adjustments to NHS waiting lists. *HC 452 Session 2001-2002*: 19 December 2001.
- NAO, (2005a). Financial Management in the NHS: NHS (England) Summarised Accounts 2003-04. *HC 60-1 Session 2005-06*: 24 June 2005: page 1.
- NAO, (2005b). Financial Management in the NHS: NHS (England) Summarised Accounts 2003-04. *NAO Press Release*: 24 June 2005.
- NHS (2000). The NHS Plan: A Plan for investment: A Plan for reform. *Cm 4818-1*: July 2000.
- NHS (2002a). Delivering the NHS Plan. *Cm 5503*: April 2002: pages 4 - 5.
- NHS (2002b). Delivering the NHS Plan. *Cm 5503*: April 2002: page 10.
- NHS Confederation, (2003). Select Committee on Public Administration Minutes of Evidence. *Memorandum by NHS Confederation*: PST 13, 17 January 2003.
- ONS, (2006). UK Economic Accounts Quarter 4 2005. *Office for National Statistics*: page 10, Table A2.
- Pepper, S.C. (1958). The Sources of Value: pages 613 - 616.
- Porter, M. (1980). Competitive Strategy: Techniques for Analysing Industries and Competitors. 1980.
- Porter, M. (1987). Corporate strategy: the state of strategic thinking. *The Economist*: 23 May 1987.
- Quinn, J.B. (1980a). Strategies for Change: Logical Incrementalism: page 14.

- Quinn, J.B. (1980b). Strategies for Change: Logical Incrementalism: page 16.
- Quinn, J.B. (1980c). Strategies for Change: Logical Incrementalism: pages 16 - 17.
- Quinn, J.B. (1980d). Strategies for Change: Logical Incrementalism: pages 18 - 19.
- Quinn, J.B. (1980e). Strategies for Change: Logical Incrementalism: page 58.
- Ramsden, B. (2001). Patterns of Higher Education Institutions in the United Kingdom.
- Rapoport, R. (1970). Three dilemmas in action research. *Human Relations*: Volume 23, No. 6: pages 499 – 513.
- Selznick, P. (1957). Leadership in Administration: A Sociological Interpretation. *Harper & Row*: 1957.
- Simon, H.A. (1956). Rational choice and the structure of the environment. *Psychological review*: 63: pages 129 – 138.
- Simon, H.A. (1957a). Administrative Behavior: pages 8 - 11.
- Simon, H.A. (1957b). Models of Man: Social and Rational.
- Simon, H.A. and Newell, A. (1976). Computer science as empirical inquiry: symbols and search. *Communications of the ACM*: Volume 19, Issue 3, March 1976: pages 113 – 126.
- Simon, H.A. (1991). Cognitive Architectures in a rational analysis: comment. *Architectures for Intelligence*: 1991: pages 25 – 39.
- Study Group on Local Authority Management Structures (1972): The New Local Authorities management and structure. *H.M.S.O.*: pages 12 -13.
- Taylor, F.W. (1911). The Principles of Scientific Management.
- Universities UK (2004). Achieving our vision. *2004 Spending Review Submission for England and Northern Ireland*: pages 8 – 9.
- Wildavsky, A. (1978). Policy Analysis is what Information Systems are Not. *Accounting, Organisations and Society*: Volume 3, No. 1, 1978: pages 77 – 88.

Declaration

The following papers prepared by me have not been peer reviewed in academic journals or at conferences, but nevertheless have been reviewed mercilessly in the 'cut and thrust' world of University politics through many committees and meetings:

- 1 Financial and Management Reporting
Finance Committee, 29 November 2001, Reference FC/1538
- 2 Budget Setting and Monitoring Process
Strategic Planning and Resource Committee (SPARC), 29 January 2002,
Reference SPARC/1528
- 3 Departmental Plans
SPARC, 30 April 2002, Reference SPARC/1546
- 4 Financial Strategy
SPARC, 3 December 2002, Reference SPARC/1589
- 5 Resource Allocation Model
SPARC, 3 December 2002, Reference SPARC/1590
- 6 Budget Round 2003/04
SPARC, 10 June 2003, Reference SPARC/1605
- 7 A Review of the Resource Allocation Model
Paper to Vice Principal and Managing Director, 27 November 2003
- 8 Resource Allocation – A New Beginning
Deans' Meeting, 23 February 2004
- 9 Budget Round 2004/05
SPARC, 24 February 2004, Reference SPARC/1618

- 10 Expenditure Based Budgets 2005-06 and Beyond
Deans' Meeting, 20 July 2004
- 11 Expenditure Based Budgets
SPARC, 30 November 2004, Reference SPARC/1634
- 12 Budget Proposals 2005/06
Finance Committee, 16 June 2005, Reference FC/1626

Resource allocation questionnaire sent to higher education institutions

1 Is your Resource Allocation Model a student number income-distribution model based primarily on HEFCE's funding allocation formula?

2 If the answer to Question 1 is Yes, do you believe that such a model facilitates the delivery of the university's strategic objectives?

University	Question 1		Question 2	
	Y	N	Y	N
1	1			1
2		1		
3	1			
4		1		
5	1		1	
6		1		
7	1		1	
8	1		1	
9	1		1	
10	1		1	
11	1		1	
12		1		
13	1		1	
14	1		1	
15	1			1
16	1		1	
17		1		
18	1		1	
19	1		1	
20	1			1
21	1		1	
22	1			1
23	1		1	
24		1		
25		1		
26	1		1	
27	1		1	
28		1		
29		1		
30	1			1
31	1		1	
32	1		1	
33	1		1	
34		1		
35	1		1	
36	1		1	
37	1		1	
38		1		
39		1		
40	1			



1 Is your Resource Allocation Model a student number income-distribution model based primarily on HEFCE's funding allocation formula?

2 If the answer to Question 1 is Yes, do you believe that such a model delivery of the university's strategic objectives?

University	Question 1		Question 2	
	Y	N	Y	N
			1	
41		1		1
42	1			1
43	1		1	
44	1		1	
45	1		1	
46		1		
47	1		1	
48	1		1	
49	1		1	
50	1		1	
51	1		1	
52	1		1	
53		1		
54	1			1
55	1			1
56	1			1
57	1		1	
58		1		
59		1		
60	1		1	
61		1		
62	1			1
63	1			1
64	1		1	
65	1			1
66	1		1	
67	1		1	
68		1		
69	1		1	
70	1			1
71	1			1
72	1		1	
73		1		
74	1		1	
75	1			1
76	1		1	
77		1		
78		1		
79	1		1	
80	1			1
81	1		1	
TOTAL	59	22	42	17

BRUNEL UNIVERSITY
RESOURCE ALLOCATION 2004/2005

SUMMARY OF NET ALLOCATIONS - ACTUAL MODEL

Budget Centre	Gross allocations £	Academic service levies £	Staff-related levies £	Student-related levies £	Stud.-rel. levies (excl. contracts) £	Space-related levies £	Sub Total £	Research Levy 1% £	Transfers added back £	Net allocations £
Faculty of Arts & Social Sciences										
School of International Studies	1,237,908	240,330	16,941	157,218	31,052	99,634	692,733	6,927		685,805
School of Business & Management	3,724,227	573,742	47,630	425,505	84,042	265,234	2,328,075	23,281		2,304,794
Economics and Finance	1,927,313	263,698	29,017	208,772	41,235	207,971	1,176,620	11,766		1,164,854
English	1,014,123	200,358	12,100	138,189	27,294	61,475	574,706	5,747		568,959
Human Sciences	3,140,819	381,139	42,001	228,632	45,157	246,254	2,197,635	21,976		2,175,659
Law	1,620,266	259,173	15,786	165,748	32,737	99,822	1,047,000	10,470		1,036,530
Language Centre	169,726	17,732	4,386	14,084	2,782	46,873	83,868	839	110,000	193,029
Performing Arts	2,096,349	340,482	22,402	192,461	38,013	188,290	1,314,702	13,147		1,301,555
Faculty total	14,930,730	2,276,655	190,264	1,530,609	302,311	1,215,554	9,415,338	94,153	110,000	9,431,185
Faculty of Life Sciences										
Biological Sciences	1,697,603	197,480	40,099	101,869	20,120	436,986	901,048	9,010		892,038
Education	3,102,971	414,883	33,412	302,703	59,787	295,800	1,996,386	19,964	230,000	2,206,422
Geography and Earth Sciences	679,829	97,397	13,255	53,594	10,585	118,939	386,059	3,861		382,198
Health and Social Care	6,527,418	590,247	77,785	450,649	45,209	389,090	4,974,437	49,744	218,000	5,142,692
Sport Sciences	2,154,384	231,751	22,322	186,050	36,747	175,886	1,501,628	15,016		1,486,612
Faculty total	14,162,205	1,531,758	186,873	1,094,866	172,448	1,416,701	9,759,558	97,596	448,000	10,109,962
Fac. of Tech & Info. Systems										
Design and Systems Engineering	4,488,344	347,502	65,836	263,411	52,026	643,219	3,116,350	31,163	0	3,085,186
Electronic and Computer Engineering	5,332,933	407,096	63,504	315,464	62,307	556,763	3,927,799	39,278		3,888,521
Information Systems & Computing	6,245,554	439,039	67,834	363,423	71,780	382,818	4,920,659	49,207		4,871,452
Mathematical Sciences	2,044,871	194,554	25,618	124,424	24,575	172,723	1,502,977	15,030		1,487,947
Mechanical Engineering	3,328,147	268,885	37,074	190,107	37,548	512,518	2,282,015	22,820		2,259,195
Centre for Environmental Research	413,991	24,987	4,777	17,306	3,418	53,601	309,903	3,099		306,804
ETC	-2,910	707	3,097	0	0	39,896	-46,609	-466		-46,143
Faculty total	21,850,931	1,682,770	267,739	1,274,134	251,654	2,361,538	16,013,095	160,131	0	15,852,964
The Henley Management College	31,338	12,627	0	15,625	3,086	0	0	0		0
Materials Teaching Unit	20,895	214	0	0	0	0	20,681			20,681
	50,996,100	5,504,024	644,876	3,915,235	729,500	4,993,793	35,208,671	351,880	558,000	35,414,792

B - 1

Annex B

**BRUNEL UNIVERSITY
RESOURCE ALLOCATION 2004/2005**

SUMMARY OF NET ALLOCATIONS - NO LIBRARY OR MEDIA SERVICES LEVIES

Budget Centre	Gross allocations	Academic service levies	Staff-related levies	Student-related levies	Stud.-rel. levies (excl. contracts)	Space-related levies	Sub Total	Research Levy 1%	Transfers added back	Net allocations
	£	£	£	£	£	£	£	£	£	£
Faculty of Arts & Social Sciences										
School of International Studies	1,152,413	78,171	16,941	157,218	31,052	99,634	769,397	7,694		761,703
School of Business & Management	3,475,603	217,618	47,630	425,505	84,042	265,234	2,435,574	24,356		2,411,219
Economics and Finance	1,798,464	105,970	29,017	208,772	41,235	207,971	1,205,499	12,055		1,193,444
English	944,165	69,397	12,100	138,189	27,294	61,475	635,710	6,357		629,353
Human Sciences	2,923,803	114,549	42,001	228,632	45,157	246,254	2,247,210	22,472		2,224,738
Law	1,510,435	83,278	15,786	165,748	32,737	99,822	1,113,065	11,131		1,101,934
Language Centre	158,514	7,007	4,386	14,084	2,782	46,873	83,381	834	110,000	192,548
Performing Arts	1,951,962	96,753	22,402	192,461	38,013	188,290	1,414,043	14,140		1,399,903
Faculty total	13,915,360	772,743	190,264	1,530,609	302,311	1,215,554	9,903,879	99,039	110,000	9,914,840
Faculty of Life Sciences										
Biological Sciences	1,579,050	50,885	40,099	101,869	20,120	436,986	929,090	9,291		919,799
Education	2,895,355	160,298	33,412	302,703	59,787	295,800	2,043,355	20,434	230,000	2,252,922
Geography and Earth Sciences	632,818	26,714	13,255	53,594	10,585	118,939	409,731	4,097		405,634
Health and Social Care	6,083,317	219,820	77,785	450,649	45,209	389,090	4,900,762	49,008	218,000	5,069,754
Sport Sciences	2,005,261	94,488	22,322	186,050	36,747	175,886	1,489,768	14,898		1,474,871
Faculty total	13,195,801	552,205	186,873	1,094,866	172,448	1,416,701	9,772,707	97,727	448,000	10,122,980
Fac. of Tech & Info. Systems										
Design and Systems Engineering	4,187,581	144,588	65,836	263,411	52,026	643,219	3,018,501	30,185	0	2,988,316
Electronic and Computer Engineering	4,971,481	165,019	63,504	315,464	62,307	556,763	3,808,424	38,084		3,770,340
Information Systems & Computing	5,803,108	189,262	67,834	363,423	71,780	382,818	4,727,990	47,422		4,680,569
Mathematical Sciences	1,902,126	64,508	25,618	124,424	24,575	172,723	1,490,278	14,903		1,475,375
Mechanical Engineering	3,102,069	106,747	37,074	190,107	37,548	512,518	2,218,075	22,181		2,195,894
Centre for Environmental Research	385,520	10,827	4,777	17,306	3,418	53,601	295,592	2,956		292,636
ETC	-2,910	0	3,097	0	0	39,896	-45,903	-459		-45,444
Faculty total	20,348,974	680,951	267,739	1,274,134	251,654	2,361,538	15,512,957	155,271	0	15,357,686
The Henley Management College	25,484	6,773		15,625	3,086		0			0
Materials Teaching Unit	19,285	0	0	0	0	0	19,285			19,285
	47,504,905	2,012,672	644,876	3,915,235	729,500	4,993,793	35,208,829	352,037	558,000	35,414,792

C-1

**BRUNEL UNIVERSITY
RESOURCE ALLOCATION 2004/2005**

SUMMARY OF NET ALLOCATIONS - NO LIBRARY, MEDIA SERVICES OR ACADEMIC SERVICE LEVIES

Budget Centre	Gross allocations	Academic service levies	Staff-related levies	Student-related levies	Stud.-rel. levies (excl. contracts)	Space-related levies	Sub Total	Research Levy 1%	Transfers added back	Net allocations
	£	£	£	£	£	£	£	£	£	£
Faculty of Arts & Social Sciences										
School of International Studies	1,103,133	0	16,941	157,218	31,052	99,634	798,288	7,983		790,305
School of Business & Management	3,332,279	0	47,630	425,505	84,042	265,234	2,509,869	25,099		2,484,770
Economics and Finance	1,724,185	0	29,017	208,772	41,235	207,971	1,237,190	12,372		1,224,818
English	903,844	0	12,100	138,189	27,294	61,475	664,785	6,648		658,137
Human Sciences	2,798,703	0	42,001	228,632	45,157	246,254	2,236,659	22,367		2,214,292
Law	1,447,117	0	15,786	165,748	32,737	99,822	1,133,024	11,330		1,121,694
Language Centre	152,051	0	4,386	14,084	2,782	46,873	83,925	839	110,000	193,086
Performing Arts	1,868,741	0	22,402	192,461	38,013	188,290	1,427,575	14,276		1,413,300
Faculty total	13,330,053	0	190,264	1,530,609	302,311	1,215,554	10,091,315	100,913	110,000	10,100,402
Faculty of Life Sciences										
Biological Sciences	1,510,714	0	40,099	101,869	20,120	436,986	911,640	9,116		902,524
Education	2,775,657	0	33,412	302,703	59,787	295,800	2,083,955	20,840	230,000	2,293,115
Geography and Earth Sciences	605,722	0	13,255	53,594	10,585	118,939	409,349	4,093		405,256
Health and Social Care	5,827,292	0	77,785	450,649	45,209	389,090	4,864,557	48,646	218,000	5,033,912
Sport Sciences	1,919,305	0	22,322	186,050	36,747	175,886	1,498,300	14,983		1,483,317
Faculty total	12,638,690	0	186,873	1,094,866	172,448	1,416,701	9,767,801	97,678	448,000	10,118,123
Fac. of Tech & Info. Systems										
Design and Systems Engineering	4,014,176	0	65,836	263,411	52,026	643,219	2,989,684	29,897	0	2,959,787
Electronic and Computer Engineering	4,763,116	0	63,504	315,464	62,307	556,763	3,765,078	37,651		3,727,427
Information Systems & Computing	5,551,424	0	67,834	363,423	71,780	382,818	4,665,569	46,845		4,618,723
Mathematical Sciences	1,819,838	0	25,618	124,424	24,575	172,723	1,472,498	14,725		1,457,773
Mechanical Engineering	2,971,732	0	37,074	190,107	37,548	512,518	2,194,486	21,945		2,172,541
Centre for Environmental Research	369,106	0	4,777	17,306	3,418	53,601	290,005	2,900		287,104
ETC	-2,910	0	3,097	0	0	39,896	-45,903	-459		-45,444
Faculty total	19,486,482	0	267,739	1,274,134	251,654	2,361,538	15,331,416	153,504	0	15,177,912
The Henley Management College	18,709	0		15,625	3,086		-3			-3
Materials Teaching Unit	18,357	0	0	0	0	0	18,357			18,357
	45,492,291	0	644,876	3,915,235	729,500	4,993,793	35,208,886	352,095	558,000	35,414,791

BRUNEL UNIVERSITY
RESOURCE ALLOCATION 2004/2005

SUMMARY OF NET ALLOCATIONS - COMPARISON OF OUTCOMES

Budget Centre	RAM Actual	RAM no Library/Media			RAM no Library, Media or Academic Services		
	Net allocations £	Net allocations £	Difference £	Difference %	Net allocations £	Difference £	Difference %
Faculty of Arts & Social Sciences							
School of International Studies	685,805	761,703	75,897	11.1%	790,305	104,500	15.2%
School of Business & Management	2,304,794	2,411,219	106,425	4.6%	2,484,770	179,976	7.8%
Economics and Finance	1,164,854	1,193,444	28,590	2.5%	1,224,818	59,964	5.1%
English	568,959	629,353	60,393	10.6%	658,137	89,178	15.7%
Human Sciences	2,175,659	2,224,738	49,079	2.3%	2,214,292	38,633	1.8%
Law	1,036,530	1,101,934	65,404	6.3%	1,121,694	85,164	8.2%
Language Centre	193,029	192,548	-481	-0.2%	193,086	57	0.0%
Performing Arts	1,301,555	1,399,903	98,348	7.6%	1,413,300	111,745	8.6%
Faculty total	9,431,185	9,914,840	483,655	5.1%	10,100,402	669,217	7.1%
Faculty of Life Sciences							
Biological Sciences	892,038	919,799	27,762	3.1%	902,524	10,486	1.2%
Education	2,206,422	2,252,922	46,499	2.1%	2,293,115	86,693	3.9%
Geography and Earth Sciences	382,198	405,634	23,435	6.1%	405,256	23,058	6.0%
Health and Social Care	5,142,692	5,069,754	-72,938	-1.4%	5,033,912	-108,781	-2.1%
Sport Sciences	1,486,612	1,474,871	-11,741	-0.8%	1,483,317	-3,295	-0.2%
Faculty total	10,109,962	10,122,980	13,018	0.1%	10,118,123	8,161	0.1%
Fac. of Tech & Info. Systems							
Design and Systems Engineering	3,085,186	2,988,316	-96,870	-3.1%	2,959,787	-125,399	-4.1%
Electronic and Computer Engineering	3,888,521	3,770,340	-118,181	-3.0%	3,727,427	-161,094	-4.1%
Information Systems & Computing	4,871,452	4,680,569	-190,884	-3.9%	4,618,723	-252,729	-5.2%
Mathematical Sciences	1,487,947	1,475,375	-12,572	-0.8%	1,457,773	-30,175	-2.0%
Mechanical Engineering	2,259,195	2,195,894	-63,301	-2.8%	2,172,541	-86,655	-3.8%
Centre for Environmental Research	306,804	292,636	-14,169	-4.6%	287,104	-19,700	-6.4%
ETC	-46,143	-45,444	699	-1.5%	-45,444	699	-1.5%
Faculty total	15,852,964	15,357,686	-495,278	-3.1%	15,177,912	-675,052	-4.3%
The Henley Management College	0	0	0	346.4%	-3	-3	-13659.0%
Materials Teaching Unit	20,681	19,285	-1,395	-6.7%	18,357	-2,324	-11.2%
	35,414,792	35,414,792	0	0.0%	35,414,791	-0	0.0%