AN EXPLORATORY STUDY OF ACCOUNTABILITY

IN THE CONTEXT OF

CONSTRUCTION PROJECT MANAGEMENT

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ABSTRACT

The research is directed essentially at Project Management (PM) in property development and construction, and serves to explore the application of the Accountability concept within this context. In broad terms, it comprises an examination of PM - in terms of the role, the arrangement, and its participants - from an accountability perspective. For the purposes of the study, accountability is treated as the "answerability for one's responsibility".

Drawing extensively from sources outside the field of PM, a conceptual framework of accountability is developed. This allows a shift in attention from single point responsibility towards management accountability of the PM role, and forms the basis for addressing PM through three constituent sub-concepts - "project accountability", "professional accountability", and "legal accountability". Project accountability is tied to the achievement of the project's agreed parameters and is considered more powerful than the idea of project authority. Professionalisation of PM is examined against the proposition of an increasing professional accountability. An assessment of the areas of potential liability in PM completes the examination through an analysis of legal accountability.

The empirical portion of the study explores participant perception of accountability relating to the project manager, the PM arrangement, and their own positions. Based on field survey data obtained through a self-administered questionnaire to a sample of 140 project participants from 33 PM arrangements, findings from the research data indicate: (1) a general agreement among participant groups in their overall perception of accountability, (2) that in-house project managers are perceived as more accountable than external project managers, (3) that the level of participants' involvement is positively related to their accountability and to their level of exposure to professional negligence, and (4) a positive correlation between a PM arrangement's accountability and effectiveness, and negative correlations between both these and role ambiguity.

In terms of contribution, the study has benefited both the areas of PM and accountability. For PM, the accountability perspective has served to bring to the forefront and to clarify a very pertinent issue relating to management performance - the extent of its answerability. For accountability, the PM arrangement as a temporary organisation has provided a most ideal field environment for its further exploration. The
group processes and interactions which typify a PM arrangement create an excellent scenario for studying patterns of accountability in the structural sense, and attitudes towards accountability and its distribution in the behavioural sense. In view of the psychological and experimental nature of much of the work on accountability that has hitherto prevailed, this additional empirical 'realism' which the concept achieves makes a valuable contribution.

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**Keywords:** Accountability, Construction Project Management, Project Manager, Professionalisation, Effectiveness.
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CHAPTER 1
INTRODUCTION

This thesis presents a study of project management from the perspective of the accountability concept.

Given that a primary objective of organising work in terms of a project is in fact to demarcate and rest accountability for it on a specific project group dedicated solely to its implementation and achievement, any apparent remoteness between accountability and project management is immediately removed.

To set the study in proper context, a broad outline of what project management encompasses is useful. The development of the project management concept is considered one of the most significant contributions to management theory and practice. It is generally accepted as a specialised branch of management in so far as it focuses on a limited set of activities which make up a project. It has also been regarded as the management of change as opposed to the management of the status quo which general management entails (Barnes, 1988). Essentially, if a project consists of a task with a defined end target, project management is considered as the management of the change process required to achieve that end target within agreed parameters (Morris and Delapp, 1979). The underlying theme is that a project comprises a defined change, this change being realised within a specified time span. To the extent that this time period is comparatively shorter than the longer term view which management of non-project activities entails, the expressed dichotomy between 'change' and 'status quo' may be valid. Otherwise, general management in the context of organisations, in broad terms, is in fact concerned with bringing the organisation from its present state to some future state. In this sense, there is clearly change. The reference to project management as the management of change must therefore keep in perspective the view that all other management is not necessarily management of the status quo. Tuman (1989) offers us an excellent and integrated treatment of this change phenomenon. Change is presented as a project with the objective of bringing the organisation from its present state to some future state, and organisations, in adjusting their structure, processes, procedures and staff to deal with a changing environment, will find increasingly that much of what they
have to accomplish will resemble a project (p.721).

In parallel with this view of project management as the management of change is the growing acceptance of a required expansion in the emphasis of project management, towards a broader 'management of projects'.

The traditional definition of project management, based on accomplishment of a project to specified terms, is considered a narrow one, and has tended to limit its role unnecessarily. Morris (1988) stresses the need to overcome this restriction and suggests the use of the term 'the management of projects' rather than project management - "The former has as its concern the place of the project in business, in society - how it is designed and appraised and how implemented; how the process of redefinition is accomplished if and when necessary. The latter, project management, is the accomplishment of a defined task with less concern over external or strategic matters" (pp.801-2). In addition, research on cost and schedule overruns have shown that their causes are, in most cases, strategic in nature or external to the projects. These factors, Morris emphasises, are seldom dealt with sufficiently in "the standard corpus of writing or teaching on project management" (p.802). Coupled with this is the increasing realisation that traditional measures of project effectiveness and success need to be broadened in keeping with industry demands. In sum therefore, an enlargement of the conception of project management towards a broader-based 'management of projects' is desirable.

In the sense of this enlargement, project management appears to be coming full circle in a unique way. Its earlier stages concentrated on development as a specialised form of general management. Although the current expansion is towards a broader-based and more strategic approach, with increasing emphasis on its human and behavioural aspects (or what Barnes, 1988, refers to as the 'timeless aspects'), what is being witnessed is not a reversal in trend but the commencement of a new cycle of development. If general management provided the groundwork for much of project management development, it is now the turn of project management, through its more demanding application of the management principles in the project setting, to mould and shape management thinking of the future.
But lest project managers are accused of perpetuating project management practice and its accompanying terminology to semantic exhaustion, it is pertinent and instructive to point out that, in dealing with and responding to change, the field of project management is itself constantly in transition. It keeps up with the state of industry and technology, and more importantly, with developments in the very crucial core area of its function, that of human resources. Arguably, it may be said that knowledge in project management always lags one step behind, by virtue of this adoptive stance. A more accurate view is prescribed. Through its adaptive approach in encountering change, it may well lead in the knowledge transfer, as projects take on a more active role in industry.

According to a recent report, there is an observable trend occurring among the most dynamic and innovative companies towards project management. After positive experimentation with project management, these companies have found it useful to make a decisive shift towards 'project based management'.

Irrespective of whether we speak of project management, management of projects, management by projects, or project based management, they are all variations of a similar theme, and the one common feature that ties all of them together is the existence of a project-type activity. Not only are organisations recognising the immense benefit afforded by project management; they are also realising that increasingly more of their work can be usefully organised as separate definable projects.

In contrast with project management, accountability as a concept has been a much less prominent and researched area of study. Its position has tended to take second stage behind the more accustomed concepts in management theory - authority and responsibility. This appurtenant view of accountability is considered as severely restrictive. Its real value lies in its capability for an almost universal application to all forms of human performance. As a central guiding mechanism governing work activity, the concept holds immense benefit for the clarification of individual and group conduct. Accountability for one's actions is clearly a more demanding requirement than mere responsibility. It is with this in mind that the concept of accountability has been chosen as the basis for our investigation of project management.
Within the whole scheme of project management, the central direction of the thesis takes the view that effective project management must be founded on thorough accountability and that in the absence of this, any measure of successful project delivery is at best arbitrary and limited. The rationale is that performance evaluation requires clear and established accountability among all parties.

In particular, the thesis is directed at project management in the development and construction industry, and at project management that is identified as a separate function. Hence, the exercise of a general management function by any one of the construction-related professions without the creation of a separately identified project manager role does not feature in the work. The main unit of investigation will be the project management arrangement which comprises the project manager, the professional consultants, and the contractor.

Project management has been viewed, among other interpretations, as the management of expectations. Accountability, as shall be observed in a later section, is also viewed as a strategy for managing expectations. The similarity in concerns is particularly meaningful to the study. Although the choice of project management and accountability as the major twin concepts of the study was not based on this, the striking coincidence which has come to light through the course of the study gives added support to the practical relevance and affinity between the two concepts. The expectations in project management have to do with both the end and the means; there are expectations as to the end results of the project as well as to the contribution of all project participants. Within accountability, it is the expectations of the parties in the accountability relationship that have to be managed. A very cogent commonality in purpose between the two concepts is demonstrated by this interpretation.

As a guide to the overall direction of the research, Fig.1.1 (on the following page) provides a flow sequence of the chapters that will form the structure of the thesis. The study can be seen as commencing from two broad fronts, the first consisting of Chapters 2 and 3, and the second consisting of Chapters 4 and 5.
Figure 1.1: Research Structure
Chapter 2 comprises the main literature review of project management. It traces very broadly how the concept has developed in response to changing demands. The early impetus for projectisation, and particularly the crucial role of the defence services in this initiative, are briefly examined. Through evolution of the matrix in meeting and dealing with increasing task complexity and varying environmental conditions, project management is seen as providing the appropriate organisational response. Systems thinking is also recognised as lending support to the growth of project management. The treatment of a project's composition and the underlying features inherent in the task of project managing completes the Chapter to give a structural background of project management.

Chapter 3 narrows the general scope of project management towards its application in our field of interest - that of property development and construction. With the view of overcoming any undue or artificial restriction of the discussion to construction project management, the term 'project management in development and construction' is adopted due to its wider coverage. This comparatively more encompassing role is in line with the study's vision of what project management entails, at least within the construction industry. With this in mind, a brief treatment of the property development process is considered beneficial in highlighting the range of activities that require to be managed within this overall process. In this context, the broader issue of management in the U.K. construction industry is examined through a review of past major studies and reports which draw attention to management deficiencies. The functions and activities of project management are also given extensive and detailed treatment. This highlights both the breadth of the role in terms of the range of activities, and the differing levels of involvement that are possible with respect to these activities. Owing to the very significant role played by project management in the NHS and the PSA, part of the Chapter documents the more important features of its application in these two areas of the public sector.

Chapter 4 commences the second broad front to our study by way of an in-depth review of accountability. The term, the issue, and the whole concept of accountability are examined in a variety of sources. From the management literature, a case is made out for establishing the concept separately from its more usual counterparts of authority and responsibility. The application of the concept, in one form or another, is surveyed extensively in the areas of educational administration,
psychology, public administration, and financial and corporate governance. Its proximity to certain aspects of responsibility attribution studies is also examined. In the project management field, authority studies provide the major sources of information pertaining to accountability. The development and presentation of accountability in the form of an authority-responsibility matrix offers new meaning to the concept. A key part is additionally drawn up for the concept as an indispensable link between attribution theory and role theory. This perspective points to a general deficiency in organisational studies to deal with the issue of accountability. As preparation for further treatment in the next Chapter, the study of accountability in the context of project management is mapped out in the form of three constituent sub-concepts - 'project accountability', 'professional accountability' and 'legal accountability'.

Chapter 5 carries further the basic ideas concerning accountability and develops a conceptual model for application in the project management context. This conceptual model is realised in two stages - (1) development of a conceptual definition of accountability and a basic four-point framework for accountability consideration, and (2) an expansion of the basic framework arising from consideration of a specific context in which the concept is to be utilised. The idea of 'project authority' is narrow in its concern, and in place of it, the notion of 'project accountability' is introduced. A model of the project management process and its examination in accountability terms brings together in this Chapter the two concepts of project management and accountability.

Chapter 6 reports on our attempt to submit some of the ideas developed from the earlier Chapters to an empirical investigation. An empirical research model, coupled with a set of hypotheses, forms the basis of an exploratory field study aimed at discovering relationships among a number of variables. The data collection utilises a self-administered survey questionnaire by a sample of 140 respondents distributed over 33 project management arrangements. The findings present some insight into participant perception of accountability of project managers and project management arrangements, and establish a number of relationships tied to project management structure. In particular, a relationship is established among perceived accountability, effectiveness and role ambiguity of project management arrangements.
Chapter 7 comprises an examination of the process of professionalisation and how this holds implications for project management through an increasing 'professional accountability'. The main elements of a profession are discussed against the stages that characterise an occupation's professionalisation process. Professional accountability is observed to be an inadvertent result of such a development. Arising from this basic framework, the extent of professionalisation of project management is examined. Additional empirical data is also offered through a participant perception of the degree of professionalisation in the project management role.

Chapter 8 addresses the issue of 'legal accountability'. A review of the law of professional negligence forms the basis for exploring the potential liability in project management. The nature of the professional task in terms of its required judgement, its dependency on others, and the degree of innovation, is examined in the light of the project management role. The terms of professional engagement which comprise the retainer are briefly and generally discussed. The standard of skill and care, essentially a cornerstone in professional negligence, is devoted extensive treatment. Within this context, the role of project management is generally undertaken by professionals who belong to or have come from some other source discipline; the implications arising from this uniqueness are accordingly examined. Joint liability is also investigated under the notion of shared accountability.
NOTES


REFERENCES


CHAPTER 2
PROJECT MANAGEMENT

2.1 INTRODUCTION

Chapter 2 comprises an in-depth review of the literature directly relating to project management. It is intended not so much as a comprehensive and exhaustive account of the evolution and development of project management, but rather as a treatment of how the concept metamorphosised under changing environmental demands. While project management as a field of study is undoubtedly wide, an attempt will be made to demarcate its exact scope which forms the focus of major concern in this study. This narrowing in vision will become more apparent as the section unfolds and by its end will have set the stage for introducing the concept of accountability in the project management context.

The notion of "projects" and the accompanying concept of "project management" have been formally with us for the last 20-30 years. Their application has, over the years, seen an increasing usage and relevance in a variety of fields. The origins of project management thinking will be briefly examined in order to trace the changing emphases over the years. It is generally recognised that the emphasis on techniques of project management in its early days has now given way to a more conceptual approach that is evident in the managerial and behavioural emphases. This direction will no doubt be considered in the best interests of any industry that utilises project management. Technical aspects of project management are, after all, only part of the application of the wider concept of project management. Also, it will be observed that the current trend is towards a broader treatment and understanding in terms of the 'management of projects' rather than the somewhat narrower perspective of 'project management'. It is possible that this perceived difference in approach is merely a case of different levels of analyses but, nevertheless, it will be discussed briefly.

The section is therefore devoted entirely to an examination of the main sources of information about project management. By organising these sources according to various observable and distinctive categories, it should be possible to achieve a more coherent understanding of the present state-of-the-art of project management. It will also enable a better view of project management in two contexts - in the construction...
context in the narrower sense, and in relation to its usage in other industries in a wider sense. This continuous shift in vision assists in strengthening the appreciation of the whole 'philosophy' of project management, which in its most basic form, is considered to be a specialised form of general management. A portion of the section will also be devoted to a treatment of the twin concepts of 'projects' and 'project management' as they presently stand in the literature so as to elucidate their cardinal features.

Section 2.2 identifies the industrial constraints which provided much of the early impetus for 'projectising', and highlights the crucial role played by the defense services. As organisations found it increasingly difficult to deal with changing environmental conditions and the demands of complex tasks requiring coordination of large groups of people and organisations, project management, through the evolution of the matrix, provided the organisational response that was deemed appropriate. This growth of project management as an organisational form is dealt with in Section 2.3. The role of systems thinking in enhancing the project management initiative is examined in Section 2.4. Section 2.5 focuses on the concept of a 'project' by looking at the elements of a project. The salient functions within the project management role are dealt with in Section 2.6. Section 2.7 completes the chapter through a brief treatment of the areas of application of project management.

2.2 ORIGINS OF THE PROJECT MANAGEMENT DISCIPLINE

It is widely recognised, at least within the field of project management, that the early initiatives in the discipline of project management were very much associated with the US Department of Defense as part of their overall weapons acquisition process. This being the case, the tendency to equate the beginnings of project management entirely with the military must however be kept in perspective, as the use of private firms to carry forward most of the effort was essentially a distinctive feature of the process (Peck & Scherer, 1962). Although the emphasis was inherently governmental and defense in origin, the response by way of industry support provided the necessary avenues for the expanded application of the project management concept.

Again, the fact that the development of CPM (Critical Path Method) and PERT (Project Evaluation and Review Technique) was coincidental with the prominent growth of the defense industry has led to an undue technical bias relating to the idea of project management. To many, project management still connotes only the technical control of
projects, and is taken to be almost synonymous with the use of network techniques, to
the exclusion of the wider aspects of management which project management entails
and indeed encompasses. Given that a major emphasis of project management in the
early days was, and still is, the control of projects, especially in terms of time and cost,
this unnecessary limitation on the concept is worth highlighting at the outset. CPM and
PERT are, and continue to be, only tools and aids for project management (Saindon,
1969).

Three broad functional areas are significant within the organisations devoted to the
implementation of weapons production - research and development, procurement and
production, and operations. Owing to the disparity in objectives among the functional
groups, and the existence of numerous inter-related subsystems involved,
interfunctional conflicts are a chief characteristic in weapons acquisition. Resolution of
these conflicts has been observed to take a number of forms, such as interfunctional
phasing, use of elite agencies and special committees, and integration through an
organising approach known as "projectising", where a special project group is
established to integrate the diverse functional interests involved in a single weapons
programme. The project group serves as a locus for identifying and resolving
interfunctional conflicts, and also as a kind of communication centre for coordinating
the many individual facets of a weapons programme. Moreover, it is used extensively
in a variety of forms by all the three US services (Peck & Scherer, 1962, p.81).
Examples of the special elite implementation agencies that were established are the Air
Force's ARDC Ballistic Missile Division to manage its Atlas, Thor and Titan
programmes, the Navy's Special Projects Office organised for Polaris, and the Army's
Army Ballistic Missile Agency for Jupiter (p.83).

But even in the 1950s, this projectising mode was not totally restricted to the defense
services. In the US advanced technology industry, the use of organisation units, or
projects, dedicated to the successful development of complex products, was already
becoming common. Gaddis (1959) describes the extent of this movement. In terms of
products in the context of advanced technology, the business of the project manager is
seen as creating such a product with the available professional specialists from diverse
fields as the basic tool. The project is the organisation unit dedicated to the attainment of
a goal - in this case the successful completion of a development product on time, within
budget, and in conformance with predetermined performance specifications.
Jasinski (1959) refers to the use of coordinators and project heads as temporary measures, providing an organisational short circuit during the course of a crash programme. He draws a parallel between these and the temporary realignments that existed in the WWII invasion task forces - "Just prior to and during the invasion one man headed all participating service units. Following the successful completion of the invasion the task force regrouped into separate and independent units reporting along individual service lines." (p.84). Use of expediters also constituted another kind of organisational change, but unlike coordinators and project heads, they had no direct authority over the individuals with whom they related.

In the field of scientific manufacturing, Davis (1962) also observes that project management gradually developed as a device for achieving better management of complex development and manufacturing projects; the primary reason being to achieve some measure of managerial unity. Four principal types of project management organisations were identified in his survey of manufacturing firms. The project expediter, as the name implies, expedites the work and serves as a centre of communication but does not perform primary management functions. The project coordinator has independent authority to act and is therefore held responsible but he does not direct the work of others. He exercises his leadership in a staff manner through procedural decisions and personal interaction, rather than through line authority. The project confederation is headed by a manager actually performing the full range of management functions from planning to controlling the work of others. The fourth type, project general management comprises persons temporarily withdrawn from their departments and wholly assigned to the project under the project manager who directs virtually the complete project. The four types of organisation are differentiated as follows - the project expediter achieves unity of communication, the project coordinator gets unity of control, the project confederation achieves unity of direction, and project general management accomplishes the ultimate unity of command. Davis points out that project organisation requires a project manager with considerable role adaptability. In order to balance technical solutions with time, cost, resource and human factors, the project manager has to be "an integrator and a generalist, rather than a technical specialist" (p.111-112).

Returning to weapons acquisition, in the US context, this refers to the 'conception, development, and production of technically advanced weapons for ultimate use by the armed forces', and the process consists of 'the flow of decisions and activities during weapons' programmes, including the actions, reactions, and interactions of government
agencies and defense contractors'. The entire weapons acquisition process therefore encompasses the weapons activities of the Air Force, the Army, and the Navy.

The Polaris system development is more accurately referred to as the Fleet Ballistic Missile (FBM) Program, and involved the development, procurement, and deployment of the Polaris missile, attendant sub-systems, and a force of 41 nuclear-powered submarines. It is generally considered as an outstanding success, with the deployment of the missile several years ahead of FBM schedule, no hint of a cost overrun, and more importantly, with frequent test results indicating that the missile works (Sapolsky, 1972). What began in 1955 as a Joint Army-Navy Jupiter Program was terminated in 1956 when the Special Projects Office (SPO) of the Navy was authorised to begin Polaris as an independent missile programme (p.8). It has been stated that the establishment of this Special Projects Office defied the Navy officials' canons of organisation, by becoming effectively the Navy's first project-oriented agency to be given a rank equal to those of the functionally specialised bureaux. A functionally specialised organisation is responsible for a particular organisational process or skill, e.g. aero-engineering, accounting, irrespective of the purposes to which these processes or skills are applied, whereas a project-type organisation is responsible for a particular organisational purpose, e.g. strategic retaliation, conventional warfare etc and thus ties together all the processes and skills necessary to accomplish that purpose (p.62).

What is equally significant is the SPO's insistence that its major contractors "reorganise their internal structure so that an independent project-type organisation is responsible for FBM work and FBM work done within the company", a move that was intended to prevent part-time involvement in the programme (p.253).

The PERT System was essentially the result of the control system developed to monitor and evaluate the progress of the Polaris weapon system, and included the network aspects of CPM (O'Brien, 1969). It is generally accepted that PERT was developed quite independently of CPM although the basis of both is the project network diagram (Moder & Phillips, 1964). It is interesting to note, according to the pioneers of CPM, that the two developments were largely unconnected (Kelley & Walker, 1989). The origins of CPM can be traced back to late 1956; it being a joint development between the Du Pont and Remington Rand companies. Results of this development were formally presented to the public at large in March 1959 (p.15).
By 1964, it was stated that "the Navy had set up 58, the Air Force 47, and the Army 28 project management offices" (Sapolsky, 1972, p.253). As a structural organisational arrangement, there was a belief that such offices would produce results.

The concept of "projectisation" was to follow from its application in the military services into NASA and the aerospace industry. Project Apollo (the moon programme) functioned very much as a projectised organisation, evolving the concept to a point of being a management revolution, and carrying to its most elaborate development the "task force" concept that was then becoming the fashion in management doctrine (Alexander, 1969). A separate Apollo Program Office was established in each of the three government field centres, as well as on the premises of the seven main contractors, each programme office having positions for such functions as design, schedule, finance, and quality control which paralleled those in the main programme headquarters in Washington. Initiated by President Kennedy in 1961, the project aimed at sending men to the moon before the end of the decade, at a then estimated cost of about US$20 billion. At its final expenditure of about $24 billion in 1969, the project was considered a resounding success. NASA's involvement marked the commencement and the extremely significant contribution of the US aerospace industry to the development of the project management imperative. Together with matrix management, project management provided the organisational response that was necessary to cope with the increasing demands posed. Existing organisational forms were beginning to suffer strains brought about by both complexity and rapid change. This impetus to the growth of project management as an organisational form is by far the most significant aspect in its development.

2.3 GROWTH OF PROJECT MANAGEMENT AS AN ORGANISATIONAL FORM

2.3.1 The Decline Of Bureaucracy

In an address to the Division of Industrial and Business Psychology of the American Psychological Association in 1964, Warren G Bennis (1966b) conceived the decline of bureaucracy - "...this form of organisation is becoming less and less effective, ...it is hopelessly out of joint with contemporary realities, and ... new shapes, patterns and models - currently recessive - are emerging which promise drastic changes in the conduct of the corporation and in managerial practices in general. So within the next twenty-five to fifty years, we should all be witness to, and participate in, the end of
bureaucracy and the rise of new social systems better able to cope with twentieth-century demands" (p.4). Organisations of the future will be characterised by "adaptive, rapid changing temporary systems" organised around problems-to-be-solved, made up of diverse specialists linked together by coordinative and task-evaluative specialists, in an organisational flux. Bennis terms such an organisation structure an "organic-adaptive" structure. This mirrors very closely Burns & Stalker's (1961) organic system of management that is appropriate to changing conditions.

In a further paper read at the Alfred P Sloan School of Management, MIT, Bennis (1966a) observed three areas which reflect a fundamental change in the basic philosophy underlying managerial behaviour over the earlier ten years:-

"(1) A new concept of man, based on increased knowledge of his complex and shifting needs, which replaces the over-simplified, innocent push-button idea of man.

(2) A new concept of power, based on collaboration and reason, which replaces a model of power based on coercion and fear.

(3) A new concept of organisational values, based on humanistic-democratic ideals, which replaces the depersonalised mechanistic value system of bureaucracy."

(p.255)

By visualising five major core tasks confronting the manager in coordinating the human side of enterprise - that of integration, social influence, collaboration, adaptation, and revitalisation - the inadequacy of the bureaucratic mechanism to cope with contemporary realities is highlighted.

One such organic-adaptive organisation of the future is the "Ad-hocracy", a term used by Toffler (1970) to refer to the new organisational system that will "increasingly challenge, and ultimately supplant bureaucracy". This theme echoes the central idea behind Bennis' forecast of the adaptive and rapidly changing temporary systems.

In noting the shift in attention towards moulding the organisation around the task, Cleland (1964) highlights the inappropriateness of the pure functional approach to tasks which involve the coordinated efforts of large numbers of organisations and people. A large single-purpose project creates unique management relationships which cut across interior organisational flows of authority and responsibility, and radiate outside to independent organisations. These new purposes created by tasks and projects require a
management philosophy that has no organisational or functional constraints, and project management is recognised as providing this required philosophy.

2.3.2 Evolution Of The Matrix

Evolution and growth of the matrix is undoubtedly associated with the US aerospace industry. To survive and prosper within the industry, firms would have to focus intensive attention both on complex technical issues and on the unique project requirements of the customer (Davis & Lawrence, 1977). The matrix therefore, in a sense, grew out of the environmental requirement for a project management system which was essentially imposed on the aerospace industry by the government as a condition for receiving consideration for R & D contracts. Industrial organisations undertaking such government projects were thus 'forced' to develop project organisation structures to ensure the contracting agency that top organisation management was properly involved (Kingdon, 1973, p.19-21). Managers with very different orientations and goals would have to come together in their search for answers that would optimise decisions for both technical excellence and unique customer requirements. Matrix was developed because its dual command structure served to induce this sort of simultaneous decision-making. Indeed, this external pressure for a dual focus was only one of the conditions (although the major one) which forced the development of the matrix. Pressures for high information-processing capacity and for shared resources have also been identified as the other two basic conditions which exist simultaneously with the pressure for a dual focus, that would make matrix the "preferred structural choice".

In the words of Trist, the aerospace industry "has cradled project management and matrix organisation, an associated pair which have compounded R&D and operational accomplishment into a single process on a vast scale" (Kingdon, 1973, p.xii). While the matrix arose principally in the aerospace industry to improve work performance, it was also recognised as a concept that would be adaptable for uses in other industries. e.g. in new product or market developments in a marketing economy (Mee, 1964).

Built around specific projects, the matrix organisation entails conceptually a system designed as a "web of relationships" (Mee, 1964, p.72) rather than a line and staff relationship of work performance. Employing mixed design principles, it is "at one and the same time a normal hierarchy and a problem-solving entity" (Kingdon, p.18),
comprising therefore two structures; the functional structure and the project structure -
the functional structure for normal hierarchical decision-making and the project
structure for making complex system decisions associated with technological
problem-solving. In short, the matrix attempts "to maintain the advantage of functional
specialisation while taking advantage also of the improved coordination offered by the
concept of project management" (p.19). Table 2.1 summarises this duality of the matrix
organisational form, and is essentially an adaptation of Kingdon's Table 2 (p.28).

<table>
<thead>
<tr>
<th>Normal Hierarchy</th>
<th>Problem-Solving Entity</th>
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<tbody>
<tr>
<td><strong>FUNCTION</strong></td>
<td><strong>Purpose</strong></td>
</tr>
<tr>
<td>Assessment &amp; Containment of Risk</td>
<td>Reduction of Uncertainty</td>
</tr>
<tr>
<td>Achievement of Stability with Transformed Environment</td>
<td>Transformation of Turbulent Environment</td>
</tr>
<tr>
<td><strong>STRUCTURE</strong></td>
<td></td>
</tr>
<tr>
<td>Functional Structure</td>
<td>Project Structure</td>
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Table 2.1 - The Duality Of The Matrix Organisational Form
(Adapted From Kingdon, 1973, p. 28)

But even when the matrix was proving to be an extremely popular form of organisation
design, both the difficulty with its development, and the ensuing problems that the
design brought, were issues that continued to be raised. Davis & Lawrence
acknowledge the depth of appreciation required by pointing out that a matrix
organisation is not simply a matter of understanding and creating a formal design,
instead:
and successful passage from its early evolution to its matured established form is recognised as a process that takes time. More important, they stress that the presence of two of the three necessary conditions is not sufficient to recommend a matrix approach. Moving to a matrix is a serious decision - "It is too difficult to undertake superficially, too costly in human terms to attempt haphazardly, and too encompassing to experiment unnecessarily" (p.19). In their view, "a successful matrix must be grown instead of installed", this growth process in the life cycle having four critical times - decision, installation, institutionalisation, and exit (See Table 2.2).

Table 2.2: Growth of the Matrix

However, owing to the paradox of dual command, it is possible that the matrix, while necessary, may well not be the preferred, or indeed, the ultimate organisation design (p.38). Peters (1979) highlights how the matrix, in attempting to combine the advantages of the functional and the divisional corporate structures - that of functional autonomy with product autonomy - often bogs down hopelessly in practice. Being an overly optimistic model of how people in organisations actually behave, "its central concept - that simultaneous decisions can routinely be made along multiple dimensions with fragmented accountability - overestimates the information-processing capacity of most human beings and the problem-solving capability of most social systems", leading to an overload of the circuits.
The idea of "fragmented accountability" is important to the present study in two respects. Firstly, it is the underlying character of the matrix's dual command structure, and owing to the inextricable link between matrix management and project management, it has tended logically to bring to the surface the twin issues of ambiguity and conflict. Together, in the main, these two aspects have provided the project management field with a relatively substantial amount of knowledge in the form of empirical studies based on the use of authority under conditions of conflict and ambiguity. Secondly, it highlights an ongoing problem in the field of project management—the constant definition and clarification of accountability of a diverse participant network intended to harness the necessary human effort towards the accomplishment of a project. In this sense, the notion of accountability prevails as a contemporary issue in project management, and is thus not restricted solely to project management under matrix structures. It is sufficient to point out at this juncture that this notion of accountability will take central focus for the research study, as will become apparent from Chapter 3 onwards. Indeed, Peters' theme of 'over-estimation' of the information-processing capacity which is caused by the dual dimensions inherent in the matrix, may be true in more ways than one. In addition to the problem of complexity and overload, the psychological dimension of information-processing has a great deal to do with one's perception of his own and others' associating accountability, as shall be observed in a later section. This information-processing aspect will be seen as a major preoccupation of the project manager, and will also be examined in terms of its potential legal implications.

As to whether the matrix is in fact cumbersome in that it inhibits action, research reveals that if this is so, it is accepted as a necessary price to pay for productivity. On the premise that the matrix is cumbersome, Denis (1986), with the use of a 94-item questionnaire survey, identifies a number of 'heaviness' factors in matrix structures and investigates these over a sample of engineering consulting firms and production companies employing a large proportion of engineers. The findings suggest a fairly balanced image of the matrix. It is cumbersome because it imposes dual authority, requires more negotiation and because the sharing can never be perfectly clear in advance or cover all matters. On the other hand, it is not because the sharing of authority is perceived as being necessary to ensure that all the important variables in the project will be taken into account, because it can be dealt with by suitable personnel rotation, and because it may well be accepted.
Returning to the main theme in this sub-section, when the discussion is placed in its proper and wider perspective, the matrix is but one of the possibilities or alternatives in the choice of an organisation design. The work of Galbraith (1971), in tracing historically The Standard Product Co.'s change from the functional form to a pure matrix form, provides a comprehensive account of such a choice of organisation design from a range of alternatives. Using a functional-product (or manufacturing) orientation as the fundamental example, the matrix is shown as being half-way on the range of alternatives between a pure functional and a pure product organisation. Within this range, the design is specified by the choice among (a) the authority structure, (b) the integrating mechanisms such as task forces, teams and so on, and (c) by the formal information system. The combination of these, together with the distribution of influence between product and functional considerations, gives an overall continuum of design alternatives. Factors determining choice in the functional product example may include diversity of the product line, rate of change of the product line, interdependencies among subunits, level of technology, presence of economies of scale, and organisation size. The range of alternatives is illustrated in Fig 2.1.

As an organising mode, lateral relations across lines of authority may be created in various forms:

1. Direct contact between managers.
2. Creation of liaison role.
3. Creation of task forces.
4. Use of teams.
5. Creation of integrating role.
6. Change to managerial linking role.
7. Establishment of the matrix form.

The extent to which these lateral relations and power factors are used determines the location of a particular organisation along the bottom line of Fig 2.1. Decision-making influence is strictly functional on the far left. To bring more product orientation into the decision-making process, the firm may introduce product task forces, product teams, and then integrators (product managers), thereby moving along the bottom line toward the right (Galbraith, 1977, p.176-179).
This power distribution for product versus functional choice is equally relevant in a project-functional choice. Although studies have indicated the direction of change of firms on this continuum, Galbraith is of the view that, owing in part to the difficulty of measuring power and influence, the data are not precise enough to specify exact power distributions. His brief account of the aerospace industry in the period from the late 1950s to the late 1960s demonstrates how environmental influences affect internal decision processes. The criticality of technical performance dominated the late 1950s and early 1960s. This influence distribution was approximated by the line No. 1 in Fig 2.1, where functional managers dominated the joint decisions while project managers were also influential due to time pressures. The early and middle 1960s were dominated by the view that technical performance could be achieved but at less cost, with cost plus
fixed fee contracts giving way to incentive and fixed price contracts, and the increased use of PERT and then PERT/Cost information systems. This influence distribution is represented by line No.2 and indicates the increased influence of the project manager in the decision process. The late 1960s were characterised by cost overruns, inflation and shifting national priorities, which made cost the top priority consideration as opposed to technical and schedule considerations. Project managers began dominating the joint-decision processes, and the influence distribution moved to line No.3. The whole process is principally the requirement by an organisation to change its decision-making structure in order to remain effective.

Utilising a somewhat similar continuum, Youker (1977) presents three major organisational forms for managing projects and other similar temporary organisations. Ranging from functional at one end to project at the other end, with matrix itself ranging from weak to strong, and lying between functional and project. The continuum is based on the percentage of personnel working in their own functional department against the percentage of personnel who are full-time members of the project team, and is depicted in Fig.2.2. As shown in the bottom line of the figure, a weak matrix has a part-time coordinator, and as it gets stronger, a full-time coordinator is used, leading to a full-time project manager and finally to a project office.

![Organisational Continuum](Source: Youker, 1977, Fig.6, p.51)
As a model of project management structure, Galbraith's model distinguishes structure types on a continuum based on a distribution of influence and responsibility between project and line management. Larson & Gobeli (1985) are quick to point out however the confusion and misunderstanding in the terminology used to distinguish different project management structures. Their research demonstrates a rather low level of conformity between the terms used by practitioners and the titles used by academics. Five different structures relating to the distribution of authority are identified, based on a review of academics' terminology. The various titles given in the studies are shown in Fig.2.3, against Larson & Gobeli's continuum of structures A to E.

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<tbody>
<tr>
<td>Davis &amp; Lawrence (1977)</td>
<td>Phase I</td>
<td>Phases II &amp; III</td>
<td>Phase IV</td>
<td>Phase V</td>
<td></td>
</tr>
<tr>
<td>Stuckenbruck (1979)</td>
<td>Functional Matrix</td>
<td>Weak Matrix</td>
<td>Project Matrix</td>
<td>Project Organisation</td>
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<tr>
<td>Vasconcellos &amp; Hemsley</td>
<td>Functional Organisation</td>
<td>Functional Matrix</td>
<td>Balanced Matrix</td>
<td>Project Organisation</td>
<td></td>
</tr>
<tr>
<td>Youker (1977)</td>
<td>Functional Organisation</td>
<td>Weak Matrix</td>
<td>Matrix</td>
<td>Strong Matrix</td>
<td>Project Organisation</td>
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Figure 2.3: Project Management Structures: Comparison of Terminology
(Source: Larson and Gobeli, 1985, pp. 40-1)
Based on a mail questionnaire survey of 124 respondents from a university's executive development programme, the findings reflect confusion and misunderstanding in the terminology used to distinguish different project management structures, as a result of which the authors find it necessary to establish a more consistent set of labels for the type of structure, and propose the following terminology:

Structure A - Functional Management  
Structure B - Functional Matrix  
Structure C - Balanced Matrix  
Structure D - Project Matrix  
Structure E - Project Team

The framework is however primarily based on the key distribution of authority between functional and project managers and is not intended to focus on all aspects of project management. According to Larson & Gobeli, if significant progress is to be made in project management research, a common set of terminology and definitions accepted by both academics and practitioners is needed. This problem is not new in any research; it typifies one of the most important concerns in research methodology - the need for an accurate operationalisation of concepts and variables so that what is measured is in fact precisely what is desired. Agreement in the language used has therefore important implications for the advance of knowledge in the field. The same five structures, A to E, have recently been utilised as the basis of an Internet study aimed at an international comparison of project organisation structures in terms of their use and perceived effectiveness (Gray et al, 1990).

From the foregoing, it becomes evident that whether the discussion pertains to the matrix structure or project management structure, in a broader sense the question of organisational choice is being addressed, ie determining a suitable or appropriate structure from a range of alternatives. With the growing stress on achieving project success and consequently on determining how best to ensure that success factors are met, a number of studies have concentrated on the use of project management structure as a predictor of project performance and success. A brief description of some of the major studies will assist in demonstrating this theme.

One of the earliest works carried out along this line of enquiry was that by Marquis & Straight (1965). Noting the lack of systematic comparison of different forms of project organisation, they attempted, based on a study of 37 large R & D projects, to analyse
the relationship between organisation type and performance effectiveness. The three major criteria of success in the R & D projects were identified as technical performance, meeting schedules and meeting target cost. Performance ratings utilised three measures: cost overruns, schedules overruns, and a combined success rating. Using two measures of the form of project management: (1) project authority and autonomy of the project manager, and (2) the form of organisational reporting relations, three distinct types of organisation were visible in the sample - project organisation, functional organisation, and matrix organisation. The findings suggest that (1) projects in which administrative personnel report to the project manager rather than to a functional manager are less likely to have cost or schedule overruns, and (2) functional organisation, compared to project organisation, of professional personnel results in higher rated technical success.

It is useful to note that, given a continuum of organisational structures, the problem is essentially one of distributing authority between functional and project managers within the organisation. Put differently, the problem concerns the balance of power between the goals of the functional structure and of a specific project (Youker, 1977). If the underlying basis of structure type is the distribution of power and influence within an organisation, it may be possible to gauge the effect of the relative influence of project and functional managers on project performance. The study by Katz & Allen (1985) utilises such a framework for investigating 86 R & D teams spread over nine technology-based organisations. Their findings show performance at its highest level when organisational influence is centred in the project manager and influence over technical details of the work is centred in the functional manager.

Part of Larson & Gobeli’s (1989) study attempts to examine this relationship between project management structure and project success. Based on 547 respondents, all members of the Project Management Institute (PMI), it was shown that project structure was significantly related to each of the four success measures - meeting schedule, controlling cost, technical performance, and overall results. The five types of project structure in their study followed their 1985 typology - Structures A to E. Projects using the balanced matrix, project matrix or the project team were generally found to do well on all four success measures, as opposed to those using functional and the functional matrix. The important point to note in this study is the attempt to properly gauge the significance of project management structure for project success by accounting for other factors which are also likely to contribute to achieving success which they referred to as contextual factors. These five external variables which were controlled in the research
design included project complexity, novelty of technology, clarity of objectives, priority, and resource availability. The analysis revealed that project structure was significantly related to project success even when the five contextual factors were controlled.

From a survey of managers of 103 development projects in 30 different firms, Might & Fischer (1985) also investigated organisational structure and its effect on project success. The relationship was however found to be positively present only for matrix organisations, and then only when relating to success measured by overall performance or by cost performance and not by schedule or technical performance.

Concurrent with this focus on project performance is the very extensive and comprehensive work on project success and failure, which is being carried out by the Major Projects Association with its emphasis on good project management practice (See Morris & Hough, 1986, and 1987).

Again, to put all these factors in proper perspective, they are not necessarily the only variables that bear a relationship to project performance. Non-structural variables such as group cohesiveness, physical distance, job satisfaction, and innovative orientation (Keller, 1986) have all been found also to be associated with project performance.

From the foregoing, it would appear that much of the knowledge regarding project management as an organisational form is derived from the experience of firms who, when faced with a concentration and emphasis of its work on the use of projects, have found it necessary to structure or even restructure their organisation in order to support this movement. The concern is therefore one of how best to fit the organisation structurally to handle the management of its projects. Appreciation of the fundamental nature of this source of knowledge is important in order to clearly discern the subtle difference between organising for project management and project organisation. The latter term - project organisation, would be rather similar to project management structure. In this sense, the use of the term project management structure by Larson & Gobeli as well as by others to include the range of organisational alternatives may not be entirely correct. The recent usage by the same authors, as part of a larger team (Gray et al, 1990), of the term 'project organisation structure' in favour of the term 'project management structure', does however overcome the problem and appears to confirm a streamlining of terminology that has been effected.
To summarise, there are broadly two different levels of analysis in the treatment of project management as an organisational response. The foregoing discussion, where project management refers to the organisation's adjustment in order to dedicate its functional personnel in varying degrees to the task of managing projects constitutes one level of analysis. The second level of analysis looks at how a specific project is organised, by treating project management as an organisation for achieving the project.

The first level of analysis takes a more macro view of project management while the second level moves into the context of a specific project. The matrix concept, as has been outlined in this Section, and within the context of the organisational structures, is therefore at the first level. At the second level, the project, as a composition of diverse contributors, can be considered a matrix in the sense that the various contributors, while also being participants to other projects, are themselves members of their various own organisations (Walker, 1983). An inherent feature of this project matrix is the difference between the issues of managing firms and managing projects. For each contributor, objectives between managing the firm and managing the project are likely to be conflicting in nature, thereby creating a need for project management to be undertaken by an independent party. In the context of the construction industry this does not however answer the problem posed by the fact that the independent firm or individual may well be involved in a number of other projects at any one time.

Matrix therefore, while providing us with much of the early support for the development of the project management concept, continues to characterise much of present project management arrangements, albeit in a different form. It is likely that the new matrix problem, in dealing with a pool of external representatives, provides a more stringent test for the task of project management.

2.4 SYSTEMS THINKING AND PROJECT MANAGEMENT

If practical impetus behind modern project management was provided primarily by the US defense services in their weapons acquisition, the intellectual thrust is considered to have been provided by the development of systems theory (Morris, 1983). It is not intended here to embark on a detailed elaboration of systems theory and its origins as this alone is a vast area which demands separate treatment. Instead some of the basic concepts involved will be considered and, through its use as a framework for the development of contingency views of organisations and their management, its support
for the project management initiative will be observed.

A system can be viewed as "an organised, unitary whole composed of two or more interdependent parts, components, or subsystems and delineated by identifiable boundaries from its environmental suprasystem" (Kast & Rosenzweig, 1985, p.103). Whether mechanical, physical, biological, or social systems are being dealt with, the elemental composition of interrelated components or subsystems prevails. The boundary concept highlights the separation between systems and their environments and aids in distinguishing between open and closed systems. The concept of holism, basic to the systems approach, stresses that the whole is not just the sum of its parts; the system itself can be explained only as a totality.

Based on his initial concept of organisations as cooperative systems, Barnard (1938) defines organisation as a "system of consciously coordinated activities or forces of two or more persons" (p.73). Torgersen (1969), in expanding the work of Barnard, considers a cooperative system as "any group undertaking wherein the activity or behaviour of an individual must be directly coordinated with the activity or behaviour of one or more other individuals toward some mutual objective" (p.5).

Miller & Rice (1967) illustrate the proposition that project-type organisations, which are necessary for temporary and transitional activity systems, also provide the most appropriate basis for a general theory of organisation. According to them, the project type of organisation which typifies the construction industry provides an ideal example of just such a system. It is however unique in that the task-oriented sentient boundaries already exist in terms of the many separate and different groups, firms, institutions and unions which are involved. Firms are essentially committed not only to different but incompatible primary tasks, and the task of project management is seen as mediating among the various considerations to arrive at an optimal solution (p.131-2).

The systems approach to the planning and implementation phases of project management is given extensive and comprehensive treatment by Cleland & King (1983). This is then utilised as a framework for examining project management in detail. On the basis that a project has been set in motion, the project management system (PMS) is the management subsystem designed to ensure successful implementation on a daily on-going basis. Definition of this PMS in terms of its subsystems is shown diagrammatically in Fig 2.4 with the project manager as the focal point of the interactive subsystems.
The basis of the organisation as a general open-system model takes the form in Fig 2.5, the crux of its function being the transformation of inputs to outputs.

**Figure 2.4: A Project Management System (PMS)**
(Adapted from: Cleland and King, 1983, Fig.3.6, p.75)

**Figure 2.5: The Organisation as a Transformation System**
(Source: Kast and Rosenzweig, 1985, Fig.5.2, p.112)
Walker (1984) utilises this transformation idea in his systems view of the construction process, by treating the process as a transformation of inputs such as ideas, energy, materials, information etc into output - the finished construction. (See Fig 2.6)

Figure 2.6: The Construction Process as an Input-Output Model  
(Source: Walker, 1984, Fig.3.1)

On this basis, he highlights the functions upon which the project management process should focus:

"(a) identifying, communicating and adapting the systems objectives;
(b) ensuring that the parts of the system are working effectively;
(c) ensuring that appropriate connections are established between the parts;
(d) activating the system so that the connections which have been established work effectively;
(e) relating the total system to its environment and adapting the system as required in response to changes in its environment". (p.35)

Practically translated, this means that the project manager's major concern will be "anticipating the chain reactions of decisions and developments that occur on the project" (p.35). Indeed this anticipative mode is a primary characteristic of the project management function and mirrors very clearly the view that project management is the 'management of expectations'. This will be expanded upon further in a later section.
Treating the project as a system, Morris (1983) identifies three principal sets of subsystems, derived from (1) the project's management levels, (2) its operating characteristics, and (3) its life-cycle. At the management level subsystem, three levels of management exist, corresponding to the institutional, strategic and tactical levels which are normally found in steady-state enterprises. (See Table 2.3)

<table>
<thead>
<tr>
<th>THREE LEVELS OF PROJECT MANAGEMENT</th>
</tr>
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<tbody>
<tr>
<td><strong>Management Levels</strong></td>
</tr>
<tr>
<td><strong>Undertaken By</strong></td>
</tr>
<tr>
<td><strong>Function</strong></td>
</tr>
<tr>
<td><strong>Concern</strong></td>
</tr>
</tbody>
</table>

Table 2.3: The Three Levels of Project Management
(Adapted from: Morris, 1983, Fig.1, p.7)

The operational subsystem consists of an external and an internal element, both of which last throughout the project's duration. While the external element is concerned with ensuring project definition, facilitating relations with outside groups, ensuring overall commercial health, and preparing for operations and maintenance, sales and marketing, the internal element is concerned exclusively with accomplishing the project's technical, cost and schedule specifications. The life-cycle subsystem which comprises the various phases of the project, creates dynamic interfaces in the form of milestones. The three sets of subsystems within a project are represented in Fig.2.7.
The task of project management is highlighted by distinguishing between two kinds of system management - managing the tasks of each subsystem to achieve the subsystem's objective, and managing the interactions between subsystems. The former is a functional management task while the latter is the project management task (p.7). Integrating the project subsystems depends on the size of the interfaces between them, i.e., the degree of differentiation between subsystems. The extent to which these subsystems overlap, their interdependency, the scale and rate of change, etc., also determine the amount of integration required. In this sense, the greater the integration required, the greater the need for the project management role and function.

Systems concepts, in providing a broad framework for understanding all organisations, involve a relatively high degree of generalisation. Contingency views, in turn, provide the necessary framework for designing and managing specific organisations, by
seeking to "understand the interrelationships within and among subsystems as well as between the organisation and its environment and to define patterns of relationships or configurations of variables"(Kast & Rosenzweig, p.116). Essentially, the crux of the contingency approach is that there is no one best way to organise. One example of its application in the field of project management is the work of Von Scifers (1972) which seeks to extend the application of the contingency theory from the firm as a whole to a sub-unit of the firm - the temporary management situation -, the 'project' here being viewed as a temporary management system, by investigating two selected variables affecting the integrative process, uncertainty and interdependence.

**2.5 THE CONCEPT OF A "PROJECT"**

Central to any treatment of project management, irrespective of the field of application, is the concept of "projects". Clearly, without the existence of projects as separate distinguishable entities, there can be no project management. It is therefore worthwhile, at the outset, to examine a cross-section of views regarding what constitutes a "project" with the idea of identifying some of its more pertinent characteristics.

Gaddis (1959) describes a project as "an organisation unit dedicated to the attainment of a goal - generally the successful completion of a developmental product on time, within budget, and in conformance with predetermined performance specifications" (p.89).

Borjeson (1976) defines it as "a temporary activity with defined goals and resources of its own, delimited from but highly dependent on the regular activity" (p.11), drawing special attention to its 'temporary' status.

According to Archibald (1976), a project comprises a complex effort and is the process of creating a specified result. It is also a unique endeavour, not completely repetitious of any previous effort (P.19).

Bittel's (1978) Encyclopaedia of Professional Management lists a project as "an organised programme of investigation and activity carried out to reach a defined goal, often of a nonrecurring nature, with a specified terminal point" (p.1003).

The involvement of the human element is an aspect of projects that receives important treatment. Cleland & King (1983) refer to a project as "a combination of human and
non-human resources pulled together in a 'temporary' organisation to achieve a specified purpose" (p.187). Zwart (1986) views it as "a temporary system of actions or activities with a clear beginning and ending, initiated and completed through a network of people" (p.11).

In the context of an organisation's overall corporate strategy, King (1983) considers projects (and programmes) as "the vehicles through which strategy is implemented" (p.155), and depicts the elements of strategic choice in the form of a triangle, where the mission and objectives are illustrated as the highest level elements which in turn are supported by the other elements of strategy, goals, and programmes (See Fig.2.8).

![Figure 2.8: Relationship Of Strategic Choice Elements](Source: King, 1978, Fig.8-1, p. 157)

Taking a project as a specific finite task to be accomplished in the broadest sense, Meredith & Mantel (1985) highlight some of the attributes that characterise projects such as purpose, life cycle, interdependencies, uniqueness, and conflict. By 'interdependencies', they refer to the fact that while projects often interact with other projects being carried out simultaneously by their parent organisation, they always interact with the parent's standard, ongoing operations.

In promoting what they term as 'Goal Directed Project Management' as an approach to managing change, Anderson et al (1987) view the project as a human endeavour which:
- creates change,
- has composite goals and objectives,
- is unique,
- is limited in time and scope, and
- involves a variety of resources, with different skills, responsibilities, and competence. (p.15)

The idea of change is very much central to the concept of projects. Morris (1981) sees projects as unique forms of organisation utilised for achieving defined change. In this sense, they are highly distinctive organisationally, being extremely goal-oriented, temporary, always in constant change, having a distinctive life-cycle, and marked by high organisational and personal conflict (p.6-7).

In a report dealing with the closing of information gaps in project management systems, the APM (Association of Project Managers) (1984) adopts the view that a project is the task of creating an outcome with predetermined objectives, and involves the complex interaction of resources, services and organisations (p.5).

An alternative approach to describing directly what a project is considers instead how a project differs from other work activity. Roman (1986) suggests a comparison between operations that normally follow a cycled pattern and uncycled operations which lend themselves to projectisation. He points out that noncycled operations are, by definition, not repetitive, may involve considerable technological change with resulting organisational impacts, and are usually determined by the fact that the end product is "in response to a specific demand rather than in anticipation of demand" (p.5). They also involve many managerial problems that are usually not found in cycled operations. This last aspect is also shared by Barnes (1985) who finds that, owing to the end objective and discrete time span that they possess, projects "are characterised by a number of management problems not found in the same forms in management of other activities" (p.11). Some of these characteristics include: the one-off team assembly, the constant preoccupation with problems both novel and unexpected, a usual sequence of stages, and the large potential for conflict.

A summary of the salient features of projects, based on all these sources, should be useful here. A project is essentially dedicated towards achievement of a specified task, goal or purpose. In this sense, it is limited in scope. It is also limited in time in that it is temporary in nature. Once the purpose is achieved or met, the project comes to an end.
It therefore differs quite significantly from the ongoing and regular operations of an organisation.

As no two projects are likely to be similar in all respects, each project is unique and one-off, ie non-repetitive. This one-time aggregation of resources means too that the team is brought together solely for its purpose, members of this team proceeding on to their further assignments on completion of the project in question. The team composition is furthermore likely to be diverse in skills and specialisations, and usually multi-disciplinary. It may well be multi-organisational too, its members belonging to various other separate organisations.

Notwithstanding that each project is different from the next, all projects, between their start and end points, can be seen to progress through a somewhat similar sequence of phases or stages commonly referred to as a life-cycle. An underlying feature of this life-cycle is 'change', an aspect of projects that is given prominence and stress in definitions of project management which speak of 'management of change'.

Owing to the temporary nature of a project, it is almost certainly characterised by a variety of conflict situations. The short time-span and the newness of each project combine to give a perfect recipe for conflict development.

While both human and non-human resources are present in a project situation, it must be stressed that it is the human resources that ultimately control the others. The human element is the key element, through which all other resources can be accessed.

Given these features which characterise a project, it is logical to carry the discussion forward to see how these features can have implications for the task of managing projects. Section 2.6 takes into consideration this objective of examining how the unique character of projects shapes the project management role.

2.6 NATURE OF THE PROJECT MANAGEMENT FUNCTION

Broadly, this section proceeds on two fronts: (1) What does the project management function do?, and (2) What is it faced with? Much of the discussion will invariably focus on the project manager's role.
The view of an organisation as an open system illustrates that, as systems become large they differentiate into parts requiring integration of these parts to ensure viability of the entire system. In addition, the system needs to continually adapt to the environment (Lawrence & Lorsch, 1967b). This differentiation and integration is reflected in the need for specialisation and coordination when firms adapt to market and technological change. The task of achieving this integration, interpreted as the achievement of unity of effort among the major functional specialists in a business, demands establishment of new positions dedicated solely to this new activity. Role titles such as product manager, brand manager, programme coordinator, project leader, etc. with integration as their core function, lend support to this trend (Lawrence & Lorsch, 1967a).

Depending on the particular situation, labels for such integrating roles vary, e.g., the 'materials manager' in manufacturing firms, the 'product manager' in business firms with diverse and rapidly changing product lines, and the 'unit manager' in hospitals. The task of the integrator in each case is "not to do the work but to coordinate the decision process" (Galbraith, 1977, p.152). Rather than making the decision themselves, integrators manage the joint-decision process. Their role is "not to take the best decision but to see that the best decision gets made" (p.136).

This aspect of organisation theory, particularly the effect of differentiation upon the pattern of integration, has been utilised as the central basis of Morris' (1972) study which examines coordination and control at specifically the Design-Construction interface of building projects under varying conditions of project uncertainty and complexity.

From a systems viewpoint, a project management system can be defined in terms of its many subsystems such as planning, control, information, human etc. Integration of this system of multiple independent subsystems is then undertaken by the project management system, with the project manager as the focal point of the interactive subsystems (Cleland & King, 1983, p.75). Miller & Rice (1967) sum up the need for integration in the construction case as follows: "...the problem for construction management is to integrate, for the duration of the project, the activities of inherently fissiparous groups and individuals whose primary allegiance is not to the specific project team" (p.131). Given the difference and the incompatibility in primary tasks between and among the various firms and individuals, the task of the project manager is one of mediation among these various considerations so as to arrive at an optimal solution. They stress however that definitions of 'optimal' will differ and that although the term 'optimisation' is used, it is more appropriately a 'process of compromise'.
The need for an organisation to constantly adapt to changes in the environment suggests that this interaction with the environment has strategic importance. Dependence by one organisation on other organisations for survival calls for linkages, or other similar mechanisms, to be established. These linkages take the form of organisational roles to be filled by 'boundary agents' (Organ, 1971). Use of boundary agents is not new however. Boundary positions arise whenever extensive interaction is required with persons occupying positions in other systems (Kahn et al, 1964). The greater the amount of time spent in this external contact, the greater the boundary relevance of the person's role. In this sense, the project manager's role, by definition of his organisational relationships, clearly occupies a boundary position which is high in boundary relevance. This high boundary relevance of his position, "combined with some of the differentiating characteristics of the project organisation...produce somewhat unique problems for the project manager" (Wilemon & Cicero, 1970, p.271).

In terms of the horizontal and diagonal relationships required in managing complex projects, there is boundary relevance. In terms of his project functions too there is boundary relevance. Two levels of his boundary position are therefore evident, intraorganisationally and interorganisationally. The important point about these boundary positions is that people fill these roles and people interact, not organisations (Organ, p.74).

This boundary position of the project manager provides an appreciation of the problems which he faces. By virtue of his position, he is susceptible to a high degree of role conflict. He gets "caught in the crossfire between the professional values of other professionals, financial goals of clients, and the expediencies urged by managers of functional departments" (Organ & Greene, 1972, p.7). In operating externally with outsiders, he lacks formal authority and has to resort to other means of influence. He will also often be "accountable to a superior who is more oriented to internal affairs" and who may not fully understand the forces and constraints on his behaviour. On the basis of these considerations, Organ & Greene (1972) conducted research in an R & D environment based on a sample of 43 project managers and 99 administrative managers and their immediate superiors, to investigate a number of propositions about project managers as compared with managers in roles with less boundary relevance. Their findings were generally consistent with the predictions from boundary role theory. This, according to them, served to document the boundary relevance of the project manager's role and also implied "that project management would be able to profit from the developing body of theory and findings concerning boundary roles and the organisational arrangements suggested by this body of thought" (p.10).
The diversity of the many interested parties within a single project can be described by its 'stakeholder' network which includes both internal and external stakeholders (Cleland, 1986). The traditional concentration of the project management function on the management of the project team must in reality recognise this comparatively more expansive network of interested parties. The notion of managing both the visible and invisible team, as shall be seen in a later section, also emphasises this macro aspect of the project management task. It is possible no doubt that this greater differentiation of involved parties can be dealt with by addressing different levels within the overall project management function.

It may be useful at this point in the discussion to stress that the task of project managing is fundamentally a management task in its most basic sense. In this connection, a reminder as to the nature and purpose of managing may be appropriate. According to Koontz (1964), the task of the manager "is to establish an internal enterprise environment for effective and efficient operation of individuals working together in groups" (p.3), the environment being "characterised by commonality of purpose, an intentional structure of roles, the removal of obstructions to performance, and the motivation of individuals to performance". The job is then one of environment creation wherein people working together in groups can contribute as individuals toward the attainment of group purposes. He emphasises that only in the sense of environment creation is the manager getting things done through people; thus to say simply that the manager's job is to get things done through people is both insufficient and inaccurate.

2.7 AREAS OF APPLICATION

On the face of it, it would seem logical to assume that wherever and whenever projects come into existence, project management can and will be employed. In so far as these projects require to be managed, this may be the case. Managing these projects from conception to completion demands a project management approach. Depending on the nature of the project and the organisation undertaking it, a separate project manager's role may or may not in fact be utilised. Nevertheless, the approach to the problem, the principles and techniques involved, will adhere in varying degrees to the whole concept of project management.

Given the foregoing, project situations can arise in numerous settings. Examples of various management situations which can constitute projects and which demonstrate the
breadth of application possible with the project management concept include the following: (1) New venture - successfully launching a new venture (business, product etc), (2) Turnaround - within a defined time period, turning a poor performance situation into a successful one, (3) Motion picture - making a movie, (4) R & D - conducting research and development into a marketable product, (5) Electioneering - obtaining the election of a candidate, (6) Urban and rural development - developing and implementing urban and rural development programmes, (7) Organisation change - effecting a change in structure, staffing, systems or style in an organisation, (8) Management consulting - counselling on a management issue or issues, (9) Construction - designing and constructing a physical facility, (10) Aerospace - designing and manufacturing an aerospace product, (11) Shipbuilding - designing and building a ship, and (12) Weapons - developing and manufacturing a weapons system (Morris & Delapp, 1979).

Examples of the types of industries or technologies in which project management is widely utilised can include those shown in Table 2.4.

<table>
<thead>
<tr>
<th>Aerospace</th>
<th>Government &amp; Civil Service</th>
</tr>
</thead>
<tbody>
<tr>
<td>Banking</td>
<td>Information Systems</td>
</tr>
<tr>
<td>Computer Systems</td>
<td>Pharmaceuticals</td>
</tr>
<tr>
<td>Construction</td>
<td>Resource Industries</td>
</tr>
<tr>
<td>Defense</td>
<td>Telecommunications</td>
</tr>
<tr>
<td>Education</td>
<td>Transportation</td>
</tr>
<tr>
<td>Energy &amp; Utilities</td>
<td></td>
</tr>
</tbody>
</table>

Table 2.4: Industry Applications of Project Management

The list is by no means exhaustive, and new applications of the project management concept continue to surface although generally these can to an extent be either subsumed under the main industrial headings or extend across a number of industries. R & D is a case in point; it arises in most if not all of the production and service industries. In terms of project management usage, it is ideally suited. The information technology (IT) field is by far the most prominent in recent years in terms of its increasing use of project managers. The heavily computerised IT initiative creates an environment ideally suited to the breakdown of work tasks into separate definable projects. Project managers can be employed to develop and introduce IT facilities, programmes, new computer systems such as business application systems, or to
support existing organisation activities, working usually as part of systems development teams. Management consultancy, with its focus on assisting organisations to achieve their strategic goals, is constantly faced with new problems that lend themselves to clear project definition. The requirement to work within, or indeed to lead, a team comprising multi-disciplines from the client organisation, the consultant organisation, and from other external sources, presents a very strong case for a project management approach. Managing a team of consultants to achieve a set programme so as to deliver concrete results to clients constitutes the central function in the management consultancy field. The new emphasis on performance improvement consultancy further supports the applicability of the project management approach.

It would be more precise to state that, as long as situations arise which allow a problem to be handled in the form of a project, the opportunity for adopting a project management approach should present itself. Given the characteristics of projects, the probability will be that the more pronounced these features are for a specific case, the greater the need for, and the greater the benefit of, a project management approach.
REFERENCES


CHAPTER 3

PROJECT MANAGEMENT IN DEVELOPMENT AND CONSTRUCTION

3.1 INTRODUCTION

This Chapter brings the discussion in Chapter 2 from its wider context to a narrower one, with particular attention to project management in the construction industry. Additionally, the focus switches in two respects. The UK construction industry and, within this, the building construction sector, will occupy the discussion from this section onwards. The case of construction in other countries will only be touched upon where it assists in demonstrating useful differences in the mode of practice. The civil engineering construction sector will also largely be excluded.

Section 3.2 presents a brief account of the construction industry in the UK in terms of its size, structure, and composition. This sets the context of the ensuing discussion. Section 3.3 sets the whole discussion in motion by establishing what the development process encompasses. This serves to highlight a number of features regarding project management - the extent of coverage required by the project management role, the sphere of participants to the development process at various stages, identified separately as the development team and the project team, etc. It also serves to support the view that project management is essentially and very much a client-based function. Where this is undertaken by externally commissioned consultants, the role is still seen as very much an extension, albeit a 'technical' extension, of the client.

Section 3.4 addresses the issue of management within the UK construction industry by reviewing the major studies undertaken since the early 1960s. The relevant findings from these studies which have implications for the project management task will be emphasised.

Section 3.5 looks at the function of project management in the context of development and construction. Section 3.6 documents the significant impact which project management has made on two areas in the public sector - the NHS and the PSA.
3.2 THE U.K. CONSTRUCTION INDUSTRY

To set the stage for discussing project management in development and construction in the UK context, it is useful first to have a picture of the UK construction industry in terms of its size, structure and composition. Table 3.1 summarises some of the useful figures for this purpose.

<table>
<thead>
<tr>
<th>Construction Output</th>
<th>(£m in constant 1985 prices)</th>
</tr>
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<tbody>
<tr>
<td></td>
<td>Actual</td>
</tr>
<tr>
<td>Housing</td>
<td>6,101</td>
</tr>
<tr>
<td>Other</td>
<td>12,497</td>
</tr>
<tr>
<td>Total New Work</td>
<td>18,598</td>
</tr>
<tr>
<td>% Change</td>
<td>-</td>
</tr>
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Table 3.1: U.K. Construction Output Figures
(Source: Joint Forecasting Committee for the Construction Industries, 1989)

As a guide to that portion of the industry which concerns us, the construction output value of total new work in the year 1988 amounted to £18,598 million. Against this figure, the forecast figures for the years 1989-91 show a growth for 1989, followed by a tapering off in 1990 and 1991. The percentages of the 'Other' work category as compared to 'Housing' are shown in the same Table for each of the four years. Very roughly, if we omit the housing figures, the output values approximate to £14 billion (against a £19 billion total) for each of the three years from 1989-1991. 'Other' new work comprises three categories - Public, Private Industrial, and Private Commercial. It will become clear in our empirical investigation that our study of project management arrangements takes place within this 'other' grouping. Although housing work may well utilise some form of project management, it is reasonable to assume that project management will be more prominently employed in this 'other' category. Given the maintenance of this £14 billion worth of construction output over each of the three years from 1989-1991, the associating need for high quality management is clearly
evident. It must be noted that these are only construction output figures. If development costs are taken into account, the figures will be substantially higher. On the basis that project management spans the entire development process, the overall development values would present a more accurate sizing of our area of interest.

3.3 THE DEVELOPMENT PROCESS

To fully appreciate the intricacies of managing construction projects, an understanding of the overall development process is necessary. If we look at project management as commencing from the point in time when a 'project' actually comes into existence, it would seem that a significant portion in the overall development process - the pre-project stage - would be left unattended. The criticality of the early decisions made at this very initial stage underpins continuously and viably the remainder of the process. For this reason, it is important to recognise, at the outset, that the project management function spans the entire development process. Any concentration of the project management task on the design and construction phases to the exclusion of pre-design and post-construction is manifestly inadequate and unduly restrictive. The real contribution in the project management approach is really only felt if it is allowed to influence the development process in toto. In practice however, this ideal arrangement rarely exists. The client or developer is appropriately the most suitable candidate to exercise the project management function. He makes effectively the best project manager. Invariably, we find that, even in cases where the client does not operate the process with his in-house project management staff, the early stages in the process are still managed in-house. It may be that the scheme is still highly uncertain or that consultant project managers are seen as lacking in such initial contribution. One suspects that the strategic context of a proposal or scheme within an organisation's corporate policy is really an aspect that only the client can fully appreciate. No matter how substantially wide the breadth of a consultant project manager's service capability is, it is unlikely that he can adequately plant himself in the shoes of the client as he stands at this early stage. This may well be the reason why, when consultant project managers are employed, the point of entry is always considered by them as never really early enough. Without over-emphasising this issue, the idea in our discussion here is primarily to point out that the development process comprises more than just the design and construction phases, and that ideally, project management should embrace the whole development process if it is to provide any worthwhile impact.
The Pilcher Report on Commercial Property Development (1975) offers us a six-point summary of tasks which the term 'development' comprises:-

(1) the perception and estimation of demand for new (commercial) buildings of different types;
(2) the identification and securing of sites on which buildings might be constructed to meet that demand;
(3) the design of accommodation to meet the demand on the sites identified;
(4) the management of short and long-term finance to fund site acquisition and construction;
(5) the management of design and construction; and
(6) the letting and management of the completed buildings.

The fundamental task at each of these stages is the establishing and the continuous monitoring of the economic viability of the project. Although the report deals with commercial property, the nature of the tasks involved are generally applicable to any development. While new-build and actual physical construction is contemplated, it is possible that major refurbishment schemes can fall within the scope of development. From a project management perspective, it is usual to presume that actual construction is involved to some extent as a minimum. There is however no hard and fast rule to this. While the straight purchase of an existing building may involve no construction work, upgrading and refurbishment schemes often involve a fair amount. It is also common to find project managers being employed on major relocations and fitting out works. For our purposes therefore, we shall think in terms of a development process that involves construction. Quite correctly, the funding and marketing aspects of the development process can have a significant impact on design and construction. They are however, according to Ratcliffe (1985), seldom given sufficient recognition when discussing the role of project management.

If we visualise a range of expanding concentrations on the development and construction process, with construction management attending narrowly to the construction phase or process, project management will be seen as encompassing also the design and perhaps funding processes, while at the widest end of the spectrum, we can conceive of 'total' project management which purports to cover the overall development process.
Cadman and Austin-Crowe (1983) identify four broad phases within the overall development process - evaluation, preparation, implementation, and disposal. Evaluation considers market research and financial evaluation of the development. Preparation includes site investigation, planning application, arrangement of finance, further market investigation and/or pre-letting, and pre-contract and design work. Implementation comprises construction essentially, while disposal deals with letting, holding and sale. While the phases may overlap they may not strictly follow this sequence though.

Given the extent of the overall development process, it would appear that a number of shortcomings are possible in the way project management within development and construction is organised. Clearly, the very early evaluations in the process are often not given sufficient attention. Equally, project management seems to stop at project completion and commissioning. Termination has a broader coverage, and takes into account letting and disposal, and possibly even management of the completed development. It unfortunately does not occupy a position of major importance. Further within the process, the funding arrangements and the ongoing marketing also do not feature prominently enough in the project management role. In sum, the project management role faces a continuous dilemma of achieving coverage of both breadth and depth. While it necessarily has to cover an extensive area, it tends to lack depth. Many client functions at the pre-project phase are sufficiently critical for the other subsequent stages in the process.

It would appear that consultant project management services that are available in the market will tend to emphasise according to their background specialisations. The bias in favour of the property-related aspects of development or the construction aspects would generally be evident, and few consultancies would in fact be capable of satisfactorily providing the full range of project management services which the development process calls for. This explains one of the major reasons why property development organisations choose to build up their own in-house project management expertise and to retain the project management role entirely in-house.
3.4 MANAGEMENT IN THE U.K. CONSTRUCTION INDUSTRY

It is not the intention of this sub-section to present a historical background of how the UK construction industry has been structured over time. Other works have sufficiently documented these developments (See Higgin and Jessop, 1965; Bowley, 1966). Two early reports have however been instrumental in setting the groundwork for much of the subsequent investigations into the construction industry. They are: (1) The Simon Report (1944) which examined the problems involved with the placing and management of building contracts, and (2) The Phillips Report (1950) which focused on the organisation and efficiency of building operations in the U.K., including the part played by the related professions. The necessity for the architect and the contractor to organise and coordinate the work of a large number of other contributors was noted initially in the Simon Report (Para.11, p.6-7). For our purposes, we find it convenient and appropriate to begin our discussion from the early 1960s. Accordingly, we shall explore the issue of management in the U.K. construction industry by examining some of the major studies and reports from this point onwards, and which have highlighted to some degree or other, the associating problems and the recommendations for dealing with them. Many of these identified deficiencies in the industry, it will be seen, have played a part in progressively emphasising the need for better as well as separate management initiatives in the industry. Before proceeding further, it is worthwhile noting that our study not only addresses the UK construction industry, but in particular, the UK building industry.

Lack of cohesion between the various parties involved in building operations is recognised in the report by Emmerson (1962) as one of the main criticisms in a quick survey of the construction industries aimed at focussing attention on problems most significant for increased efficiency: "There is a lack of cohesion between the architect, other professions, the contractor and sub-contractor." (Para.22.8). The report is best remembered as the source of one of the most quoted statements regarding the building industry - "In no other important industry is the responsibility for design so far removed from the responsibility for production" (Para.27). Methods of training and codes of conduct for members of the professional bodies are seen as aggravating this lack of cohesion. Furthermore, the restriction imposed on architects and surveyors is recognised as a negative influence on the relations in the industry.

The report by NEDC (1964) highlights the coordination of the efforts of a large number of people as one of the main tasks in the management of a construction project, and
together with the report by Tavistock (1965) on communications in the building industry, recognises the immense problems generated by complex interrelationships of team participants. Roles in the building industry have been found to be in a state of considerable confusion, with participants doing quite different jobs depending upon which of the many possible patterns of team structure they are currently operating in. Instability and the lack of stable definitions of responsibility for team members are seen as causing general anxiety among all concerned. Recognising that the lack of cohesion and coordination are effectively the result of forces beyond the control of any individual or group, the Tavistock Report calls for "development towards generally agreed redefinitions of responsibilities and the stabilising of relationships which would allow for greater joint effectiveness" (Higgin and Jessop, p.53).

The report by Banwell (1964) stresses the early involvement of specialist consultants and the main contractor. With its focus on the co-operation in design and construction, it calls for a consideration of the practices and conventions of the professions concerned, and a searching examination of the case for retaining restrictions.

With the growing emphasis on satisfaction of clients' requirements it is not uncommon to find initiatives that concentrate on the position of the client as part of the team. One such is a guide which stresses the importance of the client's role in the building process, and draws attention to problems which project teams ought to be aware of on large, fast-moving projects - the difficulty of coordination due to the large number of participants, and the exclusion of the contractor's expertise from the design process due to the separation of design and construction (NEDO, 1974). In its assessment of the consultant approach, the use of "specialist project managers" is observed to be one of the positive efforts made to overcome these problems. Carried out by some of the larger firms of general practice surveyors, management consultants, quantity surveyors and engineers, as well as by a few consultants who specialise exclusively in this service, these consultants undertake the overall management and coordinating function normally undertaken by the design team leader, taking no financial responsibility for the project, and are recommended to be employed either in the same way as the other consultants or as an integral part of the client's own internal project team (Para.28 and 29).

In a study undertaken for NEDO, UCERG, the University College Environmental Research Group (1974) examines the need for project management in some detail. When projects possess some or all of the following characteristics: high value, a short
time scale, high complexity, novelty, resource scarcity, high intensity, geographical dispersion of site and/or parties, and a large number of participants, the report recommends that "some form of unified project management becomes necessary" (Para.6). Two levels of problems are observed in the process: those which simply require better communication for a correct solution to be found, and those where there is a basic clash of interest or of opinion between some of the parties to the process. While a coordinator is sufficient for the former, it is likely to be insufficient for the latter case. The taking of decisions on the course of action in the best interests of the client calls for the project manager to be equipped with considerable executive authority. Where clients are faced with fluctuating work loads, and especially for those who build only rarely, consultant project managers from specialist project management organisations are recommended to be employed. In parallel with this, the report also recommends the appointment of a client project manager when a consultant project manager is utilised, to act as a focal point within the client's organisation. The recommended pattern of project management would entail a study of the "organisational forms, roles and functions appropriate" to it, and the development of alternatives to the RIBA plan of work. (See recommendations R13 and 14)

Another major work in this area is a research by a Joint Working Party to study public sector purchasing, commissioned in Dec 1971, and is based on a survey of central and local government building and civil engineering contracts. The outcome is the Report - The Public Client and the Construction Industries (NEDO, 1975). Covering over 2,000 contracts from approximately 300 public sector client organisations, and 50 detailed case studies, the client's role, in terms of its responsibility for strategic control, is extensively elaborated. Project performance is both better and more predictable in the cases where monitoring during the design phase is carried out by someone other than the design team leader. As projects get exceptionally large or complex, the report recommends that the client "should appoint to a full-time post a suitably qualified person as the client's representative", who would assume, on behalf of the client, responsibility for the management and coordination of the team relationships (Para.3.31). Owing to the extent and technical complexity of problems arising during the project, this "client's project manager" role is neither appropriately undertaken by the part-time lay client representative nor by the design leader. In the words of the Report: "The project management function needs therefore to be recognised as requiring a full-time commitment in the person of a specially appointed project manager" (Para.3.33). Where such a project manager is appointed by the client, careful consideration needs to be given to the roles and responsibilities of all participants, and
especially the agreement of responsibilities between the design team leader and the project manager (Para.3.34).

Although management is exercised at various levels within a construction project, project management concentrates on management and control of the contributors to the project. This fundamental point is stressed in the review by IQS (1976). With the evolution of the activity of project management, the management functions of each professional contributor are separated into those which relate to the management of his own professional activities, and those which relate to the management of the project as a whole, the latter being vested in the hands of a project manager or project management team (p.8). More accurately, each part of the process in the conventional system is managed, but the total process is not. The review develops very systematically the case for separate establishment of a person or group of persons divorced from professional functions, to undertake the project management role. In the most basic, the conventional structure with architect as team leader, project management functions run parallel to design functions, with the tendency that they become subservient to design functions. In the package deal arrangement, the contractor takes responsibility for project management as well as for constructing the project, with possibility of project management functions becoming subservient to construction management functions. Two consultants, appointed simultaneously, can also accept joint responsibility for project management in addition to performing their own professional functions, a corporate management type of arrangement. Here, again, there is a lack of identification of the final responsibility for project management. Ideally, an arrangement in which all contributors contribute to project management under the overall direction of a separate project management function, will lead itself to more objective interpretation and coordination of the professional and project management contributions of all the contributors (p.16-22), unconstrained by professional considerations. Such an arrangement demands preparation of coordinated terms of reference for all contributors and particularly for the project manager or project management team, which would give recognition to the function by the client and more importantly, by the other contributors.

A review of the role of the professions in the construction industries (Building and Civil Engineering EDC, 1976) also documents project management as one of the roles being developed. Project management is seen as covering the "tasks of overall project planning and coordination and monitoring of the progress of project participants, including the contribution of the client organisation as well as the work of designers
and contractors" (p.21), and the client project manager is the person with responsibility to the client for these tasks. Generally, large or complex projects would merit appointment of a project manager while for smaller projects a manager could handle several at different stages. He should preferably be a professional, independent of the design team, and could be an employee or a consultant. The report documents several respondents as indicating a need for project managers to be encouraged and recognised by their own professional bodies, with one public sector client recommending recognition of project management as a discipline for mid-career specialisation.

In a joint exercise by the Building and Civil Engineering EDCs towards promoting the efficiency of the British Manufacturing Industry (B & CE EDC, 1978), the survey shows the average industrial user as requiring one of the participants from the industry to "take full responsibility for the project, to ensure good coordination between design and construction and between the various participants..." (Para.3.9). Dissatisfaction with the traditional role of architect as project leader was expressed by a number of firms in the postal survey questionnaire, who complained of their shortcomings as managers. This observation bears out the general and growing recognition that the management task is by itself clearly distinct from the design and construction functions, and sufficiently critical to warrant vesting it in an independent role.

By way of response to this report, the Chartered Institute of Building set up a working party in November 1978 with the aim of producing a client's guide which would assist the client to develop the brief and offer guidance on ways of using the building industry's expertise (CIOB, 1980). The resulting guide calls for the identification of a Client Project Group (CPG) - a small working group who will act on the client's behalf in developing the project, and comprising members who would have experienced knowledge of: project management and industrial relations, design analysis, production flow and commercial marketing, legal and financial restraints (p.8). This CPG will effectively combine its staff with key members of the design and construction team to form the Project Team, and later to form the policy and progress unit as the project proceeds. Having the responsibility to plan and control the project, the CPG requires to be given sufficient authority by the client to achieve this without unnecessary reference back. Its key activities will be management of information flow and communication procedures, essentially the decision processes involved in a project. The accompanying review of building management organisations lists project management as one of five options for a client. This management organisation is flexible in that it can accommodate a preferred balance of control between the client and
the project manager - "the client can retain such direct control as he decides with a corresponding level of Project Manager's Responsibilities" (p.26).

In 1979, the Chartered Institute of Building published an Occasional Paper (No 20) dedicated solely to project management in building, which was later combined with a paper on education for project management (CIOB, 1982). It examines how project management is developed from the separation of management roles from the design and construction elements, which in turn are the result of various pressures on the traditional and 'design construct' approaches to management of the building process. This separation of the pure management role has enabled project management to develop in its own right. In acknowledging considerable confusion of terminology, usage and interpretation of the term project management, it calls for the use of the term in the comprehensive sense of "overall responsibility of a building project on behalf of the client" and recommends acceptance and use of the following definition of project management - "The overall planning and coordination of a project from inception to completion aimed at meeting a client's requirements and ensuring the aim of completion on time within cost and to required quality standards" (p.19). It however points out that the normal contractual system has "no clearly defined responsibility or accountability", although power of decision and authority is vested in project management. The gravity of this deficiency does not appear to have slackened or become any worse over the last 10 years since 1979. It is not possible to judge the extent of the problem at the present moment, but it is likely that the moves to progressively incorporate the project management role into the more usual contractual systems, have assisted in overcoming the problem to some extent. However, in the 1988 edition of the same Report, it is claimed that project managers have answered the criticism by accepting full responsibility for the management function of the project. According to this report, most project management organisations have developed conditions of engagement which properly define the contractual responsibilities they have to the client (CIOB, 1988).

The first phase of the Building EDC's investigation into the process of procuring new industrial and commercial buildings concentrates on industrial buildings and covers the whole process from a customer's recognition of the need for new industrial space to his entry into a complete and operational building (Building EDC, 1983). This research was based on a mixture of case-studies, statistical analyses, and opinion-based interviews. With its emphasis on the factors affecting construction periods, a number of key findings have significant management implications. Confused lines of
responsibility and poor communications leading to delays were found at all stages of
the process and with all types of organisational arrangements. "The participants from
the industry and the customer should know where responsibilities lie at each stage, and
who within each organisation can give authoritative answers to queries. The
arrangements must allow adequate management continuity between preconstruction and
construction, so that somebody is responsible both for the design and the consequences
of it." (Para.4.12) On the performance of architects, it "indicates that achieving fast
construction within the traditional framework requires them to be good project
managers as well as designers." (Para.4.13) Customers too have an important role to
play, in ensuring that a senior member of staff with ability to take decisions without
reference back, will be available when required, and also in ensuring that someone is
acting as a focal point for his interests, either in-house or outside, but working closely
with him (Para.5.3). To achieve fast building times, responsibility for progress-chasing
falls on the team leader or 'principal adviser, rather than on the customer. Control of the
development may also be passed to an external organisation such as under a project
management arrangement, where responsibility is transferred, both for design and
construction, to a specialist management firm or to a professional practice offering these
services. If this is utilised, customers have still to maintain very close links between
their organisations and the manager (Para.5.12). Essentially, the assessment by
customers of the type of organisation most suited to their needs involves "balancing
factors like the extent of knowledge and experience of building available within their
organisation, and the administrative load they can carry internally, with the degree of
control desired over the project as it proceeds, and the extent to which they are prepared
to pass ultimate responsibility for seeing that the work is done" (Para.5.14). The choice
of project leader is crucial, and if not available in-house, should be appointed only after
careful investigation of past experience. When interviewing firms, it is essential to
pinpoint who exactly will be in day to day charge of the project, the quality of his and
the firm's track record, and his other major commitments (Para.5.15).

Based on the projects in the study, about one in five customers utilised various
specialists to assist in the organisation and management of their project. Paragraph
12.11 gives a good account of the use of project management - "Several customers had
appointed a project manager to act on their behalf within what still remained an
essentially traditional arrangement. Project managers were used equally for large and
small projects: the projects ranged from £0.25 to £2.5 million. Project managers in the
study performed a wide range of tasks: they found and negotiated sites, arranged
financial backing, formulated initial briefs, negotiated with planning authorities,
recommended and negotiated with architects, consultants, process plant suppliers and chose contractors." On most projects, preconstruction was fast, and barring few exceptions, construction was also efficient. A very notable finding in the study was that "project managers had been used more often by customers with experience of construction and not as might be expected by the first-time customers" (Para.12.11). Generally, it was found that most projects which went well were for experienced customers, and were ones in which the customer supplied a substantial and well-directed management input. Although there was a wide range of performance within each method of contract organisation, a higher proportion of projects where non-traditional methods, such as own management, design and build, and separate management function, were used had fast times.

More recently, the British Property Federation (BPF), representing the private client in the UK, decided to carry out its own research into ways of improving the most commonly used system for commissioning design and construction - the appointment of a professional team for design and preparation of documents and the appointment of a main contractor to carry out the works. The result of this research was the development of a system known as the "BPF system for building design and construction", supported by a detailed manual setting out the operation of the system (BPF, 1983). The manual points out most poignantly that past reports published by various building industry groups, making recommendations for improvement of the industry's performance have emanated from all groups except from the private client, the man who pays, despite bearing the brunt of delays, mistakes and inadequate planning. The exceptions here are the case studies conducted by Slough Estates of U.K in 1976 and 1979 (Slough Estates Ltd, 1979) which compared the standards of achievement in industrial development projects over seven countries and made recommendations for changes. The BPF system has, since its launch in late 1983, evoked much response from the industry. Associating documentation have also since been published, namely The ACA Form of Building Agreement 1984, BPF Edition; Conditions of Engagement for Consultants Work, 1985; Conditions of Engagement for a Client’s Representative, 1985. Two of the major innovations which the System incorporates are the introduction and use of a 'Client’s Representative' and a 'Design Leader'. The Client’s Representative is charged with the responsibility of looking after the Client’s interests and undertakes primarily the main management functions of controlling time, cost, standards and building performance. The Design Leader is responsible for all aspects of the pre-tender design and specifications. Also unique is the system’s division of the design and construction process into the five stages of - (1)
Concept, (2) Preparation of the Brief, (3) Design development, (4) Tender documentation and tendering, and (5) Construction, where the end points of each stage coincide with the Client's making of a decision on whether to proceed with the project or not. These five stages are not however entirely dissimilar to other attempts at dividing the design and construction process into convenient phases. As an example, the ILO Guide (Austen and Neale, 1984) also adopts five stages, but as follows - (1) Briefing, (2) Designing, (3) Tendering, (4) Constructing, and (5) Commissioning.

While the total system is not as widely utilised as would have been preferred, aspects and principles that form part of the system are in use in various projects. Nevertheless, the spin-off effect in terms of industry discussion, has served to shake down and awaken some if not all of the entrenched professional disciplines in re-examining their roles in the light of its prescriptions.

Extending from earlier research into the speed of industrial building, the Building EDC undertook detailed case studies of 60 commercial projects built between 1984 and 1986, with individual values ranging from £250,000 to £30 million, covering office and shopping developments as well as specialist use buildings such as hotels, hospitals, and training and leisure centres (Building EDC, 1989). Generalisations from the findings of these were supported by supplementary information in the form of special in-depth investigations, questionnaires to customers and promoters, and statistical analyses of non-detailed data from some 8000 commercial projects.

Noticeably, in the majority of the cases, the traditional method of project organisation was utilised. This traditional system was however fundamentally different from the traditional system evolved in the post-war period, and from the earlier architect-led system. It had a high profile customer input. The report refers to this 'new' system as the "Customer-led Traditional System". The report recommends that a customer should establish a customer contact point within his organisation, who must have sufficient status and authority to act on his behalf in the dialogue between his organisation and the appointed team. If this in-house project executive is not sufficiently experienced with the workings of the construction industry, an external 'customer representative' or 'principal adviser' should be appointed to supplement the in-house executive (p.13). Ideally, this customer representative should be completely independent of any particular form of project organisation and must not himself carry out any other function (Para.5.4). In the area of design co-ordination, the research revealed "significant misunderstandings over responsibility for design and co-ordination arising from the
Terms and Conditions of Appointment promulgated by the professional bodies" (Para. 5.10). Customers who built regularly were found to have "building departments staffed with specialists, often called project managers" (Para. 11.17). It is suggested that, to some extent, "there may have been an interplay between the increase in customers' direct management of construction and the greater fragmentation and apparent diminishing ability of the industry to produce concerted leadership from within" (Para. 11.18). This observation is very much consistent with the often expressed view that "No one looks after your interests as well as your own staff does", and may well be a major reason behind customers preferring to carry out the project management task in-house. Paragraph 11.24 bears out this point very clearly - "The impact of the customer's intervention ... mostly ... reflected the customer's greater and more immediate stake in the outcome of the project if compared with the multiple interests of the construction team".

Good outcomes and efficient project times were found to be "not exclusive to particular procedures or forms of organisation and, more importantly, could not be attributed to their use alone" (Para. 12.20). The term 'project organisation' in the study is taken as synonymous with procurement method or procurement path.

Coordinating and augmenting activities of the individual members of the team lies with the project manager, who should not seek to carry out any of their duties or accept any of their responsibilities. In practical terms, it would be extremely difficult to isolate and identify aspects of responsibilities and duties which are in fact "coordinative" in nature and which have, owing to the use of the project manager function, passed as such to the project manager concerned. It is suggested that team members may well perceive the major part of their activities where an element of coordination with others' activities exists to pass to the project manager. In accountability terms, while team members, due to strict monitoring and control by project management, become more accountable for their own specialised functions, it is likely (and herein lies the danger) that they may effectively become less accountable for the interfunctional elements of their work. Failure in a project due to specific elements of team members' work may be quite a straightforward matter to determine. Extreme difficulty is presented however when failure to meet a client's overall needs is often the result of just the failure of the 'management' task, in its inability to coordinate in "total" terms, all the various contributions. The matter here is not purely one of design coordination, for this usually falls quite neatly as the design leader's task, but one of coordination of participants' contributions.
In this respect, the task of a project manager is a huge one. The potential danger involved is comparatively more pronounced than is anticipated in the usually general terms of engagement under which project management arrangements operate. It may be that the project management task is impossible to elaborate in exactitude, or that it is in fact safer to couch the service in vague terms rather than to opt for detailed specifics. Further discussion of this will be found in Sections 8.5 and 8.6.

The problem is possibly further exaggerated by a lack of appreciation and understanding of the distinction between performance guarantee and project outcome guarantee. Given a typical project's environment and its multitude of affecting sub-systems, no project manager can purport to guarantee the successful outcome of any project to strict terms. Theoretically, if a client contracts with a project manager for a specified finished end-product, it may be possible for strict terms of cost, time and quality to apply, but the situation is rare if not non-existent. Contracting relationships in the petrochemical and chemical industries are an exception to this. More normally, the project management service does not and cannot guarantee project success. It must undertake however a level of service which can be measured in some form, and which is not entirely tied to project outcome. For an accurate assessment of his overall accountability, it would seem that his service performance is distinct and quite separate from the project performance which is expected to be achieved.

In one sense, we may say that his professional accountability is quite different in nature from his project accountability. Professionally, a certain level of service can be expected of him. In project terms however, he can only be accountable, realistically, for the performance of an agreed set of functions.

A useful perspective of construction projects considers them as consisting of four major areas of responsibility as illustrated in Fig.3.1.
Each area may involve the work of a number of teams. To ensure effective functioning, it is not only necessary for the work within each area of responsibility to be coordinated, it is also necessary for the four major areas of responsibility to be coordinated. This simple framework of the four areas of responsibility provides a valuable insight to the various studies that we have highlighted in this sub-section. The lack of cohesion between participants, the separation of design and construction, demands for overlapping design and construction, the client's growing importance in terms of project involvement, all can be observed to be arising either within one of the areas or more likely between two or more areas in the framework, and all point towards a need for better management.

It is noticeable that, although the original concern is predominantly that of the separation between design and production and its attendant problems, the issue of management is conceivably broader, and encompasses both the multi-disciplinary arrangement within the design team as well as the client organisation's involvement. The emphasis of many of the studies/reports can be observed to be the definition of responsibility for participants. Clarity of responsibility definition however faces undue strain arising from: (1) the overlap of responsibility between and among participants, (2) the increasing complexity of projects, both in terms of technology and the larger number of inputs and participants, and (3) the shift towards a separation of the
management task and function from the design and construction elements. On the basis
that the client is itself an area of responsibility which has to be similarly managed, a
more precise framework envisages the management area of responsibility as occupying
a central position among the other three (See Figure 3.2).

![Figure 3.2: The Central Position of Management](image)

### 3.5 THE FUNCTION OF PROJECT MANAGEMENT

Based on the last two subsections (Section 3.3. and Section 3.4), it becomes necessary
at this point to focus on the fundamental purpose of the project management function in
development and construction. What is the fundamental nature of the project
management task and what are its constituent parts?

A useful point to begin an examination of this is the report by IQS/Liverpool
Polytechnic (1976) which suggests sixteen broad functional categories within project
management. These are summarised as follows:

1. Brief preparation and interpretation
2. Commissioning contributors
3. Budget costing
4. Planning consent
5. Organisation of team
6. Time plan
7. Feasibility, design and production monitoring
8/9. Coordination of contributors
10. Reporting to client
11. Contractual arrangements
12. Remedial action
13. Problem anticipation and resolution
14. Disposal strategy
15. Continuing development of completed works

The report goes on to examine and classify these functions according to which are either not always carried out satisfactorily in the conventional process, and those which are not undertaken or rarely undertaken to any extent but which, if carried out may help to solve some of the major problems which both clients and contributors recognise in the conventional process:

1. Not always carried out satisfactorily in the conventional process,
   (a) Initial planning advice - Functions 1, 3, 4, 10, 12, 13;
   (b) Monitoring of feasibility studies, design and production in terms of physical and financial client satisfaction - Functions 7, 8, 10, 11, 12, 13;
   (c) Integration of advice on the commissioning and use of the completed project - Functions 14, 15, 16;
2. Rarely undertaken in the conventional process,
   (a) Establishment of relationships between contributors - Functions 5, 10, 12, 13;
   (b) Planning, coordinating and monitoring of time - Functions 6, 9, 10, 12, 13 (p.14).

Functions 10, 12 and 13, it is pointed out, are predominant, and are mainly concerned with the coordination of contributors. On the basis of this classification, the report makes out a more formal management system than that existing conventionally, one which would employ more formal techniques of management which are appropriate to the construction process, and that are lacking in the conventional process. Project management as a separate function is seen as fulfilling this need.
The summary of activities of project management by Walker (1984) provides a broad categorisation of the function. Three activity categories exist:

(1) Approval and recommendation.
(2) Boundary control, monitoring and maintenance.
(3) General and direct oversight.

Approval and recommendation highlights the very important relationship between the power of approval and the right to make recommendations. Power of approval is exercised at the decision points in making decisions while the right to make recommendations refers to the authority to make a specific recommendation or to present alternatives upon which a decision will be based (p.115). The crux of this activity centres clearly on the decision-making process inherent in the management of a project, and is largely an information-processing function. Managing this decision process constitutes the major function of project management, and as we have seen earlier, this entails ensuring that the best decision gets made. Boundary control ensures functional compatibility of contributors' work within and between tasks, relates the system to its environment and controls the system's direction towards the required outcome, and is accompanied by monitoring and maintenance (p.117). General and direct oversight comprise two classes of supervision that are relevant to the project management task. General oversight concerns policy guidance for the project while direct oversight concerns the direct supervision of the specific skills used on the project (p.119). Taken together, the three broad categories are interpreted into thirteen functions expected from project management:

(1) Establishment of the client's objectives and priorities
(2) Design of the project management structure
(3) Identification of the way in which the client is integrated into the project
(4) Advice on the selection and appointment of the contributors to the project and the establishment of their terms of reference
(5) Translation of the client's objectives into a brief for the project team and its transmission
(6) Preparation of the programme for the project
(7) Activation of the framework of relationships established for the contributors
(8) Establishment of an appropriate information and communication structure
(9) Convening and chairing meetings of appropriate contributors at all stages
(10) Monitoring and controlling feasibility studies, design and production to ensure
that the brief is being satisfied, including adherence to the budget, investment and programme plans

(11) Contribution to primary and key decisions and to making operational decisions
(12) Recommendation and control of the implementation of a strategy for disposal or management of the completed project, including commissioning the building and advising on arrangements for running and maintaining it when completed
(13) Evaluation of the outcome of the project against its objectives and against interim reports including advice on future strategies (p.126-133).

The Chartered Institute of Building (1982) puts forward the following definition of project management - "The overall planning, control and coordination of a project from inception to completion aimed at meeting a client's requirements and ensuring completion on time, within cost and to required quality standards" (p.12). The concept is best illustrated in Fig.3.3 which stresses the 'pivotal role' of project management in representing the client in his relationship with the project team, i.e. the design and construction organisations.

![Figure 3.3: Project Manager's Pivotal Role](Source: CIOB, 1988, Fig.1, p.4)

Appointment of a Project Manager is intended to relieve the client of responsibility of providing an organisation to deal with the design and construction of the project. Notwithstanding this, the client however retains a certain degree of control necessary for satisfaction of his specific wishes and preferences. Depending on the project and the
client's specific requirements, the services provided by a Project Manager vary and may include, but are not necessarily limited to, the responsibilities and duties listed in Table 3.2 (with no order of priority or sequence to the listing).

If we examine this list of duties and responsibilities more closely, a number of features can be observed. One group of tasks consists those that are essentially initiated and performed by the project manager. Another consists predominantly of ensuring and monitoring those that are carried out by the rest of the project team. Even this dichotomous grouping may not be entirely without overlap. It is likely that tasks falling within the former grouping will also involve input from various members of the team. The latter grouping presents more pronounced difficulties in the project management role. The major function here is to interface and balance all the multi-disciplinary inputs for the common benefit of the project in overall terms, and to a certain degree, to give added emphasis on the distilled management aspects of the many disciplines which now fall on the shoulders of the project manager. Given the independent position which he must occupy, conflicting objectives among disciplines and between stages of a project can conceivably be overcome or at least minimised. This overall vision of the project management role comes from its "ability to stand back and view the total process" (IQS, 1976, p.15).

The same list of services is adopted in the Second Edition of the CIOB Report (1988), but with one major addition among a number of minor adjustments. It includes two paragraphs on 'Project Manual', (i) and (j), under 'Initial Stages with the Client':-

"Project Manual"

(i) Prepare a manual setting out the project specific arrangements for management and organisation. Include inter alia:
   (i) directory of participants;
   (ii) results of items (b), (c), (g) and (f) above;
   (iii) systems for the control of time, cost and quality;

(j) Incorporate appropriate sections of the manual into the conditions of engagement of the design team and the contract(s) for the works. Issue the manual to all project participants and keep it up to date." (p.9)
<table>
<thead>
<tr>
<th>Initial Stages with the Client</th>
<th>Feasibility Stage</th>
<th>Pre-Construction Stage</th>
<th>Construction Stage</th>
<th>Completion</th>
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<tr>
<td>Project Manager's Brief</td>
<td>Brief</td>
<td>Contractor Selection</td>
<td>Monitor Progress</td>
<td>Pre-commission</td>
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<td>Client Involvement</td>
<td>Development</td>
<td>Management Structure</td>
<td>Site Conditions</td>
<td>Final Account</td>
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<td>Project Viability</td>
<td>Project Feasibility</td>
<td>Communication</td>
<td>Meetings</td>
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<td>Funding</td>
<td>Programme</td>
<td>Design Proposals</td>
<td>Inspect Works</td>
<td>Manuals</td>
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<td>Communications &amp; Reporting</td>
<td>Design Team</td>
<td>Costing</td>
<td>QC &amp; Testing</td>
<td>Defects Liability Period</td>
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<td>Grants</td>
<td>Site</td>
<td>Pre-ordering</td>
<td>Anticipate</td>
<td>Feedback</td>
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<td>Government &amp; Other Approvals</td>
<td>Budget Monitoring</td>
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<td>Site Investigation</td>
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<td>Preliminary Drawings</td>
<td>Pre-ordering</td>
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<td>Budget</td>
<td>Planning</td>
<td>Monitor Budget &amp; V.O.s</td>
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<td>Outline Planning Approval</td>
<td>Permission</td>
<td>Training</td>
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<td>Feasibility Report</td>
<td>Building Regulations</td>
<td>Certify</td>
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<td>Contract Documents</td>
<td>Statutory Undertakers</td>
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<td>Tender Evaluation</td>
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<td>Site Inspection</td>
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Table 3.2: List of Project Management Services
(Summarised from: CIOB, 1982)

Items (b), (c), (f) and (g) refer to the portions on 'Client involvement' (b and c) and 'communications and reporting' (f and g). The project manual is by no means a new phenomenon. Projects from the more established client organisations and those which employ consultant project managers have to a large degree utilised such documentation.
Although this may not in fact be widespread, the inclusion of the item serves to document a valuable feature of existing project management practice. The manual, properly prepared, formalises the intended working arrangements among all the project participants in terms of management and administration. The more prominent of the addition is paragraph (j) which aims to incorporate appropriate sections of the manual into (1) the design team's conditions of engagement, and (2) the contract(s) for the works. This achieves a certain degree of formality of the inclusions for the design team, and provides a logical expansion of their engagement terms to incorporate working arrangements that are specific to the project in question. It therefore instils a fair amount of practical specificity into what are otherwise very broad and general conditions of engagement. It is useful to note that items b, c, f and g pertain to the relationship between the client and the project manager, and that their inclusion/ incorporation into design team members' conditions would effectively serve to give emphasis to the role of the project manager within the design team. It would appear that, if this is one of the intended objectives in paragraph (j), a more helpful inclusion in the project manual ought to be that portion under 'Project Manager's Brief' which establishes the "full extent of (the Project Manager's) authority, duties and responsibility in unambiguous terms" (Para. a, p.9). Noticeably, this catalogue of information is absent from the suggested inclusions to the project manual. It is suggested that this item is of critical importance, as the design team will otherwise have no knowledge of the project manager's extent of service and involvement in the project, especially in so far as this relates to their own involvement. This notion of awareness can possibly have implications in terms of role clarity and ambiguity within the team, and is an item that will be examined within our empirical investigation.

As to incorporation of items from the project manual into the construction contract(s), it is doubtful whether their inclusion will have full legal impact. As to the necessity of incorporation of the project manager's role into the contractual arrangement for a project, some empirical opinion will also be provided from the subsequent investigation.

Finn (1984) looks at project management in development and defines it as "the assumption of responsibility for a development scheme from inception to final completion in such a way that the client's aim to have a satisfactory building constructed on time, within an agreed cost limit and producing a satisfactory income is met." He presents a very comprehensive checklist which sets out to provide guidance throughout the stages of commercial project management, consisting of a total of 237
The most recent statement of the services which may be provided and arranged by the project manager is the schedule of services proposed by the RICS (1989), which groups the services into 16 categories that are quite similar to all the earlier sources:

1. Site selection
2. Analysis
3. Agency, valuation, funding and relocation
4. Legal services
5. Consultant appointments
6. Brief, design and quality control
7. Reporting and meetings
8. Programming
9. Capital budgeting
10. Construction economics and financial management
11. Cash flow
12. Local authority and planning approvals
13. Contract procedures
14. Contract management
15. Building management, commissioning and maintenance
16. Tenancies and fitting out.

The Appendix states very clearly that not all the services will apply to every appointment and that other services may be required which are not listed.

A number of observations can be made on reviewing all these sources. Firstly, the wording of the individual tasks in each of these sources appears to indicate differing levels and types of involvement. Clearly, to advise, to monitor, and to decide, all represent different actions on the part of the project manager. Table 3.3 summarises the range of terms utilised in the various sources and shows just how broad, especially in the case of the CIOB document, these can stretch, bearing in mind that distinctions between the levels of activity within one source may in fact not be as fine as it appears, and that a certain degree of overlap in terminology may exist. On the basis that the checklists remain as guidelines to be adopted in a particular case, no serious problems should arise. If however, as in the case of the RICS (1989) schedule, they are adopted and specified in the Appendix to the Conditions of Engagement as suggested, inability
to fulfil the tasks or omission to carry them out, may have vastly different and possibly drastic consequences for the project manager concerned.

Secondly, a number of other parties come into the realm of the project manager's function who are generally not considered as part of the consultant design team. These include landlords, development agents, legal agents, letting agents, and financing agents. Liaison with these other parties, as well as with various sections within the client group, imposes a very stringent requirement for project managers and their supporting personnel to be conversant and knowledgeable in each of these respective and surrounding areas.

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<td>Co-ordinate</td>
<td>Consider</td>
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<td>Assess</td>
<td>Advise</td>
<td>Check</td>
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<td>Establish</td>
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<td>Investigate</td>
<td>Determine</td>
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<td>Monitor</td>
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Table 3.3: List of Action Terms

Finlay (1987) points out by way of example just how crucial the wording of a project manager's duties are when specifying them in his agreement with the client - ensuring that a consultant carries out his functions and instructing the consultant to carry out his functions, can have quite different consequences if the consultant fails to do so; in the first case, the project manager would have failed in his own performance too, while in the second, his duty would have been fulfilled when such instructions were properly given, even if not carried out (p.35).
Returning to our initial premise which establishes that the project management role should embrace the overall development process, in addition to meeting the client's objectives in terms of time, cost and performance, the project management role can also undertake to maximise the development potential of a scheme. At least one major project management firm is known to adopt this development perspective by undertaking to provide a 'development management service' rather than a project management service. This development management role is seen as wider than the usual project management service, and occupies a focal position within four groups - the development team, the advisory team, the project team, and the construction team (See Fig.3.4).

The development team and the advisory team are more commonly dealt with as the client group in the normal arrangement, while the project and construction teams make up the project group, comprising all the design and construction participants. Where the development potential that is required to be achieved is stated in very specific terms in the service agreement, it is possible that such a development management service will in fact be one form of the more normal project management service that exists.

![Figure 3.4: The Development Management Role](Adapted11)
3.6 PROJECT MANAGEMENT IN THE PUBLIC SECTOR

Based on the earlier output figure of £18,598 million for 1988, the public portion of this amounts to £3,639 million, or 19.6%. Given this sizable contribution of public building construction projects within the overall UK figures, an effort is made here to document the impact of project management in public building schemes. In particular, attention will be focussed on the management initiatives of two public bodies, namely the NHS (National Health Service) and the PSA (Property Services Agency) of the Department of Environment (DoE). The NHS example documents the use of project management as part of its well established procedure for the implementation of capital building schemes. The development of the project management role within the organisational context of the PSA provides a more recent account of the increasing attention and emphasis given to project management. By way of organisational development, the overall programme towards a higher profile for project management in the PSA is still very much in progress. While the first case serves confirmation of the importance of the project management role, the second demonstrates the growing awareness of its significance in the management of projects, and elaborates on the subsequent implementation of the machinery to enable its proper function.

3.6.1 Project Management in the NHS

Essentially, capital health projects are implemented in close accordance with procedures spelt out in two major documents - Concode and Capricode. Concode contains guidance to health authorities on the procurement of NHS building and engineering work (Part 1), and on the commissioning of consultants (Part 2). Capricode (1986) sets out the health building procedures in great detail, and thus provides the mandatory procedural framework for managing and processing NHS capital building schemes. Both the Department's centrally funded schemes as well as schemes partly funded externally from sources such as the University Grants Committee, trust funds or private donations, are covered by the Capricode framework.

The Capricode procedures are built around a series of seven interconnected stages in any health building scheme:

(1) Approval in principle (AIP),
(2) Budget cost,
In providing for clear timetabling and effective management of schemes and the ongoing monitoring and evaluation of performance, the procedures have been designed with the aim "to secure a sound, consistent and accountable approach by health authorities and to promote health building schemes which, give best value for money (in terms of both capital and running costs), accommodate the requisite services efficiently, open on time, and keep within budget" (Capricode, 1986, Paras.2 and 4). Within the procedures, scheme management or the responsibility for management of the planning and execution of each scheme is seen as vesting in an individual officer, the Project Manager, "who should be accountable for adherence to Capricode procedures and keeping the scheme to timetable and budget" (Para.9). The Project Manager, in the terminology of Capricode, takes the following definition:

"The individual responsible for the overall management of a scheme, particularly adherence to budget and programme, who is accountable to health authority management. A Project Manager may be either an officer of the health authority having overall responsibility for a scheme (normally the individual who would lead the Project Team) or a consultant Project Manager from the private sector and commissioned to manage a particular scheme." (Appendix 3, p.65)

As with most other public works, health building schemes are financed mainly from public funds voted by parliament. Hence there is a general duty on health authorities to secure best value for money and to conform to Government policies on scheme planning, procurement and cost control. Capricode procedures greatly facilitate this machinery for public accountability by providing for the necessary control and reporting on schemes, thereby enabling those accountable for the expenditure of public money to explain whether resources have been spent efficiently and economically for the stated purposes. The Comptroller and Audit General (C&AG) and the House of Commons Committee of Public Accounts (PAC) may require such explanations of schemes. By adherence to Capricode, much of the information that is required for these "explanatory/accountability" purposes is readily available from the basic documentation of the schemes (Para.7). The whole crux of Capricode is the operational requirement
for approval, monitoring and control systems which are compatible to its procedures. The associating documentation of the systems should then "facilitate audit and assessment of their performance and effectiveness in use" (Para.8).

Within Capricode, the contribution of a project manager is envisaged as early as in Stage 1, and continues through the remaining stages. From Stage 3 (Design) onwards, the Project Manager "provides the channel of communication between the health authority and the Design Team (including the Supervising Officer)", and either makes or confirms all instructions from the client to the design team (Para.3.7). In the event a consultant Project Manager is commissioned, paragraph 3.8 calls for securing proper accountability to health authority management. The Senior Works Officer of the health authority is specified as the person who advises on such an appointment, guided by Concode Part 2, Chap 5, which states clearly the importance for relative responsibilities to be clearly defined, and that the authority must retain full responsibility for cost control. Concode views the project manager as integrating and coordinating the client's input into the building process, thereby linking the authority's interests and intentions to achieve maximum effectiveness from the design team and contractor (Para.2.1).

Capricode maintains, notwithstanding the use of a consultant project manager, that the Supervising Officer and other members of the Design Team "must be able to undertake their normal duties without diminution of their responsibilities under the building contract"(Para.3.8).

The case of hospital building in England provides a useful example of the management of capital health projects in the NHS and forms the subject of a recent report on the performance of the NHS building programme by the National Audit Office (See National Audit Office, 1989). As an indication of the level of investment in this sector, expenditure on the NHS hospital programme in England amounts to approximately £700 million a year. The findings of the NAO with respect to the management of hospital building (Part 4) are of special interest as the role of the project manager is extensively featured. Paragraphs 4.8 - 4.11 record the Audit's findings in relation to the project management arrangements in the hospital building schemes.

Pursuant to the Griffiths Report (1983), a management inquiry of the NHS, the Department of Health in 1985 announced changes in the roles and responsibilities of the Department, Regional health authorities and District health authorities, restricting the Department to - determining strategic policies, setting key objectives for and monitoring the hospital programme, and supporting health authorities by the production of cost
effective guidance in selected key areas; and giving health authorities greater discretion and a wider choice of sources of advice and expertise in the management of their own capital projects, thereby maintaining high priority for building major capital projects to cost, time and quality (NAO, 1989, Para.1.2). Prior to this date, projects were generally run by designated project teams drawn from various disciplines within the health authority, these teams including client parties operating on a consensus basis. The 1985 announcement effectively changed this by specifying that responsibility for the planning and management of each capital building project should be clearly vested in an individual project manager accountable for keeping the project to time and cost.

Based on the findings of NAO (1989), all 14 regions in England were found to employ individual named project managers for all their schemes in accordance with Capricode and the 1985 guidance. The Project Manager in 10 of the regions had oversight of the scheme from approval through to commissioning, while in the other 4 regions, responsibility passed from a generalist project manager to a works professional project manager after the detailed design stage. The specific case of the South Western Region showed however that there was not always one single manager but two or more handling projects at different stages, and that project managers were not wholly responsible for appointing the design team, and did not authorise payments to consultants or contractors, or settle claims against the client. In short, roles and responsibilities of project managers employed by the authorities currently vary; they generally do not possess the full range of authority that is applied in the private sector and elsewhere in the public sector. Notwithstanding this, the Department is said to be actively promoting the strengthening of the role of project managers and is of the view that they should have the full range of powers applicable in the private sector.

The attempt made by the NAO to compare project delivery times with those in the private sector reveals a number of broad lessons for NHS practice, notwithstanding the differences in size and complexity of the range of services between the two. The private sector pays a high premium for a fast-track approach to design and construction, unlike the NHS which is more concerned to maximise value for money. It is also driven by commercial considerations that do not apply to the NHS. Private healthcare operators who were consulted by the NAO stressed that one of the major factors which influenced faster delivery in the private sector was the appointment of a project manager or coordinator with full responsibility for the success of the project once approved to completion (Paras.2.16 - 2.18). The NAO concludes that increased delegation of the management of major schemes and the appointment of project managers who have full
authority for all aspects of a scheme should improve the efficiency and accountability of schemes, and the time taken to complete them (Para. 16).

3.6.2 Project Management in the PSA

The Property Services Agency (PSA) functions as part of the Department of the Environment (DOE), and its role is to provide, manage, maintain and furnish the property used by the Government. This includes both defence and civil projects, as well as those of a number of government-related bodies. The five main categories of PSA activities are - estate/management, maintenance, design of new buildings, supervision of construction, and supplies (PSA Annual Report, 1987-88). As an indication of the magnitude of new construction work which PSA is involved in, the expenditure on new construction for the previous two financial years were as follows:

1986-87: £1115 million
1987-88: £1153 million (an increase of 4%)

Against these two figures, the voted figures for 1988-89 and the forecast figures for future years, as at 1988, were:

Voted 1988-89 - £1223m
Forecast 1989-90 - £1330m
Forecast 1990-91 - £1312m
Forecast 1991-92 - £1297m,

showing a sustained forecast of approximately £1300m over each of the next three years following 1988-89. With such a high volume of new construction work, it is imperative that the standard of performance of the PSA should be, and should also be seen to be, of the highest level on all of these projects. Given this constant need for public accountability in its handling of public construction work, it is no wonder that the Agency has, over the years, undergone inquiry on a variety of issues. According to Sir Gordon Manzie, the Chief Executive of the PSA, in his 1987-88 Introduction, the year 1987/88 was significant in that it received three key reports which would, over the course of the next few years, bring about fundamental change by altering the character of the PSA (p.3). The three reports were:
(1) Report of the Select Committee on the Environment on Future of the PSA - April 1987;
(2) The Commercial Accounts Study by Deloitte Haskins and Sells - Summer 1987;
(3) Efficiency Scrutiny of Project Management in the PSA - October 1987.

The first two concern mainly the reorganisation of the PSA towards becoming a Government Trading Fund operating on a commercial basis by April 1993, and although our main concern is the third report, it must be viewed within the wider and overall context of the first two. A longer term perspective of these moves is seen as the eventual privatisation of the PSA.

Fundamentally, the restructuring contemplated by the earlier reports would "untie" client departments from the requirement to use the services of the PSA, i.e. they could, if they choose to, source them from the private sector. According to the second report, this untying will stimulate PSA towards improvements in the services and flow of information to client departments, and reductions in the cost of those services. The reorganisation that is recommended sees the PSA operating as three separate businesses by April 1990 - Project Services, Estates Services, and Property Ownership. The trading fund approach, in adopting commercial accounting disciplines, would serve customers in ways where a clear trading relationship can be established, together with a charging mechanism for determining the income generated. It would allow the PSA the opportunity to prove its competitiveness against the private and commercial sector, and also to achieve some flexibility in its financing arrangements, away from the constraints of annual spending allocations. Two funds have initially been visualised, one for Project Services and Estate activities, and the other for the Ownership function. Together, the three businesses are aimed at achieving a more effective commercial management of the PSA. The exact number of trading funds, whether one, two or three, is however still uncertain.

What is more relevant to our research is the second report's view that the Project Services function should be concerned with the supply of design services and of project management and supervision services for major projects, and within this function, the importance in recognising project management as a distinct professional discipline and career path. It also recommends that clients should have the option of employing PSA solely as project managers or as architects and engineers alternatively to the integrated service.
At the more operational level, the third report - the Efficiency Scrutiny of Project Management in the PSA - is the outcome of a joint Treasury and PSA team set up in early 1987 by the PSA to review the management and design of major construction projects (Allen, 1988). Based on a detailed study of 32 projects, a cost overrun of 8% or £60m with a further £195m overrun from client changes and inflation were shown up. The summary and conclusions of the report were however considered to be unusually sharp and critical of performance, and were seen to be somewhat distorted in not truly reflecting the tone of the main report. According to Sir Gordon, after allowing for changes and inflation, the resulting statistics would be comparably more favourable, two-thirds of the cases would have an outturn within 10% of the budget, 50% would match the report's own criteria of getting within 5%, and half would be at or below budget. In short, the real success rate that was being achieved would certainly be better than what one might conclude from reading the scrutiny report.

Owing to the unavailability of access to examine this report in greater detail (it being an internal document), much of its relevant contents will be treated jointly with the PSA's "Action Plan - Response to the Efficiency Scrutiny of Project Management" (See PSA, 1988), which effectively translates the report's recommendations into an action plan for implementation.

The Efficiency Scrutiny traces the overrun in cost and time on projects to lack of motivation, cumbersome procedures, inappropriate organisational structure and an unrealistic workload, and focuses on the important role of project managers, seen as holding the single most important post in the PSA's new works organisation. It even goes as far as saying that the Agency's success or failure in the new, more competitive climate of 1988 onwards will rest very heavily on the performance of its project managers. Weakness in the Agency's project management was reflected mainly in the poor cost control and underestimating, and although due to some extent to a shortage of project managers, it was also due to the project manager's role being undervalued and underemphasised in the PSA. It found that too often, the project manager was held back by both the organisation and procedures, the administrative structure militating against teamwork.

The 30 main recommendations of the report covered effectively five broad categories:
(1) People - (1-8),
(2) Organisation - (9-14),
(3) Procedures - (15-26),
Without elaborating in detail on the recommendations, it is sufficient to point out that the central theme of the report soughts to establish a more prominent profile for project management in the PSA by restructuring the organisation and streamlining various operating procedures in support of this. Recommendation One (R1) sets this whole direction by making the project manager "the focus of the New Works business of PSA", with responsibility and authority for results. R2 proposes dedication to the project management role exclusively of design and other duties. R11 reinforces this in proposing a "strong central focus for project management in PSA located within one of the production directorates...". Arising from these, PSA has established a new unit known as the Project Management Services Division (PMSD), with implementation of the Action Plan falling upon the head of this new division as Action Manager (R30). The establishment of project management "as a specialism with a high status and a clear career path to the top" (R3a), together with development of a training programme (R3b) and amendment of personnel guidelines from a design skills emphasis towards a management emphasis (R3c) lend further support to the central initiative.

Under the organisation category, contracts functions are recommended to be integrated into New Works Divisions (R9b). The Action Plan accepts this, which effectively transfers formal authority for contracts matters to project managers and their line managers. The focus of the procedures recommendations and the response is the introduction of the formalised Project Execution Plan (PEP) for all projects which will streamline approvals and client participation (R15). The information systems recommendations consolidates the management information requirements consequent to the project management reorganisation (R27).

The Action Plan is however quick to stress the continuing vital role of design within the new project management framework, stressing the importance that the new emphasis should not be seen to reduce the status of designers (Response to R3). Given the likelihood that existing design staff would exhibit a clear preference for either management work or pure design work, it would seem that the idea of opting for project management work would be well received generally within the PSA. Although further recruitment of project managers is envisaged by the report and accepted by the Action Plan, it is likely that the entry into PSA project management would still come through the design services as it is considered vital to have both PSA design knowledge
Within the new scheme then, the project manager performs a key and pivotal role, dealing directly with the client's Project Sponsor on all matters relating to the project. Fig. 3.5 shows the position of the project manager between the client and the rest of PSA design.

![Diagram of PSA Project Management](image)

Figure 3.5: Role of Project Management in PSA
(Source: PSA Business Brief, No.3, 1989)

3.6.3 Summary

In summary, the PSA reorganisation is a testimony to the growing importance of project management. As part of its overall and wider move towards commercialisation of its operations, the specialisation of the project management role offers an appropriate vehicle for focussing attention on PSA project performance with the view towards a competitive and superior service. The entire exercise can be viewed in broader terms as a study in the management of organisational change. The transition from scrutiny to
response documents the belief in project management and the commitment towards its implementation.

Together with the existing initiatives towards project management in the NHS, this example demonstrates that not only project management, but more broadly, the whole issue of management in the context of construction projects, deserves separate attention apart from the design and construction disciplines.
NOTES

1. 'PSA to Become Trading Fund', *Construction 65*, p.9.
3. Ibid., p.11.
4. 'PSA to Become Trading Fund', op. cit.
6. 'The Way Forward ... ', op. cit.
8. See 'Project Management Vital ... ', op. cit. and 'Change if it is Necessary But Not for the Sake of it', The Will Howie Column, *New Civil Engineer*, 16 June 1988, p.18.
10. From notes of meeting with J.G. Dilliway, Head, Project Management Services Division, PSA, 25 Sept 1989, - the preference for either project management or design work had been confirmed by recent questionnaire survey carried out internally.
11. From Speyhawk Development Ltd - undated brochure.

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3. BANWELL (1964), *The Placing and Management of Contracts for Building and Civil Engineering Work*, HMSO.
6. BUILDING & CIVIL ENGINEERING EDCs (1976), *The Professions in the Construction Industries*, HMSO.
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CHAPTER 4

ACCOUNTABILITY

4.1 INTRODUCTION

The notion of accountability and its tentative relevance to project management are the two key issues which are addressed in this section. By drawing from management theory, the close affinity the term possesses in relation to the more prominent concepts of authority and responsibility applied to managerial work is shown. The apparent disfavour found with the term points to its rather elusive and abstract character. It is undoubtedly a difficult concept to grasp, both conceptually and operationally.

Additional views on the subject serve to provide a variety of meanings from different perspectives. They support, within their contexts, a certain inherent viability attaching to the term. It is suggested that the concept, despite its intricate nature, does possess potential for application in most human endeavours. The field of project management, with its heavy concentration on the interaction of human resources is no exception. A basic premise of this research in fact contends that there is much value in employing the concept in project management. The constant reservations that are still expressed regarding project management arrangements suggests that the element of accountability may perhaps be the missing or lacking feature. The impact that the concept can and may provide is not however immediately apparent. The possibilities are nevertheless worth pursuing.

Analysis and synthesis of these views will allow the generation, for the purposes of this research, of a conceptual definition that can lend itself for use with the subsequent research problem. The applicability of the concept to the project management situation should then come into better focus. The associating implications that may be imposed should also fall in place accordingly.

Section 4.2 examines some of the meanings ordinarily ascribed to the terms 'accountability', 'accountable' and 'to account'. References to accountability in the management literature, through the more established and related concepts of authority and responsibility, are reviewed in Section 4.3. The application of the concept of accountability in the two major fields of educational administration and psychology is
investigated in greater detail in Sections 4.4.1 and 4.4.2 respectively. Section 4.4.3 highlights the prevalent attachment of the concept to public administration and considers the viability of its application outside this realm of public accountability. As the underlying and fundamental basis of a 'stewardship' relation, accountability in the financial and corporate senses is briefly touched upon in Section 4.4.4. Responsibility attribution and its treatment in social-psychological and legal-philosophical sources forms the crux of Section 4.5. These sources can be observed to give added emphasis to the occupation and performance of 'roles' in the exercise of one's responsibility.

Section 4.6 reviews the sources in the PM literature where the idea of accountability features, and the major research that have dealt essentially with the use of authority in project management. Section 4.7 attempts a combined conceptual model of accountability, authority and responsibility through the use of an authority-responsibility matrix. Building upon the basic theme of the organisation as a duality of role and personal relationships, Section 4.8 addresses role theory and attribution theory in the context of organisational role performance by considering the central part which accountability plays within this framework. Section 4.9 provides a synthesis of the whole chapter and sets the ground for examining project management accountability in terms of three constituent sub-concepts - project accountability, professional accountability, and legal accountability.

4.2 ORDINARY PERCEPTIONS

The word "accountable" is defined by the Concise Oxford Dictionary (Seventh Edition 1982) as: (1) bound to give account, (2) responsible (for things, to persons, or abs.), (3) explicable. To "account" for can also mean: to (1) answer for (conduct, performance of duty), (2) explain the cause of, and (3) serve as explanation of.

The New Roget's Thesaurus (1978 Edition) provides references to the term "accountability" in terms of liability, dueness and duty - (1) obligation, responsibility, amenability, (2) what is due, what is owing, (3) what one looks for in terms of expectations, (4) what ought to be done.

The extension and amplification of the term "accountable" from its more ordinary and basic dictionary meaning to the Thesaurus provisions is interesting for it throws up, beyond mere responsibility, the associating notions of duty and liability, both of which
as shall be observed in a later part of this section, will have quite particular application in the contexts of professionalisation and professional negligence.

The preference of Knouse (1979) for the more positive tenor of "responsibility" in terms of implied "feelings of duty, reliability, trust and importance", instead of the somewhat negative nuance attached to "accountability" that derives from liability, and his observation that one of Webster's definitions of responsibility is in fact "moral and mental accountability", suggests that there is perhaps much more to the term accountability. Adopting this rather unrefined cross-referencing of terminology between accountability and responsibility, it is found that, the COD, in explaining the term "responsible" also refers to (1) liable to be called to account, and (2) morally accountable for actions. The semantic proximity between the two conceptual meanings is already apparent.

The apparent synonymity between the terms is more than purely superficial. The two are closely linked and, as shall be observed, together with the notion of "authority" provide the basis for much of the early management theory dealing with managerial work. The precise interrelationship of these three concepts is difficult to comprehend, but is nevertheless worth investigating further.

4.3 ACCOUNTABILITY IN MANAGEMENT THEORY

Much of management literature deals with accountability in close association with authority and responsibility which arise in the traditional superior-subordinate context. A brief examination of some of these sources demonstrates both a diversity of views regarding the term and concept, and also an obvious complexity in its use.

The term "accountable" in French & Saward's Dictionary of Management (1983) is given the meaning - 'Liable to be required by a specified person (or group of people) to report on and justify actions in relation to specified matters' (p.4).

Scanlon & Keys (1963) view responsibility as having two phases - the first being "the obligation to perform to the best of one's ability those tasks that are accepted as an assignment" and the second being "the obligation to account to a higher authority for the degree of success achieved in the completion of those assignments". This second phase of responsibility, they term as accountability, stating further that while
responsibility is assigned downward, accountability flows upward in an organisation. More importantly, there is a need to recognise that "responsibility and authority in any organisation must be coequal if the individual is to be held accountable".

According to Hicks & Gullett (1975), accountability, unlike responsibility, "is external to the individual and his personal feelings", and exists when a manager requires an account of a subordinate's action or when an individual is granted authority to take certain actions. In this sense, each level can be accountable to the next quite irrespective of whether an employee felt responsible. Also, as the requirement to account is enforced by the power system, accountability tends to be derived from the power system.

Koontz & O'Donnell (1972) preferred to employ the term responsibility in favour of accountability, based on their recognition that accountability had strong overtones of a control technique and was really an aspect of responsibility, and also that responsibility had much wider currency in management practice (p.64). Drucker (1977) lists "accountability" very concisely as "responsibility for results" in his glossary.

According to Bittel (1978), accountability is an implicit answerability which arises when responsibility is accepted and the acceptance creates an obligation to perform, i.e. the acceptance and sharing of responsibility causes the accountability for results. He views accountability as "a concomitant, a derivative, or an adjunct of responsibility" (p.75).

Gross (1968), in dealing with "The Power-Authority-Responsibility Triangle" distinguishes between "responsibility for" and "responsibility to". Within this context, he sees "responsibility to" as a two-dimensional concept between an obliger (the person with responsibility) and an obligee (the person to whom he is responsible) in an obligation. The responsibility vector moving from obliger to obligee is a "sense of responsibility" and that from obligee to obliger is "holding someone responsible and accountable" (p.96).

Accountability, as viewed by Kast & Rosenzweig (1985), is associated with the flow of authority and responsibility, and is the "obligation of the subordinate to carry out his responsibility and to exercise authority in terms of the established policies" (p.239). The delegation of work by a manager, according to Allen (1973), is the entrusting of responsibility and authority to others thereby creating an accountability for results.
Responsibility is the work assigned to a position. Authority is the sum of the rights and powers assigned to a position. Moreover, accountability must be accepted by the person concerned if the integrity of the delegation is to be maintained, accountability being the "obligation to do the work and make the decisions in terms of understood and accepted standards" (p.125).

Using examples from military organisations, Paterson (1966) attempts to differentiate accountability from responsibility. He defines accountability as "the relation between two persons, both of whom are responsible to a third, and in which one is expected as of right, but is not obliged to obey the orders of the other" (p.107). As an example, a private reports to the sergeant to whom he is accountable but, because he is responsible to the officer, he can, whenever the sergeant is not present, report to the officer, just as an operative can report to the manager as well as to the foreman. In the words of Paterson, "responsibility entails accountability but accountability does not entail responsibility" (p.108). The real meaning of this is not entirely clear however.

Eilon (1971) regards responsibility as inextricably bound with accountability. To him, accountability involves the need to provide a reasoned justification for one's action; this often taking the form of "a diagnosis of the circumstances and an elucidation of the action taken and the outcome of this action" (p.5). As such, giving a person responsibility without making him accountable creates a situation in which it is impossible to evaluate his actions, whereas accountability without responsibility implies the need to keep under review the activities of every individual in an organisation.

Quite clearly, for accountability to arise, there must be, in the first instance, an existence of a responsibility. Scanlon's reference to the second phase of responsibility suggests that there is a higher element to mere basic responsibility, and which appears to be performance related.

Closely allied to this link between responsibility and accountability is the more prominent authority-responsibility connection. The relationship between authority and responsibility in management theory is of course more than obvious and requires no elaborate exposition. Whether couched in terms of required coequality or coexistence, the inseparable nature of these two concepts has long been recognised as a fundamental necessity in management.
The concept of delegation provides a clear picture of how authority, responsibility and accountability are interlinked. Delegation, according to Andrews (1975), "is not only the disposal and exercise of authority, but also the bearing of responsibility for duties undertaken, and accountability for the result" (p.22). Accountability further connotes a liability to receive censure or reward when answering for the way resources are used and duties are performed.

4.4 APPLICATIONS OF ACCOUNTABILITY

4.4.1 Education

In the field of education, accountability features rather prominently as "a set of procedures leading to the desired end of better instruction" (Knouse, 1979). Its application has encompassed the implementation of accountability systems, the increase of accountability in personnel management in school systems, and even accountability and teacher evaluation legislation, all generally with the view of meeting and coping with the demands of accountability in educational administration.

The intensity of the concern for accountability was evidently sufficient for it prompted the Phi Delta Kappa Research Service Centre to convene a symposium in 1972 devoted entirely to educational accountability. Although the proceedings dealt essentially with educational accountability in the US context, the collective contribution in this thirteenth Phi Delta research symposium represents a significant contribution to and advancement of the concept of accountability. Accordingly, the initial discussion on the subject will draw quite extensively from the subsequent manuscript (See Gephart, 1975) which followed the symposium.

Arising from the first of two meetings, a consensus concerning a definition of accountability was evident. It was agreed that it could be defined as "a systematic means to seek assurance of an expected end" (p.xv). The remarkable bearing that the definition has towards the concept of project implementation in the achievement of a project's goals and objectives is a positive indication of the wealth of similarity that exists in the concerns. The potential for a fusion of the guiding principles into the project management context is again stressed as the basic premise on which this research study is undertaken.
Such a 'systematic means', the participants agreed, would be characterised by the following eleven shorthand phrases:

1. A set of explicitly stated constraints
2. Negotiated "ends" in the light of constraints
3. Systematic "means" - involving negotiated responsibility for, responsibility to and responsibility by
4. Explicitness, clarity in negotiated ends and means
5. Systematic operation, assessment, and interpretation of the goals of the process and of the product
6. Feedback
7. System adaption and recycling
8. A concern for legitimacy
9. A concern for social consequences
10. An appropriate balance of power and authority
11. Consequences related to negotiated agreements.

(Gephart, p.xv-xvi)

The eleven items were found to represent different emphases. Items 1-4 stress that accountability is a negotiated agreement and is not imposed. Items 5-7 emphasise the disciplined, orderly, structured character of an accountable educative system and items 8-11 relate to public acceptance of education.

By distinguishing between authority and power in the sense that authority being a legitimate right to affect the behaviour of others, carries with it rights of sanction and reward, whereas power carries neither, Kogan (1986) proposes that "accountability and authority are responsibility and power converted into institutional entities" (p.30).

In his analysis, accountability refers to "a condition in which individual role holders are liable to review and the application of sanctions if their actions fail to satisfy those with whom they are in an accountability relationship" (p.25). It assumes institutional authority to call an individual or a group to account for their actions and is contrasted with responsibility which is the moral sense of duty to perform appropriately.

The part that evaluation plays is also given a degree of importance. Evaluation consists of the making of judgements, and is seen as a vital prerequisite of accountability. For a person to be held accountable there must be an evaluation made of his performance.
Sockett (1980) stresses the general consensus that an accountability system is an attempt to improve the quality of education and, at times also to prove that this is being done (p.10). He points out that an agent's accountability for his actions involves both the ability to account, and the obligation to do so, this obligation being held to exist, in the central case, by virtue of a legal contract, a detailed undertaking of a promissory character, or an unwritten agreement without force in law (p.10). The agent has the right to use resources which are not his own for purposes negotiated between him and the provider to whom he is accountable. Examples of the central case are the accountability relation between a board of directors and shareholders, and that between an agent and the provider of resources for the use of his skills. The exceptions to this central case involve barristers and doctors, who are not results bound as such, but are rather bound in terms of adherence to professional standards of integrity and practice (p.11). This distinction in forms of accountability, Sockett sees as significant, in that in the central case, the agent is accountable for outcomes and results, while in the exceptional cases, the agents are accountable to codes of practice i.e. codes of professional principles. (See Fig. 4.1)

![Accountability Diagram]

Figure 4.1 - Sockett's Interpretation Of Accountability

This professional perspective in the exceptional case is also picked up elsewhere. Accountability, in the sense of "conformity to standards of professionalism (and to peer judgement)" appears to be appropriate in cases where specialised skill groups with strong extra-institutional loyalties predominate (Smith, 1971 - p.31).
While the items do not all bear directly on the study's interpretation of accountability, the salient features, especially those concerning a clarity of systematic means towards negotiated ends, and the requirement for evaluation, do offer a valid perspective which can be borrowed. A return shall be made to some of these features when developing the model of accountability. (See Section 5.2.1)

4.4.2 Psychology

Outside the specialised field of educational administration where the issue of accountability features rather prominently, there are a number of significant contributions in the field of psychology that relate both directly and indirectly to the concept.

In the area of decision research, Beach & Mitchell (1978) initially proposed a contingency model of decision strategy selection, based on the assumption that strategy selection is contingent upon both the characteristics of the decision task and the characteristics of the decision maker. As part of the decision task, situational factors in the decision environment which were generally omitted from the decision literature were identified and included in this model. These characteristics of the decision environment were: the irreversibility of the decision, its significance, the degree to which the decision maker was to be accountable for the results of the decision and, the time and money constraints associated with the problem. Subsequent research by McCallister, Mitchell & Beach (1979) attempted to test empirically the effects of three of these factors, specifically - significance, accountability and reversibility on the choice of decision strategies. Using three experiments, all with similar designs, it was shown that when (i) decisions were significant, (ii) the decision was irreversible, and (iii) the decision maker was personally accountable, more analytic strategies were selected than if the opposite conditions existed.

Of interest to this study is their 1978 model's identification of two kinds of accountability:

(1) that which is personally imposed and which results from personal involvement with the decision and the outcomes related to it, and
that which is externally imposed and which results from being accountable to others for the decision's results rather than for the quality of the procedure used to make the decision.

These two kinds of accountability, the internal and the external, are not indistinguishable in other contributions, as shall be observed in later sections.

Adelberg & Batson (1978) examined the effect of accountability in the context of social work. Here, accountability is seen as referring to "evaluation of a helping agent by someone other than the agent" (p.343), the helping agent being either an administrator, social worker, counsellor, teacher or politician. Based on the prediction that when clients' needs exceeded available resources, making a helping agent accountable to either provider or recipients of resources would impair helping, an experiment was designed by creating a fictitious agency for the purpose of allocating financial aid to six applicants. Both accountability and adequacy of resources were varied and manipulated. Results from the experiment supported the prediction that, when resources were less than adequate, accountability led to less effective use of the scarce resources. The important finding from this study, although restricted to the social work context, is that the process of accountability, while intended to assure maximal effectiveness, may actually result in less effective services.

As a need or a pressure to justify one's views to others, accountability has been investigated for its impact on how people interpret and think about events (Tetlock,1983). Whether accountability leads to "complex or effortful information processing", or to "expedient decisions that can be readily justified to others", is seen to depend on whether people know (or can readily infer) the beliefs and preferences of the individual to whom they feel accountable. Knowledge of views seemed to dictate strategic attitude shifts while no knowledge tended to impose a more careful thinking through. The circumstances therefore play a great part in determining whether accountability can help to improve the quality of judgement and decision-making.

In further work on the effect of accountability on judgement and choice, Tetlock (1985) points out the inadequacy of laboratory experiments on cognitive processes which underlie judgement and choice behaviour, in that they fail to consider the social and organisational contexts of natural decision environments where potential accountability invariably exists. In his words, "subjects in laboratory studies of cognitive processes rarely feel accountable or responsible for the positions they take". As an alternative,
Tetlock proposes a political model, which better represents the realistic demands for accountability, where the person is viewed as a politician. This "politician research programme" rests on two hardcore assumptions: that accountability of conduct is a universal problem of social life with which people must deal, and that people are generally motivated to maintain the approval and respect of those to whom they are accountable. A major point raised is that the effects of accountability are likely to be highly variable. Depending on the circumstances, it may be highly oppressive and highly threatening, or it can be conducive to complex and self-reflective information processing. The underlying theme is the fact that "people need to justify their judgements and decisions to others" (p.310).

As cognitive misers, people generally opt for least effort solutions when coping with accountability. Tetlock terms such a coping strategy i.e. the adoption of positions likely to gain the favour of those to whom one feels accountable, as the "acceptability heuristic" (p.310). There is however no certainty in this option as it is sometimes not at all obvious what is the most acceptable response option. In instances where people are accountable for decisions they have already made and where these have led to questionable or undesirable consequences, accountability can lead to retrospective rationality; a defensive search for ways of rationalising past conduct.

In summary, Tetlock suggests multiple coping responses that will address the different forms of accountability that can arise in various situations, and cautions against merely emphasising situational determinants of how people should cope.

The need for a political perspective to organisational behaviour is also increasingly proposed. Edelman (1977) emphasises that the use of power is seen as not only for achieving physical outcomes but also to give those outcomes meanings - to legitimise and justify them. This trend towards political models to aid the understanding of managerial action under organised settings is undoubtedly appropriate in project management where models of organisation such as power sources are expected to be more suited to the management of external forces (See Morris, 1983a, p.17, & 1983b, p.35). Consistent with this shift in emphasis, decision making is also increasingly viewed as a political process (Hardy, 1987, p.99).

Inherent in this political perspective is of course the use of power. The exercise of power is, in itself, closely tied up with influence, use of authority, and ultimately, the notion of accountability.
The justification process can operate internally or externally. As an internal process, individuals are assumed to psychologically reconstruct outcomes, events or values to appear rational or competent to themselves. Externally, individuals may resort to retrospective forms of rationality or justification when they face threat or evaluation (Staw, 1980). It also has significant implications for management. Weick (1987) points out that actions in organised settings are known to create a search for reasons that transform them into responses to some stimulus yet to be identified, i.e. they evoke justification (p.10). Indeed, this construction of consistent justification is considered a prominent way in which managers explain their prior action (p.11).

Closer to the organisational context, recent research by Fandt (1986) on information management in the decision-making process investigates the influence of accountability as one of two environmental influences (the other being ambiguity) at three stages of the decision-making process - the pre-choice, evaluation/choice, and the post-choice stages. At each of these stages, an individual's use of information management in the role of decision maker is characteristically different. Information search behaviour governs at the pre-choice stage while the degree of vigilance used in evaluating alternatives characterises the evaluation/choice stage. At post-choice, there is information manipulation. In terms of research design, Fandt's approach was a controlled experiment in a field setting. By manipulating the two independent variables, accountability and ambiguity, in a 2 x 2 factorial experiment, the dependent variables in terms of information management behaviours were measured at each of the three stages through a role-play exercise. At pre-choice, information search was found to be consistently a usage of quality information rather than accessible information regardless of the level of accountability. At evaluation/choice, vigilance was significantly related to accountability but not to ambiguity. Information management at post-choice stage was more utilised in conditions of high accountability and low ambiguity than in any other condition. The results, Fandt concludes, support the notion that accountability and ambiguity affect an individual's use of information management in the role of decision maker. Accountability is seen as affecting not only what people think, but also how people think. In particular, when processing information, people become more vigilant, complex, and self-critical information processors under conditions of high accountability. According to Fandt, the research suggests that "creating accountability relationships and increasing the degree of ambiguity leads to higher quality decision making", i.e. "making individuals responsible for their performance in an environment where the 'answers' are not clearly defined will stimulate them to be vigilant decision makers" (p.144).
Negotiation and bargaining are aspects of behaviour in which accountability is also seen as playing an important role. Rubin & Brown (1975) observes that the profile of the relationship between a bargainer and his audience "resembles that of a power relationship in which one party may control the outcome of another". The audience has power to determine whether the bargainer shall receive a positive or negative evaluation, and in this sense, has the potential for controlling a bargainer's behaviour (p.48). This leads them to propose that if a bargainer is accountable to an audience for whatever it is that will bring positive evaluation, then his accountability is the mechanism by which he may be controlled. The central idea here is the power of control which the accountability relationship and process provides.

Driven by their belief that "the main void in organisational theory is a lack of concern with politics" (p.x), Bacharach & Lawler (1980) attempt a detailed examination of the form and content of power and pursue a political analysis of organisations through a study of work groups, interest groups, and coalitions. In their work, bargaining is seen as the concrete manifestation of conflict, and as intrinsic to intra-organisational relations. As an aspect of constituent-representative relations, accountability is seen as "the degree to which constituents can make representatives account for, justify, or defend the actions they took in negotiations" (p.133). Together with constituent participation, formal constituent-representative relations, and loyalty of representatives to the coalition, accountability of representatives is suggested as impacting intercoalition bargaining by increasing mutual toughness and by leading to impasses (p.139).

Investigation by Knouse (1977) also examines the effects of accountability upon negotiating behaviour. The study adopts negotiation as the primary transacting activity of the Boundary Role Person, a perspective which clearly has significant implications for the integrative function inherent in project management. In terms of composition, accountability is viewed as possessing two dimensions, an external aspect where one is held answerable to the constituency through being linked to constituency control, and an internal aspect where one is responsible to the constituency through mental and moral processes. Both dimensions are clearly marked by the concept of influence, which exists as direct control by the constituency in the external dimension, and as psychological processes indirectly linking one to the constituency in the internal dimension. The psychological definition which Knouse proposes treats accountability as "the influence (both external and internal) upon the negotiator exerted by the constituency for the purpose of maintaining adherence to its sent expectations" (p.13).
By developing a model of the processes of accountability in negotiating behaviour, the effects of the influence and review variables on the dependant variables of commitment, concession and adherence are observed. The influence variable consists of identification and internalisation in the internal dimension of accountability, while the review variable comprises compliance in the external dimension of accountability. The methodology employed by Knouse uses a laboratory based experiment known as 'The Moonwreck Problem' to test a set of hypotheses involving commitment, concession, and adherence. Internalisation of the constituent position is suggested to be the most persistent influence process over time, while review through compliance tends to dissipate in effectiveness over time. If we look at Knouse's internal and external aspects of accountability together with McCallister, Mitchell & Beach's (1979) two kinds of accountability - that which is internally and personally imposed, and that which is externally imposed, it would appear that the internal dimension corresponds to a personal sense of responsibility while the external dimension corresponds to accountability to others. Knouse's concept of accountability and his model of accountability in negotiating behaviour are visually summarised and illustrated in Fig. 4.2a and Fig. 4.2b.

Figure 4.2a - Knouse's Concept Of Accountability
If we accept that the fundamental feature of accountability is the 'calling to account' and the 'delivering of an account', it may be useful to briefly examine what 'accounts' entail. In their analysis of the use of accounts as one kind of talk, Scott & Lyman (1968) view an account as "a linguistic device employed whenever an action is subjected to enquiry", i.e. "a statement made by a social actor to explain unanticipated or untoward behaviour - whether that behaviour is his own or that of others, and whether the proximate cause for the statement arises from the actor himself or from someone else" (p.46). Although accounts would also include non-vocalised but linguistic explanations arising in an actor's mind when he questions his own behaviour, their concern is limited entirely to vocalised accounts, and also to those which are offered for untoward action, as distinguished from "explanations" - statements about events where untoward action is not an issue and has no critical implications (p.47). On this basis, they suggest, following Austin (1961), that there are in general two types of accounts: excuses and justifications, excuses being "accounts in which one admits that the act in question is bad, wrong, or inappropriate but denies full responsibility", and justifications; being "accounts in which one accepts responsibility for the act in question, but denies the pejorative quality associated with it" (p.47). While both are considered as neutralising an act or its consequences, the crucial difference between the two is that "to justify an act is to assert its positive value in the face of a claim to the contrary" (p.51). It is worth noting also that their presentation of the need for accounts is restricted to instances and situations of deviant behaviour. The negative attachment of accounts is again evident.

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**Model of Accountability in Negotiating Behaviour**

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**Figure 4.2b - Knouse's Model Of Accountability In Negotiating Behaviour**
4.4.3 Public Accountability

Traditionally, the idea of accountability has been very much attached to the use of public resources, especially public funds. Expenditure of taxpayers' money requires stringent control mechanisms to ensure that proper standards of "public accountability" are met. Government institutions and their related organisations, as spenders of public funds, must constantly be aware that they are accountable to the taxpaying public for their effective and efficient use.

As such, the term accountability has grown to be almost synonymous with 'public accountability', to the extent that its application seems almost entirely associated with the public sector. The realm of public funds and resources may be crucially wider but, in terms of the principle of accounting for such use, accountability in the use of private funds and resources is certainly no less significant.

The study by Mosher (1979) of the GAO (General Accounting Office) in the U.S. as an institution set up primarily for the purpose of assuring accountability for government performance provides an illuminating and practical example of the accountability principle. He points out the fundamental relationship that exists between accountability and independence and notes that the distinction between the two in practice is less than clear-cut, owing mainly to the use of different kinds of measures and criteria when assessing different kinds of action. Anticipation of the actions of others also seems to be an important feature when addressing independence and accountability.

In attempting to explain the idea of accountability, Mosher observes three essential elements which always feature:

(1) Information - about the decisions and actions of those individuals and organisations who are held accountable to those others who are holding them to account.

(2) The existence of some individuals or organisations, outside receivers and/or discoverers of the information, who are able and willing to examine, investigate, digest and report, or initiate appropriate action.

(3) Recourse on the basis of the information, to correct deficiencies and improve performance and/or to reward or penalise. (p.234)
Given competing values such as personal privacy and equity, accountability is seen as requiring processes of compromise and mutual adaptation for its achievement.

The interplay between accountability and independence is recognised as fundamentally a matter of balance. The constant strife between the two issues was devoted extensive elaboration at the Ditchley Conference (See Smith & Hague, 1971), which focussed on the English and American governments' use of administrative contracts as a means of delegating authority to institutions outside the traditional framework of the government. Although an inevitable tension exists between the values of accountability and independence, the contract in this context is seen as "a device of accommodation" (Smith, 1971 - p.4). Also, satisfying the need for accountability may serve in fact to protect independence, an example that the opposing nature between the two may not be entirely correct. Hague (1971) however observes that the true tension is between the phenomenon of independence and control, rather than the implied tension between independence, a phenomenon, and accountability, a process (p.78).

Rationalisation of accountability with independence also features in a major report on the organisation and management of government R & D (See Rothschild Report, Cmnd 4814) where the central issue is that of accountability versus independence.

In re-emphasising these two core issues of the Report, Williams (1972) points out that criticism following the report failed both to understand the nature of the 'accountability' which the report's proposals intended, and to realise the objective congruence with the political scenario at the time. This contemporary relevance with the political circumstances was particularly significant, according to Williams, on account of: (1) the increasing attention given to the subject of accountability, (2) the application and extension of a general principle arising from the Fulton Report (Cmd 3638), and (3) the international consensus regarding the relationship between accountability and social relevance which the report implied. In respect of public R&D, the Rothschild Report therefore reflects the desired balance between accountability and scientific independence (p.135).

Within the realm of public accountability, the role which accountability plays in the processes of public administration appears to go beyond the basic notion of answerability. Public administration accountability, according to Romzek & Dubnick (1987), can be viewed as a strategy for managing expectations, and "involves the means by which public agencies and their workers manage the diverse expectations
generated within and outside the organisation" (p.228). Four alternative systems of public accountability are possible, each based on variations involving two crucial factors:-

(1) whether the ability to define and control expectations is held by some specified entity inside or outside the agency; and

(2) the degree of control that entity is given over defining those agency's expectations; these four types are illustrated in Fig. 4.3.

![Figure 4.3 - Types of Accountability Systems](Source: Romzek & Dubnick, 1978, Fig 1)

In the bureaucratic system, expectations are managed through a hierarchical arrangement based on supervisory relationships; the legal accountability system manages expectations through a contractual relationship; the professional system relies on deference to expertise; while the political accountability system promotes responsiveness to constituents as the central means of managing the multiple expectations. A summary of the principal features of the four types of accountability systems is shown in Fig.4.4.
A shift in attention from accountability in the public accountability sense towards a parallel application in private organisations is a move that merits consideration. The virtues of public accountability must offer the non-public organisations an equally if not more viable governing concept of operation. Indeed, Hague (1971), in examining the impact of developments in management science on the solution of problems of how to combine accountability with independence in quasi-non-governmental organisations, emphasises that the problems of accountability which arise in both commercial and non-profit organisations, in both the public and private sectors are rather similar.

### 4.4.4 Financial & Corporate Accountability

Accountability in the financial accounting and auditing sense rests on the fundamental principle of "stewardship" where resources are held by individuals or groups who are not their owners. In such instances, accountability places two obligations on the steward: to render an 'account' of his dealings with the stewardship resources and, to submit to an examination of that account. (See Bird, 1973)

The rendering of an account takes the form of the provision of information, and the examination of the account comprises the audit. In broader terms, accountability is "the obligation of stewards or agents to provide relevant and reliable information relating to resources over which they have control and which have effects on others (principals)"
Examples of stewards and agents are company directors, civil servants, university councils and trustees in bankruptcy. Principals can be owners (notably shareholders) and also persons with no ownership stake, e.g. creditors, employees, consumers and taxpayers. It therefore extends to all parties who are affected by the behaviour of those who are in control of the organisation’s resources. The relevant information can however be financial or non-financial in nature.

Closely associated with financial accountability are the concepts of corporate responsibility and management accountability, under what is now widely referred to as corporate governance. Companies have responsibilities to their participants, and boards must act and operate in the best interests of participants. Additionally, they are accountable to shareholders. Owing to the large interest of institutional shareholders that is commonly evident, not only is there a problem of accountability of the board to different types of shareholder, but also a problem of the accountability of such institutional shareholders. Selected readings from the Institute of Chartered Secretaries and Administrators’ 1979 Annual Conference with its theme - “Corporate Governance and Accountability”, give attention to various aspects of corporate accountability (See Midgley, 1982). Indeed the whole idea of company reporting, with its accompanying regulations on disclosure, is part and parcel of the mechanism for ensuring the proper accountability of companies in their daily operations.

4.5 THE CONCEPT OF RESPONSIBILITY

Much of what is known regarding the concept of responsibility derives from two major sources:- (1) social-psychological studies of responsibility attribution, and (2) legal-philosophical perspectives of the concept. The various treatments of responsibility in these sources are important to our early discussion of accountability primarily because the nature and meaning of responsibility in various senses and contexts is seen as leading to differing degrees and requiring differing standards of accountability. On this basis, a brief examination of some of the more major works should provide invaluable insight into a critical and antecedent component of accountability.

As opposed to the other studies which have been highlighted, where accountability exists as one of, or indeed the major influencing feature, the treatment of the concept of responsibility in this present section appears to parallel very closely the fundamental nature of accountability as answerability. In order not to further complicate the already
complex and semantically difficult position between the two, the sources will first be identified and the difference between the two will be addressed in a later section.

According to Semin and Manstead (1983), much of everyday social life "moves within tacitly 'accounted' boundaries" where "the behaviours we engage in are implicitly taken to be rational, warrantable and intelligible, with the exception of problematic incidents which can arise, and which disrupt the routine execution of social behaviour" - such incidents they call "fractured social interaction".

The practices which are employed to repair such fractured social interaction are collectively referred to by Semin & Manstead as 'the accountability of conduct'. They include "the means by which breaches of shared rules, conventions and standards are identified, explained, understood, and normalised". Together, they "reflect the fact that individuals are held to be responsible for their actions, and when these actions are thought to be questionable, the individual concerned feels obliged or is obliged by others to provide an account - an explanation of the actions which mitigates either the actor's responsibility for the action or the questionability of the action - or to apologise for the action" (p.x).

Although attribution theory is accepted as a broad theoretical approach suitable for examining such fractured social interaction, it is considered lacking for a number of reasons. It disregards the social context in which attributions are made, ie. the rules and conventions that are so central to everyday existence are neglected. Attribution models also adopt a prescriptive stance, whereby attributions must consistently follow models and are deemed irrational if they deviate from this consistency. In addition, attribution theory does not specify the circumstances in which attributions are or are not made. It is obvious that the question 'why' is not constantly asked in daily life. This awareness of self and motive occurring only when acts are in some way frustrated. According to Semin & Manstead, "...because attribution theory does not make any statements about the nature of social reality, or the social context within which actions are designed and acts executed, it also fails to specify when we ask ourselves the question 'why?'" (p.15).
As an alternative to attribution theory, Semin & Manstead propose what they term as an "interpretative social psychology" approach for understanding fractured social interaction, which essentially encompasses "those social psychological treatments of interpretation and understanding in everyday life that have been influenced by sociological considerations" (p.2). This alternative theoretical approach, in recognising the role played by culture and language in the interpretation of social interaction, is considered to offer a "more satisfactory vehicle for analysing the accountability of conduct than that provided by attribution theory" (p.41). It is worth stressing at this point of the study that attribution constitutes only a portion of the wider concept of accountability. This should clarify an urgent concern of those who view the study of accountability as merely an investigation of attribution theory.

The meaning of responsibility and its function in everyday life are important to a study of accountability because the issue of responsibility ascription and accounting practices are intimately bound. Responsibility ascription involves practical activities that are aimed at maintaining orderly and regulated existence. More importantly, "these activities have their institutional counterparts in the legal and judicial processes through which society administers justice" (p.123).

Heider (1958) considers personal responsibility as varying with the relative contribution of environmental factors to the action outcome - "in general, the more they are felt to influence the action, the less the person is held responsible" (p.113). On this premise, the different forms in which the concept of responsibility has been used can be considered as successive stages in which attribution to the person decreases and attribution to the environment increases. Five such levels are proposed. (See Table 4.1) According to Heider, "the issue of responsibility includes the problem of attribution of action", by which he stresses the importance of determining which of the several conditions of action is to be given primary weight for the action outcome, the intentions of the person, personal power factors, or environmental forces. Only when such attribution has been decided upon can the evaluation of responsibility be possible (p.114). Semin & Manstead however caution on two features of Heider's fivefold distinction which have been somewhat overlooked in the social psychological literature. Firstly, Heider's concept of responsibility was "a conceptual tool to identify and circumscribe personal versus impersonal causation, along with the various intermediate modes, as they are employed in 'naive psychology' for the explanation of actions in general, rather than the attribution of responsibility for faulty action in particular". Secondly, the "distinction was never intended to represent a developmental ladder or
sequence" (Semin & Manstead, p.128).

<table>
<thead>
<tr>
<th>LEVEL</th>
<th>DEFINITION</th>
<th>Semin &amp; Manstead's Labels</th>
<th>Shaw &amp; Sulzer's Labels</th>
<th>Hamilton's Approx Legal Equivalent</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Global</td>
<td>The person is &quot;held responsible for each effect that is in any way connected with him or that seems in any way to belong to him&quot;.</td>
<td>Global Association</td>
<td>Association</td>
<td>Vicarious Responsibility</td>
</tr>
<tr>
<td>2. Impersonal Causality</td>
<td>&quot;anything that is caused by p (the reference person) is ascribed to him. Causation is understood in the sense that p was a necessary condition for the happening, even though he could not have foreseen the outcome however cautiously he had proceeded...The person is judged not according to his intention but according to the actual results of what he does&quot; Synonymous with objective responsibility.</td>
<td>Impersonal Causation</td>
<td>Commission</td>
<td>Strict Liability</td>
</tr>
<tr>
<td>3. Foreseeability</td>
<td>&quot;p is considered responsible directly or indirectly, for any after effect that he might have foreseen even though it was not a part of his own goal and therefore still not a part of the framework of personal causality.&quot;</td>
<td>Foreseeability</td>
<td>Foreseeability</td>
<td>Negligence</td>
</tr>
<tr>
<td>4. Personal Causality</td>
<td>&quot;only what p intended is perceived as having its source in him.&quot; Synonymous with subjective responsibility.</td>
<td>Personal Causation</td>
<td>Intention</td>
<td>Criminal Responsibility</td>
</tr>
<tr>
<td>5. Shared Responsibility</td>
<td>&quot;even p's own motives are not entirely ascribed to him but are seen as having their source in the environment.&quot; &quot;...since the source of the motive is felt to be the coercion of the environment and not p himself, responsibility for the act is at least shared by the environment.&quot;</td>
<td>Justifiability</td>
<td>Justification</td>
<td>Legal Justifications, excuses, mitigations of 3 &amp; 4 (eg. duress)</td>
</tr>
</tbody>
</table>

Table 4.1 - Heider's Stages Of Responsibility Attribution And Hamilton's Corresponding Legal Categories

Responsibility is treated by Hamilton (1978) as referring to "a decision about liability for sanctions based on a rule" (p.316). The three inputs to this decision comprise the rule itself, the actor's deeds, and the expectations of others regarding what the actor should do, i.e. "an actor is judged on the basis of causality (what was done) and
expectations (what should have been done)" (p.316). Her paper stresses the neglect of psychologists for this expectation determinant. On the basis that the actors' social roles define such expectations, she argues for the inclusion of roles in the understanding of responsibility judgements, pointing out that this is also consistent with both the linguistic analysis of the concept and the way responsibility is treated by legal rules. Accordingly, the Heiderian model is extended in her treatment to represent analogues of legal categories or of the legal responsibility rules (See Table 4.1). In her model, each of the first four Heiderian levels has a legal analogue which is a set of rules for attributing responsibility. Following Shaw & Sulzer's (1964) terminology, as shown in column 4 of the same table, association responsibility in the legal realm can be found in vicarious liability rules; commission responsibility is represented in strict liability rules; foreseeability responsibility is found in both civil and criminal statutes concerning negligence; intention responsibility is typical criminal responsibility for an intended act. The fifth level, justification, is "in fact a conglomeration of the legal categories of mitigation, justification, and excuse, all of which operate to reduce or eliminate the Foreseeability and Intention responsibilities" (Hamilton, p.318).

In order to achieve a better appreciation of Hamilton's legal analogues to Heider's levels of responsibility attribution, a brief outline of the legal-philosophical background to the concept of responsibility is useful. Hart (1968) attempts to bring some sense into the somewhat confusing terminology of responsibility by distinguishing four heads of classification:-

1. Role-Responsibility
2. Causal-Responsibility
3. Liability-Responsibility
4. Capacity-Responsibility

Of role-responsibility, "...whenever a person occupies a distinctive place or office in a social organisation, to which specific duties are attached to provide for the welfare of others or to advance in some specific way the aims or purposes of the organisation, he is properly said to be responsible for the performance of these duties or for doing what is necessary to fulfil them" (p.212). In the causal sense, "not only human beings but also their actions and omissions, and things, conditions, and events, may be said to be responsible for outcomes". The past tense of the verb in the expression 'X was responsible for event Y' may, if he has in fact caused Y, mean that he is responsible for it. Although there is causal-responsibility, Hart terms this as more appropriately an example of liability-responsibility. The third category, legal liability-responsibility,
connotes a liability to punishment, and looks into whether any of a certain range of conditions are satisfied before imputing a legal liability. Within this head, Hart refers to three classes of the 'criteria' of responsibility:–
(1) mental or physical conditions
(2) causal or other forms of connection between act or harm
(3) personal relationships rendering one man liable to be punished or to pay for the acts of another.

These diverse types of criteria for legal liability-responsibility constitute conditions of legal responsibility which form only a part of the total conditions of liability for punishment. Therefore, to say that a man is legally responsible for some act or harm is to state that his connection with the act or harm is sufficient according to law for liability (p.222). Under capacity-responsibility, reference is made to certain psychological characteristics of persons whereby responsibility for actions can be found to be diminished, impaired, or altogether absent.

As an alternative interpretation of Heider's categories, the legal analyses treat the types of responsibility attribution more as a set of different rules. Beyond the conditions and criteria of responsibility which have been highlighted, the meaning of responsibility, according to Semin & Manstead (1983), requires analysis. They draw a distinction between "bearing responsibility for an act" and "being responsible for the act". It is in the sense of bearing responsibility for the act that they refer to accountability/answerability, and this can be for one's own actions or for the conduct of others - best described as vicarious responsibility. Being responsible for an act, on the other hand, has different meanings depending on that for which one is responsible, e.g. one can be responsible for an act or be responsible for failing to achieve a certain goal. In the latter example, one might be responsible for the actions of others and therefore liable for the outcome of their actions (p.133). Within this schema, role-responsibility is seen as a special case of vicarious responsibility in the 'bearing responsibility' sense - the person is answerable for the actions of others by virtue of his role, i.e he bears responsibility for actions which are often executed by others. In sum then, according to Semin & Manstead, the function of responsibility is to express connection between the conditioning facts and conditioned consequences of the act in question, based on certain rules. If these rules are applied so as to find an agent guilty, he is then said to be responsible for the act. A different set of conditions however can result in the actor bearing responsibility for the act, i.e. being accountable or answerable for the act. The constant feature of responsibility across events and contexts is its reference to the
relationship between an act, its circumstances and its consequences (p.134).

The concept of role is important in responsibility attribution. According to Hamilton, different roles can lead to different rules for determining responsibility, based on what she terms the roles-and-deeds concept of responsibility. High-prestige roles (and this is important in the assessment of project management as a 'profession') invoke more stringent rule sets. That there are different rules by which responsibility is judged implies, according to Semin & Manstead, that the meanings of responsibility vary as a consequence of which rule is applied in a particular context (p.136).

Hamilton points out that the pattern of her legal parallels to the Heiderian stages "becomes sensible in terms of the notion that roles include liability for one's obligations" (p.322). She cites the typical example of superiors in authority hierarchies treated legally according to vicarious liability doctrines, the Association responsibility of the legal world. The fact that superiors are in one sense held to more primitive Heiderian standards is however no reflection that society is any less moral in its treatment of superiors. It is instead reflection "that society is responsive to the fact that different roles may necessitate different standards of accountability" (p.322). Within responsibility attribution, roles are viewed as "normative contexts that determine the standards of accountability of the actor...".

To cast much of these works in a proper framework, a few words regarding attribution theory are necessary. When observers causally interpret information to arrive at an attribution, and when the information concerns behaviour, behavioural consequences, and circumstances under which behaviour occurs, the end result, the attribution, has the effect of placing this information in a cause-effect context. The attribution therefore provides an answer to the question: What caused the observed behaviour and its consequences? (Jones et al, 1972) Attribution theory thus deals with the rule which the average individual utilises in attempting to infer the causes of observed behaviour. To the extent that there is a wish to impute or allocate responsibility for the behaviours and consequences in question, the issue of responsibility attribution should be addressed. It is essentially this aspect of attribution that the foregoing works have investigated. It is also this aspect of attribution theory which comes closest to the interpretation of the concept of accountability in this present study.

An interesting feature concerning responsibility attribution studies also arises when persons act in groups, i.e. in collective endeavours. Several attributional processes
have been identified that occur in groups and these include diffusion of responsibility, focussing responsibility, and performance-linked attributional biases (Leary and Forsyth, 1987). Diffusion of responsibility occurs through the decrease of feelings of personal responsibility when people join groups. In focussing responsibility, the group leadership role, the occupation of central positions, special competence, and direct assignment of responsibility, are all seen as generating special responsibility for performance. In performance-linked attributional biases, group members can display a self-serving bias or a group-serving bias. The first occurs when they "claim personal responsibility for group successes, but disclaim responsibility for group failures", and the second when they "emphasise the entire group's responsibility after success, and the group's blamelessness after failure" (p. 173). This 'group' perspective of responsibility attribution is of particular significance to the PM situation in view of the project team arrangement, its team approach, and the leadership role which the project manager invariably assumes.

4.6 ACCOUNTABILITY IN PROJECT MANAGEMENT

4.6.1 References To Accountability In Project Management

Moving slightly away from the general literature relating to management and organisation, and into the more specialised areas of project management and systems theory, further views of accountability can be observed.

Kerzner (1979) views accountability as the "state of being totally answerable for the satisfactory completion of a specific assignment", adding further that, while authority and responsibility can be delegated (downward) to lower levels in the organisation, accountability usually rests with the individual. (p.40/41)

Sinclair (1984) refers to accountability as "the process whereby each subordinate ... is measured with regard to how well he accomplished his superior's goals by utilising the authority delegated to him", and in fact as "actually a measure of responsibility".

Cleland & King (1982), although treating the subject of project authority in extensive detail, refer only to the acceptance of responsibility and accountability as part of participative management. Without expanding further, they put forth case 12-2 which deals with 'The Authority of the Project Manager', and in it speak of accountability as
"the condition of being answerable for one's actions or lack thereof in a position of
authority and responsibility", and of authority, responsibility and accountability as
being "inseparable parts of the exercise of leadership in a project management position"
(p.348).

In introducing the principle of accountability, Stallworthy & Kharbanda (1983) see the
project manager as being accountable to his senior management for the project. This
basic obligation for the carrying out of the project to a successful completion is
however, often associated with the usual problem where, while the project manager is
held accountable, he is often not given the authority to discharge his obligation to
management properly. In the context of the matrix, Stuckenbruck (1981) calls for the
project manager to be given adequate authority if he is expected to be held accountable
for the success or failure of the project.

Sufficiency or adequacy of authority seems therefore to be a prerequisite for demanding
and imposing accountability. Logically then, there can only be accountability up to the
level of authority and not beyond. This interpretation conforms with the model of
accountability in terms of an authority-responsibility matrix, which shall be developed
in Section 4.7. NEDO (1976), referring to the developing role of the client project
manager in a study of the professions in the UK construction industry, also highlighted
this 'adequate authority' as one of the requirements for the job.

Addressing lessons learnt from the mega-projects of the 1970s and the early 1980s,
Lewis & Jens (1987) identify very succinctly the need for 'manager's accountability' as
one of the emerging areas which will enhance the ability of project managers to
economically complete projects. In the future, managers will be held accountable to
manage and develop the available resources. They must also be accountable for the
economies of their projects. Greater emphasis will thus be placed on reviewing project
performance from the standpoint of economic return to the owners and demanding
performance from those who are accountable.

On the accountability of project managers, Gilbreath (1986) emphasises that the unique
nature of projects, rather than freeing them from accountability, actually holds them to
higher, more difficult to achieve standards. Furthermore, "although they cannot be
measured against known levels of compliance and performance, such as quotas, unit
rates, unit costs, return on investment levels, or productivity standards, they can and
are held accountable for ultimate success or failure, and, more closely, to someone

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else's notions of prudence, foresight, and reasonableness" (p.24).

Based on the foregoing references to accountability in the project management literature, it would appear that, congruent with the general management sources, the accountability issue would have to be similarly distilled from the major authority studies in project management.

4.6.2 Authority And Responsibility

Looking beyond direct references to accountability, the project management literature which dwells on issues of authority and responsibility will be examined. There appears to be a systematic reference to these issues which suggests that the implications for project management may in fact be more acute than previously thought.

Owing to the focal position of the project manager in relation to major decisions and considerations, Cleland (1964) calls for a special kind of recognition with respect to his authority and responsibility in his relationships with other managers in the organisation. Both de jure and de facto authority are considered necessary for the job. In addition, the project manager requires a "clear delineation of authority and responsibility so that he can properly balance the considerations involved in the development and successful conclusion of the project" (p.85). The frequent trade-offs and conflicts of purpose which he faces in his job impose such a demand.

In a more detailed contribution, Cleland (1967) develops the concept of "project authority" and presents a model of this. He notes the transformational state of authority at that time, one changing from the bureaucratic hierarchical model to a participative and persuasive one. In particular, he points out that traditional management theory views the sources and uses of authority within an organisation's boundaries, thereby ignoring "the authority patterns that exist between managers and technicians in different organisations" (p.65). Furthermore, the traditional view fails to recognise the impact of the "reciprocal authority relationships" existing between peers and associates.

The model of project authority which he presents revolves around three essential reciprocal elements:

1. the sources of project authority;
2. the conceptual framework; and
(3) the results of project authority (ref. Fig 2, p.68).

Arising from the horizontal, diagonal and vertical flow of authority in a project environment, the question of adequate authority becomes of paramount importance. He suggests that de facto authority may become equally or even more important than de jure authority, and other means to augment legal authority may be utilised.

In a further section (Section 5.3), the adequacy of Cleland's 'Project Authority' shall be examined. While it represented the preoccupation at the time of those involved both in utilising and/or performing the task of project management, it is, in the present climate of project management somewhat lacking. Instead the notion of 'Project Accountability' is proposed. The transition from project authority to project accountability should, in the writer's opinion, capture more accurately the current concerns of those involved, with accountability occupying a more central place.

Closer to the construction context, Hellard (1970) speaks of the "trinity of responsibility, accountability and authority" and how this is not readily tenable with the fragmentation of the building industry. By introducing a 'client man' and a 'project manager' to the conventional project organisation, he suggests that in so doing, the project manager would then have the complete accountability for the whole of the design process.

Among the many recommendations made, UCERG, the University College Environmental Research Group (1974), in a study undertaken for NEDO, makes a similar call for "considerable executive authority" to be given to the project manager.

In another study examining the development of project management in the construction industry, the Chartered Institute of Building (1979) cautions on the inherent weakness of the system, stressing that "while power of decision and authority is vested in project management there is no clearly defined responsibility or accountability within the normal contractual system." In encouraging the development and use of conditions of engagement, the report emphasises that "there should be a clear definition of accountability in structuring the contractual relationships between client and project manager and the project manager must accept responsibility for the management function of the project" (p.19).
From all the authority references in the project management literature, it is evident that the use of authority as the basic form of control by the project manager is of chief concern, and whether the authority which he is given is sufficient for him to activate the necessary resources for implementation of the project.

4.6.3 Review of Research On Project Management Authority

A major investigation of project management is the work of Steiner & Ryan (1968) which examines, by depth interviews, sixteen successful project managers in the aerospace industry in terms of the basic managerial principles and practices guiding their performance. Among the various groupings in this managerial model is the exercise of authority by project managers. The major findings related to this issue include the following:-

"Given a conflict of authority which exists between the project manager and other managers, both in his own company and in the organisations of his customer, project managers felt that they should have a great deal of authority" (p.24). While he clearly has authority over his immediate staff, he must also have "some authority, as well as much responsibility and accountability, for the completion of the project within the time, cost, quality, and quantity requirements in the contract" (p.24). The question of how much authority is required to be granted is however dependent on many considerations, with no single answer. The degree is seen as varying "from project to project, project manager to project manager, over time within the same project, and on the basis of a number of other variables" (p.25).

Authority is shown as required for:
(i) the assignment of priorities to support areas and in the control of budget,
(ii) for resolution of conflicts that may jeopardise both the achievement of project objectives, and
(iii) for responding to the need to balance risk over all portions of the project (p.29).

While the project manager may have legal authority, it is shown that "he gets most of his work done through influence and authority other than that legally extended" (p.30).

Stickney (1969) investigated 15 matrix organisations in the aerospace industry in a study of the authority perception of the project manager. By using six authority
variables, namely actual and required authority of both project and functional managers, shared actual and shared required authority, he was able to measure the levels of agreement/disagreement relating to various perceptions among the three groups of project managers, functional managers and top managers who participated. The major findings show an interesting mix of perceptions and agreement over the authority variables. The interrelationships among responsibility, authority and delegation perceptions were also investigated.

Building upon Bennis' vision of temporary systems characterising organisations of the future, Wilemon & Gemmill (1971) examined the three models of project management organisations - the functional, matrix and staff model, with respect to the amount of formal authority granted and the amount of project interfacing required outside the work unit. The boundary position of the project manager in the matrix and staff models, in their opinion, called for interpersonal influence bases other than formal authority to be employed. Authority to exert the relevant influences seemed to represent the power needed to accomplish project objectives.

Research undertaken by Barnes (1971) focussed essentially on the use of authority in project management. Using a sample of 63 subjects from 17 projects and seven organisations spread over the fields of space, aeronautics, electronics and defence, he was able to examine a series of hypothesised relationships by measuring four organisational variables - project structure, project level, authority role perception, and source of authority. By including both public and private organisations he was able to study differences in perception and the exercise of authority between project managers from both sets of organisations. Successful project managers in both these sets were found to use all their legal authority plus their personal influence to accomplish project goals.

In a study involving three separate organisational groups of a large aerospace electronics company, Gibby (1975) developed a measure of project management authority as perceived by project and functional managers in a complex, matrix-structured enterprise, analysed the relationship of the degree of perceived authority agreement to various measures of enterprise performance, and examined the influence of the awareness of formal specifications of project management authority on the perceptual disagreement of enterprise members. He found a significant difference between the perception profiles of project personnel and technical line personnel. Evidence from his work also indicated that within the enterprise, project managers and
technical line managers perceived project management authority differently: each group
tending to perceive themselves as exercising more authority than their counterparts.
Project authority relationships were in fact not clearly understood by the managerial
personnel of the enterprise owing to their imprecise definitions. Discounting differences
between the inter-organisational and intra-organisational contexts, Gibby concluded that
his findings were generally in consonance with the findings of prior related studies,
namely those of Steiner & Ryan (1968), and Goodman (1967).

Although the aforementioned studies all centred on matrix-oriented organisations, the
use of authority as a source of influence in the implementation of project management is
seen as an important aspect. Equally important is the role which perceptions play in
directing the actions of project managers.

There is no abundance of studies relating specifically to authority, responsibility or
accountability in the construction context. A number of past research works have
however emphasised the importance of these issues with respect to project
management.

In a review of the state of project management commissioned by the Institute of
Quantity Surveyors, the report of Liverpool Polytechnic (1976) calls for the preparation
of coordinated terms of reference when project management is utilised. This would
state the responsibilities, authority and relationships of the project management team in
terms of both the project and the other contributors (p.23).

Based on an investigation of nine surveying practices, Warner (1977) attempted to
identify and delineate the perceived gulf between the practice and theory of project
management. He found the delegation of authority as giving rise to a major area of
difficulty where the client was unwilling to vest in the project manager the degree of
authority which was felt to be required for a successful service (p.57).

Walker's (1980) own work suggested that "authority and responsibility patterns" were
areas worthy of further research (p.247), including also the associating "legal
protection afforded to clients and contributors" (p.276). He found that the
interrelationships of contributors to building projects made it difficult to apportion
responsibility and this represented an aspect of concern to newly emerging organisation
structures.
His publication in 1984 expands further on the issue of authority, its delegation and its definition. In emphasising the importance of integrating the client with the construction process, he proposes that the mechanism necessary for this integration should not only reflect the client's organisation but also "clearly state the pattern of authority and responsibility for the project" (p.247). The amount of authority delegated by a client to the project manager largely determines the integration of the project team with the client's organisation (p.81). The 'matching' of responsibility by authority, while ideal, is considered particularly difficult to achieve. In reaffirming his earlier recommendation, he stresses again the need for the responsibility pattern to provide the client with legal protection that is sufficiently practical to be applied.

The lack of attention to responsibilities and authority was also considered by Ninos & Wearne (1984) to be a major cause of failure to obtain satisfactory results from building and civil engineering construction. By depicting the responsibilities for construction in a diagram (ref p.10), the apparent complexity of roles for the promoter, project board, project director and project team was reduced to a simple checklist of requirements. In opting for the title of 'project director' which, in their opinion, indicated authority to exercise control instead of merely responsibility for coordination that frequently attached to the title 'project manager', the emphasis was seen to be the concentration of authority in one person and at one point in order to effect the necessary control.

4.7 AN AUTHORITY-RESPONSIBILITY MATRIX

In this sub-section, an attempt to develop a combined model of accountability, authority and responsibility shall be made. The importance of authority meeting with responsibility arises primarily because of the issue of the extent to which one can be held accountable. The strive for coexistence, coequality, or balance between the two, a distinctive feature of traditional management theory, is therefore, and in effect, imposed by the demand for accountability. If there is not a demand for accountability, the perceived gap between authority and responsibility in any given management situation poses no real problem. More importantly, accountability requires authority for its discharge. It is the sufficiency and adequacy of authority which support accountability. One cannot be held to account if one has insufficient authority to carry out that for which one is accountable. Taken together, the call for sufficient authority to match one's responsibility is a demand for accountability. We can examine this conceptual triangle with the aid of an authority-responsibility matrix (See Fig 4.5).
Two categories of accountability are possible for a particular situation:

1. Specified Accountability - that which is attainable, and
2. Achieved Accountability - that which is achieved.

Referring to the four quadrants of the figure as Q1, Q2, Q3 and Q4, it is found that in Q1, authority and responsibility, although balanced, are low in relation to Specified Accountability, giving rise to a low level of accountability. In Q2, responsibility exceeds authority, i.e. the authority is insufficient for carrying out the responsibility. In this instance, the level of accountability shrinks to the level of authority, consistent with the view that one can only be accountable if one has the authority to perform. There is therefore diminished accountability, or Accountability Underload. The Specified Accountability is unattainable, the Achieved Accountability being less than the Specified Accountability. In Q3, authority exceeds responsibility - one is more authorised than the responsibility requires, i.e. the Achieved Accountability exceeds the Specified Accountability. This over-accountable position, Accountability Overload, like Q2, is also unfavourable. Either the Specified Accountability is expanded to meet the Achieved Accountability, or the authority be lowered accordingly. Q4 represents a balanced authority-responsibility position, a case of high and optimum accountability, where Achieved Accountability meets with Specified Accountability.
Ideally, a situation ought to, by constant review, move outwards from Q1 towards Q4 (as shown by the diagonal arrow) possibly through a zone of adjustment comprising lateral shifts between Q2 and Q3. This constant adjustment marks an increasing level of accountability as it moves towards Q4. In so doing, a progressive cycle of rising accountable performance can be achieved through meeting the demands of accountability (See Fig. 4.6).

![Figure 4.6 - Cycle Of Increasing Accountability In Performance](image)

The close association which accountability has with the flow of authority and responsibility is apparent. Ascriptions of the term to a higher element of responsibility and to an aspect of responsibility are considered to be somewhat insufficient in the light of present-day requirements of managerial performance. It is submitted that accountability transcends this partial appurtenance to responsibility. Rather than arising as part of responsibility, it embraces both authority and responsibility. It is conceptually distinct from responsibility and is indeed capable of taking on a separate meaning. Quite clearly then, for accountability to arise, there must be in the first instance an existence of a responsibility. The distinction that ideally meets with the expectations of this study is that it arises from instead of as a part of responsibility.

4.8 THE ORGANISATIONAL CONTEXT OF ACCOUNTABILITY

When an individual becomes a member or part of an organisation, individual action takes on an added dimension. It expands in scope to meet the demands for a certain conformity to the organisation's expectations. For the individual, these expectations represent an 'executive role' which he undertaking. A comparison between the individual and the role he undertakes provides a contrast between the two dimensions (Newman & Rowbottom, 1968, p.28):
The prescribed work content of a role is seen as a contrast with the ability of the individual to exercise discretion to good effect - his capacity, his authority in the role with his actual power, and his accountability in his role with his sense of responsibility as an individual.

In much the same way as power and responsibility go together, so do accountability and authority. Consistent with this view is the consideration of accountability and authority as the transformed institutional entities of responsibility and power (Kogan, 1986, p.30).

If work is taken as an interactive composition of three basic features - activities that are relevant to objectives, and are determined feasibly by resources, a model of the organisation in terms of role and personal relationships takes the following form (Newman, 1973, p.17):

![Figure 4.7 - The Organisation In Terms Of Role And Personal Relationships](image)

Within this model, 'authority' refers to the access to resources permitted by the organisation, 'power' is the personal link with those resources - the ability and willingness to use them, 'accountability' is the organisational requirement for activities
to be carried out, and 'responsibility' is the term for the personal way of carrying them out. Based on these terms, the ideal situation of the person in a role is one where "the work objectives are clear and at least not in conflict with the personal objectives, where the limits of accountability are understood and responsibility is present with them, and the person has the power to use the resources to which the authority in his role gives him access" (p.18).

Newman's ascription of the meanings to the terms is not entirely congruent with this study's interpretation. Discounting for possible semantic differences, neither is agreement the issue. What is important and vitally beneficial is the model's treatment of the organisation as a duality of role and person relationships. It is this duality when an individual performs his organisational role that requires an imperative consideration of role theory in the context of organisations.

On the basis of this duality of person and role, and arising largely from the preceding review on justification, it is evident that all action carries with it the need for justification and answerability, this requirement dictating to a certain degree how people think and act. Role behaviour, according to Katz and Kahn (1978), generically refers to "the recurring actions of an individual, appropriately interrelated with the repetitive activities of others so as to yield a predictive outcome"(p.189). Treating human organisations as open systems of roles where the emphasis on interdependent acts forms the substance of organisations (p.187), it may be possible to generate a simple integrated model of role performance. If role performance is visualised as incorporating three aspects - causes, answerability, and consequences/outcomes, a central contribution provided by accountability for both role theory and attribution theory can be observed. (See Fig. 4.8)
Accountability addresses the varying outcomes and consequences of role performance by examining the degree to which one is answerable in any such circumstance, and accordingly will form the basis for guiding and shaping subsequent behaviour. Attribution theory, or the study of perceived causation, may well be dictated and influenced by expected accountability, in so far as an attempt is made to rationalise performance. There is no clear or distinct theory of accountability as such. It is reasonable to suggest that the process of accountability may indeed be the central guiding mechanism that ultimately influences attributed causality of behaviour on the one hand and affects expected outcomes on the other. If there is no requirement for accountability, there is no concern for either causality or consequences. On this basis, an accountability perspective is considered lacking in organisational studies.
4.9 TOWARDS A TENTATIVE APPLICATIONS MODEL

The central and underlying feature from the various sources of information which have so far been examined in this section, is that all responsible behaviour is inextricably bound with the need and ability to justify and answer for one's action. This need is further enlarged with the increasing degree of responsibility as one's actions take on a specific role performance in organised settings. In a sense, what unfolds is a formalisation of accountability in the context of an organisation, stemming from the initial and basic justification and answerability.

It would seem that if a person, by virtue of his position, assumes an advisory and service responsibility, he should be accountable for the technical quality and content, and the adequacy and appropriateness of the advice and service which he provides, i.e., accountability for his own work. Accountability for the completed work to which his effort contributes is a more questionable issue (Allen, 1973, p.127). Action in organised settings thus holds implications for all participants.

When role performance is additionally vested with the power to use resources on behalf of another party, a "stewardship" relation unfolds. The constituencies, consisting of owners and claimants of the resources, then possess a fundamental right to knowledge of how these resources have been utilised. This stewardship relationship takes on an added dimension in managerial and professional work, in that much of the manager's duties consist of working through the efforts of others. In one sense, he can be viewed as being accountable for the actions of these others. In another, possibly more realistically, he may 'share' accountability with the others for their respective contributions.

The diffusion of accountability generates a unique pattern of accountability relationships. Depending on the circumstances of each case, the degree of ambiguity that prevails is likely to differ. The shorter the lifespan of an organisation, or the more transient its nature, the greater will be the need to clarify this distribution of accountability at the outset and as quickly as permissible. Research also tells us that individuals working through other people (as what management is predominantly about) will find the consequences of their behaviour more ambiguous than individuals whose outcomes are not mediated by others, i.e., they will experience greater role ambiguity. In the main, their performance will be judged by the behaviour of others (Pearce, 1981, p.670).
It is useful to remember that one of the chief reasons in organising work in terms of separate 'project' entities is in fact to rest accountability for it on a designated person or group of persons. The project, while it may continue to be part of an organisation's overall strategic framework, allows in itself a 'separation' from the ongoing operations and generally becomes the sole or major pre-occupation of a specified group of people for its duration. This separation in terms of responsibility and control for a specific project forms the whole basis for "project accountability", which shall be developed and utilised as the discussion progresses.

If a re-examination of Sockett's two cases (P.82) is made, in which the obligation to account exists, - the central case of accountability for outcomes and results, and the exceptional case of accountability to codes of practice, in the light of a professional consultant's job function in the construction context, it would appear that aspects of both the central and the exceptional cases can apply in such an instance. Instead of two distinct and separate cases, what in fact exists are two very pertinent aspects of accountability - for outcomes and results and to established codes of practice. A professional consultant is therefore accountable to the client for a technical input that meets with the client's requirements, and also to established professional codes of practice governing his work.

Applying this to the project context in construction, two distinct notions of accountability begin to emerge. These two shall be termed - "project accountability" and "professional accountability" respectively. The first of these - project accountability, shall be examined in further detail in the next Chapter (Chapter 5), after a conceptual framework of accountability has been developed. The second - professional accountability, shall be proposed in a subsequent Chapter (Chapter 7) which deals with the issues of professionalism and professionalisation.

It is not intended at this point to elaborate on these two constituent concepts. It is sufficient to point out that accountability in project management shall be conceived as comprising three constituent and related concepts, two of which have just been mentioned, and the third - "legal accountability". Project accountability, mainly through the terms of engagement between the client and the consultants, has contractual implications for legal liability, while professional accountability has tortious implications for legal liability through professional negligence.
Figure 4.9 summarises the overall framework of PM accountability in terms of these three constituent concepts and in terms of their relationship implications for legal liability. The transformation of project accountability and professional accountability from their operational status towards legal accountability has legal liability equivalents in contract and tort respectively.
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CHAPTER 5

CONCEPTUAL FRAMEWORK OF ACCOUNTABILITY

5.1 INTRODUCTION

Arising from the investigation of the meaning and the various views of accountability in Chapter 4, an attempt is now made in this Chapter to draw together the underlying themes in order to develop a conceptual model of accountability that will, on the one hand, retain most if not all its salient features from the Chapter 4 sources, and on the other, be capable of being applied meaningfully in the context of project management. The order of the subsections provides a systematic approach towards this end.

Section 5.2 develops a conceptual definition of accountability. Section 5.3 introduces the notion of 'project accountability' in place of 'project authority'. A model of the project management process is developed in Section 5.4. Section 5.5 then attempts to address this project management process in accountability terms. The usefulness of the accountability framework will briefly be addressed in Section 5.6.

It will become obvious that most of the basic ideas relating to the concept would have been drawn from the fields of psychology and education, where the influence provided by the concept appears most prominent. Discounting the differences in contexts, the guiding principles can be seen to be applicable in our situation.

Project management is, as yet, not a profession (in the true sense) within the more traditional context of professions in the construction industry. In the light of recent developments in project management, it appears quite inappropriate that power and control in such a professionalised industry can reside in the project management function. Questions are constantly raised regarding the responsibility, authority and the ultimate accountability of project managers in terms of the project. These questions could be intended as a clarification of the role of the project manager. It is also likely that they could represent a seeking of clarification of the positions of the respective consultants in a given project management arrangement. A reconciliation and rationalisation of these issues is vitally needed. The existing plethora of procurement systems further complicates the confusion surrounding the actual position of project management.
Against this backdrop, it seems reasonable to suggest that if a clear identification can be made of the project manager's accountability in terms of for what and to whom, then the ensuing responsibility which takes the form of roles and functions will accordingly determine the requisite authority which is needed to carry out these functions.

In so doing, the overall accountability of the project manager and the project management process will reflect the true position of the whole of the project team including the accompanying relationships. This proposed interplay of accountability, responsibility and authority is visualised as the central focus of the research, and will form the basis for a conceptual framework of the project management process in accountability terms. The choice of the accountability concept will further provide the logical transition from project accountability to the legal aspects of professional negligence and resulting liability in respect of all the participants in a project management arrangement. The three sub-concepts which will be developed and utilised will be:

(1) Project Accountability,
(2) Professional Accountability
(3) Legal Accountability.

5.2 A CONCEPTUAL MODEL OF ACCOUNTABILITY

5.2.1 Conceptual Definition

Accountability can be viewed in several ways. In some, it is a state of being; in others it is a process or a set of activities; still others treat it as a product. More likely, the concept encompasses all the three ways of describing it. It could also be defined as the systematic measurement of the means to specified outcomes for which some persons or organisations are held accountable in relation to funds expended, although the circular nature of the definition makes it rather loose conceptually.

In simple terms, the word means to hold someone to account for something. Additionally, this someone is accountable to another. The requirement is not merely an ability to deliver an account but can also be an obligation to do so.
Accountability therefore arises when there is a requirement, obligation, or duty to perform a given task or function within a set of agreed expectations. The requirement can be express or implied, and the task, function or duty can take the form of a role or a process. It comprises two distinct but related elements: responsibility and authority; and the extent and level of accountability in a given situation determines the interrelationship of these two elements. There is thus a degree to which one can be held accountable. In the absence of this, there would be infinite accountability, clearly an undesirable situation.

On this premise therefore, the initial task in a given situation is to identify the accountability status, and then to examine whether the responsibility and authority arrangement is appropriately balanced. Using the earlier matrix (Fig.4.5, P.134), Specified Accountability in a given situation is therefore pre-set. What is achieved, the Achieved Accountability, may or may not meet with what is specified. In this sense, using the balance of authority with responsibility provides a guide to the level of Achieved Accountability.

In addition, the following factors can be seen to feature when we speak of accountability:

1. The term is relational, i.e. there is an accountability relationship.
2. A party can be accountable to more than one party, and vice versa, a few parties may be jointly accountable to one.
3. Party need not be a person; it can be an organisation.
4. There must exist some form of 'stewardship' i.e. where X holds (and uses) something on behalf of Y.
5. The object of the stewardship is not restricted to funds; more generally, it covers resources.
6. Evaluation is a prerequisite for ascertaining Accountability.

An initial consideration of the accountability issue should address four vital questions:

(1) Purpose - Why is Accountability sought?
(2) Parties - Who is accountable to Whom?
(3) Content - Accountable for What?
(4) Methodology - How to attain accountability?

(See Fig. 5.1)
Logically, the whole rationale for looking at accountability must be founded on a specific purpose, i.e. it must be an issue that warrants an examination. This purpose ought to be thoroughly investigated before embarking on the exercise proper. Inherent in the whole question of accountability is the identification of the accountability relationship(s) which make up the area of investigation. The parties in these relationships, in the sense of who is accountable to whom, will form in essence the objects of investigation. The subject matter of their accountability relationships will define the scope of accountability in the respective cases. This definition of accountability in turn provides the basis for evaluating performance.

Notwithstanding the foregoing, the term 'accountability', as opposed to the concept, can have a two-fold interpretation. One is the ability to account for something, while the other is the requirement to do so, i.e. one can be fairly accountable in one's actions or performance and thereby be constantly in a position to be able to answer for them, or
there may be a requirement to account for something in the sense of a demand or need for accountability (See Fig.5.2).

Figure 5.2 - Twin Interpretation Of Accountability

The requirement though may or may not be exercised. This is the one feature which emphasises the uniqueness of the concept. It functions as a control mechanism both internally and externally. If exercised, the means must exist for measuring performance against the agreed expectations. If not, the requirement should serve as a constant guide for an acceptable level of performance. In this sense, if one adopts an accountable system for the performance of a task, one can in fact be in a fairly accountable state without in reality being called to account for his performance. In this same sense, one is in a state of being able to account. The 'constant guide' that we propose is likened to the process or set of activities which presupposes that a sequence of things needs to be done, and, if done some state of accountability is then accomplished. Both these descriptions of accountability, as a 'state of being' and as a 'process', have been summarised as constituent elements of the concept of accountability (Gephart, 1975, p.68).

The preferred approach to accountable performance is therefore to carry out work always with the view that one could and indeed would be called to account for it. This should then maintain in general a fairly accountable standard that would sustain any requirement to account when called to do so. It suffices to say that the greater one's ability is to account, the less need there may be to call one to account. All this assumes however that addressing ourselves to accountability whenever we act is in fact desirable and feasible in that it does not hinder due performance. The dysfunctionality in such an
approach can well be a real problem. It is suggested that, properly addressed, accountability should not create any dysfunctionality. Performance that is not accountable has limited worth in any case.

The two questions of what it is that one is accountable for and to whom one is accountable, make up the form which accountability takes. What one is accountable for forms the crux of any accountability relationship and is totally dependent on the agreed terms between the parties. To whom one is accountable is often clouded by a combination of those whom one thinks and feels he is accountable to, and those whom others argue that one ought to account to. The normative interpretation is preferred here i.e. those to whom one ought to account. Even here, there will no doubt be differences, but hopefully, the specific context should provide a useful direction. These claimants to accountability have been most aptly termed the 'constituencies'. It is the expectations of these constituencies that make up what one is accountable for. To reiterate the point made in the earlier paragraph, there must be agreement on these expectations. The demand for clarity here is of utmost importance.

5.2.2 Imposition of the Context

If we retain the framework for accountability consideration (as in Fig. 5.1) and incorporate the operational context in which we hope to apply it, an expansion to the four basic items becomes necessary (See Table 5.1). In terms of the purpose for seeking accountability, the present state of accountability and the desired state are relevant for determining the required action. We may be addressing a lack of accountability, an intended increase of accountability, or even an initial establishment of an accountability system or position, in order to generate and maintain an overall accountability.
1. **Purpose**  
Why are we seeking Accountability?  
- What is present state of accountability?  
- What is desired state?

2. **Parties**  
Who is accountable to Whom?  
- Other parties accountable?  
- Possible shared accountability?

3. **Content**  
Accountable for What?  
- Extent of accountability specified between parties

4. **Methodology**  
How to attain Accountability?  
- Relevant evaluation criteria to check achievement

<table>
<thead>
<tr>
<th>Original Framework</th>
<th>Expansion Within Specified Context</th>
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<tr>
<td><strong>1. Purpose</strong></td>
<td>Why are we seeking Accountability?</td>
</tr>
<tr>
<td><strong>2. Parties</strong></td>
<td>Who is accountable to Whom?</td>
</tr>
<tr>
<td><strong>3. Content</strong></td>
<td>Accountable for What?</td>
</tr>
<tr>
<td><strong>4. Methodology</strong></td>
<td>How to attain Accountability?</td>
</tr>
</tbody>
</table>

**Table 5.1 - An Expanded Framework For Accountability Consideration In A Specified Context**

It is possible that not only a single party is accountable; a group, an organisation, or even a function can be accountable, perhaps jointly. Such a situation often only becomes clear when the operational context is considered.

The statement of agreed expectations and the means to achieve these take into account the particular circumstances of the situation and establishes the measurement criteria necessary for evaluating accountability. In addition to content then, the extent to which one is to be held accountable as defined by a situation is equally important.

The operational context, it can be seen, provides the second part to the basic framework for accountability consideration. It comprises the applications portion, and together with the primary conceptual portion, offers us the opportunity to employ the concept quite flexibly and beneficially to most human endeavours.

5.3 **FROM PROJECT AUTHORITY TO PROJECT ACCOUNTABILITY**

Up to now, most investigations into the authority problem in project management look from the viewpoint of the project manager's use of authority and the team's response to this exercise of authority. This perspective is one-sided in the sense that the project manager's use of authority is seen as what matters. If we bear in mind that the use of authority is by X, and is exerted over Y for specified purposes, the acceptance of Y is
just as critical for the facilitation of X's authority. This view is very much consistent with Barnard's (1968) acceptance theory of authority in which authority is defined as "the character of a communication (order) in a formal organisation by virtue of which it is accepted by a contributor to or 'member' of the organisation as governing the action he contributes" (p.163). Based on his definition, authority involves two aspects: (1) the subjective - the personal, the accepting of a communication as authoritative, and (2) the objective - the character in the communication by virtue of which it is accepted.

The authority problem concerns the project manager whereas the accountability problem of both the project manager and respective team members is what concerns the whole team. To team members, it does not quite matter whether the project manager has sufficient or insufficient authority. What does matter is his degree of accountability in relation to their respective contributions. It is submitted that this is what determines and affects the extent of the team's commitment and participation. PM is after all the harnessing of all the separate resources for the fulfilment of a single goal. It works principally through the efforts of others in the team. The group perspective of accountability is therefore of greater importance than just the authority problem of the project manager in any given situation. We have earlier suggested that the authority problem may in fact be symptomatic of the wider accountability problem. With this in mind, the following proposition is tendered: "Authority acceptance is dependent on the group's appreciation of their separate and joint accountabilities". Fundamental to this appreciation of accountability is therefore the assessment of one's own accountability and others' accountability, to ascertain a clear and definite distribution of the project's accountability. The idea of "project accountability" allows us to clarify this distribution.

5.4 MODEL OF THE PROJECT MANAGEMENT PROCESS

5.4.1 Model of the Construction Process

Walker (1984) offers us a model of the construction process which essentially presents an outline of the process of providing a project. He identifies three distinct phases within such a process, spanning between a start and a finish point - project conception, project inception and project realisation. At the conception stage, an organisation determines, over a range of feasible decisions, if acquisition of real property is in fact required. If this is not the case the organisation, although a potential client for the
construction industry, ceases to be one. If acquisition of real property is required, the process of arriving at one of the many alternatives in making further progress towards the finish point is termed the project inception process. Assuming the preferred outcome here is the construction of a new building, the process of arriving at this finished building is termed the project realisation process. (Refer to Fig. 5.3).

![Walker's Model Of The Construction Process](image)

In the same way that real property acquisition is only one of several decision options for an organisation, construction of a new building is also only one of several feasible options. The client may choose to buy, lease, adapt or even abort, at this inception phase, each of these constituting a project, although not one of new build. The development option may or may not therefore involve a new construction. It is however common to find that conversion and refurbishment work can be massive and complex enough to justify the use of project management and a full assortment of professional inputs.

Although relevant only to the Traditional System of procurement and based on the use of Bills of Quantities, the RIBA (1973) Work Plan provides us an otherwise adequate indication of the major work stages that normally typify a conventional building project.

If we generalise these work stages, we obtain in effect what is commonly referred to as a project's life cycle. Numerous accounts of the phases in such a life cycle can be
observed in the literature of project management relating to various industry utilisations. Cleland and King (1983) identify these phases as: conceptual, definition, production, operational and divestment. Morris (1981) refers to the four stages of feasibility, design, production and turnover & startup. More generally, Wideman (1988) distinguishes the stages as concept, planning, implementation and termination. In whatever context, it is clear that a 'project' must first come into existence. After developing the idea further, it is then produced, or physically realised, ie brought into operation. Given these stages within a project's life cycle, it is generally recognised that the early stages, while incurring less expenditure, exert a greater design influence, and indeed a greater overall influence on the results, than the later stages. Fig.5.4 illustrates this relative influence over the stages of a typical construction project.

![Figure 5.4: Relationship Between Design Influence and Cost](Source: Austen and Neale, 1984, p.10)

The importance and criticality of the initial stages of a project have been given extensive treatment under the generic term 'project start-up'. The 9th Internet International Expert Seminar (1984) was devoted entirely to this 'project start-up'. The term, as adopted in this seminar, however includes both the launching of a project as well as a process within a project (Morris, 1984, p.26), and is thus not restricted only to the very initial idea or concept stage (Lichtenburg, 1984, p.2).

Notwithstanding this stress on the initial stages, the termination or close-out stage, although comparatively less significant in impact, must also receive attention owing to
the need for project evaluation and for the proper re-deployment of project personnel.

Having examined very briefly the construction process and the project life cycle, what concerns us is how this can be influenced by the project management process. Ideally the project management process should encompass the entire process of development and construction in order to provide the maximum benefit. Practice however does not allow such a simple and clear-cut solution. The formal entry of the project management response tends to be later than preferred in most cases. Clients have different levels of experience with development and construction; they may or may not possess adequate expertise within their own organisations; they may or may not in fact wish to involve themselves fully in project management. The decision to adopt project management may well be dependent on a project confirmation taken quite advanced into the project's life cycle, or can, in some cases, be undertaken only when the client realises an inadequacy in this area, or when major problems are encountered. The general lack of a coherent and coordinated framework from the construction industry for such potential clients is a further factor compounding the situation, although guidelines towards improving the situation have, at the time of this study, been proposed in the form of recommendations for various organisations and professional institutions to initiate further action (Building EDC, 1989, Para.7).

5.4.2 Model of the Project Management Function

While project management functions can in fact be carried out by individual contributors in a traditional arrangement, which has been and still is the case very often, the research is mainly concerned with project management as a separate function, either exercised by the client or vested in a separate person or firm. Where this is the case, we shall refer to the arrangement as a project management arrangement. A project management arrangement, as we term it, is therefore one where the project management approach is adopted and exercised as a clearly distinct function apart from any of the other professional functions. This is not to be confused with the more common usage of the term 'contractual arrangement'. Project management is more a procurement system which could incorporate, in the course of its process, any of the 'contractual arrangements' that we are more familiar with.

A basic project management structure may take the form as illustrated in Fig 5.5:
Clearly the project management functions are divorced from the professional functions, and the point of contact between the consultant team and the client is the project manager. This is what is termed an executive project management structure where the service takes a dominant role and includes decision making by the project manager. Present-day practice will however reveal that many other parties, both from the client organisation and external to it, may also come into contact with the project manager, e.g. the planner, valuer, development surveyor, agent, accountant, solicitor etc.

As opposed to this, a non-executive project management structure takes the form illustrated in Fig 5.6.
In this structure, the project management service is less dominant, and operates in parallel with the other contributors, with consequently less decision-making (IQS, 1976).

The project management service in the non-executive arrangement has been termed 'project management coordination of design and construction' while that in an executive arrangement, 'total project management', representing two extremes of the project management role, ranging from coordination to full responsibility (CIOB, 1979).

Further work suggests that the non-executive arrangement is unlikely to contribute much to the project management process. The major difference between the two is clearer if we view the construction process as only the operating system which must, to be effective, be managed by the managing system. Management in the non-executive arrangement remains part of the operating system, whereas that in the executive arrangement becomes clearly separated from the operating system (Walker, 1984).
notion of a managing system and an operating system, with the roles and activities of project management distributed within the managing system partially to a project manager and partially retained in the client, offers a very comprehensive account of the actual position of project management (p.124).

The managing system can reside entirely in the client organisation if they have the capacity and capability to undertake the full project management role. It can also largely be undertaken by an external project management consultant, leaving only minimum control to be exercised by the client. More commonly, it is split between the two in a mixed in-house and external arrangement. These three variations provide for the client a fairly realistic set of alternatives for assembling and undertaking the project management function. The precise allocation of control between that retained by the client and that delegated to the project manager creates perhaps the most obvious source of problems relating to contributions and their inter-relationships. The lack of clarity in definition here can give rise to major difficulties in the course of the project's duration.

If we recall some of our earlier ideas tendered in Section 3, the four main areas of responsibility in a construction project are the client, management, design and construction. Within the context of a project, accountability (or more precisely "project accountability") for these four areas should lie as follows (see Table 5.2):

<table>
<thead>
<tr>
<th>AREAS OF RESPONSIBILITY</th>
<th>ACCOUNTABILITY LIES WITH</th>
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<tbody>
<tr>
<td>1. CLIENT</td>
<td>CLIENT &amp; PROJECT MANAGER</td>
</tr>
<tr>
<td>2. MANAGEMENT</td>
<td>DESIGN CONSULTANTS</td>
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<tr>
<td>3. DESIGN</td>
<td>CONSTRUCTION TEAM</td>
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<tr>
<td>4. CONSTRUCTION</td>
<td></td>
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Table 5.2 - Distribution Of Project Accountability For Main Areas Of Responsibility

Our main concern is the exercise of areas 1 and 2. It is however likely that what goes on here will influence to a certain extent the exercise of areas 3 and 4. Accountability
for the project management function is clearly dependent on where the function is located (see Table 5.3).

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<thead>
<tr>
<th>Location of the PM Function (Undertaken By):</th>
<th>Overall Accountability for the PM Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Client In-House</td>
<td>Retained by Client</td>
</tr>
<tr>
<td>2. External Project Manager</td>
<td>Retained By Client, Assigned to Project Manager</td>
</tr>
<tr>
<td>3. Mixed Arrangement</td>
<td>Retained By Client, Assigned to Project Manager</td>
</tr>
</tbody>
</table>

Table 5.3 - Distribution Of Accountability For The Project Management Function

In the external arrangement, a portion of the overall accountability still retains in the client as it is considered unlikely that clients will assign this entirely. Some control, usually in the area of final decisions, continues to reside in the client. Theoretically of course, it is always possible for a total assignment whereby the client has no involvement and in a sense is contracting to "buy" a completed project from the external project manager, but this is practically non-existent in the construction industry. The external arrangement is therefore, in reality, an example of the mixed arrangement. The split in control in a mixed arrangement can thus be viewed as a balance between retained accountability and assigned accountability within an overall accountability for the project management function. Even in employing external consultant project managers, the client still retains a degree of involvement and participation in the development process. His financial interest in the project, as the one who pays for it, in any case disallows a total assignment of accountability.

The discussion suggests that there is a possible relationship between accountability distribution and the level of the project management service. This may well be so, in so far as the level of the project management service in a project management arrangement does provide a good indicator of the accountability distribution between a client and consultant project manager. But mere participation and involvement in a project is no accurate guide to the level of a service. The content of the involvement is what matters.
Powers of decision-making, especially where these commit the client, may be a more realistic indicator.

The project management function encompasses a very wide range of services. At the lower end of the scale, there is project coordination of one form or other. The service may be a schedule (time) control or expediting function. It may be a coordination of design and construction. The service is however limited in scope. Further up the scale, we may find client representation, where the project manager acts, for the purposes of the project, as the client's representative on agreed terms. At the top end of the scale, there is executive project management where the project manager assumes fairly wide powers within the project. The precise scope of the service may be a difficult matter to determine, given that terms of engagement are nearly always very general in nature.

Three levels of involvement for the project manager have been outlined by Warner (1986) - (1) as 'enabler', bringing people and resources together, but with no role in the design and construction team, (2) as 'middleman', coordinating the client, the design team and the contractor, and (3) in an 'interactive' role, with close involvement in the whole process. Figure 5.7 illustrates the three levels.

Level (a), as envisaged by Warner, identifies the development potential and assembles the people and resources for its realisation. Levels (b) and (c) correspond quite closely to non-executive and executive project management respectively.

Parnell (1986) also suggests three levels of service that could be required of a project manager, from a client's viewpoint:

(1) administration and coordination,
(2) achievement of targets such as cost, quality and programme, and
(3) responsibility for the successful outcome of a project in its entirety.

These three levels represent, quite clearly, an increasing involvement, from project coordination to full project outcome responsibility.
Based on the foregoing discussion, Figure 5.8 attempts to demonstrate some correspondence between and among the terms which represent varying levels of involvement by the project manager. The various levels of involvement indicate in effect a relative distribution of project control between the client and the project manager, as shown in the lower portion of the figure. 'Total' project management is a term which has been used, in one sense, to refer to management of the entire development and construction process, as opposed to the narrower discipline of construction project management (Ratcliffe, 1985, p.621). In another sense, it can refer to the situation where all design team consultants contract directly with the project manager and not with the client, the client's only professional engagement contract being with the project manager. In this case, the single point responsibility becomes also a single point of contract.1
5.5 MODEL OF PROJECT MANAGEMENT IN ACCOUNTABILITY TERMS

5.5.1 Participation in a Project Management Arrangement

An examination of a project management arrangement will yield the following groupings of participants:
1. Client.
2. Project Manager.
3. Consultant Team.
4. Contracting Team.

It is not uncommon to hear of the client being referred to as a "many-headed beast", a view which marks the growing concern that managing the client may well be the most difficult task in project management. Depending on the number of levels in the client's organisation, the distribution of responsibility for the project in question, and the characteristics of the involved members, a typical client can in fact be a rather complex ongoing system, capable of imposing quite substantial influence on a project organisation (Cherns, 1983).

Figure 5.8: Varying Levels of the Project Management Service
An alternative view of project management defines the practice as "managing the visible and invisible teams to meet the objectives of the stakeholders" (Briner & Geddes, 1988). From this perspective, it is evident that elements of visible and invisible teams, as well as of stakeholders, can all be found within a client organisation. Coupled with the possibility that a major part of the project management function usually rests with the client, we can expect some difficulty from this particular grouping. Although the designation of one person in the client organisation to become the sole point of contact can obviate and mitigate the inherent difficulties, the solution in practice may not be so simple.

This definition of project management, as the management of the visible and invisible teams, is both dynamic and challenging as it crosses between and among all the above-mentioned groupings of participants. The visible team comprises the main project team members, while the invisible team includes internal support staff, client contacts, users and outside organisations. The interfacing and integrational elements of project management are immediately brought into sharper focus.

If the project management function is provided entirely in-house by the client, the concept of the project manager as 'surrogate client' approaches a non-entity; the project manager and the client are one and the same. There appears to be some merit in this notion. Ultimate responsibility and accountability for a project should rest with the client, a view that we shall consider in more detail. It has been suggested that ultimate responsibility for project management belongs to the client (CIRIA, 1983). Both these views should achieve some clarity when we address the issue from the accountability perspective. If, on the other hand, the client decides to employ separate project management expertise to supplement this in-house capability, the profile for the mixed project management function becomes more complicated. The exact positions of the client and the project manager in such an instance is not only a matter between the two, but may concern also the rest of the consultant team. In the same way that a number of persons in a client's organisation can undertake the project management role, the project manager can also comprise a team. Notwithstanding this, there will usually be one person designated as the Project Manager. The difficulty arises in such a mixed arrangement because of the existence of both a client project manager and a consultant project manager. It is not improbable to conceive of the consultant project manager's role in this instance as corresponding to a non-executive one, although this may not necessarily be the case.
At the other extreme, an external consultant project manager may be utilised, and there may be no direct contact between the client and the rest of the consultant team. The project manager becomes the surrogate client or the technical client. For all intents and purposes, he may be treated as though he is the client. It becomes a little alarming if we consider that while the consultants' point of contact is through the project manager, their respective consultancy agreements remain usually and directly with the client. The terms of reference, we may argue will make clear that the project manager is fully representative of the client in all respects. The implications here must be addressed objectively if the justification for separate project management is to be upheld.

In a project management approach, the management aspects of the work of the conventional consultant team are distilled and identified, and vested in the project management function. This calls for the preparation of coordinated terms of reference for all the consultants (IQS, 1976, p.23). The mere fact that such management aspects can be relinquished by the consultants suggests that the distillation process is capable of clearly separating management functions from technical functions. Problems of definition of responsibility at the interface between management and professional functions must be investigated in depth (p.43). Within a project management arrangement, the construction portion of the project continues to be undertaken in one or other of the forms of contractual arrangements.

Various contractual arrangements have to do with the way in which the work is placed with the contracting team. The recent increase in use of design and build and management contracting systems has reinforced the view that the traditional arrangement may be lacking in certain respects. While both systems allow for greater integration of design and construction, design and build offers a single point of responsibility which appeals to clients generally. It is no more unusual to find management contracting operating under a project management arrangement.

5.5.2 Interrelationship of Participants

A typical project management arrangement comprising the four groupings of participants is characterised by a network of relationships. These relationships can be contractual in nature in which case contract law governs. The difficulty arises when we observe that most of the relationships are in fact operational in nature, ie working
relationships, which by and large conform to accepted practice in the industry. The problem is exacerbated because these relationships overlay the contractual ones. Rights and duties arising under a contractual relationship dictate and determine the accountability position quite adequately and exhaustively. Establishing the accountability position when working relationships cross contractual relationships poses a greater problem. The accountability relationships may not and usually do not correspond directly with contractual relationships.

Where parties are related by contract, we shall term the relationship one of primary accountability. Accordingly, the primary accountability relationships in a typical project management arrangement are as follows:

1. Client and Project Manager.
2. Client and Individual members of consultant team.
3. Client and Contractor.

The extent of primary accountability will clearly be established by the terms and conditions in the respective agreements. The terms of engagement in the consultancy agreements in cases (1) and (2) should spell out the scope of the participants' involvement in the project. In case (3), the client and contractor would be linked via the conditions of contract governing the building work. A contractual relationship effectively represents the most basic and fundamental example of an accountability relationship. More accurately, it is an accountability relationship that is enforceable by law and governed by a set of established principles under what is commonly referred to as the law of contract. If we view contracts in this manner, it follows that there must be an accountability relationship in any contract. However, not every accountability relationship need be a contract.

Accountability is therefore the essence of a contractually binding relationship. Extending this further, we know that duties can arise in law outside of contracts. Accountability too can arise under similar circumstances. For the purposes of our study, we shall term the accountability which arises under such relationships as secondary accountability. From this perspective, the notions of the tort of negligence and professional liability come to mind. Indeed, the concept of accountability underpins this area of legal relations, as we shall observe in a later section when we turn our minds to the legal aspects involved in project management.
Directing our minds to secondary accountability, we observe from the four main groupings of participants in the project management arrangement that this can arise between any of the participants, individually or even jointly. It is suggested that the integrative function that is so prominently the crux of project management must create possibilities of joint or shared accountability. We have seen in the efforts to integrate the contractor into the design phase, the various degrees of design delegation that arise from mere design detailing to full design and build, the associating problem of the question of design liability. In the same way, the transfer of management functions to the project management role can give rise to an unclear definition of accountability in terms of the management function.

If we are to question what precisely is the management responsibility in the project management function, this may be phrased in terms of responsibility for the project, for the project's outcome, for the management of the project, or in some other terms. The question however assumes greater clarity if we rephrase it in accountability terms. What is the project manager accountable for? More generally, what can and should the project management function be accountable for? This needs to be examined bearing in mind that the project management function is one which essentially works through the performance of other participants' functions. In sum, the notion of management accountability offers us much greater clarity than that of management responsibility when we seek to appreciate the central purpose of project management.

5.5.3 Relationship Between Client And Project Manager

We begin by stating, first and foremost, that a client in initiating a project to meet his needs, is totally accountable for the project. Within the strategic framework of the organisation, the person responsible for carrying out the project is fully accountable for it to the top management, who in turn may be accountable for it, as part of the organisation's goal of sustaining or enhancing growth, to the shareholders. We shall refer to this as ultimate accountability.

While we maintain that ultimate accountability for a project is held by the client, it is probable that, for the purpose of realising or implementing the project, he may choose to transfer some of this accountability, by holding part of it himself and assigning part of it to another party, the project manager. If the full project management function is undertaken entirely in-house, there is no real division as the overall accountability is
retained. If, on the other hand, an external project manager is to be employed, the client has to decide precisely this division of accountability for the project between himself and the project manager. The assigned accountability is determined by what the client expects the project manager to be accountable for. Depending on the situation, the project manager's project management function can be made accountable for the project in terms of agreed levels of time, cost and performance. Terms such as planning, control and coordination may also be commonly encountered. For the client who is a first-timer to the construction industry, he may not be so conversant with the levels of expected service available. Frequently, the exact terminology of the project management service, although decided finally by a client, is first put forward by the project manager. In the absence of an industrially accepted framework for the project management service, the client ought to direct his mind to more precise definitions of the service in terms of its accountable parameters in order to facilitate proper evaluation.

Will the project manager be made accountable for:

- overall management of the project,
- management and coordination of the design and construction,
- delivery of the project in time and to cost agreed,
- successful completion of the project, or
- coordination of the consultant team?

The range of possibilities can be absolutely wide when we consider the whole spectrum of project management functions that may be offered and agreed upon.

The detailed listing of duties and activities that characterises a project management service agreement must reflect the true accountability position between the client and the project manager. A logical and systematic approach should adopt the following sequence:

1. Establish the extent of accountability of the project manager (as desired by the Client).
2. Translate this into specific tasks and duties by specifying the functions in more detail.
3. Ensure that these meet the true intent in (1).

The flow of authority, responsibility and accountability between the client and the project manager takes the following form. Given an agreed level of assigned
accountability, the client must delegate authority for performance. If the delegated authority is adequate, there is acceptance of the assigned responsibility. In turn, accountability flows back to the client from the project manager (See Figure 5.9).

![Figure 5.9: Flow of Authority, Responsibility and Accountability Between Client and Project Manager](image)

This flow from client to project manager and back is fundamentally the three distinct and constituent steps of the delegation process - the assignment of responsibility, the delegation of authority, and the creation of accountability.

The accepted responsibility comprises all the specific tasks and duties translated from the assigned accountability. This prescribed accountability will ensure that adequate authority is released to support the accepted responsibility. It has been suggested that if authority is inadequate, the accountability shrinks to the level of this authority. The specified accountability is therefore not reached, representing a wasteful situation. On the other hand, if authority exceeds the responsibility, accountability is still limited to the level of responsibility, ie we have more authority than required, again an
inappropriate position. The specified accountability is achieved when authority matches the responsibility.

The question of how much authority a project manager should be given, if addressed from an accountability standpoint, would then become a question of: For what the project manager is made accountable, is the released authority sufficient to carry out the responsibility? The problem immediately becomes one of a joint determination between the client and the project manager, and no more a matter of unilateral concern. If the accountability position is clearly defined, there should ideally and theoretically be no imbalance between responsibility and authority. The authority gap that plagues project management should thus be obviated.

5.5.4 Relationship With Rest of Team

The accountability relationship becomes complicated when we consider the rest of the participant team. Their primary accountability is to the client while operationally, their secondary accountability is to the project manager. (See Fig.5.10)

![Accountability Relationship Diagram](image)

Figure 5.10 - Accountability of Participant Team to Client & Project Manager

The secondary accountability creates difficulty because it flows to and through the project manager. Performance accountability is thus monitored through the secondary
channel instead of the primary channel. In addition, this secondary flow raises the possibility of a shared accountability for participants' functions, with the project manager's functions.

5.6 FUNCTIONS SERVED BY AN ACCOUNTABILITY FRAMEWORK

What is the purpose of applying accountability to the project management context? Phrased differently, how does an accountability framework help us? We should derive some benefit in terms of the following aspects:

1. It clarifies positions and functions for all the participants, including interrelationships.
2. It provides a clear statement/definition of the project parameters.
3. It allows and facilitates performance measurement of the participants.
4. It provides a mechanism for identifying inadequate performance, and tracing liability.
5. It gives authenticity to both the project audit and the project management audit.

The very application imposes increased demands that call for improved performance. We achieve therefore a progressive cycle of rising accountability which ideally should benefit the participants. Is there a clear pattern of accountability? If not, we should set out to establish it. If there is, is it adequate? If not, we should consider improving the situation by aiming for high levels of accountability.

The influential nature of the PM task raises questions as to its real accountability vis-a-vis the rest of the participant team. While accountability for the design and the construction functions is somewhat clearer, accountability for the management function seems to remain rather vague and ambiguous.

The research plan in the next section (Chapter 6), will outline our attempt to explore further the viability of the tentative accountability framework in the project management context. An empirical investigation should allow us the opportunity of examining some of the ideas raised in this Chapter and in Chapter 4.
NOTES

1. See (1) Letter by B. Hamilton - 'A Strategy for Managing Projects', in Chartered Quantity Surveyor, Vol. 11, No. 12, August 1989, pp.10-11; and (2) His reply - Chartered Quantity Surveyor, Vol. 12, No. 2, October 1989, p.25; The Executive Project Management (EXPM) consultancy which Hamilton prescribes would effectively constitute an example of this 'Total' project management.

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CHAPTER 6

THE EMPIRICAL INVESTIGATION

6.1 INTRODUCTION

In Chapter 4, a broad and general treatment of the concept of accountability was embarked upon. The reference to accountability was traced in the management literature, and its operational affinity and alignment to the more usual and traditional concepts of authority, responsibility, power and influence, was observed and noted. Extending beyond the confines of the management field, the section also surveyed the comparatively extensive use of the concept in some other specialised areas, namely in education and psychology. Closer to the intended area of interest, project management, a number of significant studies which dealt almost entirely with the use and perception of authority were examined. Although most of these were carried out in the environments of matrix organisations in the U.S., the findings nevertheless inspired and reinforced many of the initial ideas regarding the nature of the managerial effort under conflicting demands, a feature which underlies much of the PM function on a wider scale.

These initial expositions were expanded upon by developing, in Chapter 5, a conceptual framework of accountability which would accommodate a definition of the concept in varying contexts. This was attempted by approaching the concept in two stages, first, by taking a primary view, then followed by an imposition of the context under which the concept would be utilised. The conceptual definition therefore took on additionally the operational dimensions, producing a rather formidable framework. The case of an accountability framework within the PM arrangement was briefly explored against a model of PM framed in accountability terms.

The potential that the concept holds for this study has gathered some momentum over the last two sections. It remains therefore, at this stage, to subject some of the notions to empirical inquiry and testing. The research plan that this section comprises is intended to enable such an investigation.

Beginning with the problem statement and a brief on the research objectives, this will set the ground for the development of a set of hypotheses which will assist and guide
the empirical investigation. Following these, an account of the research design and the research methodology used will be delivered. This will include the various considerations which influenced the choice of design and method, as well as the major problems encountered during the course of the empirical investigation.

For the purposes of the research, a "PM Arrangement" is a project arrangement in which there is a distinct and separate project manager role, irrespective of whether this is undertaken in-house by a client organisation, by an externally appointed consultant project manager, or through a combination of both. This definition is retained in the survey questionnaire (See Appendix 4).

6.2 STATEMENT OF THE PROBLEM

"How Accountable is Project Management (PM)?"
This is the central question that underlies the research problem. It reflects a treatment of the problem at three possible levels:

1. How accountable is the PM function (and the Project Manager)?
2. How accountable is a PM arrangement?, and
3. How accountable are the participants in a PM arrangement?

Level 1 addresses the conceptual desirability for accountability in the PM function. This general treatment challenges the need for accountability by examining the PM function in relation to the more conventional design and construction functions. Does the existence of PM as a separate function create a higher demand for accountability and does it create a shift of accountability for participants? Levels 2 and 3 deal with the problem more specifically in the operational context, by addressing a particular PM arrangement and its participants. The emphasis here shifts to a determination of a sufficient level of accountability in a specific situation. The question therefore spans from general (conceptual) to the specific (contextual), allowing a treatment of both the macro and the micro situations involving the concept.

In order to gauge the practical benefit and significance of a tentative application of the concept of accountability to PM, it is worthwhile to first investigate participants' perceptions of the notion. Given the many faceted approach to the use of accountability discussed in the earlier sections, the question that is now of interest is - How do
participants in a PM arrangement view the notion of accountability? The idea behind this line of enquiry is to develop a picture of how accountability is viewed by contributors who operate almost entirely in temporary project settings. Does the general appreciation of accountability depart substantially from what the literature anticipates, i.e. is there a difference which is due to the temporary nature of their involvement?

More specifically, it is desired to explore participant awareness and consciousness of the processes of accountability that operate. When does the issue of accountability arise? Is there an ongoing consideration of one's own accountability and of others' accountability in the project setting? Is accountability viewed positively, negatively, or contingently depending on the circumstances? Is there a general lack of accountability, or is the problem more appropriately a poor distribution of accountability among participants? The question of major importance here is whether all these aspects pertaining to accountability are viewed differently across participant groups, given the seven-group breakdown in the respondent sample. An added concern is whether the use of PM improves the accountability of participants at all. In the same way that all projects are uniquely different in terms of scope and requirements, it is likely that consideration of the foregoing will generate answers that will vary from arrangement to arrangement, from group to group, and from time to time.

Given the initialised appreciation of accountability, the importance and usefulness of the concept must next be established. Is accountability necessary in PM and why? What are the associating consequences in a PM arrangement in the absence of adequate accountability? How does accountability influence performance in PM, if at all? Depending on the earlier appreciation, does it serve to enhance or impede performance? The collective concern here is whether accountability can improve PM performance in terms of effectiveness? Put differently, given two PM arrangements, one with a high level of accountability, the other with a low level of accountability, can a difference in effectiveness be observed between the two?

The discussion of accountability within an integrated framework of role performance in Chapter 4 leads also to the suggestion that role specification which is clear in accountability terms should achieve a low level of ambiguity between role senders and role receivers. Adopting this basic premise, it may be possible to utilise the level of role ambiguity as an additional indicator of the level of accountability in a PM arrangement.
By virtue of its very function, PM has very much to do with project success. Research into project success have shown that there is a clear relationship between certain factors and the criteria of project success. These determinants of the success measures are seen to be very much associated with effective PM systems. It appears therefore that by concentrating efforts on achieving and maintaining effectiveness in PM, it should be possible to ensure a higher probability of project success. The ultimate purpose of PM must be the achievement of a successful project outcome. If the sought outcome is the end, PM is clearly a means to this end. Logically, if the means is enhanced and improved, the chance of achieving the sought outcome should increase accordingly, all other things being equal. To the extent that "effectiveness" is associated with "sought outcomes", it is suggested that effectiveness of the means is the guide to the attainment of the outcomes. Arising from this, it is effectiveness of PM performance that is of interest to this study.

The twin main concerns in the research problem are therefore, with respect to PM:

1. How accountable is it? and
2. How effective is it?

Inherent in this problem is the implication that accountable performance is a pre-requisite for effective performance, i.e. for performance in PM to be effective, it must first be accountable.

6.3 RESEARCH OBJECTIVES

The major purpose of this research is to explore the accountability concept in the context of PM arrangements. In so doing, it should add in broader terms to the store of knowledge regarding the concept, especially in relation to its implication in temporary management settings. By investigating the practical implications which the concept may hold for various aspects of the PM arrangement, it should be possible to identify the more pertinent areas in PM that can benefit from it. In particular, the accountability perspective should provide an ideal framework for studying the patterns of interrelationships between the participants, an area that personifies, in essence, the cardinal function of the PM task - that of integration of the participants to the project - both structurally and behaviourally.
In addition, this primary treatment of accountability in PM is considered as a necessary pre-requisite to the subsequent investigation of the professional and legal aspects involved in such arrangements. It provides the fundamental platform on which to mount the legal framework. Professional duties and the ensuing questions of negligence and liability, in the view of this study, rest almost entirely on an accountability framework. The significance here is accentuated by the absence of an extensive body of case law relating to PM practice.

This initial and exploratory investigation therefore lays the groundwork for the later portion of the study. Additionally, it hopes to utilise some indicator of accountability in order to allow for adequate identification and assessment. Accountability, being a new topic of interest and study with respect to PM, this indicator may well be less rigorous by research standards. It is by no means intended as a measure of accountability as such. It would more appropriately be an indicator of accountability perception.

6.4 THE RESEARCH MODEL

Arising from the research problem and the research objectives, a structural scheme in the form of a research model has been developed to assist in the investigation (See Fig. 6.1).

The rationale behind the research model takes perception of accountability as one of the initial points. How one perceives accountability in PM settings is very much dependent on which participant group one belongs to. It is likely that membership in a particular group will condition and determine this perception to some degree. In addition, the PM structure imposes a constraint on the groups by creating a further difference in perception relating to their relative accountabilities. The other initial point consists of the utilisation of PM. This is seen as improving the level of accountability of participants in general, i.e. PM arrangements and their participants are seen as achieving a higher level of accountability as compared with project arrangements where there is no distinct PM role.

The participant grouping brings an inherent difference in perception while the PM structure imposes an additional difference, both of these determining the perceived level of accountability within a particular PM arrangement.
Figure 6.1: The Empirical Research Model
6.5 THE RESEARCH HYPOTHESES

Following from the research model in Section 6.4, a set of hypotheses has been formulated to assist and guide the research investigation. It is stressed that these are at a greater level of generality and more exploratory in nature than those that are normally associated with purely scientific hypotheses-testing. The hypotheses are as follows:

H1 Irrespective of PM arrangement, participant groups will possess differing perceptions of accountability, i.e., there will be a difference between all participant groups in their overall perception of accountability.

H2 PM structure influences accountability of both Project Managers and participants.

2.1 In-house Project Managers are perceived as more accountable than external Project Managers.
2.2 Participants' accountability is perceived as greater in in-house arrangements than in external arrangements.

H3 Use of Project Management leads to participants' increased involvement, increased accountability and decreased exposure to professional negligence.

3.1 Project Management increases participants' project involvement.
3.2 Increased involvement tends to be associated with increased accountability.
3.3 Increased accountability is in turn associated with decreased exposure to professional negligence.

H4 Project Management arrangements which are perceived as having a high level of accountability are also perceived as experiencing a low level of role ambiguity and achieving a high level of effectiveness.

The four groups of hypotheses are reflected in the research model in Fig.6.1 as H1, H2, H3, and H4 respectively. In addition to these hypotheses, a number of other possible relationships generated by the empirical investigation will also be examined in a later subsection (See section 6.8.6).
6.6 THE RESEARCH DESIGN

6.6.1 Units of Investigation and Levels of Analysis

A major concern of the research at this juncture is the question of what level(s) of analysis should be chosen to conduct the research. If the basic premise that a project is primarily a temporary organisation is accepted, the project team would constitute an organisational unit. In this sense, as research into a temporary organisation, the work conforms in kind to what are generally termed organisation studies in two respects - it takes place in and through the client organisations, and it concerns projects as temporary organisations. Arising from this, decisions concerning appropriate levels of analysis have to be made in at least two senses: "the level or levels at which the research is conducted within the organisation and the most appropriate ways of aggregating data (as well as recognising that data collected at one level may be employed to make inferences about another level)" (Bryman, 1989, P.3).

To some degree, the choice of level for data collection is very much constrained by the problem of gaining access to organisations. Bearing in mind the added sensitivity which the notion of accountability inevitably generates, entry and support/participation are made all the more difficult.

Given the specified research objectives, the appropriate level for data collection is the individual participants to a PM arrangement. For the purposes of the research, the participants are further grouped into one of the following seven groups:

1. Client/Client's Representative,
2. Project Manager,
3. Architect,
4. Structural Engineer,
5. Services Engineer,
6. Quantity Surveyor, and
7. Contractor.

Each participant within a PM arrangement therefore constitutes one unit of respondent. Aggregation of data will be carried out (1) within participant groups, (2) over all respondents, (3) within PM arrangements, and (4) within PM structure, depending on
the specific research question being addressed. Data collection at the individual respondent level will thus be aggregated and utilised at the PM arrangement level.

The PM arrangement can additionally be structured generally in two different ways:

1. In-house PM, and
2. External/Mixed PM.

The first structure arises when a client organisation undertakes the PM role entirely in-house. In the second structure, an external consultant project manager is commissioned. In such cases, it is likely that the client still maintains its own representative in the PM arrangement. The external case is therefore the extreme example of a mixed arrangement in the sense that most external cases are to some degree mixed.

In terms of composition therefore, the PM arrangement is considered as comprising seven main groups, and in terms of form, it is considered as structured in two ways, internally and externally.

6.6.2 Research Methodology

Research methodology concerns in the main the methods to be utilised for generating, gathering, and analysing the required data.

Arising from the research model generated, it would seem desirable to obtain data, or more accurately, measures of the respective variables, which will allow a comparison and contrast of accountability perceptions:

(a) between participant groups,
(b) between project management structures, and
(c) between project management arrangements.

The nature of the enquiry, aimed essentially at tapping respondents' perceptions of accountability generally and of accountability relating to both the project manager and the arrangement, requires that it should be conducted in a project setting. In research terminology, the work takes the form of a field study. Field studies refer to scientific studies that systematically pursue relations and test hypotheses, that are
non-experimental, and that are carried out in life situations. According to Kerlinger (1986), they are strong in realism, significance, strength of variables, theory orientation, and heuristic quality. But, despite these strengths, they possess inherent weaknesses too, namely their non-experimental character and the lack of precision in the measurement of field variables (p.374).

In addition to being a field study, the investigation is also largely exploratory in character, aimed ideally at seeking the 'what is' situation. As mentioned earlier, although a hypothetical model is utilised, the hypotheses serve only to guide the data collection rather than aim to generate truly scientific testing.

6.6.3 Choice of Questionnaire Survey

Given the nature of the research objectives and in addition to being a field study, it takes the form of a survey research. Bryman (1989) describes survey research as entailing "the collection of data (invariably in the field of organisational research by self-administered questionnaire or by structured or possibly semi-structured interview) on a number of units and usually at a single juncture in time, with the view to collecting systematically a body of quantifiable data in respect of a number of variables which are then examined to discern patterns of association" (p.104).

Perceptions of and attitudes towards accountability suggest that much of the information is in the form of subjective reports of the participants and will comprise their opinions and evaluative judgements. Perceptions, Litterer (1973) tells us, "are of extreme importance to understanding organisational behaviour, for people act on the basis of what they think they see or understand" (p.106). Some of the influences on this perception formation are identified as:- stress conditions in the form of group pressures, interactions with others, expectation that people have of a person occupying a role, reference groups, and the person's organisational position (p.107). On the premise that people act partly on the basis of what they perceive in a situation, Litterer is of the view that perceptions are important in the study of organisations. Intended primarily to bring about integrated behaviour, organisations will face greater problems if members do not exhibit or share similar or at least compatible perceptions.

Cammann et al (1983), in relation to studies on organisational change, expand on the suitability of organisation members as sources of information regarding the
organisation. Members are at one and the same time participant-observers and active-members; as participant-observers, they are uniquely qualified to describe their work, work environment and organisational activities, and as active members they are uniquely qualified to "report their own personal beliefs, opinions, expectations, and affective responses that may, in aggregation, reveal important attributes of the organisation" (p.71). Collection of such individual-level information provides an assessment and evaluation of the organisation which reflects the criteria of interested parties, organisation members almost always qualifying as relevant interested parties.

Given the extent of participants' perceptions which we wish to tap, the self-administered questionnaire is considered an appropriate instrument for data collection for a number of reasons: (1) it is comparatively cost-efficient and time-efficient, (2) it allows data collection from a large number of respondents with minimal disturbance and disruption of the normal activities of the organisation, (3) the data is conveniently quantifiable and codifiable, and (4) it is easy to assure anonymity and confidentiality. There are however inherent defects in this mode of data collection: (1) validity of responses is very much dependent on the clarity and unambiguity of the questions, (2) responses may be inadvertently biased and knowingly distorted, (3) there is absolutely no direct control over who actually or ultimately completes the form, and (4) in the event of non-response on any portion of the questionnaire, there is difficulty in following-up on the respondents concerned to resolve this. Notwithstanding these defects, it was decided, based on the breadth of respondents across participant groupings and across project management arrangements, that the self-administered questionnaire offered the most suitable mode for data collection in the present study.

The apparent quantitative nature of the questionnaire does not however limit the study's approach to an entirely quantitative one. The main reason for this is that the questionnaire design was based in part on interviews carried out with practitioners in the project management field, and which were aimed at gaining a better appreciation and understanding of practitioners' response to the problem. These were essentially semi-structured to unstructured so as to allow a greater latitude to the problem treatment at the early stages of the study, and were carried out between July 1988 and July 1989. It is stressed that the ideas discussed at these interviews assisted largely in shaping the research direction embodied in this chapter. This preliminary work can be said to comprise a qualitative approach as opposed to the actual field survey which constitutes essentially a quantitative approach. The field work also possesses a small degree of
qualitativeness in the form of open-ended type of questions for respondent completion. In these two senses, the overall research can be said to have utilised an integrated approach.

An added concern peculiar to this research is the rather abstract nature of accountability. It is almost impossible to measure, i.e. it does not lend itself to easy operationalisation. Much thought has been put into the matter, and after due consideration, a next best alternative has been resorted to. Instead of attempting to build up and utilise a set of specific questions aimed at measuring the degree and extent of accountability in a given situation, a fair amount of global judgement type of questions have principally been utilised in major portions of the questionnaire. Patchen (1963) highlights this choice of method which faces researchers who rely on reports of organisation members for the measurement of organisational characteristics. In his study of influence in organisations, he examined data from studies of two organisations collected from both global measures of influence within the organisation and indexes based on influence in specific areas, with the view of observing some degree of consensus through empirical evidence. The relative merits of the two options are summed up as follows:

"We have, then, two techniques by which organisation members may be asked about power (and other) relationships - one by obtaining over-all global judgement, the other by getting information about a list of specifics. The global judgement method has the advantage of brevity and simplicity. It takes less of the respondent's time. It demands less knowledge about the organisation by the researcher because he does not have to know precisely what specifics to ask about. One might argue that it also gives as valid, or more valid, information because the respondent makes an over-all judgement on the basis of intimate knowledge of the organisation rather than on the basis of a handful of perhaps arbitrarily chosen specifics. An advocate of the more concrete approach might argue, however, that the global assessment approach has relatively poor reliability and validity. Each respondent may be thinking of different specifics when he is asked to make an over-all judgement, or he may give different weights to the various specifics than another man does. Or the implicit process of weighting may be too complex for him to attempt, and he may, therefore, answer capriciously" (p.42).

Patchen points out that the global and index measures may be getting at perceptions of somewhat different aspects of the influence situation, and concludes from his investigation that "...where the researcher is attempting to assess actual influence patterns and has to rely on questionnaire data for a rough measure of such patterns, the
specific-item measure appears clearly more useful. Where the researcher wishes to get perceptions of the actual influence pattern, then the simpler global measure may be equally useful" (p.52).

The questions utilised will be observed to be a combination of specific types and global types. They will essentially be global if referring to some assessment of the level or degree of accountability.

6.6.4 Sampling Considerations

The next step in the field survey concerns the selection of units for the collection of data - the issue of sampling. Given that the interest is in project management arrangements and in achieving a fair distribution of these over the two different types of structures, it is considered that a purposive sampling form of nonprobability sampling be utilised. There is as such no random sampling, and use of judgement and deliberate effort to obtain representative samples by including typical areas of interest is what characterises the sampling.

Although the sampling is considered purposive, it is also likely to be what Bryman (1989) calls a "convenience sample". He draws attention to the prevalence of such convenience samples in organisation research - the sample being one which is not derived from any form of probability sampling but rather simply a sample that is available to the researcher.

No doubt, a much larger sample would have been possible by conducting the survey through the membership of the respective professional institutions. This was considered as gaining size in the sample at the expense of representativeness, as a proportion of those responding may in fact not have had any direct experience in projects led by project managers. They would then have responded merely based on information and knowledge which is not grounded on any real experience. This consideration was vital to the intention of obtaining maximum first hand empiricism from the field study. Empirical research does not rest only on observation and experiment beyond theory; it also rests, more crucially, on knowledge from experience. This aspect of experience is seldom given adequate emphasis though. As a major consideration in the sampling of this study, it can be stated unequivocally that the basis of the response data is founded on real experience in project management settings.
Furthermore, such a survey through the membership of the professional institutions could generate data that would largely be distorted by institutional bias.

Gaining access to organisations and project management arrangements being the main problem, the following steps were taken, with the idea of maximum representativeness in mind:-

(1) A list of 40 private property developer organisations was extracted from the 1988/89 edition of the "Directory of Property Developers, Investors and Financiers". Some of these organisations were in any case mentioned at the earlier interviews between the author and practitioners, and which were known to undertake rather sizable development projects with either in-house project managers or external consultant project managers.

(2) Letters of enquiry, explaining the purpose of the overall research, and the intended data collection, were sent to this selected list of 40 organisations, requesting for support in the form of participation in the fieldwork. A sample copy of this letter is included as Appendix 1. These were sent out between 5 April 1989 and 26 April 1989. As most of these private firms were likely also to be members of the British Property Federation (BPF), the assistance of the BPF was earlier sought and obtained in the form of a letter of support, designed to encourage a more positive initial response. A sample copy of this letter is included as Appendix 2.

Sixteen replies were received, with twelve firms agreeing in principle to participate, and four firms declining. A total of 33 projects/project management arrangements were obtained from these 12 interested firms.

(3) Questionnaires were then sent through the client organisations to all the project consultants and contractors on these projects. This portion of the exercise commenced on 10 July 1989 and, including numerous reminders and follow-ups, stretched for an approximate period of eight months, ending in February 1990.

Non-response on questionnaires sent out is an area that requires mention in any research study. At worst, it can render an already weak sample more unrepresentative. The problem lies in the possibility that those agreeing to participate may well differ substantially from those that do not (Bryman, 1989, p.112).
6.6.5 Respondent Information

Out of a total of 209 sets of questionnaires sent out, 140 sets were returned. Table 6.1 summarises the numbers involved.

<table>
<thead>
<tr>
<th>Breakdown of Responses Over Groupings</th>
<th>Number</th>
<th>% of Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Client / Representative</td>
<td>18</td>
<td>12.9</td>
</tr>
<tr>
<td>2. Project Manager</td>
<td>10</td>
<td>7.1</td>
</tr>
<tr>
<td>3. Architect</td>
<td>21</td>
<td>15.0</td>
</tr>
<tr>
<td>4. Structural Engineer</td>
<td>25</td>
<td>17.9</td>
</tr>
<tr>
<td>5. M&amp;E Engineer</td>
<td>23</td>
<td>16.4</td>
</tr>
<tr>
<td>6. Quantity Surveyor</td>
<td>28</td>
<td>20.0</td>
</tr>
<tr>
<td>7. Contractor</td>
<td>15</td>
<td>10.7</td>
</tr>
<tr>
<td>Total</td>
<td>140</td>
<td>100.0</td>
</tr>
</tbody>
</table>

Table 6.1: Profile of Returns by Respondent Discipline

A number of comments are necessary to clarify some of the figures involved. Firstly, although 209 forms were sent out, not all projects employed or utilised a full team of consultants. Some projects had no M&E engineer, and in a number of projects, construction work had yet to commence. Some consultants acted on two projects within one client firm, but completed only one set of the forms in respect of one of the two projects. Secondly, a number of client's representatives undertook more than one project within the firm. They too completed only one set of the questionnaire and in respect of one project. Given these two qualifications, the response rate should in fact be higher than the basic 67% indicated.

Table 6.2 gives a structural account of the 140 respondents in terms of their age group, their number of years of experience in the construction industry, and their number of years experience in project management arrangements.
### Age Group Distribution

<table>
<thead>
<tr>
<th>Age Group</th>
<th>Number</th>
<th>% of Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>21-30 yrs</td>
<td>13</td>
<td>9.4</td>
</tr>
<tr>
<td>31-40 yrs</td>
<td>68</td>
<td>49.3</td>
</tr>
<tr>
<td>41-50 yrs</td>
<td>36</td>
<td>26.1</td>
</tr>
<tr>
<td>Over 50 yrs</td>
<td>21</td>
<td>15.2</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>138</strong></td>
<td><strong>100.0</strong></td>
</tr>
</tbody>
</table>

### Years of Experience

<table>
<thead>
<tr>
<th>Number of Years</th>
<th>Number</th>
<th>% of Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>1-5 yrs</td>
<td>2</td>
<td>1.4</td>
</tr>
<tr>
<td>6-10 yrs</td>
<td>14</td>
<td>10.1</td>
</tr>
<tr>
<td>11-15 yrs</td>
<td>35</td>
<td>25.4</td>
</tr>
<tr>
<td>Over 15 yrs</td>
<td>87</td>
<td>63.0</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>138</strong></td>
<td><strong>100.0</strong></td>
</tr>
</tbody>
</table>

### Years of Experience in PM Arrangements

<table>
<thead>
<tr>
<th>Number of Years</th>
<th>Number</th>
<th>% of Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>1-5 yrs</td>
<td>68</td>
<td>49.3</td>
</tr>
<tr>
<td>6-10 yrs</td>
<td>47</td>
<td>34.1</td>
</tr>
<tr>
<td>11-15 yrs</td>
<td>14</td>
<td>10.1</td>
</tr>
<tr>
<td>Over 15 yrs</td>
<td>9</td>
<td>6.5</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>138</strong></td>
<td><strong>100.0</strong></td>
</tr>
</tbody>
</table>

**Table 6.2: Profile of Respondents by Age and Experience**

In further support of the experience factor which is considered so important in the study, Table 6.2 shows all the respondents as having had experience in project management arrangements, with approximately 50% of respondents having had 1-5 years experience, and the rest having more than 5 years of such experience.
6.7 OTHER DESIGN CONSIDERATIONS

6.7.1 Gaining Access to Respondents

The gravity of this well known problem in organisational research was not felt in the study until the attempt to carry out a pilot/pretest on a number of arrangements. After a brief review of the questionnaire instrument was conducted with the help of two project management practitioners, three project management consultant firms were approached for assistance and cooperation to try out the questionnaire on one or two of their project management arrangements. The major problems faced here included the following:

1. The project manager concerned needed to secure official clearance from the client organisation for distribution of the questionnaire to the project participants;
2. The client concerned in turn preferred to obtain uniform agreement from all participating consultants before granting permission for the exercise;
3. Owing to the level and position of one client's representative, the questionnaire was deemed by the project manager as taking too long for a person in his position to complete; and
4. Non-response to the request.

On the basis of this experience, it was decided to effect a change in strategy, and to seek entry to project management arrangements and to participants through the client organisations (as detailed in Section 6.6.4 above) instead of through the project management firms, with the view of obtaining greater support. The rationale here was that if the client supported the exercise, the rest of the team would similarly be committed to it if requested or instructed by the client to assist. Based on the response rate of 67%, there is no certainty that the preferred choice of gaining entry actually secured a higher participation, but compared with the attempt for the pilot test, the participation is evidently more positive and encouraging. In addition, firms which preferred not to take part could, by choice, decline to do so. This gave a fair amount of certainty that those which did agree to participate would carry their commitment through by encouraging support from their consultants. What is certain is that this approach minimised resistance to the exercise to some degree, and helped to dispel skepticism from consultants towards the exercise. The chief advantage though was the tremendous time saving accrued by the direct entry through one single source.
6.7.2 Omission of the Pilot Exercise

Given the difficulty in gaining access for a questionnaire pretest, and the fact that two professional reviews were conducted, the option of omitting the pilot altogether was highly probable.

In parallel with this consideration, responses from the client organisations agreeing to participate in the actual exercise were being received. The number of projects offered by the firms was by no means large. The possibility of using say two of these projects for the pilot was considered but was deemed unsuitable on account that this would eat into the already small number of projects obtained. Coupled with the time constraint, the decision was thus made to proceed with the field exercise without the pilot study.

Arising from this, a number of questions in the returns were observed to have created some problem in answering. These no doubt would have been detected and omitted or amended given the benefit of a pilot exercise.

6.7.3 Anonymity and Confidentiality

As a large proportion of the questions were considered to be of a rather sensitive nature, the invitation to firms to participate, and the subsequent cover letter to individual respondents (See Appendix 3) stressed absolute anonymity and confidentiality in the participation and the responses. Client organisations, in some cases, supported this guarantee further by instructing their consultants to mail their completed forms in the envelopes provided direct to the author, instead of returning them sealed in the same envelopes to the client's office for subsequent collection, as specified in the cover letter.

To some extent, this gave added emphasis and assurance regarding anonymity and confidentiality. The problem it generated however was that the onus of ensuring that all or at least most of the forms were returned was removed from the client, thereby leaving the participant respondents much freedom as to how long to take to complete and to return the forms. Undue problems were created in the pursuit of non-respondents. Owing to anonymity, the chasing-up had to proceed through the client's representative. In a number of cases, respondents claimed they had long returned the completed forms direct by post. In others, forms had been misplaced, but they were willing to fill them in if new sets were sent. In most of these cases,
replacement sets were indeed sent. All this imposed a great strain on the conduct of the field exercise, resulting largely in it taking a total of eight months (solely for the data collection only).

The added incentive included in the initial letter of invitation to client organisations was an undertaking to make available the findings in summarised form to the participating organisations at the conclusion of the research. This ensured some form of return to the participating organisations for their time and effort in cooperating in the research.

The major setback in a self-administered questionnaire which is both anonymous and confidential is, as stated earlier, that there is virtually no control over who ultimately fills in the form.

6.8 DATA ANALYSIS

A sample copy of the questionnaire set is included as Appendix 4. This is the main and complete set utilised for consultants in the external project management arrangement. For client's representatives and project managers, and for all respondents in in-house arrangements, there is a slightly amended form which omits a number of questions.

The various parts of the questionnaire are basically different in terms of whether they are project specific. Some parts are general and irrespective of any arrangement, while others are designed with respect to the arrangement from which the participant and research respondent comes. Part 1 aims to examine all participants' perception of various aspects of accountability and is not arrangement specific. Part 2 measures the role ambiguity within the arrangement. Part 3 does not relate to any particular arrangement and is largely general in nature. Part 4 is arrangement specific and gathers participants' assessments of their arrangement. The need for integration of the project manager into the contractual arrangement is addressed by Part 5. Part 6 is designed to gather some basic objective data regarding respondents. Part 7 deals with participants' assessment of the degree of professionalisation in the project management function.

The term "Accountability" is specifically defined at the beginning of the questionnaire to mean "the answerability for one's responsibility" for the purposes of the study. Given the difficulty in interpretation and in achieving any clear uniformity across all respondents, this preamble was considered necessary as well as the most suitable
approach for ensuring some degree of consensus.

Where statistical tests are carried out in the analyses of the hypotheses, the study will adopt and utilise the 0.05 level of significance, i.e., the results will be considered as not significant if they fail to make the 0.05 grade. In addition, the exact significance levels obtained in the tests will also be stated.

The majority of the data analyses and the statistical tests and routines have been carried out using SPSS/PC+V2.0, which is essentially the PC version of the SPSS (Statistical Package For the Social Sciences) package that traditionally runs on mainframe systems.

The combining of responses in much of the analyses is in line with the view that average responses achieve a better reliability than individual responses, especially in relation to attitude responses (Kerlinger, 1973, p.417).

6.8.1 Use of Parametric and Nonparametric Statistics

The ordinal nature of the scales used is an area which may present some methodological problems in data handling. Accordingly, a short discussion of this is considered proper. Of prime concern here is the question of whether parametric or nonparametric statistics is more appropriate when the rating scale is ordinal. Use of parametric statistics is generally considered as only applicable under three assumed conditions - assumption of normality, homogeneity of variance, and continuity and equal intervals of measures. Nonparametric statistical tests, on the other hand, are "hemmed in by fewer and less stringent assumptions than parametric tests, (and) are particularly free of assumptions about the characteristics or the form of distributions of the populations of research samples" (Kerlinger, 1973, p.286), i.e., they are distribution-free.

The seven-point agreement scale utilised in Part 1 of the questionnaire serves as a measure of attitude regarding a specific statement, and is basically an ordinal scale. By assigning numbers to the seven categories, a measure of the observation (or rating) is achieved. The problem begins here. The rules under which the numbers are assigned, according to Siegel (1956), determines the kind of measurement which is achieved, i.e., the operations and relations employed in obtaining the scores define and limit the manipulations and operations which are considered permissible in handling the scores (p.29). In Siegel's view, data measured by ordinal scales should be analysed by
non-parametric methods. The basis of an ordinal scale is that the events measured are, in some empirical sense, ordered in the same way as the arithmetical order of the numbers assigned to them (Anderson, 1961). Applying parametric tests to data measured in such ordinal form is objected to on the ground that the rating scale, being ordinal, generates data that is not truly numerical. Strictly, the numbers 1 to 7 on the scale do not indicate that the intervals between any two numbers are equal, or that they indicate absolute quantities. A person rating a statement 6 cannot be said or inferred as two times more in agreement than another who rates a 3 for the same statement.

The objection to the meaningful application of mathematics to ordinal scores, according to Anderson, has arisen partly from the failure to keep scales and statistics separate. A statistical test "can hardly be cognisant of the empirical meaning of the numbers with which it deals ... Consequently, the validity of a statistical inference cannot depend on the type of measuring scale used" (p.309). The choice of statistical test is therefore governed by pure statistical considerations and has nothing to do with scale type.

Kerlinger advises the routine use of parametric statistics with a sharp eye kept on data for "gross departures from normality, homogeneity of variance, and equality of measures" (p.288), and recommends that the best procedure seems to be to "treat ordinal measurements as though they were interval measurements, but to be constantly alert to the possibility of gross inequality of intervals" (p.441).

More recently, Kerlinger (1986) suggests the use of parametric analyses even when the rules governing its use are violated, re-emphasising that parametric methods can adequately handle most analytic problems of behavioural research, and that they are "robust in the sense that they perform well even when the assumptions behind them are violated - unless, of course, the violations are gross or multiple" (p. 275).

Havlicek and Peterson (1977) have also shown empirically that the Pearson r (a parametric measure of correlation) "can be used in nearly all situations in which there is a need for a measure of relationship between two variables, regardless of the shape of the distributions of scores or the type of scales being used" (p. 376). Essentially, their study shows that the Pearson r is robust to rather extreme violations of basic assumptions of normality and type of scale used.

The distinction between usage of parametric and non-parametric continues to be clouded. Conover (1980) even points out that there is no agreement among statisticians
as to the meaning of the word 'non-parametric', and even concerning whether certain tests should be classified as parametric or non-parametric. The problem is far from being decisively settled.

Gardner (1975), in examining the relationship between scales of measurement and appropriate statistics in some detail, draws attention to a 'grey region' occupied by many types of summated scales; this grey region lying somewhere within the apparent black-and-white distinction between ordinal and interval scales. Summated-rating attitude scales, where the total score is the sum of a set of ordinal weightings, constitute an example of such a scale. Data from such scales, according to Gardner, generate a low risk of unwarranted conclusions when parametric procedures are applied to them (p. 54).

Given the seven-point agreement scale used in Part 1 (See Appendix 4), the subject matter of the measurement is not in the nature of scores such as intelligence, aptitude or personality scores which are basically and strictly ordinal, and do not have equal intervals or absolute zeros. Each score on the seven-point scale is a measure of attitude towards a specific item statement and differs from the intelligence or personality scores. Torgerson (1958) points out however that the neutral points found in measurements of preferences and attitudes can be considered to be natural origins. Such is the seven-point scale used in Part 1 where a value of 4 forms the neutral point, with degrees of agreement and disagreement on either side. But this still does not address the problem of equal intervals. If however, a further assumption can be made with some degree of assurance as to the equality of intervals, it may then be possible to proceed with mathematical operations that are permissible for levels of measurement higher than ordinal, and accordingly with the use of parametric statistics but always bearing in mind the danger of erroneous interpretations.

Given the nature of the scales utilised in our questionnaire survey instrument, a mixture of parametric and nonparametric statistical tests will be employed in the data analysis. Where items are known to combine to provide a measure of a single variable, e.g. through use of summated scales of the Likert type, equal intervals will be assumed, and the restriction to nonparametric treatment will be dispensed with.
6.8.2 Analysis of Hypothesis 1

"Irrespective of PM arrangement, participant groups will possess differing perceptions of accountability, i.e. there will be a difference between all participant groups in their overall perception of accountability."

The data for the analysis of Hypothesis 1 (H1) consists essentially of responses to the eight items in Part 1 of the questionnaire by all sampled respondents. It is to be noted that, although all eight item statements relate to the issue of accountability, they do not, and are not intended to, combine to form any scale of accountability perception or any composite measure of accountability perception. "Overall perception" of accountability, for the purposes of the study, is taken as the profile of a group over the eight items.

The eight items are as follows:

1. Accountability becomes an important issue in a project only if role problems are encountered.
2. Issues of accountability in a PM arrangement do not concern me unless they impinge directly on my own role and contribution.
3. A project arrangement with no project manager has a more definite distribution of accountability than one which uses a project manager.
4. Use of PM transfers a substantial portion of a project's overall accountability from participants to a project manager.
5. In making recommendations relating to professional consultants' contributions, the project manager incurs a shared responsibility.
6. It is unclear what the PM function is accountable for with respect to the project, when compared with the traditional design and construction functions.
7. A project manager's power and influence is excessive when compared with the responsibility he carries.
8. Project outcome is entirely the responsibility of the project manager.

Each item requires an agreement response on a seven-point scale ranging from 'Strongly Disagree' (1) to 'Strongly Agree' (7), with a middle point of 'Neither Disagree Nor Agree' (4).

As a preliminary inspection, the group responses over the seven-point rating scale for each of the eight items are tabulated and the frequencies plotted graphically to observe
the response patterns. Appendix 5 summarises the response distributions and the line plots of frequencies for all the seven groups. From the medians of the groups, it can be observed that four of the items (Items 1, 2, 5 & 8) indicate a general similarity in response patterns, while the other four (Items 3, 4, 6 & 7) indicate some dissimilarity in response patterns. On the basis that there appears to be some difference between the groups, further analysis can be proceeded with, and in this connection, the investigation is most appropriately undertaken with the use of profile analysis. Average scores for two or more groups of individuals can be depicted by profiles and investigated through statistical tests of overall significance of differences between such profiles of means (Nunnally, 1978, p.441).

6.8.2.1 Profile Analysis

The mean scores of individual groups over each of the eight items are first obtained. The use of group means takes into consideration the relative strength of agreement/disagreement within the groups, and evens out any within-group differences before comparison between groups is undertaken. These are presented in Table 6.3.
<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
<th>G1</th>
<th>G2</th>
<th>G3</th>
<th>G4</th>
<th>G5</th>
<th>G6</th>
<th>G7</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Relation with Role Problems</td>
<td>3.06</td>
<td>2.80</td>
<td>3.67</td>
<td>3.12</td>
<td>2.65</td>
<td>2.67</td>
<td>2.67</td>
</tr>
<tr>
<td>2</td>
<td>Relation with Own Role</td>
<td>2.06</td>
<td>1.60</td>
<td>3.24</td>
<td>3.08</td>
<td>3.26</td>
<td>3.37</td>
<td>2.60</td>
</tr>
<tr>
<td>3</td>
<td>Accountability Distribution</td>
<td>2.89</td>
<td>3.20</td>
<td>4.19</td>
<td>3.84</td>
<td>3.13</td>
<td>4.00</td>
<td>3.67</td>
</tr>
<tr>
<td>4</td>
<td>Accountability Transfer</td>
<td>4.00</td>
<td>2.50</td>
<td>3.14</td>
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<td>2.67</td>
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<td>5</td>
<td>Shared Responsibility</td>
<td>4.94</td>
<td>4.80</td>
<td>5.33</td>
<td>4.64</td>
<td>5.00</td>
<td>4.29</td>
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<tr>
<td>6</td>
<td>Ambiguity of PM Accountability</td>
<td>3.61</td>
<td>3.80</td>
<td>4.81</td>
<td>4.40</td>
<td>4.59</td>
<td>3.64</td>
<td>4.27</td>
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<tr>
<td>7</td>
<td>Project Manager's Excessive Power</td>
<td>3.28</td>
<td>2.40</td>
<td>5.14</td>
<td>4.68</td>
<td>4.30</td>
<td>3.75</td>
<td>3.33</td>
</tr>
<tr>
<td>8</td>
<td>Project Manager's Outcome</td>
<td>2.06</td>
<td>1.80</td>
<td>1.86</td>
<td>2.04</td>
<td>2.70</td>
<td>2.54</td>
<td>2.60</td>
</tr>
</tbody>
</table>

Table 6.3: Group Means on Part I Items

The group means are then plotted graphically to obtain visual profiles of all seven groups. These seven profiles are shown in Fig.6.2. Initial visual inspection of the profiles shows a low degree of difference between groups on items 1 and 8, and a high degree of difference on item 7. The remainder of the items exhibit a closer agreement between the seven groups. This is shown by the points bunching closer together.
ITEM

1. Relation with role problems

2. Relation with own role

3. Accountability Distribution

4. Accountability Transfer

5. Shared Accountability

6. Ambiguity of PM Accountability

7. Project Manager's Excessive Power

8. Project Manager's Outcome Responsibility

LEGEND

- G1 / Clients
- G2 / Project Managers
- G3 / Architects
- G4 / Structural Engineers
- G5 / M&E Engineers
- G6 / Quantity Surveyors
- G7 / Contractors

Fig. 6.2: Profiles of Group Means
The major concern here however is whether the groups differ in their overall perception of accountability as measured over the eight items. On the basis of the seven group profiles, then, how similar are the profiles? Nunnally (1962) suggests one treatment, that of factoring raw score cross-products of the groups, providing in effect a basis for what is termed the profile space. Cronbach and Gleser (1953) however offer a simpler treatment of the degree of similarity between profiles, through the use of $D^2$, where:

$$D^2_{12} = \sum_{j=1}^{k} (x_{j1} - x_{j2})^2$$  \hspace{1cm} (6.1)

A profile or pattern pertaining to a person, according to Cronbach and Gleser, consists of a set of scores. Using the notation:

- $j =$ any number of variates, a, b, c ... which are $k$ in number;
- $i =$ any one of the persons, 1, 2, ... $N$;
- $x_{ji} =$ the score of person $i$ on variate $j$.

Considering two persons, person 1 has the set of $x_{j1}(x_{a1}, x_{b1}, \ldots, x_{k1})$ and person 2 has the set of $x_{j2}$. Without restrictions, $x_{j1}$ can be regarded as the coordinates of a point $P_1$ in $k$-dimensional space; $x_{j2}$ similarly defines a point $P_2$. "The more similar the measures of two individuals the closer will their points lie in the $k$-dimensional space, and conversely, the further apart the points, the more dissimilar are the corresponding measurements. Accordingly, we define the dissimilarity of two individuals as the linear distance between their respective points" (p.459).

According to Cronbach and Gleser, "$D^2 \text{ (as above) can be used directly as a measure of similarity . . . Formula (as above) is a general expression for the dissimilarity between two profiles. It may be applied to practically any score set; viz., responses to a series of items, raw scores on a set of tests, profiles of deviation scores, ratings of a group of stimuli on a subjective scale . . . }" \hfill (p.459).

Following Cronbach and Gleser's definition of $D^2$, this is applied as a measure of how similar the groups are based on their respective profiles, the main difference being groups which are being compared instead of individuals.

Utilising the mean scores from Table 6.3, the values of $D^2$, and accordingly, $D$, for
each pair of groups are calculated. The D values are shown above the diagonal in Table 6.4. Ranking all the D values together, from smallest to largest, the ranks of the D values are arrived at, and these are shown below the diagonal in Table 6.4.

<table>
<thead>
<tr>
<th>GROUP</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>-</td>
<td>1.877</td>
<td>3.047</td>
<td>2.587</td>
<td>2.165</td>
<td>2.074</td>
<td>1.913</td>
</tr>
<tr>
<td>2</td>
<td>9</td>
<td>-</td>
<td>3.694</td>
<td>2.889</td>
<td>2.896</td>
<td>2.704</td>
<td>1.793</td>
</tr>
<tr>
<td>3</td>
<td>20</td>
<td>21</td>
<td>-</td>
<td>1.294</td>
<td>1.934</td>
<td>2.446</td>
<td>2.454</td>
</tr>
<tr>
<td>4</td>
<td>16</td>
<td>18</td>
<td>1</td>
<td>-</td>
<td>1.392</td>
<td>1.698</td>
<td>1.739</td>
</tr>
<tr>
<td>5</td>
<td>13</td>
<td>19</td>
<td>11</td>
<td>2</td>
<td>-</td>
<td>1.596</td>
<td>1.468</td>
</tr>
<tr>
<td>6</td>
<td>12</td>
<td>17</td>
<td>14</td>
<td>6</td>
<td>4</td>
<td>-</td>
<td>1.678</td>
</tr>
<tr>
<td>7</td>
<td>10</td>
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<td>15</td>
<td>7</td>
<td>3</td>
<td>5</td>
<td>-</td>
</tr>
</tbody>
</table>

Table 6.4: "D" Values and their Ranks

The sum of ranks for each group is obtained. This gives an indication of the group's difference with all other groups, i.e. the larger the rank sum, the larger the group's difference with all other groups. On this basis, the re-ordered groupings in terms of their maximum difference from other groups is shown in Table 6.5.
Table 6.5: Re-order of Groups Based on Difference

The figures provide only a guide as to the degree of similarity between groups, and too much emphasis and interpretation cannot be be placed on them. Examining Table 6.4, it can be observed that the largest D value is between Group 2 (Project Managers) and Group 3 (Architects), followed by that between Group 1 (Clients) and Group 3 (Architects). As the difference between D values of Group 1 and Group 2 is relatively small, it appears that Groups 2, 3, and 1 can be seen as separated from Groups 6, 5, 4, and 7. Group 6 (Quantity Surveyors) appears to take a middle ground between the other six Groups.

6.8.2.2 Statistical Test of Difference Between Groups

A non-parametric statistical test, the Kruskal-Wallis one-way analysis of variance test is next applied to check if statistically there is a significant difference between the seven groups. All the means from Table 6.3 are combined together and ranked in ascending order. The rationale of the test is that if there is no difference between the seven groups in their overall perception of accountability, the ranks should all be randomly
distributed in the seven columns, i.e., over the seven groups. If this is so, then the sum of the ranks (or their means) in the seven groups should be approximately equal. On the other hand, if there are differences between the groups, then the ranks in one group should be higher than the ranks in another group, with consequently a higher sum and mean of ranks. Kruskal and Wallis' formula for assessing the significance of these differences is:

\[
H = \frac{12}{N(N+1)} \sum_{j=1}^{k} \frac{R_j^2}{n_j} - 3(N+1)
\]  

where \(N\) = total number of ranks = 56,
\(n_j\) = number of ranks in group \(j\) = 8 in each case,
\(R_j\) = sum of ranks in group \(j\).

\(H\), the Kruskal-Wallis test statistic, is then approximately distributed as chi-square with degrees of freedom = \(k-1 = 7-1 = 6\). The computed mean ranks and the chi-square statistic are shown in Table 6.6.

<table>
<thead>
<tr>
<th>GROUP</th>
<th>MEAN RANK</th>
<th>CASES</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>25.56</td>
<td>8</td>
</tr>
<tr>
<td>2</td>
<td>18.63</td>
<td>8</td>
</tr>
<tr>
<td>3</td>
<td>36.56</td>
<td>8</td>
</tr>
<tr>
<td>4</td>
<td>29.88</td>
<td>8</td>
</tr>
<tr>
<td>5</td>
<td>31.50</td>
<td>8</td>
</tr>
<tr>
<td>6</td>
<td>30.31</td>
<td>8</td>
</tr>
<tr>
<td>7</td>
<td>27.06</td>
<td>8</td>
</tr>
</tbody>
</table>

Cases: 56
Chi-square: 5.6358
Significance: .4652

Table 6.6: Kruskal-Wallis Data for Test of Difference Between Groups

As can be seen, the test result shows the chi-square value as not significant. This means that the ranks are randomly distributed over the seven groups, i.e., the differences
between the seven groups are not statistically significant. In other words, based on the data, there is no difference between the seven groups in their overall perception of accountability.

If the mean ranks are examined more closely, it can be observed that Group 2 and Group 3 have the lowest and the highest mean rank respectively. To check the difference between these two groups, the Mann-Whitney test is applied. This gives a result that is significant at the .0587 level, which is quite close to the specified .05 level for this study. The same test, if carried out for the rest of the groups two at a time, shows results that are all not significant. While the Mann-Whitney test is meant for two samples, the Kruskal-Wallis test is designed for k samples. From these two tests, it appears that the only difference between groups that is nearly significant is that between Group 2 and Group 3, i.e., Project Managers and Architects.

There is some implication here for project management practice. The project management function has traditionally been carried out by architects and is still undertaken largely by architects in projects where there is no separate project manager. The evidence of a difference in accountability perception between the two is therefore an interesting feature.

In overall terms therefore, Hypothesis 1 (H1) which states that there is a difference between the groups is not supported. There is general agreement among participants in their overall perception of accountability. While there is some difference between groups, the difference is however not statistically significant. It is stressed that the result is limited by the assumption of overall perception being measured by the eight items. As stated earlier in the preliminary investigation of the responses to the eight items, items 3, 4, 6, and 7 show a greater dissimilarity in perception between the groups, whereas items 1, 2, 5, and 8 exhibit a general similarity in perception between the groups - they are all generally in disagreement with the four statements.
6.8.3 Analysis of Hypothesis 2

"PM structure influences accountability of both Project Managers and participants."

6.8.3.1 Hypothesis 2.1

"In-house project managers are perceived as more accountable than external project managers"

The 'measure' of the project manager's accountability within an arrangement is obtained by combining the assessments of all the other participants within that arrangement on Question 10 of Part 4 of the questionnaire, scored from 4 to 1 for each respondent -

"How accountable would you describe the Project Manager's role to be in this PM arrangement?

<table>
<thead>
<tr>
<th>Accountability Level</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Highly accountable</td>
<td>4</td>
</tr>
<tr>
<td>Somewhat accountable</td>
<td>3</td>
</tr>
<tr>
<td>Somewhat Not accountable</td>
<td>2</td>
</tr>
<tr>
<td>Highly Not accountable</td>
<td>1</td>
</tr>
</tbody>
</table>

The combined scores, converted to a percentage of the total score obtainable, are given in Table 6.7 for all the 33 arrangements, 19 of which are in-house arrangements, and the other 14 of which are external arrangements.
Table 6.7: Accountability Scores of Project Managers

Applying the Mann-Whitney test to the scores of the two groups, the mean ranks are 19.79 for the in-house group, and 13.21 for the external group. This confirms initially that the in-house group achieves higher accountability scores since higher ranks and mean ranks are shown for the in-house group in comparison with the external group. The test gives a significance of .0524, which is quite small and almost meets the .05 specified level. It is thus almost significant at the .05 level, and can be concluded that the difference between in-house and external project managers in their accountability, as perceived by the rest of the participants, is statistically significant, and that in-house project managers generally are seen as more accountable than their external counterparts.
6.8.3.2 Hypothesis 2.2

"Participants' accountability is perceived as greater in in-house arrangements than in external arrangements."

Question 1 of Part 4 of the questionnaire provides the basic data for dealing with this hypothesis - "How accountable would you describe your own role to be in this PM arrangement?", with responses scored from 1 (Highly Not Accountable) to 4 (Highly Accountable). Crosstabulation of the responses with the PM structure (in-house or external) produces the data shown in Table 6.8.

<table>
<thead>
<tr>
<th>Arrangement</th>
<th>Participants' Accountability</th>
<th>Row Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>In-house</td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>External</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>Column Total</td>
<td>2</td>
<td>2</td>
</tr>
</tbody>
</table>

Table 6.8: Participant Accountability and PM Structure

The chi-square value of independence is however small, at 4.0698, with a significance of .2540. The result is thus not significant, i.e., the two variables are independent. There is no relationship between participants' accountability and whether they are in in-house arrangements or in external arrangements.
6.8.4 Hypothesis 3

"Use of Project Management leads to participants' increased involvement, increased accountability and decreased exposure to professional negligence."

6.8.4.1 Hypothesis 3.1

"Project management increases participants' project involvement."

Question 6(1) of Part 3 provides the basic data for examining this proposition. The responses are shown in Table 6.9.

<table>
<thead>
<tr>
<th>Value</th>
<th>Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less</td>
<td>1</td>
</tr>
<tr>
<td>Same</td>
<td>2</td>
</tr>
<tr>
<td>Greater</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 6.9: Change in Participant Involvement

Two steps are followed in the treatment. Firstly, combining categories 2 and 3, the number of cases for "Decrease" (7) and for "Does Not Decrease" (105) are checked against chance expectation. This is essentially a chi-square test of independence using observed frequencies against expected frequencies. The chi-square value is 85.75 which is very significant. This means that there is evidence that involvement does not decrease. Next, categories 1 and 2 are combined instead, and the number of cases for "Does Not Increase" (64) and for "Increase" (48) are checked by the same procedure. The chi-square value is 2.29 which is not significant at the .05 level. This means that there is no evidence to say that involvement does not increase, i.e., it may increase or it may not. Interpreting these two steps together, the evidence is that project management does not lead to a decrease in participants' project involvement. There is however insufficient evidence to say that it leads to an increase in involvement. In other words it can remain the same or it can increase.
6.8.4.2 Hypothesis 3.2

"Increased involvement tends to be associated with increased accountability."

This proposition is examined through Questions 6(1) and 6(2) of Part 3. The procedure for dealing with this is firstly to check for independence using the chi-square statistic, and then to calculate the measure of association between the two to see if there is correlation. Kendall's Tau-C is the coefficient of correlation utilised as it is suited to ordinal variables and rectangular contingency tables (Nie et al., 1975; Reynolds, 1977). The cross-tabulation of involvement and accountability is shown in Table 6.10.

<table>
<thead>
<tr>
<th>Role Accountability</th>
<th>Project Involvement</th>
<th></th>
<th>Row Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Less (1)</td>
<td>Same (2)</td>
<td>Greater (3)</td>
</tr>
<tr>
<td>Equal (2)</td>
<td>6</td>
<td>52</td>
<td>33</td>
</tr>
<tr>
<td>More (3)</td>
<td>1</td>
<td>5</td>
<td>15</td>
</tr>
<tr>
<td>Column Total</td>
<td>7</td>
<td>57</td>
<td>48</td>
</tr>
</tbody>
</table>

Table 6.10: Participant Accountability and Involvement

The chi-square value is 8.7398 and has a significance of .0127. This confirms that involvement and accountability are not independent. The chi-square test is essentially an indicator of whether two variables may or may not be statistically independent, and by itself it gives no indication of the strength or form of the relationship between the two. Accordingly, a measure of association is required. Tau-C provides this added information. Moreover, use of a measure of association overcomes a major potential drawback of the chi-square technique - its magnitude is affected by sample size, i.e. a significant relationship can always be found if the sample is made large enough (Reynolds, 1977).

Tau-C is given by:

$$\text{Tau-C} = \frac{2m(P - Q)}{N^2(m - 1)} \quad (6.3)$$

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where \( m \) = the smaller number of rows and columns,
\( P \) = the number of concordant pairs,
\( Q \) = the number of discordant pairs, and
\( N \) = the number of cases.

A pair of cases is said to be concordant if values for both variables for one case are higher (or both are lower) than the corresponding values for the other case. It is discordant if the direction for one variable is reversed for the other variable.

Kendall's Tau-C for the two variables is calculated to be .207 and this value has a significance of .0032. The coefficient is positive, i.e., the variables are positively related, cases with low values on one variable tend also to have low values for the other variable, and similarly for high values. From this measure, it can be concluded that increased involvement is associated with increased accountability, although the association is not a very strong one.

6.8.4.3. Hypothesis 3.3

"Increased accountability tends to be associated with decreased exposure to professional negligence."

Questions 6(2) and 6(3) are utilised in this analysis in a similar manner to that used for Hypothesis 3.2. The crosstabulation of accountability and exposure to professional negligence is shown in Table 6.11.

The chi-square value obtained is 42.259 with a significance of .0000 which is extremely small. This confirms that there is dependence between the two variables. Kendall's Tau-C is calculated to be .3051 with a significance of .0000. (Note - In SPSS/PC+V2.0 language, observed significance levels are reported to 4 decimal places; thus figures of .0000 mean that the observed levels are exceedingly low.) This confirms a positive correlation between the two, i.e., increased accountability tends to be associated with increased exposure to professional negligence, as against the hypothesis of a negative association.
Exposure to Professional Negligence | Role Accountability | Row Total
---|---|---
| Equal (2) | More (3) |
Decreased (1) | 1 | 2 | 3
Same (2) | 80 | 5 | 85
Increased (3) | 8 | 14 | 22
Column Total | 89 | 21 | 110

Table 6.11: Participant Accountability and Exposure to Professional Negligence

6.8.5 Hypothesis 4

"Project Management arrangements which are perceived as having a high level of accountability are also perceived as experiencing a low level of role ambiguity and achieving a high level of effectiveness."

The level of accountability achieved by a project management arrangement is measured by a global question - Question 3 of Part 4:

"On the basis of your experience and information, how would you rate the overall level of accountability of this PM arrangement?" - which contains a six-point scale ranging from 1 (Highly Not Accountable) to 6 (Highly Accountable).

The overall score for an arrangement is the sum of all the participants' scores within that arrangement expressed as a percentage of the maximum obtainable score.

Part 2 of the questionnaire is designed to measure the degree of role ambiguity in the arrangement, and consists of four basic items for the general case of the in-house arrangement, but with the inclusion of two extra items for the case of an external
arrangement. The items have largely been adapted from the item inventory developed and utilised by Rizzo et al (1970) for measuring role ambiguity, especially that portion pertaining to "the existence or clarity of behavioural requirements, often in terms of inputs from the environment, which would serve to guide behaviour and provide knowledge that the behaviour is appropriate" (p.155). Rizzo's items, among other aspects of role ambiguity, aim to reflect certainty and the clarity or existence of guides, directives, and policies. Although he uses a seven-point response scale ranging from Very False to Very True to indicate the degree to which the condition (item) exists for a respondent, a four-point scale ranging from Definitely False to Definitely True has been adopted for use in this study. The items have also been worded in the form of each respondent's assessment of the degree to which the condition exists in the arrangement rather than for himself.

The six items are as follows:

(1) All participants in this arrangement are clear as to their respective roles and responsibilities.
(2) All participants know what is expected of them.
(3) There are sufficient policies and guidelines for all participants' work.
(4) Directions from the Project Manager are seldom questioned as to their source or base of authority.
(5) Distribution of control between the Client and Project Manager is clear to all the rest of the participants.
(6) Extent of authority delegated from Client to Project Manager is clear.

The scoring system sums each respondent's scores over the four or six items. The combined scores of all the participants within an arrangement are then calculated as a percentage of the maximum obtainable score. This gives a specific score indicating the extent of role ambiguity in that arrangement. Only the arrangements having at least two respondent participants are considered in the analysis. As all the items are loaded in the same direction, the lower the overall score for the arrangement, the lower the role ambiguity as seen and assessed by the participants.

The level of effectiveness of the arrangement is measured by a combined rating on three aspects of effectiveness: (1) the quality of the overall performance of the arrangement, (2) the probability of a successful outcome for the project in question, and (3) the level
of satisfaction with the arrangement, all three items being rated on a seven-point scale
(See Question 2 of Part 4 of the Questionnaire). Items (1) and (2) are rated from Poor
to Outstanding, and item (3) is rated from Not Satisfied At All to Extremely Satisfied.
The assessments here depart from the more objective measures of effectiveness which
are invariably based on time, cost, and quality parameters. On the basis that the more
important concern here is the effectiveness of the arrangement rather than the
effectiveness of the project, the departure is considered as providing a more appropriate
indicator.

The scoring system sums the individual's scores on all three items and calculates the
total score of all the participants within an arrangement as a percentage of the maximum
obtainable score, as in the measures of accountability level and role ambiguity. The
higher the score, the higher the perceived level of effectiveness of the arrangement.

Based on the above scoring system, the overall percentage scores for each of the
arrangements in terms of accountability, role ambiguity and effectiveness, are shown
in Table 6.12.
<table>
<thead>
<tr>
<th>Project Management Arrangement</th>
<th>Accountability</th>
<th>Effectiveness</th>
<th>Role Ambiguity</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>73.3</td>
<td>63.8</td>
<td>17.5</td>
</tr>
<tr>
<td>2</td>
<td>70.8</td>
<td>64.3</td>
<td>42.2</td>
</tr>
<tr>
<td>3</td>
<td>63.9</td>
<td>57.1</td>
<td>28.1</td>
</tr>
<tr>
<td>4</td>
<td>66.7</td>
<td>52.4</td>
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<td>80.6</td>
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<td>83.3</td>
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<td>77.8</td>
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<td>80.6</td>
<td>65.9</td>
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<td>76.7</td>
<td>65.7</td>
<td>22.5</td>
</tr>
<tr>
<td>26</td>
<td>87.5</td>
<td>73.8</td>
<td>10.9</td>
</tr>
<tr>
<td>27</td>
<td>63.3</td>
<td>63.8</td>
<td>13.8</td>
</tr>
<tr>
<td>28</td>
<td>50.0</td>
<td>59.5</td>
<td>40.6</td>
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<td>29</td>
<td>75.0</td>
<td>59.5</td>
<td>15.6</td>
</tr>
<tr>
<td>30</td>
<td>90.0</td>
<td>83.8</td>
<td>11.7</td>
</tr>
<tr>
<td>31</td>
<td>56.7</td>
<td>54.3</td>
<td>18.8</td>
</tr>
<tr>
<td>32</td>
<td>72.2</td>
<td>63.5</td>
<td>22.9</td>
</tr>
</tbody>
</table>

Table 6.12: Scores for Accountability, Effectiveness and Role Ambiguity

Performing a correlation among the three items produces the correlation coefficients shown symmetrically in Table 6.13, which shows positive correlation between accountability and effectiveness, and negative correlations between both these and role ambiguity.
<table>
<thead>
<tr>
<th>Correlations</th>
<th>Accountability</th>
<th>Effectiveness</th>
<th>Role Ambiguity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Accountability</td>
<td>1.0000</td>
<td>.4474*</td>
<td>-.4477*</td>
</tr>
<tr>
<td>Effectiveness</td>
<td>.4474*</td>
<td>1.0000</td>
<td>-.5609**</td>
</tr>
<tr>
<td>Role Ambiguity</td>
<td>-.4477*</td>
<td>-.5609**</td>
<td>1.0000</td>
</tr>
</tbody>
</table>

Number of Cases: 32  
1-tailed Significance: * - .01  ** - .001

Table 6.13: Pearson Correlation Coefficients Among Accountability, Effectiveness and Role Ambiguity

The correlations between effectiveness and accountability, and between role ambiguity and accountability, are significant at the .01 level, while the correlation between role ambiguity and effectiveness is significant at the .001 level. The correlation coefficients indicate a moderate positive linear relationship between accountability and effectiveness, and negative linear relationships between both these and role ambiguity. In SPSS/PC+, coefficients with one-tailed observed significance levels less than 0.01 are designated with a single asterisk; those less than 0.001, with two asterisks. For the coefficient of 0.56, it means that the probability that a correlation coefficient of at least 0.56 is obtained when there is no linear association in the population between role ambiguity and effectiveness is less than 0.001.

The correlation diagrams showing the scatterplots between the variables Accountability and Role Ambiguity, and between Role Ambiguity and Effectiveness, are shown in Fig.6.3 and Fig.6.4 respectively. The inverse relationships of these two sets of variables are indicated by the negative slopes of the best fit lines through the 32 points in each case.
The diagram of scatterplots between Accountability and Effectiveness is shown in Fig.6.5.
The statistical evidence based on data from the 32 PM arrangements therefore supports the hypothesis of a positive relationship between accountability and effectiveness, and negative relationships between them and role ambiguity.

The analysis of this hypothesis using Pearson's coefficient of correlation, $r$, is primarily parametric in treatment. If the scores of Table 6.12 are instead analysed with the use of nonparametric statistics, they have first to be converted into ranks. The method consists essentially of ranking the scores for each of the three variables separately and independently over the 32 arrangements, and then using these ranks in the computation of the Spearman's Rank Correlation Coefficients, rho (which is basically the nonparametric equivalent to the Pearson's $r$ in the parametric case). It is to be noted that the sets of scores are ranked independently of each other and are not mixed in the process. Using such a rank sum analysis (Meddis, 1984, p.273), rho is given by:

$$
\rho = \left[ \frac{6\Sigma R_j^2}{k^3 - k} - \frac{6(k+1)}{k-1} \right] \frac{2}{\Sigma T_i} - 1
$$

(6.4)
where:

\[ p = \text{the correlation coefficient (Spearman's Rho)} \]

\[ \sum R_j^2 = \text{sum of squares of the rank sums} \]

\[ \sum T_i = \text{sum of the 2 correction factors due to ties.} \]

The significance level of rho is computed by:

\[
Z = \sqrt{\frac{p^2 (k - 1)}{k}}
\]  \hspace{1cm} (6.5)

and evaluating Z against the normal distribution tables.

This method for calculating and evaluating rho is computationally different from the original Spearman's method (See Siegel, p.202) in that it uses rank sums and their squares \((R_j^2)\) instead of rank differences, \(d_j\); it is also simpler when dealing with ties which are invariably present. The answers are however similar in either case. The ranks of all the three sets of scores are shown in Table 6.14, and the resulting rank correlation coefficients are summarised in Table 6.15. It can be observed that these coefficients are marginally higher than the Pearson \(r\) coefficients of Table 6.13, but otherwise, they correspond in terms of the associations and their observed significance levels. The overall results in this case are thus similar irrespective of whether parametric or nonparametric treatments are utilised.
<table>
<thead>
<tr>
<th>PM Arrangement</th>
<th>Ranks of Accountability</th>
<th>Ranks of Effectiveness</th>
<th>Ranks of Role Ambiguity</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>22.0</td>
<td>23.5</td>
<td>23.0</td>
</tr>
<tr>
<td>2</td>
<td>19.0</td>
<td>25.0</td>
<td>1.0</td>
</tr>
<tr>
<td>3</td>
<td>9.0</td>
<td>10.0</td>
<td>11.0</td>
</tr>
<tr>
<td>4</td>
<td>14.5</td>
<td>4.5</td>
<td>4.0</td>
</tr>
<tr>
<td>5</td>
<td>27.5</td>
<td>6.0</td>
<td>7.0</td>
</tr>
<tr>
<td>6</td>
<td>29.5</td>
<td>32.0</td>
<td>28.0</td>
</tr>
<tr>
<td>7</td>
<td>26.0</td>
<td>20.5</td>
<td>29.5</td>
</tr>
<tr>
<td>8</td>
<td>27.5</td>
<td>27.0</td>
<td>19.0</td>
</tr>
<tr>
<td>9</td>
<td>5.5</td>
<td>2.0</td>
<td>5.0</td>
</tr>
<tr>
<td>10</td>
<td>14.5</td>
<td>18.0</td>
<td>11.0</td>
</tr>
<tr>
<td>11</td>
<td>5.5</td>
<td>15.5</td>
<td>17.0</td>
</tr>
<tr>
<td>12</td>
<td>14.5</td>
<td>20.5</td>
<td>18.0</td>
</tr>
<tr>
<td>13</td>
<td>14.5</td>
<td>3.0</td>
<td>6.0</td>
</tr>
<tr>
<td>14</td>
<td>23.5</td>
<td>15.5</td>
<td>22.0</td>
</tr>
<tr>
<td>15</td>
<td>7.0</td>
<td>8.0</td>
<td>3.0</td>
</tr>
<tr>
<td>16</td>
<td>14.5</td>
<td>4.5</td>
<td>20.5</td>
</tr>
<tr>
<td>17</td>
<td>10.0</td>
<td>12.0</td>
<td>14.0</td>
</tr>
<tr>
<td>18</td>
<td>14.5</td>
<td>10.0</td>
<td>24.0</td>
</tr>
<tr>
<td>19</td>
<td>29.5</td>
<td>29.0</td>
<td>29.5</td>
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<td>20.5</td>
<td>13.0</td>
<td>9.0</td>
</tr>
<tr>
<td>21</td>
<td>1.0</td>
<td>28.0</td>
<td>13.0</td>
</tr>
<tr>
<td>22</td>
<td>14.5</td>
<td>1.0</td>
<td>8.0</td>
</tr>
<tr>
<td>23</td>
<td>2.5</td>
<td>10.0</td>
<td>11.0</td>
</tr>
<tr>
<td>24</td>
<td>14.5</td>
<td>20.5</td>
<td>26.0</td>
</tr>
<tr>
<td>25</td>
<td>25.0</td>
<td>26.0</td>
<td>16.0</td>
</tr>
<tr>
<td>26</td>
<td>31.0</td>
<td>30.0</td>
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<td>23.5</td>
<td>15.5</td>
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<td>31.0</td>
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<tr>
<td>31</td>
<td>4.0</td>
<td>7.0</td>
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</tr>
<tr>
<td>32</td>
<td>20.5</td>
<td>20.5</td>
<td>15.0</td>
</tr>
</tbody>
</table>

Table 6.14: Ranks on Accountability, Effectiveness and Role Ambiguity
Table 6.15: Spearman Rank Correlation Coefficients Among Accountability, Effectiveness and Role Ambiguity

<table>
<thead>
<tr>
<th></th>
<th>Accountability</th>
<th>Effectiveness</th>
<th>Role Ambiguity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Accountability</td>
<td>1.0000</td>
<td>0.5062*</td>
<td>0.5178*</td>
</tr>
<tr>
<td>Effectiveness</td>
<td>0.5062*</td>
<td>1.0000</td>
<td>0.5844**</td>
</tr>
<tr>
<td>Role Ambiguity</td>
<td>0.5178*</td>
<td>0.5844**</td>
<td>1.0000</td>
</tr>
</tbody>
</table>

1-tailed significance: * - .01  ** - .001

6.8.6 Other Relationships Investigated

A number of other possible relationships generated by the data were also examined, and these are listed accordingly.

(1) "The more conscious accountability as a process is for an individual, the more positively it is perceived by the same individual, i.e., individuals who consciously address themselves to the issue of accountability will tend to look at it in more positive terms than those who treat it as an unconscious process"

The data from Questions 2 and 3 of Part 3 (See Appendix 4), when analysed together, produce a chi-square value of 24.468 which is significant at the .0001 level, and a Kendall's Tau-C of .373 significant at .0000. This confirms that the view of accountability and the level of consciousness towards it are not independent but are instead positively related. In order that the variables are treated appropriately, the view of accountability is scored as a "1" if it is considered as being dysfunctional, and as a "2" if it is healthy. Dysfunctional is taken as a negative view and healthy as positive, so as to be directionally in line with the degree of consciousness.
(2) "Project Managers rated high on Accountability are associated with PM Arrangements rated high on Accountability."

The data from Questions 3 and 10 of Part 4 (See Appendix 4), when analysed together, produce a chi-square value of 69.792 which is significant at the .0000 level, and a Kendall's Tau-C of .4417, significant also at .0000. This confirms a positive relationship between project managers' accountability and accountability of PM arrangements.

(3) "Infringement on the professional functions of participants by the Project Manager is seen by the participants as tending not to incur any associating accountability for the Project Manager."

Question 4 of Part 3 (See Appendix 4) generates the data for examining this proposition. 130 out of the 138 responses answered 'Yes' to the possible infringement on professional functions by the project manager. Of these 130, 93 (or 71.5%) answered also 'Yes', that this infringement does not incur the project manager any associating accountability, with 37 (or 28.5%) answering 'No'. Interestingly, 8 of the 9 responses from project managers provided 'Yes' answers also. Given that in general, infringement is more than probable, this corresponding lack of assumption of any accountability, revealed by the responses, may be an important feature of project management involvement. The observed frequency of 93 to 37 produces a chi-square value of 24.12 which is significant at .001, confirming the suggested position. Further discussion of this can be found in Section 8.8 under 'shared accountability'.

6.9 SUMMARY OF EMPIRICAL FINDINGS

H1 We began with the proposition that there would be a difference in overall perception of accountability among participant groups. Although the profile analysis indicates some degree of difference among groups on certain of the items, and demonstrates a higher degree of similarity among clients, project managers and architects than with other groups through the use of 'D' values, there is no statistical support for a difference in overall perception among the groups. A difference between project managers and architects is however almost significant at the .05 level.
Thus, on the basis of the 8 items in Part 1 of the survey questionnaire, we may conclude that participant perception of accountability, irrespective of grouping, is generally similar. In one sense, this means that we do not possess sufficient information to distinguish groups in terms of how they perceive accountability. In another sense, we are a little more certain, arising from this general agreement among project participants in such perception, that when dealing with the issue of accountability, there is some degree of uniformity and congruency in participant interpretation.

H2 The data confirms that there is a statistically significant difference between in-house and external project managers in their accountability, as perceived by the rest of the participants, and that in-house project managers are perceived as more accountable than external project managers. PM structure appears therefore to play some part in determining the accountability of project managers. In-house managers score higher due probably to their being part of the client organisation. By virtue of their client representation role, they are perceived as being highly answerable in their own performance. The suggestion here is that external project managers lack accountability, and preferably their accountability should be raised. Alternatively, it may well be more prudent to exercise the project management role in-house in order to attain a high level of accountability.

As to whether participants' accountability is influenced by PM structure, the data do not produce a significant relationship. In other words, participants acting in in-house PM arrangements are not necessarily any more or less accountable than those acting under external PM arrangements. The exercise of project management internally or externally thus makes no difference to participants' accountability.

H3 There is evidence that project management does not lead to any decrease in participants' involvement. While it can lead to a similar or greater involvement, the evidence from the sample is not conclusive as to which is more likely. Notwithstanding this, the level of involvement is seen as positively related with the level of accountability. The level of accountability is also seen as positively related with the level of exposure to professional negligence. It is to be noted, as in all correlations and measurement of association between variables, that only a relationship, whether positive or negative, is confirmed based on the sample data.
No further dependency, in terms of causality, can be imputed. It is therefore not possible to say that increased involvement leads to or causes an increase in accountability, or vice versa, that increased accountability causes an increase in involvement. The two possibilities here appear however to demonstrate some connection with the two-fold interpretation of accountability described earlier in Section 5.2.1. Increased involvement may lead generally to a greater requirement for answerability, which in turn demands an ability to answer; this need to be able to answer in turn generating a higher level of involvement. There is however no evidence to show that this flow proceeds as suggested, the only evidence being that they are related to some degree.

**H4** The hypothesis that accountability and effectiveness of a PM arrangement are positively related, and that both are negatively related with role ambiguity, is supported statistically from the sample data. Logically, there is merit in aiming to achieve a high level of accountability in a PM arrangement in so far as this is known also to achieve a high level of effectiveness. The inverse relationships with role ambiguity confirm that the level of role ambiguity provides a useful and accurate indicator of accountability and effectiveness.
NOTES


REFERENCES


CHAPTER 7

PROFESSIONAL ACCOUNTABILITY

7.1 INTRODUCTION

The purpose of this section is to examine and demonstrate how issues of professionalisation and professionalism can have significant implications for the concepts of accountability and project management. It is not intended to be an elaborate exposition of the evolution or development of the professions. These aspects are well documented in major works which adopt mainly a sociological approach to the investigation of the professions. A brief outline of the major themes involved will however be useful in setting the context. The central thesis of our investigation in this section is that the processes of increasing specialisation and professionalisation are accompanied by higher standards and expectations which in turn results in greater accountability. The process is likely to be a cyclical progression more than a determinate and longitudinal arrival at a specific level. It is continuous, but a pattern of somewhat similar phases can be discerned if we examine professions in the light of increasing accountability. We may ascribe to this expansion in accountability as an increasing "professional accountability". This dimension of accountability, as we have pointed out earlier, is in turn inextricably linked to legal accountability, the relationship here constituting the critical extension of our main thesis.

The treatment of whether PM is or can be considered a profession must of necessity be dealt with at two levels: (1) whether 'management' in general is a profession, and (2) how 'professionalised' is PM in the context of the construction industry's professions. It must be remembered that the infusion of a formal PM role occurs within an industry that is traditionally both multi-disciplined and heavily professionalised. With PM taking on an increasingly executive function, it is questionable whether it can itself avoid the tide of professionalisation. Conformity with generally accepted characteristics which distinguish professions from other non-professional occupations is only one measure of whether PM is a profession, and must be examined from a practical standpoint, bearing in mind that, to a certain extent, all occupations experience the phenomenon of professionalisation. In the context of such a heavily professionalised construction industry within which PM operates, it may also be interesting to investigate the present extent of professionalisation in the PM role as perceived by the rest of the team.
members. For this reason, Part 7 has been included in the fieldwork instrument as a
gauge of the 'external' perception. The data generated from this part of the
questionnaire will accordingly be examined in this section. It may indeed be that the
circumstances under which PM is currently operating already require that it be
considered a profession for all intents and purposes. Due consideration of this issue
should serve to portray the PM role in more realistic and dynamic terms, and may in the
process provide indication of the direction of its future growth and development, at
least in the UK construction industry context.

More importantly, the idea of professionalisation, through our dimension of
professional accountability, completes our basic framework of accountability in PM, as
one of the three sub-concepts of accountability.

This appreciation of professionalisation, applied to PM, gives new meaning to what is a
contemporaneous issue regarding the function. It is likely that the consequences of
professionalisation will have greater implication than merely the clarification of how
professionalised it is. Professional accountability serves to illustrate the situation in
more accurate terms.

Section 7.2 serves to differentiate between the concepts of profession, professionalism,
and professionalisation. Section 7.3 identifies the major themes that underlie the
professions. Within this framework, a number of practical constraints which affect the
professionalisation process are dealt with in Section 7.4. The idea of professional
accountability that goes in hand with professionalisation is addressed in Section 7.5.
The extent of professionalisation of PM, including a team perception indicator of this,
are examined in Sections 7.6 and 7.7 respectively.

7.2 PROFESSIONALISATION AND PROFESSIONALISM

In noting the looseness and confusion in the terminology of authors concerning the
issue of professionalisation, Vollmer and Mills (1966) caution on the premature
agreement upon precise definitions of concepts. This can serve to inhibit our openness
to important aspects of phenomena that we are investigating, ie without allowing a
certain degree of flexibility in the definition and use of concepts, these aspects may well
be missed. Accordingly, they suggest "that the concept of 'profession' be applied only
to an abstract model of occupational organisation, and that the concept of
'professionalisation' be used to refer to the dynamic process whereby many occupations can be observed to change certain crucial characteristics in the direction of a profession, even though some of these may not move very far in this direction." (p.vii). A 'profession', in this terminology, is therefore an ideal type of occupational institution, while 'professionalisation' is a process that may affect any occupation to a greater or lesser degree. In terms of the concept of professionalisation, many if not all occupations can be placed at some position along a continuum between the ideal-type profession at one end and the completely unorganised occupational categories, or non-professions, at the other end (p.2).

The idea of such a occupation-profession continuum however implies that the differences between occupations and professions that are being focussed on are differences of degree and not differences of kind. In this sense, the proper and more appropriate question which a continuum suggests is - "to what extent is a particular work activity a profession?", rather than - "Is a particular work activity really a profession?" (Pavalko, 1971, p.16). This preference towards extent rather than reality is very much in accord with the view of Vollmer & Mills, who prefer to avoid discussion of "whether or not any particular occupational group is 'really a profession'", and instead find it "much more fruitful to ask 'how professionalised', or more specifically 'how professionalised in certain identifiable respects' a given occupation may be at some point in time" (p.vii).

Professionalisation therefore is the process whereby work groups attempt to change and actually change their position on one or more dimensions of the occupation-profession continuum, moving towards the profession pole. Caplow (1954) observes that there are quite definite steps involved in professionalisation:-
(1) the establishment of a professional association, designed to keep out the unqualified, (2) the change of name, serving to reduce identification with the previous occupational status and to assert monopoly, (3) the development and promulgation of a code of ethics, and (4) prolonged political agitation in order to obtain the support of the public power for the maintenance of the new occupational barriers (p.139). This typical sequence of events which characterises the process of professionalisation is extensively investigated by Wilensky (1964). Based on an examination of the history of eighteen occupations, he identifies the order of events as follows:-
(1) The thing which needs doing begins to be done full time, (2) Establishment of a training school as the question of training soon arises, (3) Formation of a professional association by those pushing for prescribed training, (4) Persistent political agitation in
order to win the support of law for the protection of the job territory and its sustaining code of ethics, e.g. certification, licensing, registration etc., and (5) Development of a formal code of ethics, embodying various rules e.g. elimination of the unqualified and unscrupulous, reduction of internal competition, protection of clients, and emphasis on the service ideal (pp.142-145). (See Fig.7.1)

![Figure 7.1: The Process of Professionalisation](image)

In a sense, this sequence of events suggests that, in the process of professionalisation, an occupation passes through "predictable stages of organisational change, the end state of which is professionalism" (Johnson, 1972, p.22).

As a departure from the more usual approaches to the identification of professionalism, Moore (1970) proposes that professionalism should properly be regarded as a scale rather than a cluster of attributes. The characteristics that identify and define the professional are considered as comprising the following:- (1) the professional practises a full-time occupation, (2) there is a commitment to a calling, (3) the occupation is formally organised, (4) he possesses esoteric but useful knowledge and skills, based on specialised training or education, (5) he is expected to exhibit a service orientation, and (6) there is autonomy in practice. These characteristics, Moore suggests, are unequal in value, and can be regarded as points or clusters along a scale of professionalism (p.5).
Rosenblum (1970) reminds us very aptly that professions are a subset of a larger occupational class known as the services, where a service, following Parsons, is defined as any act of an individual so far as it contributes to the realisation of the ends of other individuals (p.53).

7.3 THE MAIN THEMES

7.3.1 Trait and Functional Approaches

To recapitulate on the differentiation between the concepts of profession, professionalism, and professionalisation, (1) 'profession' is an abstract model of occupational organisation or an ideal type of occupational institution, (2) 'professionalism' is the end state of an occupation's passage through stages of organisational change associated with the professionalisation process, and (3) 'professionalisation' is the dynamic process whereby an occupation changes its position on one or more dimensions of the occupation-profession continuum, moving towards the profession pole. It remains now to follow with a brief account of the major themes that have been distilled from the literature relating to these three concepts.

Johnson (1972) identifies two broad types in the existing approaches to 'professions' - the 'trait' and the 'functionalist' models of the professions. While trait models tend to be less abstract and comprise essentially a list of attributes considered to represent the common core of professional occupations, functionalist models are more abstract and attempt to limit the components of the model to those elements considered to have functional relevance either for society as a whole or to the professional-client relationship (p.23). With the emphasis on attributes, the trait approach is also known and referred to as the attribute approach. The underlying presumption is that the greater the intensity of an occupation on each of the attributes, the more 'professional' the occupation is (Raelin, 1989). A number of weaknesses can however be observed in relation to the trait approach. It bases its essential elements on the existence of an ideal type or 'true' profession which is seen to exhibit to some degree all of the features (Johnson, p.23). Classically, the cases of law and medicine are taken as providing the ground for abstracting these known characteristics. By using discriminating characteristics drawn from such a 'presumed' profession as comparison, there is also the danger of including characteristics which are "indices of the current recognition of the occupation, rather than guides to its crystallisation in its present form" (Turner and
Hodge, 1970, p.23). There is additionally the erroneous tendency to accept the professionals' own definitions of themselves (Johnson, p.25). The trait model, being fundamentally ahistorical, would seem to apply inadequately to professionalisation as a process. Occupations may well develop organisationally in various forms that could all be structurally different. In this respect, the model is seen as severely restrictive and insufficiently responsive to pick up such departures (p.27). Any possible relationship between elements, whether causal or otherwise, fails also to be captured by the model. The clearest example of the trait approach is found in Millerson's (1964) twenty-three elements drawn from various authors. No doubt, these various sources are all trait-related in nature.

The functionalist model, in a sense, is a refinement of the trait model. It avoids presenting an exhaustive list of traits and instead aims for elements which have functional relevance. In the view of Barber (1963), certain concepts apply to all other groups as well as to professional ones, i.e. they are not exclusive to professional groups and are as such not 'differentia specifica' of professional behaviour. According to him, there is no absolute difference between professional and other kinds of occupational behaviour, but only relative differences with respect to certain attributes common to all occupational behaviour (p.671). On this basis, four essential attributes combine to define professional behaviour: - (1) a high degree of generalised and systematic knowledge, (2) primary orientation to the community interest rather than to individual self-interest, (3) a high degree of self-control of behaviour, and (4) a system of rewards (monetary and honorary) that is primarily a set of symbols of work achievement and thus ends in themselves and not means to some end of individual self-interest (p.672). Owing to the powerful control which generalised and systematic knowledge provides over nature and society, Barber stresses the importance to society that such knowledge be used primarily in the community interest. General prestige and honours or symbols of achievement are viewed as more appropriate for community interest and therefore relatively more important in professional than in nonprofessional behaviour. Accordingly, the four essential attributes define a scale of professionalism which measures the extent to which it is present in different forms of occupational performance (p.673). The term 'professionalism' used here would seem to refer to the 'end-state' of professionalisation which we mentioned earlier.

Notwithstanding these two distinct approaches to the professions, Johnson points out that the one element that is lacking is the attempt to understand professional occupations in terms of their power relations in society, both their sources of power and authority
and the ways in which they use them. According to Raelin (1989), recent sociological research, in challenging the attribute approach as not sufficiently dynamic or process-oriented, has also alternatively proposed such a power approach. Arising from this power process, the professional group in question would effectively be able to exercise monopoly over provision of its expert services while still enjoying relative freedom from external intervention (p.102). The basis of this alternative approach lies very simply on the reasoning that knowledge is power. Indeed the whole interplay of knowledge and power within the professions' context is so pertinent that it forms the central theme in Dingwall and Lewis' (1983) work on the sociology of the professions.

### 7.3.2 Elements of Professions

In the meantime, it remains for us to outline in more detail the significant features of professions and the process of professionalisation that have characterised the various approaches so far mentioned. The distinguishing attributes of a profession are many, but Greenwood (1957), arising from a careful canvass of the sociological literature on occupations, distills five elements which all professions seem to possess: (1) systematic theory, (2) authority, (3) community sanction, (4) ethical codes, and (5) a culture. These attributes are however not strictly exclusive to the professions as nonprofessional occupations also possess them, although to a lesser degree. Accordingly, Greenwood cautions that the difference between a professional and a nonprofessional occupation on each of these attributes is a quantitative and not a qualitative one, i.e. the attributes are present in different degrees rather than being totally present or absent. We shall adopt Greenwood's five elements as the basis for our discussion here.

#### 7.3.2.1 Systematic Theory

The existence of a systematic body of knowledge and theory constitutes one of the sharpest distinctions drawn between a professional service as opposed to a nonprofessional occupation. The skills characterising a profession, according to Greenwood, "flow from and are supported by a fund of knowledge that has been organised into an internally consistent system, called a body of theory." As a generally accepted hallmark of all professions, this process of distilling and systematically formulating an underlying body of knowledge is crucial in any occupation's
progression along the path of professionalisation. Advice or action, or both, that is then based on such knowledge constitutes the 'esoteric' service which a profession delivers (Hughes, 1963, p.655). In essence, this service, whether advice or action, is directed and applied to the needs of a client. The focal interest of the profession is therefore primarily the region of requirements that adhere to the client group. While the nature of the underlying knowledge is not normally clear, it is seen often as a combination of both practical and theoretical knowledge. Wilensky ascribes to this view of the professional's job the term 'technical' - ie based on systematic knowledge or doctrine acquired only through long prescribed training. His term 'technical' is not however restricted to mean only 'scientific'. He considers that both scientific and non-scientific systems of thought can serve as a technical base.

In this connection, Hughes (1963) reminds us that the essence of the professional idea and the professional claim is that professionals "profess" - "they profess to know better than others the nature of certain matters, and to know better than their clients what ails them or their affairs" (p.656).

The exercise of this service to clients calls for a certain detachment, in that personal interest gives way to a strife for a deeper understanding of the issues involved. Hughes pictures this detachment as part of the need to achieve a certain equilibrium between the universal and the particular. The deep interest acquired is of the sort that "leads one to pursue and systematise the pertinent knowledge...to finding an intellectual base for the problems one handles, which, in turn, takes those problems out of their particular setting and makes them part of some more universal order" (p.660). The underlying body of theory which a profession attempts to develop becomes then a system of abstract propositions which describe in broad terms the classes of phenomena comprising its focus of interest (Greenwood, 1957). It is likely that this focus of interest will of necessity shift and change in accordance with the changing needs within the group of clientele, especially with regard to a profession that is still very much in the transitional stages of its development.

7.3.2.2 Authority

Arising from this specialised knowledge the professional is imbued with what is known as professional authority. He becomes an authority on his subject and an expert on its application, thereby raising himself to a superordinate position in his role relationship
with the client (Moore, 1970, p.106). Placed in such a relationship, the client virtually accepts what the professional dictates; he therefore accedes to professional judgement and surrenders to professional authority. This subordination to professional authority in turn invests the professional with a monopoly of judgement. The whole realm of this professional authority is however necessarily limited by what is referred to as functional specificity, ie the function of his authority is confined to those specific spheres within which he has been educated (Greenwood, 1957).

Cohering closely to this exercise of professional authority is the necessity for an accountability to one's fellow professionals and peers. This associating 'professional accountability' does not appear to feature in the literature on professionalisation. Instead, the issue of professionalism has regularly been treated in the context of accountability, especially in the area of educational accountability. Kogan (1986) has considered the possibility of treating professionalism as an aspect of accountability (pp.31-2). He points out, relating to this issue of professionalism, and by way of example, that professionals serving the public through institutions may in fact respond more to a sense of professionalism than to formal accountability systems. The distinction made by Sockett (1980) between accountability for outcomes and results and accountability to professional codes of practice (See Section 4.4.1) also recognises the existence of such a professional accountability.

7.3.2.3 Community Sanction

Community sanction of a profession's authority takes the form of powers and privileges that are conferred upon the profession. Examples of powers are control over its training centres by way of the accreditation process, and control over its admission process through use of professional titles and a licensing system. Privileges include confidentiality between client and professional in the form of privileged communication that enjoys a certain immunity from external encroachments, as well as a relative immunity from community judgement regarding technical matters. This special privilege of freedom from the control of outsiders rests on three claims (Freidson and Rhea, 1965) - that their work is of such a high degree of skill and knowledge that only fellow professionals can accurately assess their performance; that professionals responsibly can be trusted to work conscientiously; and that in instances of inadequate performance, colleagues are trusted to take appropriate regulatory action. The crux of this community sanction is therefore the autonomy that is conferred upon and which the
profession enjoys from the rest of society, ie the general freedom or a perceived right to make choices concerning both means and ends (Kerr et al, 1977, p.332). Effectively, professionals should exhibit a certain independence in thought and action. The willingness to speak their minds without fear or favour, and to ensure that they are never put under control or dominance of any person or organisation which could impair this independence, constitutes what is considered the most precious privilege and obligation of a professional person (Lord Benson, 1989).

7.3.2.4 Code of Ethics

In order to avoid possible abuse of its inherent monopoly, a profession normally possesses a built-in regulative code of ethics governing the behaviour of its members. They are obliged to render service without concern for self interest and without becoming emotionally involved with the client (Kerr et al, p.332). Between client and professional, the relationship is thus marked by emotional neutrality and the element of disinterestedness. Among professional colleagues, mutual cooperation and support are the order of the day. In place of competition and advertising is the phenomenon of consultation and referral between colleagues, generating an informal self-discipline. More formally, the professional associations play their part in ensuring this adherence to the profession's ethics. The element of ethics therefore, in broader terms, encompasses characteristics such as commitment to the work and the profession, identification with the profession and fellow professionals, and maintenance of established standards among members.

7.3.2.5 Culture

Within a profession, the network of formal and informal groups also generates an interaction quite unique to it, viz., a professional culture, consisting of its values, norms and symbols. While social values are its basic and fundamental beliefs, the norms provide the guides to behaviour in social situations (Greenwood, 1957). Notwithstanding mastery of the underlying theory and acquisition of the technical skills, the effective adjustment to the professional culture is normally seen as the ultimate test of entry for any new incumbent.
Given the foregoing five broad elements which feature quite prominently for any profession progressing along its professionalisation process, it is possible that directionally opposing forces can impose practical constraints on the process. The next subsection, Section 7.4, highlights some of the problems that can arise.

7.4 THE PRACTICAL CONSTRAINTS

Even as early as 1954, Caplow points to the strength of the professionalisation theme, observing that it occurs in occupations once considered entirely commercial, e.g. banking and advertising, in occupations which never involve independent work, e.g. drafting and photographic processing, and in those which used to be thought of as quite removed from the economic arena, e.g. philanthropy and the research sciences. "Even pure management is perhaps in the process of being professionalised ... " (p.140). While this central theme is as true today as three decades ago, it is worthwhile noting that the reverse process, deprofessionalisation - where an occupation loses partial professional status over the course of time, is also possible. Perhaps the most critical message that lies in this probable reversal is the realisation that it may well be more prudent, for various reasons and in certain cases, to avoid full professionalisation or perhaps to retard the full process in the first instance. How this idea conflicts in principle with the natural progression of occupations along the path of professionalisation is not immediately apparent. But as a distinct and conscious effort to limit or retard the process, it is certainly possible. It is observed that this phenomenon has, up to now, been largely unrecognised and unexplored. Arising from the earlier sections leading up to this section, it is suggested that a plausible hypothesis of this activity is that it is linked to the excessive demands imposed by increasing accountability. This line of argument is not entirely without basis though. Indeed the underlying theme in the dilemma between independence and accountability, which we have earlier mentioned (see P.116) would appear to encapsulate very appropriately this set of diametrically opposed forces. We shall entertain this notion of increasing accountability and the whole relationship between professionalisation and accountability in the immediate subsection, Section 7.5.

The fact that many professions now operate within the confines of organisations imposes an additional strain on the ideal two-party arrangement (professional and client) which professional ideology prefers. Such institutional constraints serve to intervene between the professional and the client (Hughes, p.664). The issue of
independence and freedom is thereby moulded in no small way by the institutional settings. Within such a prevailing environment, the client for the professional becomes fudged. The obligation to the person is tempered by obligation to one's employer or organisation. Professional culture too is faced with a new set of demands which the organisational culture imposes.

Professionals working in organisations are prone to experience conflicting expectations when goals and values of management do not match their own goals and values. Although limited to organisational careers of professionals in large organisations, Raelin (1984) presents a tentative model of professional deviant/adaptive career behaviours which serves to clarify the negative behavioural effects experienced. Without delving too deeply into the mechanics of his model, it suffices to point out that it usefully demonstrates the extent and breadth of behavioural responses that can arise for the professional working in an organisation.

This organisational constraint which professionals working in organisations are inadvertently subject to does have implication for project management. If we accept that the project management function possesses a certain degree of professionalisation, it will be noticeable that a fair amount of project managers work in-house within their own organisations, as opposed to the case of the externally commissioned consultant project manager. In such instances, is there a possibility for a conflict of interest depending on whether the person is exercising a client representative's role or a project manager's role? Given that in both, client satisfaction is the key function, and that the role of client's representative almost entirely resides in the client organisation as opposed to the in-house project manager role, it is possible that, from the standpoint of professional accountability, project managers working in-house as part of a client organisation may too be subjected to a specified level of accountability viz-a-viz the rest of the project team.

The very interdependence of professions and organisations poses the central problem of autonomy versus integration of professional activity in organisations. By way of their primary functions, professionalism and organisation are significantly different; the former aims for protection of standards for creative activities while the latter concentrates on the efficient coordination of diverse activities (Kornhauser, 1963, p.195).
More crucial to the main line of enquiry of this study is the criterion of influence and responsibility which professionalism embodies. This professional responsibility is based on the belief that the power conferred by expertise carries with it a certain "fiduciary relationship to society" (Kornhauser, p.1).

Owing to the different sources of legitimacy, there is a strain between organisational and professional bases of authority and responsibility when professional staff provide services within an organisation. "Organisational authority characteristically is executive authority: it acquires its legitimacy from the mandate attached to an office. Professional authority, on the other hand, is the authority of the expert: it clarifies legitimacy on the basis of special competence" (p.13).

This point alone raises a very pertinent implication with respect to the manner in which the project management role is undertaken or exercised. The in-house project manager obviously is imbued with a certain degree of organisational authority in addition to whatever professional authority he may already possess, while the independent consultant project manager must depend more substantially on his professional authority for influence. Clearly therefore, the extent and scope of accountability between the two should accordingly be different.

7.5 PROFESSIONAL ACCOUNTABILITY

What does professionalisation of an occupation bring about? Put differently, what are the sort of changes that an occupation undergoes during the process of professionalisation? The same elements and features utilised to distinguish professional occupations from non-professional ones provides a suitable framework for dealing with this question. As the whole combination of systematic theory, authority, community sanction, ethical codes, and culture develops, one undeniable observation becomes obvious - standards of practice are raised. The service in question, while it strives for a higher level of professionalisation, inevitably experiences the need to raise its standard of practice. This can come from the desire to formalise in order to achieve a greater visibility, and from having to respond to increasing demands from those who utilise the service. The inescapable result of professionalisation is therefore the overall elevation of the standards of the service, in terms of both its provision and the expectations of users. The implication that this has for the service in respect of its accountability is what concerns the study.
In terms of accountability in the context of professionalisation, is there a difference in accountability between professional and nonprofessional occupations? From the basic model in Chapter 5, it would appear that, irrespective of the type of service, accountability exists as long as an item of work is undertaken by one party for another. As such, accountability is present for both professional and nonprofessional occupations. It can however be present in different degrees.

A professional has clients, whereas a nonprofessional has customers, the essential difference here being the party who determines the nature and extent of the service. In the nonprofessional case, the customer is presumed to have knowledge of his needs and of what is required in order to fulfill these needs. In the professional case, the client is deemed to lack the required background to diagnose his own needs and to seek a solution for them, this being placed on the professional concerned. The customer therefore knows what he wants when he goes out to obtain it. His acceptance of a product or service confirms the satisfactory provision of the same by the nonprofessional. The fundamental accountability relationship between the customer and the nonprofessional is thus definite, clear and specific. The client in the professional case is in turn aware of his needs and requires that these be met. The exact mode towards this end is prescribed by the professional based on his expert knowledge and judgement. Satisfaction of the client's needs becomes very much more dependent on the degree of definition of the needs and the agreed results expected. The variation in terms of performance requirements is immediately apparent. Accordingly, accountability of the professional lacks clear definition. Its nature and extent are likely to be comparatively vague.

The exercise of professional authority in the carrying out of professional work, within our basic framework of accountability, generates professional accountability. There is some indication of the applicability and relevance of the accountability notion in the professionalisation context. Moore (1970) observes, in relation to professional advice, that there is a penalty that goes with the client's freedom regarding such advice - "When the client is free to reject or simply ignore professional advice, he does so at his own peril. The professional can scarcely be held accountable for failure not of his doing" (p.107). Pletta (1984) investigates the engineering profession in the U.S. context, and finds that "increasing sophistication leads to an unwillingness to assume accountability or responsibility - to pass the buck - and reinforces the concept that engineering is a reactive profession" (p.142). On ethical accountability, he stresses that "each
practitioner ... is to be held accountable to the State and to the public by high professional standards in keeping with the ethics and practices of other learned professions ... " (p.167).

Two hypotheses will dominate the discussion in this subsection. Firstly, "professionalisation as a process generates professional accountability." Secondly, "the further along the process of professionalisation an occupation is, the higher the level of professional accountability that goes with it." Professional accountability is therefore the inevitable result of the whole process of professionalising. Fig.7.2 summarises this cycle of increasing professional accountability.

![Figure 7.2: The Cycle of Increasing Professional Accountability](image)

Professional accountability is to the client, the profession, and the professional community, for conduct and action in accordance with the existing standards in the profession. As standards change with professionalisation, the professional accountability has to keep up with these changing standards. The raising of standards can occur in its theoretical base or in its practice.

This issue of an increasing professional accountability, it is observed, does not feature in any of the sociological works on occupations and professions. Hamilton's (1978)
proposition of a greater responsibility in the prestige roles comes close to the idea though. Romzek and Dubnick's (1978) 'deference to expertise' as the basis of the relationship within a professional accountability system, leads also to the suggestion that a change or an increase in expertise will impact professional accountability in a similar manner.

The initial ideas tendered in Chapter 5 regarding the term accountability are retained in this section - a higher level of accountability has two meanings:— (1) one is better able to answer for one's actions, i.e., one is more accountable, in that the standards of performance and the level of service are better and more clearly defined, and (2) one is also more accountable in the sense of being more exposed to be called to account or to answer for one's actions. This dichotomous interpretation comes into better focus if the issue of professional accountability is viewed against professionalisation. Ideally, professionalisation should generate increased accountability in the first sense and decreased accountability in the second. The fact that in practice, accountability in the second sense has been seen to increase, reflected by the higher exposure of the professions in general to professional negligence claims, does not however bear this out. It is possible that the ability to answer, i.e. accountability in the first sense, has not been properly achieved and that this has led instead to a higher requirement to account, i.e. an increased accountability in the second sense. To stress again the recurring theme - the better able one is to account for his performance, the lesser the need to call one to account. This logical inversion has merit in its rationale. The fact that in many of the construction professions, exposure to professional negligence has increased, suggests that other factors are in play. As shall be observed in the next section, the report by the DTI (1989) confirms that this increased exposure to professional negligence has come about through "the development of the law (by decisions of the courts rather than legislation), and through a greater readiness to litigate on the part of those who have suffered loss" (p.6), factors that are in fact not directly related to the levels of professionalisation achieved in the various professions. According to the report, the significant change since the 1970s in the exposure of professionals to negligence claims has not been related to any discernible increase in negligence; on the contrary, "there is a great deal of evidence of improved professional standards" (p.6).
7.6 PROFESSIONALISATION OF PROJECT MANAGEMENT

7.6.1 General

The question of how professionalised the project management role is may be a crucial one in many respects. Firstly, the whole basis of what the project management 'profession' offers in terms of a service lacks proper definition. This poses great difficulty for informed expectations. The fundamental constitution of the project management task within the industry is still comparatively vague and ambiguous. Secondly, in terms of insurance requirements, the insured in professional indemnity insurance need not in fact be a practising professional, i.e., the carrying out of professional type activities or services may be sufficient to justify and to obtain professional indemnity insurance cover (Jones, 1988). This still begs the question - how professional is professional before an activity qualifies? What effect does this have on the extent of cover available and the accompanying levels of premiums, bearing in mind that these risks will in fact be re-distributed and be ultimately borne by the client? Thirdly, given the varying extent of the service from project to project, the expert evidence in cases of professional negligence must be capable of discriminating between what the project management role generally offers and the extent of the role specifically agreed upon in the said instance. The requirements of the expert himself may of itself be a critical issue. It is probable that an expert who is highly professionalised in his background and approach to project management may possess higher expectations of the service in general. The inherent dilemma between support of one's own discipline and the duty to enhance its standard and quality does not appear to be an easy issue to overcome. This problem is less significant in the more established professions such as architecture, engineering and surveying. With project management it is easy to contemplate services which may vary quite substantially in terms of the degree of professionalisation. Fourthly, the constant upgrading in the standard of the discipline imposes a very dynamic pressure on both what is offered and what can be expected. The constant upgrading of standards which accompanies the process of professionalisation generates this.

An additional point to note in this discussion is that the project management function is almost certainly practised by individuals who are themselves members of one of the existing construction related professions. This feature makes the project management case a unique one that is different from the other more established professions. The profession model must necessarily take account of this special feature.
In one sense, the professionalisation of project management is very much helped by this primary existing foundation. It takes as its start point a position very much further along the professionalisation scale. In another sense, as a 'second' profession, as it most certainly is in the usual case, it is possible that the need for professionalisation is not felt to the same degree as in the normal case. Project managers may well prefer to practise as project managers but choose to continue to retain professional association with their source disciplines, although this raises the issue of possible compromise due to vested interests and allegiance towards different professional bases.

It may be that this fundamental pre-existing professional base within the project management case imposes a pre-determined level of professionalisation in the function. It can be seen as an 'acceleration' of the process. In so far as the more universal and general aspects of professionalisation are concerned, this base may indeed be relevant and acceptable, and sufficiently transferable. As regards the aspects which are more particularly attached to the discipline, e.g. the systematic body of theory, a separate assessment may be appropriate. If an architect undertakes specifically a project manager's role within a project, it may be the case that a higher expectation can be imposed on him with respect to matters relating to the design elements of the project. This point will be discussed in greater detail in a later section.

7.6.2 A Systematic Body of Theory and Knowledge

To what extent then, along the characteristics associated with the professions, can project management be considered to be professionalised?

Is there a systematic body of knowledge and theory of project management as such? This question must be entertained closely with the existence of professional associations which serve to support the practice of project management.

The building blocks of a theory of project management can be said to be already in existence, albeit fragmented across disciplines, approaches, and industries. The degree to which these have been systematised into a coherent body of knowledge is however not so visible. As noted in a earlier section, much of the current knowledge of project management derives from the application of principles of organisation and management to the temporary management setting of projects. Knowledge drawn from such
application constitutes contribution to the theoretical base of project management.

Wearne (1965) points to the study of project management as a significant departure in the general field of management science, highlighting that the management of projects requires quite different training and experience which calls for a broadening of the narrow range of experience that is generally required before a person moves on to project management. As a new area of management deserving of research and study, developments in management science, such as decision theory, network analysis, and systems analysis, are all seen as providing "great scope for research into the accumulated experience of industry, for developing systematic techniques and for applying the resulting body of academic knowledge of project management into training for industry" (p.163).

To the extent that attempts have been made to collate and organise all these diverse sources into a distinct structural framework, it can be said that a systematic body of theory and knowledge exists. In this regard, the work of both Internet (The International Association of Project Managers) and PMI (Project Management Institute) is particularly significant. What is noticeably invaluable to this development of a systematic base of knowledge is the support which theory is provided through the carrying out of empirically linked research studies. The contribution which is made by even the smallest investigation in field settings is of enormous benefit to the development of project management as a separate and distinct discipline. No doubt this development will continue to benefit from advances in the more general fields of management and organisation theory. These source disciplines provide an almost unlimited amount of base material from which project management can usefully tap. The advancement in more specialised areas such as industrial psychology and organisational behaviour also generate a very dynamic 'behavioural' impetus for the theoretical framework of project management.

Internet is a non-profit making organisation registered in Zurich, and has its origins in 1965 as a discussion group of managers. The name, as originally proposed, standing for INTERnational NETwork, continues to the present day. The setting up of associated national societies and associations under Internet in various countries has made Internet effectively an international association of national project management societies. Between 1975 and 1985, member societies were established in Austria, Denmark, Egypt, Finland, France, Germany (FRG), Iceland, Italy, Netherlands, Norway, Spain, Sweden, Switzerland, and the U.K.. Continuing cooperation is also
maintained with the Project Management Institute of U.S., the Engineering Advancement Association of Japan, ENAA, and the Project Managers' Forum in Australia.¹ Its main contribution to the advancement of project management is its organisation of the World Congresses, the International Expert Seminars, Workshops and Symposiums, dedicated towards an international exchange of ideas, attitudes and experiences. Working Parties continue also to look into various key topics that are deemed to be of current importance, culminating in reports and publications.

PMI (Project Management Institute) is essentially a non-profit professional organisation dedicated to the advancement of the state-of-the-art in project management, and is based in Pennsylvania, U.S. Table 7.1 shows its official statement of objectives.

<table>
<thead>
<tr>
<th>PMI's objectives are to:</th>
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<tr>
<td>Foster professionalism in the management of projects</td>
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<tr>
<td>Advance the quality and range of project management</td>
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<tr>
<td>Identify and promote the fundamentals of project management and advance the body of knowledge for managing projects successfully</td>
</tr>
<tr>
<td>Provide a recognised forum for free exchange of ideas, applications and solutions to project management challenges</td>
</tr>
<tr>
<td>Stimulate the application of project management to the benefit of industry and the public</td>
</tr>
<tr>
<td>Provide an interface between users and suppliers of hardware and software project management systems</td>
</tr>
<tr>
<td>Collaborate with universities and other educational institutions to encourage appropriate education and career development at all levels in project management</td>
</tr>
<tr>
<td>Encourage academic and industrial research in the field of project management</td>
</tr>
<tr>
<td>Foster contacts internationally with other public and private organisations, which relate to project management, and cooperate in matters of common interest.</td>
</tr>
</tbody>
</table>

Table 7.1: PMI's Statement of Objectives
As part of its overall objective to establish project management as a unique discipline and an independent profession, PMI has comprehensively and successfully endeavoured to develop a Body of Knowledge (BOK). Within this framework, project management is seen as "a complex multidisciplinary profession which has considerable overlap into many other disciplines and professions" (Stuckenbruck, 1986, p.26). Three major points of overlap are identified in the areas of (1) general management, (2) the technical area(s) in which the project is involved, and (3) the supporting or service areas which are also crucial to project success. The Venn diagram in Fig.7.3 depicts the overlaps.

![Venn diagram](image)

**Figure 7.3: Scope of the Project Management Body of Knowledge**
(Source: Stuckenbruck, 1986)

A slightly different modification of this Venn diagram pictures the Project Management Body of Knowledge (PMBOK) as positioned midway along a know-how continuum in which on-going management is at one end and technical management is at the other.
Project management in this presentation is seen as the link enabling the two to come together (See Fig. 7.4). The basic project management functions concentrate on project integration, while its remaining functions are influenced by the particular field of application - this is the area of overlap between 'generic project management and field specific project management' (p.18) - and occurs to the right of the diagram. To the left, there is also an overlap between general management expertise and project management, reflected by the need for project management personnel to have sufficient specialist knowledge to understand and communicate in the various specialty areas on both sides.

![Know-How Continuum](Image)

**Figure 7.4: Location of the Project Management Body of Knowledge**
(Adapted from Wideman, 1986)

This PMBOK has, since its inception in 1986, been progressively upgraded, and as at 1988, comprises eight functions/areas:

1. Scope Management,
2. Time Management,
3. Cost Management,
4. Contract Management,
5. Quality Management,
6. Risk Management,
7. Human Resources, and
8. Communications.

Each of these is broken down into its component Processes, Activities, and Techniques, with the eight project management functions together embracing all the processes and activities to be undertaken to complete a project (Stretton, 1989).
In sum, it can be observed that a certain degree of a systematic and theoretical base is very much in existence. The part played by the associations dedicated to its advancement has been substantial.

7.6.3 Training Requirements and Degree of Specialisation

Closely tied to the development of a systematic body of theory and knowledge are the issues of how specialised this is and the nature of the associating training that is required. Given that project management as a distinct career path is virtually an extension from one's base discipline, a prescribed training structure in terms of content and especially duration, is difficult to pin-point. While it would vary from industry to industry, it is generally accepted that such training is most beneficially post-experience and post-qualification, where prospective and aspiring project managers must already possess a certain period of experience within the specific industry. It is likely that a basic training for project management can in effect be part of a source discipline's programme of continuing education and professional development.

But just how specialised is the training which attaches to project management? The substantive ingredients of project management education programmes will demonstrate that there is essentially a core area of basic subjects, accompanied by an area that is mostly industry specific. Education is however only one aspect of training. Practical experience is another, perhaps more vitally so in the case of project management. In broader terms, the management of projects within an industry entails first and foremost knowledge of and an experience in the said industry. The acquisition of project management skills devoid of any industrial application is too barren to visualise, and offers little that is of real use.

7.6.4 Certification

The part that certification plays in the professionalisation process is well documented in the moves towards certifying project management 'professionals' undertaken by PMI and Internet. In this regard, the PMI's certification programme has been in place since 1984 as compared with Internet which is only currently moving towards certification. Known as the Project Management Professional (PMP) programme in the PMI, its basic purposes are the enhancement of professionalism in project management and the provision of a
structured method to project management personnel to aid in their personal professional development.

Martin (1988) provides a valuable insight into the issue of professionalism in PMI. As the foundation of a profession, the BOK is adopted by PMI as the common denominator binding all parts of the professionalism programme together (See Fig.7.5).

With certification, the BOK serves as the basis for developing examination and for evaluation of the individual's experience and service credentials. From the educational perspective, the BOK provides the content boundaries for graduate, postgraduate, and continuing education courses in project management, and the framework for structuring research studies aimed at advancing the state-of-the-art of project management knowledge. In terms of accreditation, the BOK serves as a standard for evaluation of university curricula and industry courses. Recertification, based in part on attendance at fully accredited courses, symposia, seminars etc. over a seven year period from initial certification, completes the loop (p.12).

In keeping with its total dedication to the advancement of project management, certification is not limited to PMI members; non-members of the Institute can also apply. The entire certification process comprises nine basic steps shown in Fig.7.6.
On the same issue of certification, Internet, based on a survey of its membership (through a sample size of 438 returns), found overwhelming response in favour of professional recognition for project managers (See Gray and Larson, 1988). In addition, such recognition was seen as benefiting not only project managers but also clients and employers. It is especially of interest to note that 41.2% of the sample comprised U.K. members.

The U.K. Association of Project Managers (APM) has, since the idea of certification was first mooted within the Association in 1986, renewed efforts towards this end. Proposals for such a programme were put to its members at the 1989 AGM. These, together with a recommendation to set up a definitive procedure, were endorsed by the membership. As at early 1990, it is understood that the Professional Standards Group of the Association will be presenting its proposals in greater detail at the forthcoming Internet 1990 World Congress at Vienna. Noticeably, the U.K. association is expected to lead the certification initiative within Internet. The anticipated response and support from the rest of Internet,
especially in view of the impending single European market from 1992 onwards, will no
doubt be equally strong.

The APM is understood also to be finalising publication arrangements for a Code of
Ethics, and in the process of preparing its own set of Standard Terms of Engagement for
project management.

7.6.5 Accreditation

Through PMI, a number of Universities have gained accreditation for their project
management courses. The Master of Project Management Degree Programme at the
University of Quebec achieved PMI accreditation in 1988, and being the first formal
accreditation by PMI, marked the formalisation of PMI's process for accreditation. The
Master of Project Management (MPM) Degree of Western Carolina University's School of
Business is another such programme in the U.S. which has gained PMI accreditation.

No such formal accreditation exists in the U.K. for project management courses. Among a
number of postgraduate courses known to specialise in the area of construction
management and project management relating to property development and the
construction industries, one is directed at project management in general while another is
specifically directed towards engineering construction.

7.7 TEAM PERCEPTION OF DEGREE OF PROFESSIONALISATION IN
PROJECT MANAGEMENT

To enable an indicative assessment of the present degree of professionalisation in project
management, a more detailed framework of its characteristics is necessary. The eight-point
occupation-profession model by Pavalko (1971) provides an appropriate basis for an
investigation of this nature (p.26). For simplicity, the four sub-dimensions under 'training
period' were divided into four separate items, and the 'length of training' omitted and
substituted instead with 'Necessity for specialised training', giving an eleven-point model
which was included as Part 7 in the field questionnaire (Appendix 6.4). This portion of the
questionnaire required respondents to assess the current state of professionalisation in
project management based on each of the eleven items. The exercise seeks to answer the
question - To what extent, along various dimensions associated with the professions, can
project management be considered to be professionalised?

The idea of canvassing the external team assessment of the degree of professionalisation exhibited by the project management function is valid in a few respects. Firstly, it overcomes the inherent bias when members of a developing profession attempt to define their own practice. This should overcome Johnson's (1972) concern which we noted in an earlier section (See Section 7.3.1). Secondly, it allows us to compare, although superficially, this assessment against the clients/project managers' group assessment along all the items. Thirdly, similar to the advantage noted in Chapter 6, the use of the team's responses ensures a realistic assessment due to their close proximity to the project management role. The danger however, is the possibility that potential project managers will inadvertently grow out from such a pool of professionals. If so, prospective project managers may well display a relatively more prominent professionalisation stance, thereby nullifying the validity stated in the first point.

All eleven items were rated with five-point scales spanning the occupation-profession poles. It is stressed that each item stands separately on its own, with no permissible comparison of scale ratings across items. As Pavalko points out (p.27), there is no a priori way of determining what the relative weight of each of the dimensions should be. It therefore provides a static view of how professionalised project management is on each of the dimensions and at the current point in time. The mean ratings, considering responses from all participants, are summarised in Table 7.2.

It can be observed that relevance to social values and the importance of a subculture in its training are both perceived as relatively unimportant. The necessity for specialised training achieves an exceptionally high score indicating the consideration of the function as primarily a separate discipline altogether. Items 7-11 all achieve moderate scores. The existence of a body of theory and knowledge is not perceived to be very prominent. Some degree of specialisation in the training and its stress towards an ideational treatment are also picked up by the data. It is interesting to note that while the necessity for specialised training is scored high, the degree of specialised training is scored low in comparison.
<table>
<thead>
<tr>
<th>Dimension</th>
<th>Occupation Pole</th>
<th>1 2 3 4 5 Mean Score</th>
<th>Profession Pole</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Body of Knowledge &amp; Theory</td>
<td>Absent</td>
<td>2.84</td>
<td>Present</td>
</tr>
<tr>
<td>2. Relevance to basic social values</td>
<td>Not Relevant</td>
<td>2.66</td>
<td>Relevant</td>
</tr>
<tr>
<td>3. Necessity for specialised training</td>
<td>Unnecessary</td>
<td>4.39</td>
<td>Necessary</td>
</tr>
<tr>
<td>4. Degree of specialisation in training</td>
<td>Non-specialised</td>
<td>3.44</td>
<td>Specialised</td>
</tr>
<tr>
<td>5. Degree to which training is ideational</td>
<td>Low</td>
<td>3.10</td>
<td>High</td>
</tr>
<tr>
<td>6. Importance of subculture in training</td>
<td>Unimportant</td>
<td>2.83</td>
<td>Important</td>
</tr>
<tr>
<td>7. Motivational base for work</td>
<td>Self-interest</td>
<td>3.26</td>
<td>Service</td>
</tr>
<tr>
<td>8. Autonomy</td>
<td>Absent</td>
<td>3.46</td>
<td>Present</td>
</tr>
<tr>
<td>9. Sense of commitment</td>
<td>Short-term</td>
<td>3.97</td>
<td>Long-term</td>
</tr>
<tr>
<td>10. Sense of community</td>
<td>Low</td>
<td>3.21</td>
<td>High</td>
</tr>
<tr>
<td>11. Extent of development of Code of Ethics</td>
<td>Undeveloped</td>
<td>3.25</td>
<td>Highly Developed</td>
</tr>
</tbody>
</table>

Table 7.2: Mean Professionalisation Scores Based on All Participants

If we deal with the same data in two groupings - the Client and Project Manager groups as Group 1, and the remainder as Group 2, the two profiles obtained are shown in Fig.7.7, together with their respective mean scores.

It can be observed that higher mean ratings are given by Group 1 for seven of the eleven items on the model. The aggregation of the client group and the project manager group as Group 1, measured against the rest, provides an accurate comparison between the management group and the rest. This is further confirmed by treating group 2 (project managers) alone against all the remainder; the results are similar except for item 3 which gives reversed scores, i.e. all the other items, except item 3, remain unchanged in terms of relative magnitude.
Although the model is static and possesses heuristic quality, a replication of the same exercise after a period of, say, 1 or 2 years, may generate a different pattern over the items, which can again be usefully compared with the present data. As it stands at the time of this study however, the mean scores generated by the data based on the professionalisation model have provided useful information regarding the professionalisation status of PM along each of these dimensions, as perceived by project participants.
NOTES


REFERENCES

1. BARBER, B. (1963), 'Some Problems in the Sociology of the Professions', Daedalus, Vol. 92, No. 4, Fall, pp. 669-88.


8.1 INTRODUCTION

This Chapter draws together the two earlier dimensions of accountability - project accountability and professional accountability - and examines how both these dimensions are related to the third and last dimension in the overall framework - legal accountability.

The basis of legal liability arising from professional negligence is first discussed in Section 8.2 which highlights the whole issue of professional responsibility in law and what it entails. The current state of the law of professional negligence is briefly reviewed with reference to the growth and extension of the duty of care required of professionals. Section 8.3 focuses on the essential elements in the professional task, and can be seen to take a similar approach to that of Section 2.6 which dealt with the nature of the project management function. These two sections provide the twin foci that underlie what is fundamentally a 'professional management' role.

The retainer under which professionals are commissioned forms the subject matter of Section 8.4. The use of standard forms is considered both generally and in the case of project management. Section 8.5 provides an in-depth elaboration of the legal guidelines and principles which govern the central element of professional negligence - the standard of skill and care. The determination of a 'reasonable' standard, and in particular how this is modified, influenced, or expanded, depending on the circumstances, is given much coverage. The problem presented by hindsight is briefly discussed owing to its relevance in professional negligence actions and in the evaluation of management performance on projects.

Section 8.6 summarises the outstanding issues relating to project management that are left uncovered by Sections 8.2 to 8.5. The uniqueness of the project management role gives added emphasis to the issues of accountability definition and distribution within the project team. Reflection of these by way of attempts to exclude or restrict liability are treated together with the primary purpose of delimiting one's scope of professional services, in Section 8.7.
8.2 PROFESSIONAL NEGLIGENCE

8.2.1 Generally

"The issue of professional responsibility today is a complex one, embracing education and training, office procedures and management, the organisation of the profession, continuing education, supervision by professional bodies, complaints and disciplinary procedures just as much as actions for professional negligence. Indeed, such actions in many ways represent the ultimate test of the success or failure of many aspects of professional organisation and training." (Greer and Harkness, 1985)

It is pertinent to launch the discussion in this legal section with the above two statements for a number of reasons. (1) It puts into proper perspective the whole issue of professional negligence, demonstrating the many and various aspects of professional responsibility which can be called into play. Clearly, actions for professional negligence, while they comprise the more visible element in the sphere of a profession's practice, they are but one aspect among a host of interlocking characteristics which are equally important. (2) "Professional organisation and training" returns us to one of the core features of the professionalisation process which we examined in the last chapter. The notion of increasing accountability brought on by a higher level of professionalisation, which we tendered at the beginning of the last chapter, would appear to be supported in some degree by the expressed relationship between actions for professional negligence and professional organisation. The nexus between professionalisation and professional negligence liability is the increasing accountability. (3) While professional responsibility may be multifarious, professional accountability must be separate and quite definite, and should be the object of a more stringent test. This reinforces our very early premise which we began with, that accountability and responsibility as concepts are closely related but are however not the same. The test which professional negligence imposes is therefore one of professional and legal accountability and not merely professional responsibility. We should nevertheless appreciate that the meaning of responsibility in the legal literature does correspond very closely to the concept of accountability, as we have seen earlier (e.g. Hart, 1968 and Hamilton, 1978). Taken together, it is worthwhile remembering that, with respect to a specific profession, its level of professionalisation at a point in time determines to a large degree the extent of the reasonable skill and care that can be expected in its performance.
The issue of 'standards' is therefore very much dependent on the level of professionalisation. In setting these standards, the profession defines its recognised practice against its state of knowledge. This in turn influences the level of expert judgement that derives from it. The courts too have a part to play in setting these standards as a matter of law. Together, the standards by which a professional man is judged are thus set, partly by the profession and partly by the courts. The difficulty however is in attempting to reconcile the two, as more often than not, the interaction between the standards set by the professions and the standards imposed by courts is seen as "a constantly shifting scene" (Jackson, 1989, p.137). Notwithstanding this, the professionalisation process serves generally to raise the standard of practice thereby raising the standard of care that can be expected, as can be observed in the case of many of the more established professions.

The courts' interpretation of the professional practice requirements, it will become clear through the course of this section, may or may not coincide in toto with the pointers to practice prescribed in the professionalisation model from the last chapter. Nevertheless, the legal view is too significant to be taken lightly, and in so far as it serves to direct a convergence between professional services provided and expected, it should always be of primary concern to developing professions.

With the foregoing in mind, a number of exclusions in the intended scope of this section are considered in order. The section will not dwell in any detail on the technicalities of legal remedies, limitation of actions, and of professional indemnity coverage. These areas are capable of demanding individually separate treatment by themselves. Bearing in mind that the major concern of the section is the potential liability in the project management function in relation to its professional status, these exclusions are not seen as adversely affecting our intended purpose. No attempt will also be made to examine the historical development of professional negligence. A very useful and comprehensive account of this historical background which highlights also the part played by the contract-tort relationship and its assimilation can be found in the work of Lavers (1986).

It is proper at this juncture to point out that actions for professional negligence can arise under both contract and tort. More correctly, as far as the professional man is concerned, his obligations are regulated under civil law in two main ways, in contract and in tort. In contract, duties are fundamentally agreed between the parties, whereas in
tort, they are primarily fixed by law and are owed to persons generally. The duty of care in contract is owed by the professional to his client whereas in tort, he owes a common law duty of care not only to his client but also to other persons. We are however reminded that this obligation to exercise reasonable skill and care is not the only term which ought to be considered in professional negligence:

"A contract gives rise to a complex of rights and duties of which the duty to exercise reasonable care and skill is but one." (per Oliver J. in Midland Bank v. Hett, Stubs & Kemps. [1978], 3 All E.R. at p.611b)

This implied term for reasonable skill and care is now enshrined in The Supply of Goods and Services Act 1982. Notwithstanding this, there is nothing which prevents clients from expressly stating this requirement in their terms of engagement with the professional, as is common nowadays in most professional contracts.

8.2.2 Liability for Professional Negligence
Figure 8.1 summarises the extent of liability which a professional person can incur. In basic terms, he can be liable to his client in both contract and tort, and to third parties in tort.

It is well established that traditionally, the main source, and in some cases, the sole source, of a professional person's liability to his client is provided by his contract with the client. And although such a contract may contain an express term that he will exercise reasonable skill and care, the courts have long been willing to imply such a term in the absence of any express term. As mentioned in the previous paragraph, this implied term is now firmly embodied in S.13 of the Supply of Goods and Services Act 1982, which provides that for a supplier acting in the course of a business (where 'business' includes a profession under S.18), contracts for such services shall contain an implied term that the supplier will carry out the service with reasonable skill and care. Notwithstanding this, there are express and specific terms in any contract between the professional and his client, and liability ensues if any of these are broken, "quite irrespective of the amount of skill and care which he has exercised" (Jackson and Powell, 1987, p.8). Oliver J.'s statement in the Midland Bank case emphasises that the implied obligation of reasonable care and skill is by no means a compendious nor an exhaustive definition of all the duties created contractually by the retainer.

The tort of negligence is essentially a breach of a general duty to take care which causes damage to some other person. Lord Atkin's 'Neighbourhood Test' in Donoghue v. Stevenson [1932] A.C. 562 provides the classical definition when such a duty of care arises:-

"You must take reasonable care to avoid acts or omissions which you can reasonably foresee would be likely to injure your neighbour. Who then, in law, is my neighbour? The answer seems to be - persons who are so closely affected by my act that I ought reasonably to have them in contemplation as being so affected when I am directing my mind to the acts or omissions which are called in question."

The basis for the tort of negligence rests on three essential elements:- (1) a duty of care owed by the defendant to the plaintiff, (2) a breach of this duty, and (3) damage suffered by the plaintiff as a result of this breach.
The part played by judges and the courts in the development and extension of this is well summed up by Lord Hacking (1987) - "Each of these elements in the law of negligence turn on the current standards which judges feel society is asking them to apply on their behalf. Hence, since Lord Atkin's famous dictum in Donoghue v. Stevenson, there has been a progressive raising of the standard of care expected of defendants" (p.2). It can be seen that, over the years since Donoghue v. Stevenson, the duty of care has been extended by the courts to areas "where previously no remedy existed or the existing remedies appeared to be inadequate" (Jackson and Powell, p.9). This general willingness of the courts to extend the Donoghue v. Stevenson principle is best described by Lord Wilberforce in Anns v. Merton LBC [1978] A.C. 728 :-

"Through the trilogy of cases in this House - Donoghue v. Stevenson [1932] A.C. 562, Hedley Byrne & Co. Ltd. v. Heller & Partners Ltd. [1964] A.C. 465 and Dorset Yacht Co. Ltd. v. Home Office [1970] A.C. 1004, the position has now been reached that in order to establish that a duty of care arises in a particular situation, it is not necessary to bring the facts of that situation within those of previous situations in which a duty of care has been held to exist. Rather the question has to be approached in two stages. First one has to ask whether, as between the alleged wrongdoers and the person who has suffered damage there is a sufficient relationship of proximity or neighbourhood such that, in the reasonable contemplation of the former, carelessness on his part may be likely to cause damage to the latter - in which case a prima facie duty of care arises. Secondly, if the first question is answered affirmatively, it is necessary to consider whether there are any considerations which ought to negative, or to reduce or limit the scope of the duty or the class of person to whom it is owed or the damages to which a breach of it may give rise ...

This two-stage test, known as the Anns test, continued to guide the courts in determining the existence of a duty of care and its precise scope, and was applied in Junior Books Ltd. v. Veitchi Co. Ltd. [1982] 3 All E.R. 201, considered as adding a fourth decision to the 'trilogy' of cases (Greer and Harkness, 1985). According to Lord Roskill, the proper control of the extent of a defendant's liability lies not in asking whether the proper remedy should lie in contract or tort nor in artificial distinctions between physical and economic or financial loss, but in establishing whether there is a 'sufficient relationship of proximity' and then whether there are any considerations affecting the scope of the duty. Junior Books is however considered as the turning

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point in the determination of duty of care based on the Anns test. There is apparent disillusionment in the adequacy of the Anns test in all circumstances, in the cases following Junior Books, and its appropriateness as the sole test for duty of care has since been criticised in English courts and in other common law jurisdictions. Accordingly, arising from the Privy Council's decision in Yuen Kun-Yeu & Others v. A.G. of Hong Kong [1987] 2 All E.R. 705, the Anns two-stage test is no longer considered as an appropriate guide to a duty of care in all circumstances (Martin, 1988).

More recently however, after standing for some 13 years, the decision in Anns has finally been unanimously overruled in the House of Lords in Murphy v. Brentwood D C [1990] 2 All E.R. 909, where it was held that the local authority was not liable in negligence to a building owner or occupier for the cost of remedying a dangerous defect in the building arising from negligent failure of the authority to ensure design or erection to applicable standards, as the damage suffered was neither material nor physical damage but purely economic loss. Literal application of the Anns decision and the logical difficulty in relating it to the previously established principles of the tort of negligence were found to have given rise to anomalies and considerable litigation, a point already noted in the earlier case of D & F Estates v. Church Commissioners for England [1988] 2 All E.R. 992. In the words of Lord Keith in the Murphy case:

"I think it must now be recognised that it (i.e. Anns) did not proceed on any basis of principle at all, but constituted a remarkable example of judicial legislation. It has engendered a vast spate of litigation, and each of the cases in the field which have reached this House has been distinguished. Others have been distinguished in the Court of Appeal. The result has been to keep the effect of the decision within reasonable bounds, but that has been achieved only by applying strictly the words of Lord Wilberforce and by refusing to accept the logical implications of the decision itself. These logical implications show that the case properly considered has potentiality for collision with long-established principles regarding liability in the tort of negligence for economic loss. There can be no doubt that to depart from the decision would re-establish a degree of certainty in this field of law which it has done a remarkable amount to upset." (p.923)

The decision in the Murphy case has further been applied by the House of Lords in Department of the Environment v. Thomas Bates & Son (New Towns Commission, third
party) [1990] 2 All E.R. 943, where again, purely economic loss was suffered by the plaintiffs, there being no damage to a building and no imminent danger to personal safety and health.

Jackson and Powell (1987) summarise the substantial extension of liability in the context of professional negligence in terms of four developments:-
(1) the concurrent liability of the professional to his client,
(2) the wider range of persons to whom the professional owes a duty of care,
(3) the elimination and restriction of the traditional immunities, and
(4) the narrowing of protection afforded by the Limitation Acts. (p.11)

Concurrent liability refers basically to liability of a defendant in either contract or tort at the election of the plaintiff. The basis of such election is guided by the differences existing between the rules and procedures of tort and contract, e.g. limitation periods, available defences, and measure of damages. Limitation of actions is recognised as one of the major reasons which have led the courts to recognise concurrent liability.

In Bagot v. Stevens, Scanlon & Co. [1966] 1 Q.B. 197, it was maintained that any action brought for failure to comply with a contractual duty under a contractual relationship, was not merely an action founded on contract but an action founded upon contract alone. Although subsequent cases in the 1970s demonstrated a departure from this approach towards an admission of concurrent liability, the case of Tai Hing Cotton Mill Ltd. v. Liu Chong Hing Bank Ltd. [1985] 2 All E.R. 947 appeared to mark a reversal:-

"Their lordships do not believe that there is anything to the advantage of the law's development in searching for a liability in tort where the parties are in a contractual relationship. This is particularly so in a commercial relationship." (per Lord Scarman at p.957)

It has been suggested that "the 'contract only' approach may well be appropriate only in those cases where there is a detailed contract of retainer between the professional man and his client" (Jackson and Powell, p.13).

In tracing the progressive change in the law of negligence and highlighting the increasing liability facing the professions, Lord Hacking stresses that the causes do not simply rest with extensions to the law of negligence by judicial decision. Increased
liability imposed by Parliament, e.g. through the Financial Services Act, and the fact that professionals often have wider responsibility and also owe a duty to a wider number of persons, have also contributed to this increased liability (House of Lords, 1987, p.1466).

Since Lord Atkins' test, there are now many more neighbours and a greater range of damage which has been held sufficiently 'foreseeable' for the professional to be liable (Hacking, 1987, p.3). While on the one hand the duty of care is owed to a wider range of parties, e.g. duty of a solicitor to the beneficiary in a client's will (Ross v. Caunters), on the other, the standard of care has been raised with the increase in scientific knowledge. Claims can now be brought separately from the law of contract, i.e. there is a duty owed in tort independent of the duty owed in contract (Midland Bank case), and can also be made for pure economic loss that is not associated with physical damage, as in Esso Petroleum (House of Lords, p.1464). The raising of the standard of care is an inherent component of professionalisation of any occupation. It marks an increase in legal accountability that is brought about essentially by increased professional accountability.

Where third parties are concerned, two situations are envisaged in which the professional is held to owe a duty of care:- (1) where a report or certificate is issued by the professional with knowledge that this will be shown to a particular third party or class of third parties with the view of inducing a certain course of action, and (2) where work in which the professional is engaged is intended to benefit some third party (Jackson and Powell, p.14).

Not only negligent acts or deeds can give rise to a cause of action. Negligent statements, referred to as misstatements, can also give rise to a cause of action. The basis of liability in negligent statements is well established in Hedley Byrne & Co. Ltd. v. Heller & Partners Ltd. [1964] A.C. 465 - there must exist a 'special relationship' between plaintiff and defendant, and there must be reliance placed by the plaintiff on the advice:-

"If someone possessed of a special skill undertakes, quite irrespective of contract, to apply that skill for the assistance of another person who relies upon such a skill, a duty of care will arise ... Furthermore, if in a sphere in which a person is so placed that others could reasonably rely upon his judgement or his skill or upon his ability to make careful inquiry, a person
takes it upon himself to give information or advice to, or allows his information or advice to be passed on to, another person who, as he knows or should know, will place reliance upon it, then a duty of care will arise."
(per Lord Morris)

A recent re-statement of the well established principles concerning negligent misstatements in *Hedley Byrne* can be found in the Court of Appeal case of *Caparo Industries plc v. Dickman* [1988] B.C.L.C. 387 where it was decided that an auditor owed a duty of care to a shareholder who was an investor whether the shareholder was a potential buyer or seller of the shares. This has however now been reversed on appeal to the House of Lords (*Caparo Industries plc v. Dickman & Others* [1990] T.L.R., p.30) with the current ruling that auditors of a public company's accounts owed no duty of care in carrying out the audit to members of the public who relied upon the accounts in deciding to buy shares in the company. Needless to say, the direction of the courts arising from this decision, is felt to be unclear. One letter sums up the situation very aptly:- "Now, by its decision, the House of Lords has shot the plaintiff whom the negligent auditor has most to fear." 1

In the context of construction, it is obvious that the Client in project management qualifies as a 'neighbour', based on the legal fundamentals. Furthermore, the rest of the participants in the team are also likely to be owed a duty due to their proximity to the project manager. Information by the project manager, such as performance reports on the team members, will clearly be relied upon by the Client, in the absence of any direct access between the Client and such other parties.

8.3 NATURE OF THE PROFESSIONAL TASK GENERALLY

8.3.1 Exercise of Judgement and Dependency on Others

Much professional work, irrespective of which profession we are referring to, involves a large measure of judgement, and occasionally, this judgement can be at fault (House of Lords, 1987). This informed judgement is observed to be an important characteristic of the construction professions where most of the advisory and design roles entail the assessing of uncertainties (DTI, 1989). Given this fundamental nature of the professional input, as in all cases of the exercise of judgement, there will be occasions when this input will be wrong or mistaken. And on such occasions, it is not necessarily
the case that there is in fact professional negligence. Legal support for this is now available in that an error of judgement may or may not constitute negligence. We shall return to this when we discuss the standard of skill and care.

The project management role is unique in terms of this characteristic of informed judgement. The judgement that it undertakes involves the input and contribution of the rest of the team. Its framework of judgement comprises the professional input and judgement that comes from the team members. Herein lies the dilemma which typifies so much of the project management task. In one sense, its role cannot infringe on the professional contributions of the team, and in another, it is precisely this independent management role of dealing with the professional contributions of the team which demands that it acts accordingly in unifying all the contributions. This problem is well reflected in the tension between accountability for the performance of the PM role and accountability for the responsibility of others. The Project Manager's accountability for the responsibility of others is however limited to their performance responsibility in general; it would normally not cover the technical and specialised aspects.

This unique problem for management, indeed for project management, is well highlighted and described in the report by DTI (1989). Referring to the nature of the interdisciplinary inputs in the construction case, especially their interdependence, it points out that:

"... a less than adequate performance by one participant can create additional tasks for others and management can become overwhelmed by the volume of the work entailed in resolving uncertainties and correcting mistakes. Attempts to define liability must fail. Construction has many discontinuities and inter-relationships, which change as projects progress. There are opportunities for misunderstandings and mistakes especially if one or other of those involved under-performs. Most consultants would accept liability for their own activities. In practice, their liability is much affected by the acts or omissions of others" (p.72).

This cross-effect that arises in the acts or omissions of all participants is all the more critical in the case of project management for two reasons: - (1) it is essentially this joint effort which it undertakes to manage, and (2) its performance is almost entirely dependent on the performance of all the participants.
8.3.2 Innovation

Closely related to this large measure of judgement which exists in professional work generally is the degree of innovation which exists particularly in some professions, especially in the medical and the design professions. The report on professional liability by the ICE (1989) to the DTI Study highlights the effect of professional negligence on this innovation. New methods and/or solutions that are as yet untried will no doubt, in the light of the existing professional negligence climate, meet with extreme caution. The general tendency to play safe will act to deter innovation, thereby denying both the profession and the public the advancement which inherently attaches to professionalisation. More prominently, the threat of professional negligence liability arising from error of judgement will affect innovation in the form of defensive working. The need to be doubly sure and doubly safe leads to unnecessary qualification of advice, more extensive and comprehensive tests and studies, and over-design, all of which add up to make the service more expensive. The solution may not however be any more economic. Capper and Uff (1988), in their report to the same DTI Study Team, sum up this negative effect on innovation:

"The situation may now have reached the point where the only real protection for the professional is to be found in the avoidance of untried methods and the adoption of a conservative approach. This is hardly acceptable. There is a strong case for developing a climate in which expertise will flourish rather than be stifled." (p.38)

Although the nature of some professional work may focus on the achieving of a specific result, there is generally no guarantee of a specific result or of a successful result in most examples. This point will also be taken up in a following subsection on the standard of care and skill.

In addition to the foregoing aspects of the nature of the professional task, a number of features pertaining to the wider context of professionals' activities in construction are worth highlighting. Professionals in construction owe duties not only to their employers but also to other members of the team arising from their independent role. They may also act as part of a team, as in 'package deal' cases. Occasionally too, they may offer an expansion in their range of services, e.g. assuming responsibility for financial aspects of the project (Capper and Uff, 1988).
8.4 THE RETAINER AND TERMS OF ENGAGEMENT

8.4.1 Scope of the Retainer

The retainer and its terms of engagement will govern the extent of a professional's involvement and performance. Even where a duty of care is implied, this must always be related to what the professional person is instructed to do, as spelt out by the terms and limits of his retainer (per Oliver J. in Midland Bank case). In practice, the scope of such a retainer can vary quite substantially between two extremes, from "a lengthy, detailed, written document" to "a short, informal, perhaps largely oral agreement" (Greer and Harkness, 1985, p.4). Exactly what a professional person is instructed to do in a particular case can give rise to disagreement. This is more so where the potential scope of services is wide and where the client's instructions are not recorded in writing (p.5).

The scope of a retainer is therefore limited by what a professional person is requested and undertakes to do. His duty is "directly related to the confines of his retainer", and general retainers which impose a duty to consider all aspects of a client's interest whenever a professional person is consulted, are seldom accepted by the courts. In rejecting the existence of a general retainer, Oliver J. in the Midland Bank case stressed that the extent of a solicitor's duties in that case "depends on the terms and limits of that retainer and any duty of care to be implied must be related to what he is instructed to do", and that "the court must beware of imposing on solicitors, or on professional men in other spheres, duties which go beyond the scope of what they are requested and undertake to do" (1978, 3 All E.R. 571, at p.583).

Notwithstanding this, there may be instances when a wider duty to protect a client's interests may be imposed even within the context of the retainer, as when risks are identified in the course of taking instructions; the professional person should then call attention to and advise upon the risks instead of merely advising within the strict limits of his retainer (Royce v Rendells [1983] 268 E.G.).

It would appear that the exact scope of a retainer, especially when it is not detailed and in writing, would give rise to differing interpretation. Where no specific instructions are given, the professional person may be required to inform himself of the exact nature of
his client's interest. But even when the retainer is in writing, the exact wording used can often give rise to ambiguity. Thus the instruction to obtain insurance cover for a certain business extends to all its foreseeable risks, and the professional person should inform himself thoroughly about his client's business in order to ascertain all the foreseeable risks (Fines Flowers Ltd v. General Accident Assurance Co.[1978] 81 D.L.R.).

8.4.2 Standard Forms

Although standard forms are common for most of the construction professions, up to recently, there has been no standard form available for project management in particular. The RICS (1989) publication now provides such a standard document which can be adopted for use. It is understood, at the time of the writing of this report, that this new form has been adopted for use by many practitioners in the project management field, being the only form that is officially available at present. Work is also being undertaken by the Association of Project Managers, U.K., towards producing a set of conditions of engagement which would cater to project management practice across industries, i.e. not restricted only to construction.

While there is no such equivalent standard form in the public sector, the 'Project Manager' does however feature centrally in the GC/Works/1 - Edition 3 form of contract (General Conditions of Contract for Building & Civil Engineering, Standard Form of Contract - Lump Sum with Quantities, December 1989) published by the DOE, as:

"the official of the Authority (i.e. the employer) or other person employed in that capacity, named ... and appointed by the Authority to act on his behalf ... for the purpose of managing and superintending the Works" (p.1).

The Project Manager in this 3rd Edition virtually replaces the SO (Superintending Officer) in the 2nd Edition (September 1977), and carries all the powers of certification, instruction and approval that are usually associated with the SO's role.

The need for standardised conditions of engagement for project management has been stressed rather extensively in recent years. As a means of coordination, it is recognised as
providing concrete benefits such as:– (1) consistency - allowing proper comparison of performance and costs between projects, (2) saving in bargaining time and other transaction costs, and (3) practice application - with the greater likelihood that the courts' interpretation would achieve mutual understanding by other parties transacting on similar terms (Mastrandrea, 1986, p.126).

Referring to the principal forms of conditions of engagement in use for the construction professions, the questionnaire survey of the DTI (1989) study found current conditions widely criticised as failing to:

- identify the class of service to be provided;
- identify and allocate inherent risks;
- make clear the role of insurance;
- identify the skills to be provided;
- take sufficient account of the realities of modern construction which may require the coordination of the designs and progress of many consultants and specialist suppliers;
- take sufficient account of the form of contract to be employed and of post-tender coordination; and
- avoid awkward gaps and ambiguities (p.75).

The report points out that the composite set of conditions of engagement negotiated by the Department of Health is a good example of one which matches its requirements, and recommends that such integrated and consistent conditions ought to be developed as models for appointment and risk allocation, and to provide a reliable basis for negotiation (p.76). Needless to say, all the pointers above are useful considerations in the preparation and use of any standard form for project management.

According to the report, "terms of engagement for professionals are usually brief and expressed in general terms', and additionally, "the brief is also expressed in terms of the project or other intended purpose, often with little or no reference to the way in which the commission will be fulfilled" (p.93).
8.4.3 Retainers for Project Management

With regard to project management, Knowles (1986) stresses that, owing to "the differing roles which the project manager can be expected to perform it is essential for any agreement to set out in precise terms those duties" (p.11). If care is not taken, there is always the danger that, in the extreme case, the guarantee of a result, as is common in design and build cases where there is a fitness for purpose clause, may well be imposed on a project manager. This, according to Knowles, can happen if for example, a project manager undertakes an obligation to ensure "the building is completed to time to specification and to budget", "it may be deemed by a court as guaranteeing the result, and any failure may amount to a breach of contract" (p.11).

But even the precise setting out of the project manager's duties in his conditions of engagement can still leave room for differing interpretations where his real degree of input in the respective duties remains vague. The move towards standardised conditions of engagement has however served to overcome at least the initial problems caused by unclear role definition of project management. Care must be taken if standard conditions are adopted for use as not all the standard services commonly listed may be provided, and if provided, may be to differing degree and extent, in any particular case.

Where professionals choose to incorporate specific exclusion clauses in their terms of engagement, these have to comply with provisions under the Unfair Contract Terms Act 1977. This aspect relating to the retainer will be taken up in section 8.7 which deals with exclusion and restriction of liability.

It is possible that, owing to the extensive involvement of the project management task in the contributions of the other professional participants, a greater need is felt for the use of such exclusion clauses in its terms of engagement.

8.5 THE STANDARD OF SKILL AND CARE

8.5.1 'Reasonable' Standard

A number of rules can be seen to govern both the implied contractual duty to exercise reasonable skill and care and the duty of care in tort, and it is to an assessment of these
that the discussion now turns. The standard is determined by reference to members of
the profession concerned, i.e. in situations which involve use of some skill or
competence, "the test is the standard of the ordinary skilled man exercising and
professing to have that special skill." "A man need not possess the highest expert skill;
it is well established law that it is sufficient if he exercises the ordinary skill of an
ordinary competent man exercising that particular art" (per McNair J. in Bolam v.
Friern Hospital Management Committee [1957] 1 W.L.R. 582). This has come to be
known as the Bolam test, and has been approved in Privy Council and in House of
Lords decisions since.2 The 'ordinary skilled man' has more recently been referred to
as a "reasonably competent professional man" (per Lord Fraser in Whitehouse v.
Jordan [1981] 1 W.L.R., at p.281), thereby putting the standard to be achieved as that
attained by 'reasonably competent' members of the profession, and not merely ordinary
skilled members. Even so, there appears to be some latitude in standards to be applied,
between that which members of the profession do in fact ordinarily achieve and that
which members ought to achieve in the opinion of the court. The latter standard is well
reinforced in the Midland Bank case where the court states that the extent of the legal
duty in any given situation must "be a question of law for the court" (p.402C). Thus if
reference is made to 'reasonably competent' members of a profession, it would fall
upon the court to decide what the term means. It is pointed out that 'reasonably
competent' members need not necessarily be equated with practitioners of average
competence (Jackson and Powell, p.16).

Exercise of reasonable skill and care means precisely what it states, and is not intended
generally to indicate a standard of perfection or a guarantee of success in every case.
Tindal C.J., in a medical case as early as 1838, clarified this position:

"Every person who enters into a learned profession undertakes to bring to
the exercise of it a reasonable degree of care and skill. He does not
undertake, if he is an attorney, that at all events you shall gain your case,
nor does a surgeon undertake that he will perform a cure; nor does he
undertake to use the highest possible degree of skill." (Lanphier v. Phinos
1838) 8 C.&P. 475

In the words of Lord Denning M.R. in the Greaves case - "The law does not usually
imply a warranty that (a professional man) will achieve the desired result, but only a
term that he will use reasonable care and skill" (p.1100D). Megarry J. stresses the point
very clearly - "On any footing, the duty of care is not a warranty of perfection."
Given this general position, it must be stressed that certain professions are more prone to experiencing failures in the course of their work. Different professions would in practice experience varying degrees of success. Arising from this, the expectations created by different professions, or even by different branches within the same profession, can vary (Jackson and Powell, 1987, p.6).

Compliance with the profession's common professional standards will not necessarily afford a good defence (Edward Wong Finance Co. Ltd. v. Johnson, Stokes Master [1984] 2 W.L.R. 1). It is up to the courts to determine if there is negligence, and mere compliance with general and approved standards does not bind them to these standards within a profession. Notwithstanding this, establishing the standard by reference to the general and especially approved practice in the profession still constitutes important evidence. Although this assists the court, the decision of what is required to discharge the standard is essentially a matter for the court having regard to the circumstances of each particular case.

8.5.2 Experience and the Issue of Source Discipline

The question of qualifications and experience, and how these influence the standard of skill and care to apply in a particular case, is an area that continues to be treated differently by the courts. Should the professional be judged according to the standard appropriate to a practitioner with his particular qualifications and experience or according to the standard appropriate to his profession generally? One preferred view suggests reference to the standard of skill and care appropriate to members of the defendant's profession who have the same status or formal position as the defendant (Jackson and Powell, 1987, p.17). This point is of particular significance in the project management scenario where it is common to find project management services being offered and undertaken as additional services by professionals from the other disciplines. Within such services, there are vast differences too in the levels of specialisation. Thus, surveyors and architects who undertake work as project managers will clearly find themselves judged according to the standard applicable to project managers. To some degree, firms have attempted to overcome this by deliberately setting up separate firms devoted specially and solely to project management, apart from their original organisations. It is however possible that the source discipline of professional consultant project managers may still impose a somewhat higher standard of skill and care on matters especially related to their source disciplines. There are no
cases in point, but given the unique base of project management as a special case of professionalisation discussed in the last chapter, it is probable that this issue can arise.

Although its legal implication is unclear, Knowles (1986) raises the question of a possible difference in standards applied to a duty of care in such instances:

"If the project manager is alleged to be in breach of his obligations in not noticing a design fault, will the duty be a more onerous one if the project manager is an architect or engineer than would be the case if the project manager is a QS (Quantity Surveyor)?"

According to Knowles, "where ... the project manager is an architect or engineer his depth of knowledge of design would in normal circumstances be much greater than that of the QS", a duty to study the drawings and specifications in order to sanction (this being a specific job function required of the Client's Representative within the context of the British Property Federation system, whose role is regarded as a close parallel to that of the project manager, although there are some differences) them "would in all probability be expected to notice any obvious design faults and if he failed to notice the fault he may have a liability" (p.11).

A close parallel to this relationship with one's source discipline is the observation by Madge (1986) regarding directors, that there has been a shift in recent years towards a higher standard expected of directors with qualifications or experience in, say, accountancy, law or finance. The move towards more professional directors is seen as leading the law to look for correspondingly higher duties.

On this point of one's own base discipline, and in relation to the specialist skill which the Bolam test prescribes, it is advisable that consultants recognise what their traditional service skills are, and understand that the provision of project management type services must be a conscious and deliberate decision based on available expertise. Thus, to undertake project management work merely to preserve one’s good relations with a client when one is traditionally practising in some other discipline can lead to serious consequences (Mastrandrea, 1986).
8.5.3 A Higher Standard

There may also be instances where the Bolam test does not strictly apply, as when professionals who are specially and highly skilled or who have special experience, are employed by clients with this clearly in mind, thereby calling for what appears to be a higher standard. Megarry J. first raised this question in a case concerning the standard of care required of solicitors:

"No doubt the inexperienced solicitor is liable if he fails to attain the standard of a reasonably competent solicitor. But if the client employs a solicitor of high standing and great experience, will an action for negligence fail if it appears that the solicitor did not exercise the care and skill to be expected of him, though he did not fall below the standard of a reasonably competent solicitor? If the client engages an expert, and doubtless expects to pay commensurate fees, is he not entitled to expect something more than the standard of the reasonably competent? I am speaking not merely of those expert in a particular branch of the law, as contrasted with a general practitioner, but also of those of long experience and great skill as contrasted with those practising in the same field of the law but being of a more ordinary calibre and having less experience. The essence of the contract of retainer, it may be said, is that the client is retaining the particular solicitor or firm in question, and he is therefore entitled to expect from that solicitor or firm a standard of care and skill commensurate with the skill and experience which the solicitor or firm has. The uniform standard of care postulated for the world at large in tort hardly seems appropriate when the duty is not one imposed by the law of tort but arises from a contractual obligation existing between the client and the particular solicitor or firm in question." (Duchess of Argyll v. Beuselinck [1972] 2 Lloyd's Reports 172 at p.183)

The higher duty, according to Megarry J., arises in contract through the retainer rather than in tort.

In "Design" cases too, a higher duty can be imposed as in a case where consultant engineers were held liable for designing a floor which was inadequate for its known purpose (Greaves & Co. (Contractors) Ltd. v. Baynham Meikle & Partners [1974] 3 All E.R. 666) The Bolam test was not strictly applicable in this case owing to the
special circumstances of the case, as there had been knowledge regarding vibration.

A few points may be relevant here. Is the client particularly employing a professional and a firm of special skill and experience? Does the professional and the firm in fact possess such greater skill and experience? Has it represented to the client this greater skill and experience when undertaking to render services, thereby incurring a higher obligation?

More recently, the Bolam test was challenged in the Wimpey case concerning a professional indemnity policy where counsel for the plaintiffs sought to put two glosses on the test for the purposes of the case - (1) that the test is not applicable if the client "deliberately obtains and pays for someone with specially high skills", and (2) that "it is the duty of the professional man to exercise reasonable care in the light of his actual knowledge and that the question whether he exercised reasonable care cannot be answered by reference to a lesser degree of knowledge than he had, on the grounds that the ordinarily competent practitioner would only have had that lesser degree of knowledge" (per Webster J. in Wimpey Construction UK Ltd. v. D.V.Poole [1984] 2 Lloyd's Law Reports 499 at p.506). Webster J., although he considered Kilner J.'s judgement in the Greaves case, maintained that that decision rested on 'special circumstances', and ruled accordingly that the test remained unqualified. The submission of the second gloss was accepted but was not regarded as a gloss upon the test. He regarded the test as "... only to be applied where the professional man causes damage because he lacks some knowledge or awareness" and that it "establishes the degree of knowledge or awareness which he ought to have in that context". "Where, however, a professional man has knowledge, and acts or fails to act in a way which, having that knowledge he ought reasonably to foresee would cause damage, then, if the other aspects of duty are present, he would be liable in negligence by virtue of the direct application of Lord Atkin's original test in (Donoghue) v. Stevenson ... " (pp 506-7).

8.5.4 State of Knowledge in the Profession

Apart from the general standard of practice in the profession, the current state of knowledge within the profession also plays a part in the determination of the requisite standard. In the medical cases, it is generally accepted that advances in knowledge between the date of alleged negligence and the date of the actual case should be ignored when assessing the exercise of reasonable skill and care.
If a professional does not possess the knowledge or expertise required by his client, he is required to inform the client accordingly, and may propose or recommend seeking specialist advice and assistance if necessary. This point is relevant to the project manager's role in two respects. Firstly, the project manager almost certainly recommends the employment of the required consultants, given the specific requirements of the project. In this respect, the appointed consultants should of necessity possess the requisite skills. Secondly, where a consultant subsequently finds himself to be lacking with regard to certain specialist skills, it will fall upon the project manager to determine the appropriate manner in which to obtain the said skills.

Where a professional, arising from his lack of certain skills, does bring in a specialist and the specialist is duly appointed, it would appear that legal responsibility for the work in question passes to the expert. In the Court of Appeal case of *Investors in Industry Limited v. South Bedfordshire D.C.*, Slade L.J. was of the view that the RIBA clauses contemplated such recommendation of other experts where specialist knowledge or skill went beyond an architect's ordinary competence. If pursuant to this recommendation, a consultant is appointed, the architect would normally carry no legal responsibility for the work, but instead would be legally responsible for directing and coordinating the expert's work in the whole, with the exception that if any danger or problem arose, it would be the duty of the architect to warn the client ([1986] 1 All E.R. 787 at pp 807-8).

Boxer (1986) highlights an important question raised by the same case - "to what extent can one professional consultant who is, for example, the leader of a team of professionals in a project rely on the particular skills and expertise of another professional without having to 'second guess them'" (p.3). The leadership role which the project manager assumes makes this question extremely pertinent. The reliance on consultants' skills and expertise is a constant feature of project management. The usual problem which arises concerns the degree of infringement by the project manager when proposals from consultants are vetted and modified. This problem appears to be more pronounced in construction where, according to Boxer, "the merging of the various responsibilities adopted by the professional parties employed is sometimes very difficult to identify" (p.3).
8.5.5 The Problem of Hindsight

The inevitability of advancement in knowledge over time brings out a more pertinent concern which the courts have constantly stressed in professional negligence cases - that judgement on hindsight should be avoided. In design cases therefore, the conduct of designers must be judged by the standard of the time at which the design was carried out and not by any later standards. The fact that consequences of a design are now known must be disregarded (per Webster J. in Wimpey case at p.507).

Megarry J. summarises this necessary avoidance of hindsight very succinctly in the Duchess of Argyll case:

"In this world there are few things that could not have been better done if done with hindsight. The advantages of hindsight include the benefit of having a sufficient indication of which of the many factors present are important and which are unimportant. But hindsight is no touchstone of negligence. The standard of care to be expected of a professional man must be based on events as they occur, in prospect and not in retrospect." (p.185)

The danger of hindsight is especially relevant in the context of the management of projects. Projects, by their very nature, face a multitude of impacting factors which are generally very dynamic. They can go wrong due to any one of a numerous number of reasons. But the failure of projects in any sense does not necessarily mean that its management has been negligent. More accurately, it is a question of management prudence, and in this respect, evaluation and determination is mainly in retrospect. Fox (1984) offers some valuable pointers in his proposed framework for such inquiry and evaluation, which are clearly of relevance to the discussion here. As an after-the-fact qualitative evaluation of the management process, the question of management prudence is essentially a question of reasonableness of the managerial process. He argues that such an evaluation differs from a conventional management audit, where there is an observation to be made and a lesson to be learned whenever management actions fail to produce optimal results. Evaluation of prudence is contrastingly different as it "must be designed to judge the reasonableness of management decisions, considering the circumstances occurring at the time decisions were made" (p.130). It must take into account a project's complexity and volatility, the types of interrelated tasks involved, and with what experience has demonstrated can be achieved in a specific context. According to Fox, reasonable (prudent) decisions do not guarantee
high-quality performance on schedule and within budget, and budget overruns, schedule slippages, and technical performance shortfalls do not necessarily signify imprudent management. He points out that, in sum, "determining whether a management process was imprudent is fundamentally different from concluding that some other decision would have been preferable" (p.131). In respect of such decisions, Fox highlights the pitfalls of hindsight as follows:

(1) It ignores much of the environmental 'noise' clouding issues at the time decisions have to be made,
(2) It ignores requirements for managers to negotiate solutions and make trade-offs among competing demands for limited resources,
(3) It tends to assume that an area in which problems developed should have commanded major management resources before the problems occurred,
(4) It makes it possible to second-guess the assignment of time, skills and funds to better match the magnitude of problems subsequently encountered with the resources available for solving them,
(5) It involves the assumption that problems which arose had origins that should have been evident when the decisions were made, and
(6) It is likely to underestimate, or even ignore, the costs of alternative actions. (p.132-133)

Given these limitations upon a reasonable evaluation, the task is essentially a clear reconstruction of events, resources, and norms prevailing at the time of the management action. This is an enormous task and demonstrates the criticality of a sound enquiry of all the circumstances as the basis for determining any imprudent management performance. The implication here for examining possible professional negligence within a professional management task must accordingly be appreciated. The problem is further exacerbated by the fact that the outcomes of management decisions, in terms of success or failure, are usually not immediately evident (Hague, 1971, p.358).

8.5.6 The Client's Experience

It is also possible that the scope of the duty is dependent on the client's level of experience. In Carradine Properties Ltd. v. D.J. Freeman & Co.[1982] 126 S.J. 157, a case concerning solicitors' failure to make inquiries regarding insurance, it was held
that the scope of the solicitor's duty to exercise all reasonable care and skill in and about his client's business depended on the client's apparent need for advice. An inexperienced client required more advice than an experienced one. Cases such as this serve to illustrate the issue of contributory negligence. The sophistication of the client, in particular, the extent to which he appreciated the risks involved in the intended transaction, is seen as a crucial factor in determining whether there has been a breach of duty by his professional advisers (Dugdale, 1986, p.181).

This issue has important implications for the consultant project manager who is likely to be commissioned by clients with varying degrees of experience on property development and construction matters, from the very established and experienced property developer to one who is in some other field of business or is embarking on a project first time. If, as is commonly the case, clients choose to employ project managers in order to fill the gaps in their available in-house expertise, it would be prudent that the prospective managers satisfy themselves as to the precise nature of these gaps before appointment.

The recent increase in the use of collateral warranties has also served to extend duties to third parties by overcoming the privity of contract doctrine. It is now common to find such contracts being required by clients to be entered into between their professional advisers and their financiers, purchasers and tenants. Capper and Uff (1988) point out that the likely consequence of such measures is to slowly transform the professionals' exercise of reasonable care to a provision of performance guarantees in respect of their work.

8.5.7 The Relevant Standard in Project Management

Following the guidance rules that have been elaborated on, it remains to determine the relevant standard of skill and care to apply in the case of project management. A number of difficulties are evident. In the absence of any official guidelines to the effect, the practice of project management presents difficulty in terms of what an ordinary practitioner, or for that matter, what the reasonably competent practitioner is. With its state of professionalisation still very much in transition, the problem is then two-fold. Recourse to expert witnesses, a process which characterises professional negligence cases, is itself a difficult matter given the wide difference in opinion regarding what project management is and what it does. The more critical problem is that there is no
general or approved practice in the profession by which one can refer to in attempting to establish a standard. In so far as the state of practice in the profession still lacks definition and uniformity, an easy solution to the problem does not appear to be in sight. All this is further compounded by the fact that management performance is predominantly dependent on and by way of the performance of others whose contributions come within the ambit of the project manager. The difficulty is in determining the degree to which non-performance or inadequate performance by these others can be reflected as non-performance or inadequate performance in the management function. On this note, it is submitted that, by virtue of its extensive involvement in the performance of so many others, the probability of shared legal responsibility must be correspondingly high.

The use of expert evidence to assist the court in professional negligence cases is not without its problems however. Oliver J., in the Midland Bank case, stressed the court's function in deciding questions of law, and cautioned on the use of expert witnesses:-

"I doubt the value, or even the admissibility, of this sort of evidence, which seems to be becoming customary in cases of this type. The extent of the legal duty in any given situation must, I think, be a question of law for the court. Clearly, if there is some practice in a particular profession, some accepted standard of conduct which is laid down by a professional institute or sanctioned by common usage, evidence of this can and ought to be received. But evidence which really amounts to no more than an expression of opinion by a particular practitioner of what he thinks he would have done, had he been placed, hypothetically, and without the benefit of hindsight in the position of D (defendant) is of little assistance to the court, whilst evidence of the witnesses' views of what, as a matter of law, the solicitor's duty was in the particular circumstances of the case is, I should have thought, inadmissible, for that is the very question which it is the court's function to decide." (p.582)

In the Carradine case, expert evidence was rejected on account that it was the solicitor's view of what in law the duty was and not that of the established practice. If expert evidence was admissible it had to be evidence as to the best and accepted practice in a profession. One view of Oliver J.'s dictum in the Midland Bank case suggests that while the court may be able to form its own opinion in solicitors' negligence cases, expert evidence in say, medical cases, are clearly necessary, and in such cases Oliver
J.'s dictum is deemed inapplicable (Jackson and Powell, 1987, p.310).

Lord Denning, in Greaves & Co. (Contractors) Ltd v. Baynham Meikle & Partners [1975] 1 W.L.R. 1095, expressed the inadmissibility of evidence which showed that other designers might have done the same as the defendant, on the reasoning that other designers might have fallen short too, and stressed that it was for the judge to set the standard of what a competent designer might do. It has been suggested that the fact that other designers might have fallen short is surely the strongest evidence for a finding of non-negligence, and that the ability of a judge to set a standard without reference to evidence that other competent designers might have done the same may be practically impossible (Lavers, 1986, p.204).

Notwithstanding the above, the reference to expert witnesses continues to be a necessary feature in professional negligence cases as a means of determining the reasonable standard expected by the professional in specific cases. Clearly, while the standard of practice within a profession may depend on expert evidence, the final decision on the standard to apply rests with the court, after due consideration of all the evidence.

8.6 THE CASE OF PROJECT MANAGEMENT

In addition to the examples of legal implications mentioned in the last four sections of this Chapter (Sections 8.2 - 8.5), a number of other issues which derive essentially from the nature of existing project management practice are worth highlighting.

The role of the project manager is not recognised in any of the standard forms of building contract, i.e. he is not a named party. Questions relating to whether he can direct the consultants and the contractor, or control the client's actions can be posed, and these highlight a vital issue - "If the project manager is offering a service geared to total project satisfaction or achievement of construction-related targets, it must follow that he has identifiable control over the building contract" (Parnell, 1986, p.900f). The crux of the problem concerns this control element and how it is viewed by all the participants. The immediate problem for the project manager is how to achieve this desirable control without being named as a party in the building contract. It remains arguable whether there is in fact a need to integrate the project manager formally into the contractual arrangement. Knowles (1986) also raises the foreseeable need to deal
with this question of whether the contract between the client and the contractor should make reference to certain of the duties of the project manager.

Empirical evidence from the fieldwork seems to be in support of integrating the project manager into the contractual arrangement. Question 1 of Part 5 of the questionnaire ("Is there a need to formally integrate the Project Manager into the contractual arrangement, either directly or indirectly?") generates responses shown in Table 8.1. - 98 out of the 137 respondents (or 71.5%) answering affirmatively.

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Table 8.1: Integration of Project Manager into the Contractual Arrangement

Owing to the "comparative novelty of the position of project manager there is no historical connection with which to gauge liability. The ground rules are being written as we go along." (Knowles, 1986, p.6) The lack of, or more precisely, the total absence of case material directly relating to the role of project management, leaves us with the following alternatives:- (1) to draw from U.S. case decisions concerning construction management, (2) to draw from existing principles applied in the more established construction professions, or (3) to draw from principles applied outside the construction field.
The work by Batt (1984) provides an excellent account of legal liability attaching to professional construction management. Although he does not deal directly with the case of project management, he is of the view that much of the work is applicable to it, "for the principles applicable for determining the risks flowing from each type of management are the same, although the manager's area of exposure in project management is naturally greater" (p.389).

More recently, Mastrandrea (1986) attempted to develop a framework of areas of potential liability of the consultant project manager, by drawing upon common strands between management and legal principles. In dealing with liability arising in contract, agency and tort, practical analogies were drawn for project management, and these were in turn tested against a number of US decisions concerning construction and project management. The decisions were found to be largely consistent with the developed principles. Arising from his study, Mastrandrea is of the view that the principles will provide the basis for application by the UK courts in dealing with cases concerning project management. He further submits that, due to the relative infancy of project management, the courts would not initially require very high managerial and organisational standards, but that gradually detailed standards would be clarified and raised (p.131).

The study by Finlay (1987) takes a different approach, and raises numerous practical examples of potential liability adhering to the project management function in view of its very robust role in the project context. In sum, it points to "scope for catastrophe that lies in the Project Manager's role" (p.53).

The closest a case concerning project management in the UK has come before a decision by the courts is one dealing with alleged negligent advice in connection with the £58m Trocadero development complex in London, between Richard Ellis and Electricity Supply Nominees (ESN), the pension fund of the electricity industry, which resulted in ESN venturing into a property development they would otherwise have avoided. The case fortunately reached an out of court settlement before a judicial decision. Although the original sum claimed was in the region of £50m, the settlement figure is said to be substantially lower. The magnitude of the sums involved gives an indication of how extensive liability amounts relating to negligent development advice can reach. It is however doubtful if the development scheme by Richard Ellis was part of an overall project management service undertaken by them in this instance. Its direct relevance to project management therefore remains unclear. On the basis that
development advice can normally be part of the project manager’s overall contribution in a project, it goes to show the drastically different exposure to professional liability that can well arise between say the architect and the project manager. While the architect or engineer is seen as having a wide responsibility in terms of the whole building, the project manager attracts an even wider responsibility in terms of the entire development. The difference in scale alone is dramatic.

In drawing from cases dealing with the other functional disciplines in construction, it is probable that aspects of their work which lean more towards 'management' as opposed to technical input, will offer closer and more significant analogies. In this regard, the role of the architect, especially his functions of supervision beyond basic design and design coordination, comes closest to offering concrete guidelines.

Outside the field of construction, it is submitted that the role of the company director comes close to the professional management position which the consultant project manager occupies. In principle, and also within the context of the accountability concept, both roles undertake a stewardship of resources, in the case of the director - the resources of the company, and in the case of the project manager - the resources of the client for the purposes of the project. Additionally, both undertake to utilise these resources effectively and efficiently towards the achievement of established goals. The one major difference lies in the fact that directors' duties are governed primarily by the Companies Act, being officers of the body incorporate by definition.

Arising from the Insolvency Act 1985 and the Company Directors Disqualification Act 1986, whereby directors are made liable for company losses if they knew or ought to have known that there was no reasonable chances of the company avoiding insolvency but allowed it to continue trading, interest in D & O (Directors and Officers) liability insurance is seen as quickening, despite the uncertainty whether such D & O cover is in fact lawful under the provisions of the Companies Act 1985. By all accounts, D & O exposure is expected to increase in frequency and in severity in the UK. It has comparatively wider usage in the US. The duty of directors has gradually extended over the years, from being owed to shareholders alone, to employees and even as far as creditors. The term 'officer' generically includes all who act on the company's behalf, resulting in the duty being owed by more people. In this regard, it is common to find management and financial consultants falling within the category of 'shadow directors' of the company which they are providing services to.
A more strategic issue brought about in the case of project management is one that is less featured in the literature. Discussion has so far centred on the project manager’s liability to the client and to third parties. If a special relationship can exist between the project managers and third parties, is it not possible that they too can owe a duty of care to the project manager? There is no doubt that a project manager’s assessment of options and alternatives prior to making a recommendation to the client places extensive reliance upon the primary proposals deriving from the rest of the consultant team. If it is possible for the project manager to incur a shared accountability with these team members, the converse position is equally probable - consultants incurring a shared accountability with the project manager. Consistent with the framework of accountability adopted in this study, accountability of project managers is only one aspect of the overall and wider issue of accountability in project management.

It can happen that project managers finding themselves facing negligence suits initiated by clients may well find it appropriate to join relevant members of the consultant team in the proceedings. This undoubtedly fuels the existing problems caused by the highly inequitable 'joint tortfeasors' rule. Good project management should ideally clarify and enhance the accountability of the entire team, resulting in their decreased exposure to professional negligence claims.

If the use of project management does nothing to improve accountability in the project team, but instead adds to ambiguity and shared accountability, the price for practical and operational project expediency brought on by project management may be a high one to pay, especially in view of the already treacherous minefield of professional liability which plagues the construction professions.

### 8.7 EXCLUSION AND RESTRICTION OF LIABILITY

It is generally recognised that professional persons do not seek to either exclude or to restrict their liability to clients, although exclusions to third parties may be more acceptably common. For professionals to seek to disclaim liability for negligence by specifically inserting exclusion clauses in their written contractual terms is uncommon, although not unheard of.5

Where such an exclusion is desired, it must comply with provisions of the Unfair Contract Terms Act 1977 (UCTA). Exclusion or restriction of liability for death or
personal injury resulting from negligence are expressly prohibited by Section 2(1) of the Act. Damage other than death or personal injury is covered by Section 2(2) which prohibits exclusion or restriction of liability for negligence by reference to a contract term or notice except in so far as the term or notice satisfies the requirement of reasonableness, the test of such reasonableness being spelt out in Section 11. Section 1(1) defines negligence as including both the tort of negligence as well as a breach of any contractual obligation to exercise reasonable skill or care. Section 3 extends the requirement of reasonableness to attempts to exclude or restrict liability for breach of contract or claims to be entitled to render a contractual performance substantially different from that which was reasonably expected, or no performance at all, in those cases where one party deals on a consumer or on the other's written standard terms of business, and in this regard, a professional body's standard conditions of engagement would probably fall into this category (Greer and Harkness, 1985, p.43). The Act therefore applies to attempts for exclusion or restriction of liability towards both clients and non-contracting parties. Essentially then, if exclusion clauses are utilised, they must satisfy the criterion of reasonableness in order to be effective at all.

Beyond statutory regulation under the Unfair Contract Terms Act 1977, such clauses are required under common law to be properly incorporated in the contract before they can be relied upon. Clarity and unambiguous wording may be important for their interpretation (Photo Production Ltd. v. Securicor Transport Ltd. [1980] A.C. 827).

It has been suggested that there ought to be a difference between exemption clauses and disclaimers, the former curtailing a liability that has arisen, and the latter preventing a liability from arising (Holyoak, 1985). On this note, Greer and Harkness (1985) point out that the argument, in the contractual context, "distinguishes careful delimitation of the scope of the professional man's retainer - what he is contracting to do for his client? - from attempts to exclude liability for breach of professional duties", and suggest that while only contractual clauses of the second type are subject to the UCTA, there may be some difficulty where clauses which do not appear to be excluding liability, on closer examination, can be seen to be achieving similar objectives through careful delimitation of duties (p.44). Although possible in principle, positive delimitation is seen as presenting practical difficulty in identifying each and every duty to be undertaken. It also suffers from commercial objection in that "it is almost impossible to produce a document which is efficient, flexible, firm, legally positive and yet at the same time client-friendly" (Capper and Uff, 1988, p.45).
The RICS (1989) Agreement includes the following clause:

"The Project Manager shall not be responsible for:-
(a) Any forecasts of financial viability.
(b) The Consultant's designs and technical co-ordination thereof.
(c) The advice or recommendations that may be provided by any Consultant or adviser appointed by the Client." (Clause 5 of the Memorandum of Agreement)

This provides a typical example of what appears to be a sensible delimitation in the project manager's scope of work. It is however possible that it serves in fact to avoid accountability for the professional inputs of the various consultants on the team. Items (a) and (b) are relatively straightforward, and appear to be generally in line with the DTI (1989) report's recommendation that consultants should make it clear where they do not wish to accept responsibility for certain items of work. Item (c), owing to the inadvertent degree of coordination and interdependence both among consultants and between consultants and the project manager, may present problems in the form of the joint and/or modified advice, recommendations etc. Theoretically, this clarification of accountability on the part of the project manager is desirable. In practice, it overlooks the possibility of shared accountability arising. Shared accountability, within the realm of professional negligence, provides the fundamental basis for imputing joint liability, and will be dealt with in the immediate section.

It is submitted that, in the case of project management, the ability to exclude liability for consultants' inputs, especially if there are integrative and coordinative elements which fall upon the project management task, is severely restricted. Although it is always possible to specify exclusions, their real effect in practice, given the nature of the project management task, may be less than anticipated. Excessive exclusions or indeed scope delimitations within the PM function appear in principle to run contrary to the whole concept and purpose of PM. The employment of PM as a separate function in addition to the traditional and existing disciplines on a project, in seeking to achieve a single integrative point of responsibility, can well do without such exclusions.
8.8 JOINT LIABILITY AND CONTRIBUTION: SHARED ACCOUNTABILITY

The DTI (1989) report emphasises that the problems of joint liability, while they are not unique to the construction industry, do however take a particularly acute form - "In the construction industry, the parties tend to assume concurrent liabilities where there are several professionals whose work may interact and who may also be concerned with the performance of contractors and subcontractors." The report further emphasises that "as the use of management contracting or project management increases, there will be even more potential concurrent liabilities" (p.95). This latter point seems to be consistent with our notion of possible shared accountability arising in the project management task.

The problem posed by joint liability is essentially the application of the 'joint tortfeasors' rule. As a major problem facing the professions, it is considered of great inequity to allow "a system which encourages the practice of suing several parties as concurrent tortfeasors and, at the same time, holding them jointly and severally liable for the whole of the loss or damage, irrespective of the degree of each party's individual liability" (RICS, 1988, p.5). In the words of Lord Hacking (1988), "this is manifestly unfair and runs contrary to the fair premises, under which our law has generally developed, that each party should only be responsible in law for the wrong which he has committed" (p.4).

Although the rule is clearly unfair, and recommendations to alter the law have been made, and are strongly supported by the professional bodies, the DTI report is of the view that "it raises issues of public policy which may need to be considered by the Law Commission" (p.68), and concludes that "there is a pressing need to ensure that defendants in actions arising from construction projects are liable for no more than their proper and equitable share of responsibility" (p.97).

The harmonising of consultants' conditions of engagement to clarify interrelated responsibilities, which the report calls for, presents therefore, at one and the same time, a problem of project management and for project management. Conditions of engagement for project management must clarify its position in relation to consultants' functions within the specific project. Additionally, the proper matching of consultants' terms has to be ensured by the project manager who, in normal circumstances, would be arranging for the formulation of these.
The inclusion of a project management function in a project arrangement ought to improve and clarify the accountability position of all the project participants within the arrangement. In addition to ensuring its own accountability to the client, it undertakes, as the operational intermediary between the client and the rest of the participants, to ensure their respective accountabilities to the client. The opportunity of incurring shared accountability in such an integrative role is a real problem for project management. Two extremes can be observed. At one end, a low level of involvement by project managers, e.g. in a purely coordinative function, is not considered as adding much by way of improving the existing process. At the other end, a high level of involvement may generate a certain degree of 'interference' with respective consultants' inputs, leading to possible shared accountability. It is difficult to visualise a proactive project management function which totally and successfully avoids any shared accountability in its performance.

The results from the 'Infringement' hypothesis (See Section 6.8.6 of this Study) raises important implications for the question of joint liability. If, as the evidence suggests, the infringement by the project manager on participants' professional functions is not viewed as leading to any corresponding accountability for the project manager, there seems to be some support for the view that, in general, there may be a lack of accountability in the project management function. The similarity in view between project managers and the rest does not weaken this observation. It is suggested that project managers may be desirable of not incurring any associating accountability and thus be of this view, whereas the rest of the consultants may view this as undesirable. If this infringement on consultants' work is taken together with the project manager's excessive power, as viewed by participants, the consequences may be correspondingly more severe. Question 5 of Part 3 of the questionnaire provides data which confirms the possibility of project managers exceeding their powers when directing and instructing the rest of the team - "In issuing instructions to the rest of the participants, is there a possibility that the Project Manager may at times be exceeding his powers in the project?". 123 out of 138 (or 89.1%) respondents answered 'Yes' to the question.

Based on our basic framework of accountability from Chapters 4 and 5, shared accountability can arise in one of two ways:- (1) where two or more parties are accountable to another in respect of a common subject matter, or (2) where one party is accountable to two or more other parties.
As described earlier, consultants, in normal project management arrangements, have a primary accountability to the client and a secondary accountability to the project manager. This constitutes shared accountability in the second example above. The process of acting through the project manager further creates a shared accountability between consultants and the project manager, to the client. This arises as the first example above. It is submitted that, depending on the extent of the project manager’s involvement in the consultants’ primary input, varying degrees of shared accountability ensues. Consider the example of a consultant’s basic proposal in respect of a portion of the design. A fair amount of adjustment and/or modification of this may be undertaken at the request or instruction of the project manager in order to better meet the requirements of the brief. Where the final proposal departs from the initial, it is likely that there will be some shift in accountability from the consultant to the project manager for the proposal in question. Finlay (1987) puts forward a more intricate and interesting example - "Who for instance is liable where the Architect designs, the contractor suggests modifications for 'buildability' and the project manager decides which option will be adopted?" (p.43).

Indeed, in the same manner that shared accountability arises in design liability between designers and design and build contractors, so does shared accountability for management and design between consultants and the project manager. Where management decisions influence or affect the construction element directly, there is also the possibility of shared accountability arising between the project manager and the contractor. The design liability cases may present less problem in so far as it is probably clearer and simpler to determine e.g., where concept design ends and detailed design follows. With management and design cases, the interdependence may be more complicated, and the demarcation between functions may, due to overlap, be less clear. It is suggested that not only does the project manager incur a shared accountability with the consultants; it is possible too for consultants to incur a higher accountability. This arises when consultants exceed their terms of reference in meeting the project manager’s requirements, and more so when they are in principle opposed to or in disagreement with the proposals.

While it may be possible in practice for project managers, through careful instructions and communications, to attempt to avoid attracting any shared accountability, it is suggested that the problem is a difficult one to overcome.
This potential for shared liability in project management has also been recognised in the U.S. context. Nixon and Cornell (1989) point out that "the liability which has traditionally been allocated to the architect/engineer by standard industry practices is now having to be shared by the project manager as his responsibilities or shared duties overlap with those of the architect/engineer" (p.19). Where project managers are responsible for reviewing architects' design and the schedule of construction materials, they are in fact adding expertise to the project with respect to their knowledge of regulations, technology and costs. This, according to Nixon and Cornell, results in a dilution of the architect's ultimate and sole responsibility in these areas to a shared liability with the project manager.

The crux of shared liability in PM is therefore 'shared accountability' which is inherently present owing to the nature and purpose of the role. A logical approach to this issue is firstly to recognise its existence, and then to seek to clarify areas where shared accountability arises, with the view of overcoming uncertainty. Avoidance of accountability through unilateral or inequitable shifts is clearly not the preferred solution. On the contrary, the task of PM and for PM is primarily a proper allocation of accountability. To reiterate an earlier point (See Section 5.3, P.154), an inter-participant appreciation of joint and separate accountabilities lies at the heart of authority acceptance, and the achievement of this within a project team is principally the task of PM.
NOTES


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CHAPTER 9

CONCLUSION

9.1 THEORETICAL BASIS OF THE RESEARCH

As a summary of our main sources of information, we shall attempt here to draw together the major strands of the concept of accountability which provided the theoretical basis for the whole research study. Much of the knowledge regarding accountability derives from the field of psychology where it acts as a psychological process, both internally and externally, to determine how people act. In decision research, it features as a characteristic of the decision environment to force the use of more analytic decision strategies. In information-processing and judgement, knowledge of the party to whom one is accountable, acts to determine the level of effort put in. Least effort solutions in coping with accountability, referred to as the 'acceptability heuristic', are seen as practically possible but undesirable owing to the lack of control over what constitutes an acceptable response option. Alternatively, a political approach under which the person, as politician, ensures accountability to his constituencies, is seen as more viable. When processing information prior to decision-making, people are found to be more vigilant, complex and self-critical under conditions of high accountability. Within negotiation and bargaining, accountability operates as the control mechanism which governs the negotiator/bargainer.

Public accountability, with its constant rationalisation of two competing concepts - accountability and independence - provides further useful knowledge concerning the principle of accountability. Corporate governance, through financial and corporate accountability, illuminates the accountability concept in terms of the 'stewardship' relationship which invariably arises. The concept of responsibility, through social-psychological studies of responsibility attribution, and through legal-philosophical interpretations, gives added emphasis to the whole idea enshrined within the accountability of conduct. In this connection, legal interpretation of responsibility parallels very closely the idea of accountability. The attention given to the issue of accountability in the administration of education also features very prominently in our sources of knowledge. Its application in education has served to clarify what is entailed in just such an accountability process, i.e., the operational aspects that are called for in an accountability system.

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Much of the investigations in the psychological field have however taken the form of experimental studies whereby respondents are made to perform under prescribed conditions of accountability, i.e., the presence or absence of accountability features as a control variable that is manipulated. Research studies in actual and real field settings are comparatively rare.

Project management and its accompanying literature can be seen to provide very little direct reference to the issue and concept of accountability. Similar to the case of management in general, the emphasis has instead been on its constituent concepts - authority and responsibility. In this regard, much work in project management has tended to focus on the study of authority as a means of exercising control in projects.

On the basis that authority, responsibility, and accountability are distinctly separate concepts although they are closely linked, a basic model of accountability was presented in terms of an authority-responsibility matrix. By viewing role performance in the organisation context, an integrated framework of accountability was also proposed which served to link the concept of accountability to attribution theory and role theory.

Through these preliminary assessments of the accountability concept, a framework was formulated which would bring together the two concepts - accountability and project management. Essentially, what was sought was an application of the concept of accountability in the project management context.

The part which accountability plays in project management is recognised through a combination of three sub-concepts - 'project accountability', 'professional accountability', and 'legal accountability'. The performance of project management in terms of a project's parameters comprises project accountability. Its performance against its state of professionalisation in the industry constitutes the second sub-concept, professional accountability. Together, these two provide the basis for examining the related sub-concept of legal accountability.
9.2 SUMMARY OF RESEARCH PURPOSE AND DIRECTION

The study of managerial effort in organisation settings has tended to deal with particular and specific aspects of the management task, such as decision-making, planning and control etc. The degree to which the management function assumes accountability has been left largely unattended. The temporary management setting which a project provides creates additional problems for the management task due mainly to the imposition of an interorganisational aspect. This interorganisational network overlays the existing intraorganisational one, and acts to bring to the forefront the criticality of the accountability issue. In this sense, the project management situation offers an excellent scenario for the treatment of accountability of the management task, and indeed of the 'professional management' task.

The choice of accountability and its application to project management brings together in one the whole issue of management performance and its answerability. What is project management accountable for and to what degree can a project manager be held accountable? While accountability in design and construction is more determinate, accountability for management is comparatively vague, and up to now, has failed to be addressed to any significant degree.

Given that accountability in terms of concept application to project management is new, the main aim of the empirical investigation was to seek an insight as to how accountability is viewed by project participants. The study thus aimed primarily to explore participant perception of accountability in the project context. Accordingly, the empirical investigation was conducted in a real setting (or 'natural' environment) - the project management arrangement. This is essentially the vehicle which undertakes implementation of the project and offers the most suitable unit of investigation for the study.

It is evident, from the sequence of the various chapters, that the direction leading up to the empirical investigation was taken from two broad fronts, project management (comprising Chapters 2 and 3) and accountability (comprising Chapters 4 and 5). These four Chapters provided essentially the literature review of the two areas concerned. Chapters 7 and 8 took the subject further by expanding upon the basic framework of accountability through the sub-concepts of professional accountability and legal accountability respectively. In Chapter 7, we attempted to show how professionalisation of project management holds implications for practice through an
increasing professional accountability. It also examined the degree to which project management can be considered to be professionalised along some of the main themes that are normally identified with the professions. Through the raising of standards of practice, not only is professional accountability called to higher levels; legal accountability is similarly held to higher standards. Chapter 8 provided this treatment of the potential liability in project management that is shaped by its unique character.

At the heart of the whole research study then is the recognition that dealing with the issues of authority and responsibility is fundamentally inadequate when instead, an accountability perspective provides a more appropriate and formidable basis for addressing management performance. The challenge for management performance is clearly one of meeting accountability and not merely coping with responsibility within an authority framework.

9.3 SUMMARY OF EMPIRICAL FINDINGS AND THEIR IMPLICATION FOR PRACTICE

The observed relations from the empirical investigation provide a definite picture of accountability perception in real terms. In this sense, the work differs largely from other work where conditions of varying accountability are controlled and manipulated. Instead it seeks to discover the true status and view of accountability in the temporary management setting.

Arising from the investigation, we are now better able to visualise certain aspects of accountability appreciation in the project management context. A number of useful conclusions can be drawn from these findings.

We now know, from the finding of a relationship between the level of accountability consciousness and how it is viewed, that clarification of accountability need not be left to chance. With some confidence, issues of accountability can be consciously deliberated upon without fear of generating a negative impact on group performance. The willingness to take a more objective view of accountability can and should be further explored.

The evidence of a positive link between accountability and effectiveness suggests that it is worthwhile to direct efforts at achieving a high level of accountability in a project
management arrangement. It seems reasonable to assume that if an independent to
dependent variable relation exists, accountability will most appropriately be the
independent variable and effectiveness the dependent variable. But even if this can be
assumed, the relationship may well be brought about by other variables at play.
Effectiveness certainly depends on many other factors and not just on the level of
accountability within the arrangement. A logical conclusion would be to pay special
attention to increasing accountability as overall effectiveness is seen to bear a positive
relation to it.

The difference in perception that shows up between project managers and architects
indicates that the two groups may possess rather conflicting views as to the real task of
project management. Can there be a difference in orientation towards the client? Or can
it be that project managers in fact carry less accountability than is thought to be fair, in
relation to their exclusion from contractual arrangements? In either case, it would
appear to be beneficial to pursue some degree of inclusion of the project manager's role
in the contractual arrangement.

If in-house project managers achieve higher rated accountability scores than external
project managers, there may be important implications for external arrangements. No
serious problem is posed if the outcome of a project is one that is highly successful. If
however, a less than successful outcome is obtained (and this is not unusual in the
construction case), there may be a danger of the external project manager avoiding his
proper share of accountability. A related hypothesis reveals further that project
managers having high rated accountability are also associated with project management
arrangements which score high on accountability. As there is no statistical evidence that
the use of project management improves participants' accountability, or that
participants' accountability in in-house arrangements is higher than those in external
arrangements, the accountability that is achieved by an arrangement provides a good
guide to the general level of participant accountability within the arrangement. Project
management should thus strive for a high level of accountability in its own function,
with the likelihood that the whole arrangement would also be similarly accountable.

The relationship among involvement, accountability and exposure to professional
negligence, generates a very useful picture of participants within the arrangement.
Although the question sought to check if project management leads to an increase in
participants' involvement, this was confirmed in so far as it does not lead to any
decrease in involvement. On this basis, the remaining relationships were still pursued
and examined. Increased involvement was found to be associated with increased accountability and with an increased exposure to professional negligence. Noticeably, the latter relationship runs contrary to our proposition of a decreased exposure to professional negligence. To be more answerable seems to be associated with greater liability. Our proposition of a decreased exposure rests on a distinction between the two meanings of accountability - the ability to account, as against the requirement to account. It is possible that this distinction is too fine to be examined empirically. As far as practice is concerned, it is still desirable to seek a decrease in exposure to professional negligence.

The overall picture which is presented through the various relationships investigated provides useful indicators for both future accountability investigations and project management practice.

The implications for practice which derive from the investigation would vary according to the participant group concerned. Clients, in whom ultimate accountability for a project resides, must assess objectively the choice of PM structure, and if consultant project managers are utilised, should endeavour to demarcate as clearly as possible the project accountability that is assigned to the external project manager. Project managers, whether acting in-house or as external consultants, should recognise the differing accountability status which exists in relation to this, and would do well to constantly address themselves to maintaining an accountable management performance in all respects. Project consultants should be vigilant in ensuring that their professional and technical contribution is not in any way compromised by an overly demanding project manager, especially in view of the possibility that the associating accountability in such circumstances may in fact not accrue to the project manager as such. For the researcher, the study demonstrates the attendant difficulties when dealing with a complicated concept in a novel application. Although the task has been a huge one, the overall enquiry, in examining the issue of accountability within the PM context, has opened up the broader issue of management performance and its answerability, and has served to lay the groundwork for subsequent and further investigation.

9.4 THE WIDER CONTEXT OF THE STUDY

The bridging of accountability and project management in this study immediately enlarges the accountability problem. What we know regarding individual performance under accountability influence is obviously quite different from what can be expected
when dealing with group performance. How is accountability shared or distributed among the group members? In particular, does a group leadership role attract a larger share of accountability and can it in fact be made accountable for the performance of others? What sort of shifts in accountability can arise if a separate project manager role exists on a project? These are some of the questions which an application of accountability to project management generates.

Thus, while project management affords an excellent scenario for treatment of accountability, it additionally imposes an exceedingly strict test on the applicability of the concept. The contribution from the research study is therefore not restricted only to that which has been provided for project management by accountability. The application to project management has equally enriched current knowledge of the accountability concept. The overall study has, in this respect, aided both accountability and project management.

In addition, the accountability concept, arising from its sources in other fields and disciplines, brings to the study of project management in effect a "cross-disciplinary" conceptual application. As an essentially psychological process and variable, this management application of the accountability concept is both unique and novel. It serves to highlight the benefit which cross-disciplinary applications can provide. On a broader note, the application acts as an indicator of the tremendous wealth of knowledge that generally exists in fields outside one's target area of interest.

In sum, the employment of the accountability concept in the project management situation afforded an appropriate framework for addressing a host of pertinent issues relating to the project management role in development and construction. While the role has experienced wide usage and an almost unquestioned dominance in projects where it has been utilised, a subtle query regarding its true position in terms of its ultimate accountability can be detected. The role is a dynamic one, and carries with it a high degree of power and control over the project and project participants. Unfortunately, the associating accountability that goes with it has not been seen as truly adequate or commensurate. Given that failure or inadequacy in design and construction are aspects which have occupied the major part of professional performance in the industry, a similar deficiency in management can be expected to create complications. The difference is that assessment of professional liability for the more established construction-related professions has the benefit of clear, distinct and specific roles that have been developed over long periods of professionalisation.
9.5 LIMITATIONS OF THE STUDY

A number of limitations have been noted in relation to the study and these are addressed in the following paragraphs.

The data collected from respondents are all pegged at specific points in time for the various projects. Logically, as a project progresses, there should be a growing awareness and an increasing accountability appreciation. The confidence that is instilled in the whole team takes time to develop. It can therefore be expected that projects which are further into their development span, say in the construction phase, would have shaped a clearer and more positive response to the whole distribution of accountability in the project. For a similar reason, assessments for items such as role ambiguity and effectiveness will tend to be scored lower and higher respectively on projects which are well advanced.

The empirical approach has attempted to link project management structure to accountability perception and appreciation. This combining of the structural element with the behavioural element within the project, although much desired and which should always be encouraged, is not without its problems however. Structural elements are by nature reflected in objective data, whereas behavioural elements, being largely dependent on attitudes, opinions, and preferences, tend to be far more subjective. Although it is probable that structural elements do shape the behavioural elements, it is equally probable that other factors, both structural and behavioural, could have generated the patterns observed. As an initial and exploratory investigation into the accountability issue in project management, the apparent lack of concern for other intervening and extraneous factors is not considered to be unduly damaging on the findings.

Accountability is by nature an extremely difficult topic to comprehend and an even more difficult concept to operationalise and measure. Despite our attempts to impose some uniformity to the term, it is still possible that practitioners and respondents alike may have been guided by their own preconceived notions of it. Coupled with this is the realisation that the meaning of the concept of accountability may differ from the meaning of the term 'accountability' that is used. Our convergence in meaning may not be shared by respondents who could be thinking of the concept at one level and responding to questions based on its meaning at the other level. There is no doubt that a
large number of respondents view accountability as simply a 'responsibility for results'. This does not necessarily mean that the concepts of accountability and responsibility are equated or merged. On the contrary, it is likely that they are in fact using the term 'responsibility for' to mean accountable.

The semantic difficulties generated by the topic of accountability therefore present an enormous problem for a research investigation of this kind.

Findings from the fieldwork are restricted solely to project management in the construction case. Any attempt to utilise these across different industries must be exercised with due caution. Having said this, the overall direction of the research study, that of examining and clarifying the accountability position of project managers and project participants, continues to be a pertinent issue in all applications of project management, and can thus be adapted for use.

The research sample comprised 140 participant respondents distributed over 33 project management arrangements. This size is by no means large, and it is possible that with a larger sample, some of the relationships investigated may have been supported, and those that are supported may have been more strongly so.

### 9.6 RECOMMENDATIONS FOR FURTHER STUDY

Arising from our investigation, the following are some of the areas that are considered useful for further study.

1. Specific areas of project accountability can be investigated through detailed case studies of a number of project management arrangements. This will serve to bring objective data to bear on situations which truly generate accountability problems.

2. Following on from the first recommendation, it may be possible to re-construct the scenarios in terms of specific research problems which can then be controlled and tested through experimental research designs in real project settings. Team reactions within a project can in this way be tapped to provide an early picture of their joint accountability appreciation.
(3) Given the difficulty with the meaning of accountability both as a concept and as a term, the conduct of an investigation based on the use of the semantic differential (Osgood et al, 1957) may generate useful pointers. This method provides essentially a measure of the meaning of an object to an individual, and consists of a series of bipolar rating scales to tap the individual's response. It can generally be used to rate any concept.

(4) The hypothesis of an increasing professional accountability that accompanies a professionalisation process (P.241) can form the central basis of an empirical investigation of the various construction professions. Each discipline's professional status can be examined historically against its ensuing accountability. In parallel, sociological studies of the professionalisation process should also endeavour to address the issue of professional accountability instead of stopping at professional authority.

(5) A detailed study of existing forms of professional engagement for PM, treated against the range of the service provided, should generate a valuable picture of the degree of legal accountability that is being achieved in practice.
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68. MONOPOLIES COMMISSION (1970), A Report on the general effect on the public interest of certain restrictive practices so far as they prevail in relation to the supply of professional services, Cmnd 4463 & 4463-1, October, HMSO.


Mr Christopher Leong  
55 Ashleigh Drive  
Loughborough  
LE11 3 HN  

April 1989

RESEARCH INTO PROJECT MANAGEMENT PRACTICE

The current state-of-the-art in project management (PM) practice in development and construction is sophisticated and dynamic. Formal research in this very specialised field is however considerably lacking, especially in relation to human behavioural aspects. I now write to request your help as part of my research effort to add to the existing empirical base.

I am presently undertaking a PhD research at the Bartlett School of Architecture & Planning, University College London. The central focus of my research is the issue of accountability in project management. In particular, the empirical fieldwork aims at investigating participant perception of PM accountability generally and as part of specific PM arrangements, as the basis for understanding and examining the interpersonal implications of a conceptual application of the concept. Irrespective of the degree of formalisation of accountability systems, it is envisaged that an appreciation of accountability will provide a PM arrangement with added vision and meaning, as well as acting as a yardstick for performance evaluation of both participants and the project. Measurement of project and performance effectiveness loses meaning if it is not founded on clear and unambiguous accountability relationships.

The empirical field investigation will be in two parts, the first being a broad survey based on a self-administered questionnaire by participants of PM arrangements, followed by the second part where findings will be explored for a better understanding through selective interviews. The questionnaire is a seven page self-administered document directed individually at each of the following participants in a PM arrangement:

1. Client  
2. Project Manager  
3. Architect  
4. Structural Engineer  
5. M&E Engineer  
6. Quantity Surveyor  
7. Contractor

and is expected to take not more than 30 minutes to complete. It is hoped that a total of at least 50 such PM arrangements (ie up to 350 responses) will be sampled and that these will include arrangements where the Project Manager role is taken in any one of three ways - in-house, by an external independent consultant, or through a mixed arrangement. Additionally, some basic information relating to the projects in question will be sought from the client organisation.

Completed questionnaires will be referenced to each arrangement only for the purpose of ease of analysis, and will otherwise be strictly confidential and anonymous. Findings will be in summary form so as to prevent any possible identification of individual sources of information. These summarised findings will of course be made available to participant respondents for their information.
The demands of accountability in a real project situation are considered vitally important in shaping the project team's appreciation of and response to role expectations. Reciprocal interpretations, while differing to varying extents, will identify specific areas of deficiency and need. It is considered that a realistic empirical survey of this issue must rely on a first-hand response from participants who are directly involved in the mainstream of PM practice. It is also recognised that a client organisation's agreement to participate in a research investigation will ensure a better commitment from the rest of the team members.

Please consider participating in the field investigation by allowing as many of your organisation's projects as possible that are managed on PM arrangements as individual units of investigation. You will find enclosed with this letter a reply sheet and a self-addressed envelope for your convenience as an indication of your agreement to participate.

For your added consideration, I have included a letter of support from the British Property Federation, signed by Mr Ron Denny.

A copy of my personal particulars is also attached together with a letter of confirmation from University of London regarding my research status.

I trust that you will consider my request in the light of its potential benefit to the construction industry in UK and look forward to receiving your favourable reply. Thank you very much for your time and interest, and also in anticipation of your invaluable cooperation.

Yours sincerely

Christopher Leong

Enc

cc Mr John Andrews
    Research Supervisor
RESEARCH INTO PROJECT MANAGEMENT (REPLY SHEET)

TO: Mr Christopher Leong  
    55 Ashleigh Drive  
    Loughborough  
    Leics LE11 3HN

1. ORGANISATION: ____________________________________________
                             ____________________________________________
                             ____________________________________________

2. CURRENT PM ARRANGEMENTS AVAILABLE FOR INVESTIGATION:

<table>
<thead>
<tr>
<th>PROJECT TITLE</th>
<th>PM TASK UNDERTAKEN:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>In-House/Externally/Mixed</td>
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</tr>
</tbody>
</table>

3. PERSON TO CONTACT FOR ARRANGEMENTS:

   Name: ____________________________
   Designation: ____________________________
   Tel: ____________________________

4. FILLED IN BY: ____________________________
                              ____________________________

5. DATE: ____________
RMD/GH

30th June 1988

TO WHOM IT MAY CONCERN

CHRISTOPHER LEONG HOE YUEN

Last year Mr. Christopher Leong completed a Master's Degree at Loughborough University. His dissertation centred on the British Property Federation System. It was the most comprehensive and penetrating study which I had seen.

Mr. Leong has now been accepted to carry out MPhil/PhD research at the Bartlett School of Architecture and Planning, University College London. His subject is "Accountability in Project Management".

B.P.F. members are well aware of the deficiencies in cost consideration by some designers. It is also well known that whilst some project managers are engaged on contracts which ensure that they are accountable and that the other parties, both consultants and contractors are also accountable, there are many contracts with project managers which are deficient.

In my opinion the results of Mr. Leong's research would be of great benefit to members of the B.P.F. I hope therefore that when he contacts you, you can find time for you or one of your staff, to give him every co-operation and assistance. He assures me that anything he learns and includes in his Thesis, will not be identified to a particular company.

Thank you

R.M. Denny
Consultant
TO The Consultant Concerned:

Dear Sir

RESEARCH INTO PROJECT MANAGEMENT PRACTICE

I am presently undertaking my PhD research at the Bartlett School of Architecture & Planning, University College London. The central focus of my work is the issue of Accountability in project management; it aims to examine PM practice from the perspective of the accountability concept and to utilise this as the framework for assessing the potential liability in the function.

The attached questionnaire forms part of the empirical fieldwork and is intended to investigate participant perception of accountability generally and as part of specific PM arrangements. The client organisation has kindly consented to the use of this project as one of the units of investigation. I should be most pleased if you could spare approximately 20-25 minutes of your time to complete the attached questionnaire. Your first-hand involvement in PM arrangements is extremely vital for an accurate reflection in the fieldwork.

Your role and the arrangement concerned will be the only references in the questionnaire required for the purpose of analysis; the completed form is otherwise confidential and anonymous. Findings will be in summary form so as to prevent any possible identification of individual sources of information. The completed questionnaire should be sealed in the accompanying envelope and returned to the client's representative for collection.

Your assistance and cooperation in completing the questionnaire will be greatly appreciated. I shall be happy to clarify any query you may have, and can be contacted at the above home address (Tel No: 0509-264334) or at the Bartlett School (Tel No: 01-3877050 Extn 4854). If you have further thoughts regarding the subject matter, I would be most interested to follow up with a short discussion at your convenience.

Thank you.

Yours sincerely

Christopher Leong

Enc
INTRODUCTION

This questionnaire forms part of the overall empirical fieldwork aimed at investigating participants' interpersonal perceptions of accountability in project management arrangements.

GENERAL INSTRUCTIONS

For the purposes of this study, the term "Accountability" shall be taken to mean the answerability for one's responsibility. The term "PM Arrangement" shall refer to a project arrangement in which there is a distinct and separate Project Manager role, irrespective of whether this is undertaken in-house by a client organisation, by an externally appointed consultant, or through a combination of both.

The questionnaire comprises sections that may or may not relate directly to this particular PM arrangement through which you have been approached. The respective instructions that precede each part will make clear the case accordingly.

PART 1

The following is a set of statements relating to the question of accountability in Project Management (PM) generally. They do not relate to the particular PM arrangement of which you are a part. We are interested in your opinion and how you feel regarding each of the statements, based on your knowledge and experience of PM. Each statement is accompanied by a choice of seven responses, numbered from 1 to 7:

Strongly Disagree / Disagree / Slightly Disagree / Neither / Slightly Agree / Agree / Strongly Agree

Circle the choice that best represents how you feel. There are no right or wrong answers.

1. Accountability becomes an important issue in a project only if role problems are encountered.
2. Issues of accountability in a PM arrangement do not concern me unless they impinge directly on my own role and contribution.
3. A project arrangement with no project manager has a more definite distribution of accountability than one which uses a project manager.
4. Use of PM transfers a substantial portion of a project's overall accountability from participants to a project manager.
5. In making recommendations relating to professional consultants' contributions, the project manager incurs a shared responsibility.
6. It is unclear what the PM function is accountable for with respect to the project, when compared with the traditional design and construction functions.
7. A project manager's power and influence is excessive when compared with the responsibility he carries.
8. Project outcome is entirely the responsibility of the project manager.
PART 2

The following are a series of statements that may or may not be true for this PM arrangement of which you are a part. Circle as it applies to you and your arrangement:

Definitely False / More False than True / More True than False / Definitely True

1. All participants in this arrangement are clear as to their respective roles and responsibilities. 1 2 3 4
2. All participants know what is expected of them. 1 2 3 4
3. There are sufficient policies and guidelines for all participants' work. 1 2 3 4
4. Directions from the Project Manager are seldom questioned as to their source or base of authority. 1 2 3 4
5. Distribution of control between the Client and Project Manager is clear to all the rest of the participants. 1 2 3 4
6. Extent of authority delegated from Client to Project Manager is clear. 1 2 3 4

PART 3

The following questions do not relate specifically to this PM arrangement. We are interested in your objective answers.

1. Based on the PM arrangements which you have been a part of in the last two years, has the issue of accountability of any participant arisen?  
   Yes/No - ____
   If Yes, how frequently?  
   Very frequently - ____
   Quite frequently - ____
   Not so frequently - ____
   Only once - ____
   Did any of these occasions lead to intended and/or actual legal action for resolution? Yes/No - ____
   Did any of these relate to the Project Manager's role? Yes/No - ____
   Did these issues point to:  
   - a lack of accountability - ____
   - an excess of accountability - ____
   - uneven distribution of accountability - ____
   (Check those that apply)
   Were they related to:  
   - particular major decisions taken - ____
   - performance in general - ____
   - other aspect(s)(please specify) - ______

2. How often is your own effort and participation in project decisions guided by a prior assessment of your own accountability in relation to them?

   (1) (2) (3) (4) (5)  
   Rarely Not So Often Quite Often Very Often All the Time
3. In your opinion, is this prior consideration of accountability:
   (1) dysfunctional, in that it impedes performance,       ____ or
   (2) healthy, in that it enhances performance?        ____

4. Is it possible for the Project Manager, in carrying out his work, to infringe upon the professional functions of the other participants?
   Yes/No - ____
   If Yes, is it also possible that this will not incur the Project Manager any associating accountability?
   Yes/No - ____

5. In issuing instructions to the rest of the participants, is there a possibility that the Project Manager may at times be exceeding his powers in the project?
   Yes/No - ____
   If Yes, would you:
   - still comply without hesitation - ____
   - raise a query while complying - ____
   - comply with exclusions - ____
   - refuse to comply - ____

   In what ways can the requirements exceed his powers? Please give examples in brief:
   ____________________________________________________
   ____________________________________________________
   ____________________________________________________

   How can these be overcome?
   ____________________________________________________
   ____________________________________________________
   ____________________________________________________

6. Comparing your role in PM arrangements to that in project arrangements without a project manager, do you consider:
   (1) your project involvement to be:
        greater - ____
        the same - ____
        less - ____

   (2) your role to be:
        more accountable - ____
        equally accountable - ____
        less accountable ? - ____

   (3) your exposure to professional negligence to have:
        increased - ____
        remained the same - ____
        decreased ? - ____

   (4) there to be any shift in accountability from you to the Project Manager: Yes/No - ____

7. Is your role more accountable in an In-house PM arrangement or in an External PM arrangement?
   In-house PM arrangement - ____
   External PM arrangement - ____
PART 4

The following questions relate directly to this PM arrangement. We are interested in your objective assessments.

1. How accountable would you describe your own role to be in this PM arrangement?
   - Highly accountable
   - Somewhat accountable
   - Somewhat Not accountable
   - Highly Not accountable

2. On the basis of your experience and information, how would you rate:
   (1) the quality of the overall performance of this PM arrangement?
      (1) (2) (3) (4) (5) (6) (7)
      Poor Rather Poor Fair Good Very Good Excellent Outstanding
   (2) the probability of a successful outcome for this project?
      (1) (2) (3) (4) (5) (6) (7)
      Poor Rather Poor Fair Good Very Good Excellent Outstanding
   (3) your own satisfaction with this PM arrangement?
      (1) (2) (3) (4) (5) (6) (7)
      Not Satisfied Satisfied Extremely Satisfied
      At All

3. On the basis of your experience and information, how would you rate the overall level of accountability of this PM arrangement?
   - Highly Accountable
   - Not Accountable

4. If it is possible to increase this level of accountability, how accountable do you think it ought to be?
   - Highly Accountable
   - Not Accountable

5. How important is accountable performance to the participants of this PM arrangement?
   - Not important at all.
   - Quite important
   - Very important
   - There is constant review.

6. If total accountability for this project is seen as physically divided and distributed to all participants in this PM arrangement, how would you describe the thoroughness of this distribution?
   - Not satisfactory at all. There seems to be areas that cannot be traced to any one participant.
   - Just satisfactory, although more can be done.
   - Very Satisfactory, Very exhaustive, No element is left unaccounted for.
7. How clear are participants as to their respective accountabilities in this PM arrangement?

(1) (2) (3) (4) (5) (6) (7)
Not clear at all, generally there is great uncertainty. Moderately clear, just sufficient. Very clear, Every participant is certain of his own accountability.

8. To what degree do participants in this PM arrangement accept that ultimately, accountability for the overall project must be borne by all?

(1) (2) (3) (4) (5) (6) (7)
Do not accept at all. Accept in so far as it is within their means. Accept totally. No question about the issue.

9. In your opinion, what is the PM function accountable for:

Generally: ____________________________________________________________
In this Project: __________________________________________________________

10. How accountable would you describe the Project Manager’s role to be in this PM arrangement?

Highly accountable - _____ Somewhat accountable - _____ Somewhat Not accountable - _____
Highly Not accountable - _____

11. How accountable do you think it ought to be?

Highly accountable - _____ Somewhat accountable - _____ Somewhat Not accountable - _____
Highly Not accountable - _____

12. Given the responsibility of the Project Manager in this PM arrangement, do you consider that the authority that he possesses is:

- insufficient - _____
- appropriate - _____
- excessive? - _____

PART 5

The following questions are intended as an assessment of the implications of PM on the type of contractual arrangement utilised.

1. Is there a need to formally integrate the Project Manager into the contractual arrangement, either directly or indirectly?
   Yes/No - _____

2. How is this being achieved in the present PM arrangement?
   ________________________________________________________________
   ________________________________________________________________

3. Do you consider this as sufficient?
   Yes/No - _____
4. What contractual arrangement is being employed in this PM arrangement?

__________________________________________________________________________

5. In your judgement, is there a possible overlap between management functions relating to construction and the overall management functions undertaken by the Project Manager?  
Yes/No - _____

Please give examples: ______________________________________________________________________

__________________________________________________________________________

6. Is integration better achieved by any other form of contractual arrangement? If so, which?

__________________________________________________________________________

PART 6 - Respondent Personal Data

We are interested in the following aspects of your personal data. Please check the relevant answers that apply.

1. Your role in this PM arrangement:

   (1) Client
   (2) Project Manager
   (3) architect
   (4) QS
   (5) Structural Engineer
   (6) M & E Engineer
   (7) Contractor

State exact designation: __________________

2. Your age group:  (1) 21-30 yrs  (2) 31-40 yrs  (3) 41-50 yrs  (4) Over 50 yrs

3. Number of years experience in the construction industry:

   (1) 1-5 yrs  (2) 6-10 yrs  (3) 11-15 yrs  (4) Over 15 yrs

4. Number of years direct involvement with PM arrangements:

   (1) 1-5 yrs  (2) 6-10 yrs  (3) 11-15 yrs  (4) Over 15 yrs

5. Number of PM arrangements directly involved with prior to this one:

   Please state number: _______

6. Any other PM arrangement involved with in addition to present one:

   Yes/No - _____ ; If Yes, how many? - _______

324
1. The following table is intended to gauge the degree of professionalisation in the PM function. Based on your knowledge and experience, indicate your present consideration of the PM function on each of the dimensions:

<table>
<thead>
<tr>
<th>(1) Existence of a systematic body of knowledge and theory</th>
<th>Absent</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>Present</th>
</tr>
</thead>
<tbody>
<tr>
<td>(2) Relevance to basic social values</td>
<td>Not Relevant</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>Relevant</td>
</tr>
<tr>
<td>(3) Necessity for specialised training</td>
<td>Unnecessary</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>Necessary</td>
</tr>
<tr>
<td>(4) Degree of specialisation in training</td>
<td>Non-Specialised</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>Specialised</td>
</tr>
<tr>
<td>(5) Degree to which training is ideational</td>
<td>Low</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>High</td>
</tr>
<tr>
<td>(6) Importance of sub-culture in training</td>
<td>Unimportant</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>Important</td>
</tr>
<tr>
<td>(7) Motivational base for work</td>
<td>Self-interest</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>Service</td>
</tr>
<tr>
<td>(8) Autonomy</td>
<td>Absent</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>Present</td>
</tr>
<tr>
<td>(9) Sense of commitment</td>
<td>Short term</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>Long term</td>
</tr>
<tr>
<td>(10) Sense of community</td>
<td>Low</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>High</td>
</tr>
<tr>
<td>(11) Extent of development of Code of Ethics</td>
<td>Undeveloped</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>Highly Developed</td>
</tr>
</tbody>
</table>

2. Please state in your own words what you understand by the term "Accountability":

________________________________________________________________________
________________________________________________________________________
________________________________________________________________________

3. Please feel free to use the space here for any comments that you may wish to make.

________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
________________________________________________________________________

THANK YOU FOR YOUR COOPERATION.
(1) Accountability becomes an important issue in a project only if role problems are encountered.

<table>
<thead>
<tr>
<th>Response Rating</th>
<th>Group 1</th>
<th>Group 2</th>
<th>Group 3</th>
<th>Group 4</th>
<th>Group 5</th>
<th>Group 6</th>
<th>Group 7</th>
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<tr>
<td>Mean</td>
<td>3.06</td>
<td>2.80</td>
<td>3.67</td>
<td>3.12</td>
<td>2.65</td>
<td>2.67</td>
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Responses on Item 1

![Graph showing frequency of responses by group]
(2) Issues of accountability in a PM arrangement do not concern me unless they impinge directly on my own role and contribution.

<table>
<thead>
<tr>
<th>Response Rating</th>
<th>Group 1</th>
<th>Group 2</th>
<th>Group 3</th>
<th>Group 4</th>
<th>Group 5</th>
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<tr>
<td>Column Totals</td>
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<td>24</td>
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<td>27</td>
<td>15</td>
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</tbody>
</table>

**Means**: 2.06, 1.60, 3.24, 3.12, 3.26, 3.37, 2.60
**Medians**: 2, 2, 2, 2, 2, 2, 2
**Modes**: 2, 2, 2, 2, 2, 2, 2

Responses on Item 2

![Frequency Distribution Graph](image-url)
(3) A project arrangement with no project manager has a more definite distribution of accountability than one which uses a project manager.

<table>
<thead>
<tr>
<th>Response Rating</th>
<th>Group 1</th>
<th>Group 2</th>
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Mean 2.89 3.20 4.19 3.84 3.13 4.00 3.67

Median 2 2 5 4 3 4 4

Mode 1 2 6 2 2 2 2

Responses on Item 3

- Group 1
- Group 2
- Group 3
- Group 4
- Group 5
- Group 6
- Group 7

Agreement Rating

Frequency

328
(4) Use of PM transfers a substantial portion of a project's overall accountability from participants to a project manager.

![Responses on Item 4](image-url)
(5) In making recommendations relating to professional consultants' contributions, the project manager incurs a shared responsibility.

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| Column Totals   | 15    | 140        |
| Mean            | 4.94  | 4.80       |
| Median          | 5.5   | 6          |
| Mode            | 6     | 6          |

Responses on Item 5

![Graph showing responses on Item 5 across different groups with varying agreement ratings.]
(6) It is unclear what the PM function is accountable for with respect to the project, when compared with the traditional design and construction functions.

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Responses on Item 6

[Graph showing frequency distribution of responses for each group]
(7) A project manager's power and influence is excessive when compared with the responsibility he carries.

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Responses on Item 7

![Graph showing responses on Item 7](image-url)
(8) Project outcome is entirely the responsibility of the project manager.

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Responses on Item 8

![Graph showing frequency distribution of responses on Item 8 for different groups](image-url)