

INTEGRATION AND CULTURAL ENGINEERING ON PROJECTS IN DEVELOPING COUNTRIES (KENYA)

Edward Ochieng¹ and Andrew D. F. Price²

Department of Civil and Building Engineering, Loughborough University, Leicestershire, UK, LE11 3TU

The theory and practice of project management has changed fundamentally over the last ten years. This is illustrated by the introduction of a number of terms such as “modern project management”, “management by projects”, “project (project management) culture” and “beyond the Gantt Chart” that differentiate between traditional and contemporary forms of project management. Though change is inevitable, there remains an inclination for project management to be maintained as a key management tool in business environment. While there have been a number of empirical studies on project practice, particularly relating to measures of project success, the consequence of the transition from traditional to contemporary project management remains largely unexplored. The few studies that have been carried out have focused on project management practice in generic terms or on the experiences of individual organisations. This is more evident in developing countries, such as Kenya, even though different reports continue to highlight the significant number of project failures in such countries. Using qualitative and quantitative methodologies, this paper explores the role and relevance of cultural engineering to industrial projects in Kenya. This should provide a comprehensive assessment of factors critical to industrial project success. The findings should also demonstrate the most appropriate strategic planning approach for developing countries and aid the optimum utilisation of scarce resources and better fulfilment of industrial projects.

Keywords: Cultural engineering, Developing countries, Life cycle, Project integration, Strategic planning.

INTRODUCTION

It is widely recognised that industrial project management is not as consistently effective as it ought to be (Maylor 2001). The discipline of project management has changed dramatically in recent years to accommodate emerging management process and philosophies related to organisational development. After re-examining some of the failures or poor performance of projects, it can be argued that in developing countries problems often originate from poor project integration, unclear management roles and the setting of unclear goals (Cusworth and Franks 1993; Murithi and Crawford 2002). It has been observed from the literature that project integration theory can appear simple and straightforward but can be very difficult to achieve in practice (PMI 2000). Struckenbruck (1992) and Turner (1992) argued that ineptly conceived or poorly executed project management is doomed to failure. Cusworth and Franks (1993) suggest that, in developing countries, project managers work in a different context and face a different set of problems from those in industrialised countries. This has led a number of observers to question the applicability to developing countries of management concepts developed in industrialised countries.

The main purpose of the study is thus to review the existing strategies in cultural engineering in Kenya with the view to introducing modern culture and bridging the traditional culture. The paper starts with a review of cultural engineering, followed by an overview of Kenya and an analysis of previous studies as relating to developing countries. It presents an analysis of the oil and manufacturing industries, as they are the most established industrial sectors in Kenya. An overview of the research methodology has been summarised. The paper concludes by identifying the gap in the literature and the need for further study.

CULTURAL ENGINEERING IN INDUSTRIAL PROJECTS

An extensive literature review highlighted that cultural engineering is often an imprecisely used term that has a diverse range of meanings, with very few empirical studies done on its role in project management. The most appropriate definition was found in Mazrui (1972), whereby cultural engineering was defined as the modification of technology to aid social needs and assist in inducing social reform. While this definition is more than thirty years old it still captures the concept of cultural engineering as explored in this study.

Hodgetts and Luthans (1991), suggest that culture can affect technology transfer, managerial attitudes, managerial ideology and even business government relations. Perhaps, most important, culture affects how people think and behave. It could be argued, that project management originated in Western countries and its popularity has been steadily growing, but the outcomes have not always been in line with expectations, particularly in developing countries. Turner (1999) submits that one of the reasons for poor project performance could be a weak understanding of local needs by Western project managers, particularly, needs beyond the project scope and integration which are hard to articulate and define in Western technology. Furthermore, a number of Western cultural engineering methods are weak in both project initiation and the project termination phases, due to their individualistic attributes towards authority, risk and challenge, and quality of life (Turner 1999). It could be argued that the need for cultural engineering is the most significant problem on industrial projects in developing countries. In spite of project management popularity and widespread appeal, there are many issues that need to be given serious consideration before implementation. The focus of this research is to understand the theoretical and practical implications of cultural engineering for project management within developing countries, as presented in Figure 1.

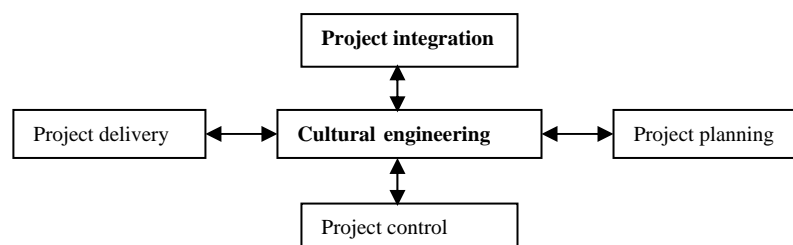


Figure 1: Theoretical and practical implications of cultural engineering

KENYA: TODAY AND IN THE FUTURE

There have been several attempts to introduce effective forms of project management in Kenya, for instance, following independence it became apparent that the country simply did not have the capacity to achieve its ambitious development objectives (Ndegwa and Kuhn 1982). This led to an urgent need to institute some kind of effective project recognition, preparation, planning and implementation. As a result of the insistence of international development agencies, the Kenyan Ministry of Economic Planning and Development assumed the responsibility for introducing a project unit. The aim was to assist Ministries within the government with identification, preparation, evaluation and preparation of development projects. It could be argued that these were solid ambitions, perhaps best demonstrated in practice through the large number of projects described by the ministry. Although Kenya has shown commendable performance in managing large projects, major problems in some areas of project management still continue to persist. Among these is the appropriate implementation of project integration.

Although the industrial sector, which includes oil, chemical, food manufacturing and pharmaceutical, is far from the largest sector in Kenya, in terms of share of total output or employment, the growth of this sector has long been looked on as an important instrumental for economic development. The lack of high quality data constitutes one of the main impediments for rigorous and policy relevant research into most African industries. It could be argued that the vast majority of previous heavy industrial construction on Kenya has been based on aggregate data. Though aggregate data are useful in many circumstances, the range of issues that can be addressed relating to industrial projects are inherently limited.

INDUSTRIALISATION IN AFRICA (KENYA)

Industrialisation has been an integral part of Kenyan development strategies both in the colonial and post-colonial periods (ROK 1966). In addition, it is not only seen as a mechanism of diversifying the economy but also as a dynamic engine for sustained accelerated economic growth, especially in the post independence period. From the government publication National Development 1997-2000 (ROK 1997-2000), it has been suggested that the emphasis is on the development of the industrial sector for a stable and sustainable growth in the twenty first century. The country intends to achieve the status of a new industrialised country by the year 2020 (ROK 1997). Though Kenya inherited a relatively well established industrial sector after independence, the sector's overall performance has been rather poor for most of the post-independence period. This is with exception of the period between 1963 and 1972 when it registered an average annual growth rate of above 10 per cent.

The objectives of industrialisation include diversification of the economy, employment generation and conversion of foreign exchange. Though Kenya has remained politically stable for most of the post-independence period, it has been shown from the literature (PER 2000-2004) that there have been internal political dynamics with implications on the choice and implementation of strategic planning in the country. This has therefore undermined some of its policies and strategies for industrialisation. Arguably, the policy-making environment of any nation is determined to a large extent by the kind of political set-up that a nation has in place, including the legal and institutional mechanisms established to guide the strategic planning process. The industrialisation process in Kenya has therefore been

influenced by a number of factors including the country's colonial history, resource endowments, regional economic relations, foreign investor including donor perceptions, the prevailing socio-economic environment and the general policy environment (World Bank and IMF 2004). In Kenya, and indeed in many other developing nations, there is a need to question not only the context and content of government strategy relating to industrialisation but also the strategic formulation capacity that defines the scope and effectiveness of project integration. This study seeks to help address this lack of attention by focusing on the importance of cultural engineering. This is imperative to Kenya, because industrial performance and its drivers are diverging rather than converging. Much of the divergence appears to be a long-term phenomenon within the industrial sector. To achieve long-term sustainable industrial development, Kenya and many other countries in Africa need a concerted strategy for industrial upgrading moving from simple to more advanced strategic planning.

PROJECT MANAGEMENT IN DEVELOPING COUNTRIES

Project integration is the process required to ensure various elements of a project are properly coordinated (PMI 2000). The move towards project integration has been underpinned by the need for new models of project management practice and performance improvement (Maylor 2001). For example, in exploring the planned and emerging project management styles of leadership, Lewis et al (2002) concluded that in a tough, dynamic and demanding world, traditional models that propose an either/or style of project management are no longer appropriate.

Literature relating to the introduction of project integration encompasses both its character and the process by which its character develops. Traditionally, the scope of project management emerged from the intent differences between operations and project, with project management being seen to be applicable to manage unique, capital-intensive, non-operational activities in such project based organisations as automobiles, telecommunications, construction and oil. Theorists describe the introduction of project management as being broader in its area of applicability than traditional project management (Pelligrinelli and Bowman 1994; Turner 1993).

Though there has been significant research into project management in Western economies, there has been little to define a concept that links project integration and strategic planning in managing projects in developing countries. The focus has mainly been on the use of key success factors to improve the effectiveness of project management in developing countries (Murithi and Crawford 2002; Struckenbruck and Zomorrodian 1987). This highlights the need to explore industrial project management in Kenya. Currently, evidence suggests that there is increasing emphasis on strategic planning at the expense of industrial projects in Kenya (PER 2000-2004). Strategic planning can be defined as a management tool used to help an organisation do a better job (Dobson et al 2004). The perception is that the lack of appropriate strategic planning has led to many projects failing to achieve the targets set for them, or that they have unintended negative consequences which far outweigh their direct benefits.

There is a growing demand for a model or tool to help project managers in Africa deal with large and complex projects. Barnes and Wearne (1993) argued that most tools developed in the field of project management appear to be insufficient to fulfil this role. The argument of the applicability of industrial project management tools to

developing countries inevitably leads to the question of whether it is applicable to all African countries, or just to particular countries under certain conditions. Having considered some of the types of international projects (ECI 2005), it could be argued that most problems do arise due to cultural engineering issues.

The issue of cultural engineering is a prime focus in today's project management literature as argued in a recent workshop (EC1 2005). This was advanced, by attendees who suggested that introducing established project management tools into a developing country is likely to fall short of its potential effectiveness unless they are modified to take account of the prevailing cultural and processes. To this end, this study intends to explore the principles of cultural engineering which are particularly relevant in assisting developing countries to achieve project success.

STUDIES OF PROJECT MANAGEMENT IN DEVELOPING COUNTRIES

Numerous UNIDO (2005) studies on developing countries (www.unido.org-publications 2005) have highlighted the difficulties faced in understanding and interpreting project management tools in developing countries. In the 1990s, a UNIDO (1995) study concentrated on formulating industrial policy in Africa, and the final report focused on the role of government policies although there was no overt strategy to stimulate industrial growth. Earlier on Struckenbruck and Zomorrodian (1987) studied project management in developing countries, and recommended that the application of project management needs to take into account, technical, political and environmental conditions. They concluded that factors such as: nature of the task; type and size of project; and the degree of technological complexity must be considered in order to ensure the success of the endeavour. Attention was thus turned away from addressing cultural complexity. Al-Shaikh (2001) concentrated on the units involved in strategic planning and the components of strategic planning in business firms in United Emirates and established that substantial evidence from developing countries indicates that strategic planning is associated positively with financial performance and negatively with failure rates but fails to address the link between strategic planning and project integration in organisations. There is currently a dearth of information investigating cultural engineering in developing countries. Some recent works include:

- Hofstede (1980) studied cultural aspects of developing and developed nations. The conclusions of Hofstede's study were somewhat open to question because of its lack of sufficient empirical data and the failure to include basic social, political and religion parameters, values, preferences and strategic formulation techniques; and
- Murithi and Crawford (2002) who focussed on the applicability and relevance of project management, tools and techniques in Africa, and argued that the application of project management tools and techniques will not enhance project success if they run counter to cultural and work values.

The above studies span over two decades and highlight that the understanding of cultural engineering remains weak. The existence of this problem is argued by the real lack of commitment through little understanding detected at governmental and senior management level (PER 2000-2004 and ROK 1997-2000). Literature thus suggested that there is a need for empirical work to formalise a project integration model for industrial organisations in Africa (Kenya). There is also a need to verify the

tools, concepts and techniques of the present project integration orthodoxy work; in particular, which ones do not work and why. This will incorporate assessing the gap between what the literature maintains is required of cultural engineering and why project integration is not good in developing countries. The planned research will address the cultural adaptation issue being faced in the sector.

PROBLEM IDENTIFICATION

Exploring this area is justified as the industrial sector has had difficulties in the modification of project management in Kenya (Kenya Nation newspaper 2001; PER 2000-2004; and ROK 1966). The problem is the inconsistency between what is required of cultural engineering, what the industrial sector claims to deliver and what they actually deliver (ROK 1997-2000). According to Ndegwa and Kuhn (1982), PER (2000-2004), ROK (1997-2000), The World Bank and IMF (2004) some of the problems being faced include: ineffective procedures for defining and preparing; difficulties with appraisal and selection; problems of activation and start up; ineffective project execution; operation and supervision; deficiencies in the co-ordination of project activities; problems in evaluation; diffusion of project results and lack of follow-up action; lack of standards and discipline; unclear management roles and lines of authority; and lack of a management infrastructure.

To catalogue the lack of cultural engineering in developing countries is not to condemn the government, international bodies and private co-operations but serves to underline the need for new and more effective management procedures. This should lead to industrial projects having greater impact on improving social and economic conditions in developing countries (Africa). Current project management literature recognises that industrial projects have identifiable features (Lewis et al 2002). It also highlights that projects follow a life cycle and maintains that industrial project managers currently manage the whole of that life cycle. Lack of research on pre-delivery, preparation or strategic planning and the absence of project integration research has prevented the government from addressing the problems being faced in managing of industrial projects in Kenya.

Current research as part of a PhD study is examining problems being experienced in the management of projects in the sector. Difficulties currently being encountered will be addressed and solutions proposed. From preliminary discussions with industrial project managers in Kenya, a number of them pointed out that there was still lack of research on how Western project management cultures can be adopted in managing large industrial projects in developing countries.

It is being increasingly recognised that traditional project integration is an exclusive management process of scientific nature characterised by various techniques that include: planning, monitoring, control of project performance and quality of project work. It was also acknowledged, that project integration provides better quality to clients through optimal utilisation of resources and effective intra-organisational integration. Literature suggests that there exists large scale of empirical evidence highlighting a degree of disorder among existing approaches to management of industrial projects in Kenya (Kenyan Nation newspaper 2001, PER 2000-2004 and ROK 1997). There is a need for a wider understanding of variables, which influence success of industrial project management in Kenya.

According to the Kenya Nation newspaper (2001), failure of projects in Africa has been attributed to poor project planning and control. Attendees at seminar in Nairobi

/Kenya (2001) were told that Africa needed to embrace modern methods of project management to avoid wastage of project public resources. However, if factors such as commitment, planning, awareness and the evidence presented are considered, it could be argued that lack of cultural understanding and modification have led to this gap. This indicates the need to understanding experiences and attitudes towards adopting project integration concepts.

THE POTENTIAL SIGNIFICANCE OF THIS RESEARCH STUDY

It has been acknowledged that the industry forms an important part in the economy of developing countries. The fundamental assumptions underlying this research include the following: project integration issues dominate current industrial project performance in developing countries, consequently due to underdeveloped cultural engineering (ECI 2005). Unfortunately, research on industrial project integration in developing countries remains scant. This indicates the need to understand the theoretical and practical implications of cultural engineering of industrial projects in developing countries.

DISCUSSION

This paper asks the following research questions with respect to which factors are critical to large industrial project success in developing countries, which further research will attempt to answer.

- What factors lead to consistently successful management of project sub-functions in industrial projects?
- In large industrial projects, what are the challenges that project managers face in effectively developing project purpose in developing countries?
- What factors lead to project integration success?
- What factors lead to strategic planning success on projects in developing countries?
- What is the degree of cultural complexity that exists on projects in developing countries?
- How/Can cultural engineering be successful applied to modify project delivery in developing countries?

METHODOLOGY

Given that little is known empirically about cultural engineering in developing countries, both qualitative and quantitative methodologies will be used. Like in most engineering management studies (Lewis et al 2002; Maylor 2001), the study will not attempt to promote a particular approach to cultural engineering in developing countries. Since the literature suggests that there are already external factors which may influence the adoption of cultural engineering on industrial projects in Kenya, these factors will be assumed as integral to everything which takes place in projects. In exploring cultural engineering the main data collection strategies will be semi-structured interviews and postal questionnaires. In addition a case study approach will be used with specific selected industrial organisations. Triangulation of data will be necessary because of the complexity of the research problem that involves cultural issues in developing countries. This should open up the possibility of developing a

clear understanding of difficulties faced in adopting project management concepts, in particular the understanding of cultural engineering. In summary, this study will adopt the following research methodology as presented in the Figure 2 below.

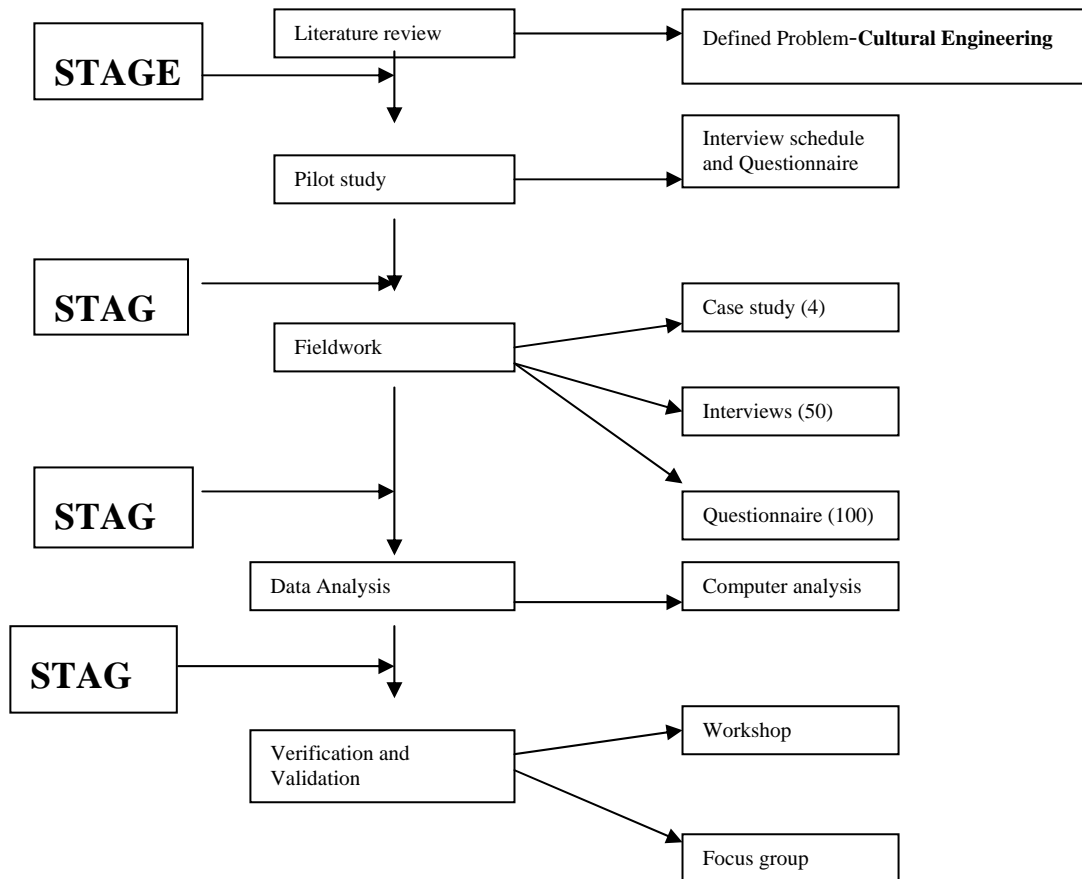


Figure 2: Proposed Research Methodology

SAMPLE

The sample will be purposeful selected from participants in the manufacturing, oil and gas sector in Kenya. The aim will be to select participants using simple random selection to ensure each individual will have an equal probability of being selected from the population (Easterby et al 2002). This will ensure a sample that is representative of the population. Given the need for in-depth information, constraints of time and cost, the study will mainly focus on experienced participants who have a minimum of 5-10 years experience within the industrial sector. It is proposed to include a total of 150 participants involved in industrial project management in Kisumu, Nairobi and Mombasa, this will be roughly split into: refineries and manufacturing organisations. The organisations to be used in this study will be government owned, this means it would be imperative to interview participants from the two sectors mentioned above.

DATA ANALYSIS

Qualitative and quantitative data analysis strategies will be used. In keeping with the principles of qualitative research, data will be developed through constant comparative analysis over the entire time frame of the study. In addition the use of multiple methods or triangulation will be used to secure an in-depth analysis. In the process of analysis, there will be a continual reassessment and refining of concepts as the analysis proceeds. This process will facilitate the development of working models that will explain the role of cultural engineering in industrial projects. Computer assisted data analysis will also be employed. For nominal and interval data, the chi-square test will be applied to determine the presence of an association of the quantitative data. Descriptive and inferential statistics will be adopted: statistical tests will be used to test the hypothesis in the study. In general the analysis will involve identifying factors related to cultural engineering in developing countries. These will be validated by participants before finalising the results.

CONCLUSIONS

The literature review pertaining to industrial project management and its applicability to developing countries (Kenya) suggests that cultural engineering is one of the most crucial elements in project management success. This paper has highlighted that industrial project management is claimed to be an effective and adjustable management approach, which has the potential of being great value to developing countries. However, as argued in this paper there are considerable cross-cultural problems foreign project managers face in pursuing the approach in managing large projects. The most formidable problems foreign project managers face in modifying and tailoring project management to local needs include procedures, knowledge and process. The proposed research therefore intends to demonstrate that if a proper cultural strategy is installed and managed by properly trained project managers, the difficulties can be overcome to the benefit of all concerned with large industrial projects in developing countries. This should be achieved by combining both qualitative and quantitative research methods. This will include the analysis of the critical factors for success as relating to Kenya. In summary, the driver for this study is in the current lack of an appropriate cultural engineering strategy and the persistent problems being faced within industrial projects in Africa (Kenya).

REFERENCES

- Al-Shaikh, F (2001) Strategic Planning Process in Developing Countries. The Case of United Arab Emirates Business Firms. *Management Research News*, Vol. 24, November 12.
- Barnes, N M L and Wearnes, J H (1993) The Future for Major Project Management. *International Journal of Project Management*, Vol. 11, No.3. pp 41-135.
- Cusworth, W and Franks, R (1993) *Managing Projects in Developing Countries*. UK Limited: Longman Group.
- Dobson, P, Starkey, K and Richards, J (2000) *Strategic Management*. Oxford: Blackwell Publishing Ltd.
- Easterby-Smith, Richard Thorpe, M and Andy Lowe (2002) *Management Research, An introduction*. 2ed. London: Sage Publications.
- ECI (2000) Project management workshop, Loughborough University, 7th June. *Unpublished Handbook*. European Construction Institute.

- Hodgetts, R M and Luthans, F (1991) *International Management*, New York: McGraw-Hill. Pp.35.
- Hofstede, G (1980) *Culture's consequences: International differences in work-related values*. California: Sage Publications
- Lewis, M L Welsh, M A Dehler, G E and Green, S G (2002) Product Development Tensions: Exploring Contrasting Styles of Project Management. *Academy of Management Journal*, Vol.45 No.3, pp 546-64.
- Maylor, H (2001) Beyond the Gantt Chart: Project Management Moving on. *European Management Journal*, Vol. 19, No.2. pp 92-100.
- Mazrui, A A (1972) *Cultural Engineering and Nation Building in East Africa*. USA: Northwest University Press.
- Murithi, N and Crawford, L (2002) Approaches to Project Management in Africa: Implications for International Development Projects. *International Journal of Project Management*, Vol. 21 Issue.5, pp 309-319
- Ndegwa, P and Ruhn, T E (1982) Development Objectives, Plans and Projects: The Experience of Kenya. *TIMS Studies in the Management Sciences 17*.
- Pelligrinelli, S and Bowman, C (1994) Implementing strategy through projects. *Long Range Planning*, Vol.27 No.4, pp125-32.
- Project Management Institute (2000) *A guide to the Project Management Body of Knowledge*. Pennsylvania: Project Management Institute.
- Public Expenditure Management (PER) (2000-2004): *Development Since the 1997*. Kenya: Government Printer Nairobi.
- Republic of Kenya (ROK), *National Development Plan (1966) and (1997-2000)*. Kenya: Government Printer Nairobi.
- Republic of Kenya (ROK) (1997). *Sessional Papers No.2 of 1997 of Industrial Transformation to the Year 2020*. Kenya: Government, Printer Nairobi.
- Struckenbruck, L C and Zomorrondian, L A (1987) Project Management: The Promise for Developing Countries. *Project Management Journal*, Vol.5, No.3 August 1987.
- Struckenbruck, L C (1992) *The Implementation of Project Management: The Professional Handbook*. Massachusetts: Wesley Publishing Company Inc.
- The Kenyan Daily Nation Newspaper*. Thursday August 30th 2001. www.nation.co.ke
- Turner, J R (1992) *The Handbook of Project Based Managerial; Improving the Process for Achieving Strategic Objectives*. London: McGraw-Hill.
- Turner, J R (1993) "Editorial", *International Journal of Project Management*, Vol.11 No.4, p.195.
- Turner, J (1999) *The handbook of project-based management: improving the process for achieving strategic objectives*. 2ed. London: McGraw-Hill pp490-506.
- United Nations Industrial Development Organisation (1995), *Formulating Industrial Policy in Africa: 2000 and Beyond*. www.unido.org –Publications link.
- WorldBank and IMF (2003) *Public Expenditure Management*. Country Assessment and Action Plan. Washington: WorldBank and IMF.