

Matrix Structure and Manpower Development: A Paradigm Shift



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ABSTRACT: The paper examine matrix structure and manpower development;a paradigm shift. The aim of this research is to determine the extent to which matrix structure improves an organisational manpower effectiveness as well as to ascertain how matrix structure increase organisational manpower efficiency. The content analysis methodology was used in this study. The data and information used in this study are from the existing literature and previous studies. The secondary data sources include textbooks, journal articles, reports and internet. Research question raised in this paper was explored by the concept of matrix structure. The findings of the research reveal that team motivation, problem solving, skills and knowledge acquired on the job enhance manpower effectiveness while the managerial skills required in the matrix structure centred on positive on the positive achievement of the firm and individual employee. The study recommends that careful attention should be paid to the creation of matrix structure in terms of coordination, communication and control.

KEYWORDS: Matrix structure, Manpower development, Employee performance, Institutions.

1.0 INTRODUCTION

The modern challenges in the manufacturing sectors have led to a new horizon of matrix structure. Many organisations are changing their organisational structure to have matrix elements, and this is expected to continue in the future (Galbraith, 2012). A complex organisation with two or more project, programme, process and problems need matrix structure to accomplish its objectives. In this study, matrix organization structure is a combination of two different structures; that is, the functional and project structures. It consists of group of persons from various functional departments instructed to work on a project under the direction and guidance of a project manager who is appointed by the top management. Matrix organization structure is a phenomenon in which the reporting relationships of company are set up as a grid rather than a traditional hierarchy. Matrix structures are uniquely developed for a particular organization using a specific application.

Anshika (2013) posits matrix organisation as any organisation that employs a multiple command structure as well as related support mechanisms, associated organisational culture and behavioural patterns. Thus, matrix organisation structure is capable of managing very large and very complex programmes, projects, problems, and limited resources. In the recent time, Microsoft has experienced paradigm shift from divisional structure to a matrix element. Microsoft embarked on matrix structure in order to crave for synergy of its products with Microsoft services. The purpose was to enhanced the new invented Windows 10 to run across every platform (Burton, Obel, & Håkonsson, 2015). In the healthcare institutions, there is dynamic trend in the traditional functional organization to medical specialties with important attention to patient matrix structure (Axelsson, Axelsson, Gustafsson & Seemann, 2014). The Danish influence in matrix structure in 2007, Medtronic seemingly replace hospitals at initial stage as a result of lost of patronage by its customers. It was a mismatch with Medtronic's product. The Medtronic consequently change to fit into matrix structure. Medtronic is a global leading company on medical technology services and solutions, primarily aim at collaborate with others to take on health-care's greatest challenges.

An upsurge in environmental challenges in terms of complexity and uncertainty requires the application of matrix. The matrix structure is a model of the Law of Requisite Variety (Ashby, 1956): environmental complexity are assessed by the complexity in the organisation's design. Matrix organisations are actually selected for strategic reasons. On the other hand, matrix affects

Matrix Structure and Manpower Development: A Paradigm Shift

individuals and teams working in the organisation. This is because information flow and decision policy in matrix cannot be juxtapose with the hierarchy obtained in traditional setting. However, the shift by many organisations to matrix structure have rest sufficiently harnessed the benefits expected from the matrix (Malloy, 2012). Ford and Randolph (1992) expressed that:

An organization cannot diffuse a matrix into its existing structure and expect success. Matrix structures should be uniquely developed for a particular application in a particular organization...There is also evidence to suggest that there are contingencies based on the structural, system, behavioral and cultural context of the organization in general and the matrix structures in particular, which have positive and negative influences on the effectiveness of the cross-functional structure.

It is suggested that many scholars are unanimously on a good mechanism for improvement of organisational productivity and equally submitted that manpower development is vital for training of managers, professional and all employees, for acquisition of knowledge, skills needed for present and future task accomplishment (Ofubruku, 2012). Therefore, manpower development is an integral aspect of the total investment by the most businesses to realise more potentials.

It is on this premise that matrix structure if adopted by organisations that engage into multiple functions, then there is the need for adequate manpower training to ensure proper roles in all of its functions given. This therefore means that a close related shift from the normal or conventional way or means of having an effective organisational structure also requires a matrix form having the paradigm shift.

This paper, having looked at what is obtains above could draw an inference from suitable related literature to assume a sophisticated shift from using a matrix model of organisational structure to adequately function well. The paper also highlighted on establishing where the problem lies, questions raised as to this development and the objectives of the study.

The paper also reviewed related literature such as the concept of matrix structure, highlighting the basics for a matrix structure, the relationship or impact of a matrix in an organisation as well as the concept of manpower training and development. There is also a theoretical and empirical reviewed of the subject under investigation . it suffices to posit that the study adopt an underpinning theory. The paper further looked at the methodology used for the study and the inference drawn from the related literature to show a shift citing relevant authorities. There is also a discussion based on stated objectives as well as recommendations.

1.1 Statement of the Problem

Many organizations have developed good manpower training and development programmes, but it has not always been easy to achieve the individual set goals due to certain factors that influencing different objectives. The various institutions or organizations, have unique goals and objectives which they project to achieve. It is against this backdrop that organizational activities are propelled. In Nigeria, the vacuum between the skilled and semi-skilled labour is on contrast level. While the semi-skilled labour on the surplus, the skilled labour is redressing. This has been the challenging issue for manager in terms of redressing the surplus an scarcity of human resources. Both the private and public sectors businesses of the economy are enclosed by the problem of inefficiency, low capacity utilization and other symptoms of poor job performance (Burton, Obel, & Håkonsson, 2015). These problems can be averted and slowed by early identification of adequate training techniques and programmes for various levels of managers, supervisors and operatives particularly looking at matrix structure that accommodates seamless processes (Burton, et al., 2015).

1.2 Research questions

- i. To what extent does matrix structure improves an organisational manpower effectiveness?
- ii. Does matrix structure increase organisational manpower efficiency?

1.3 Research objectives

- i. To determine the extent to which matrix structure improves an organisational manpower effectiveness.
- ii. To ascertain whether matrix structure increase organisational manpower efficiency.

2.0 LITERATURE REVIEW

This paper reviewed some related literature.

2.1 Concept of Manpower Development

Manpower system is a group of individuals who collaborate within an organisation to fulfill its shared objectives. Manpower development is the process of enhancing organisation resources and improving ability and capability to have productive life (Hassan, 2007). According to Schultz (1993), the definitions of manpower have shown some essential elements in enhancing organisations resources and help employees to improve productivity of the business or organisation. In order to endure

Matrix Structure and Manpower Development: A Paradigm Shift

business effectiveness in organisations, the manpower becomes an asset and instrument used to grow productivity. Thus, the definition of manpower development as stated by the Organisation for Economic Co-operation and Development (OECD) (2001) referred to the improvement of skills, knowledge, capabilities, and qualities personified in persons that enable the making of personal, societal and commercial well-being. This implies that manpower development could lead to better employees' productivity and ultimately improve organisation productivity. Rastogi (2002) stated that manpower is an important resource for organizations especially for employees' continuous improvement of knowledge, skills, and abilities.

Training means modification of behaviour for the development of knowledge and skills of manpower for doing a particular job. Learning modifies behaviour as a result of education, instruction, development and planned experience (Micheal, 2005). on-the-job training is learning undertaken under the guidance of the experienced supervisor. It is on the job because the trainees learn the job while at the same time contributing towards the objective of the organisation. Job rotation, coaching and apprenticeship are training on the job. On the other hand, off-the-job training is the method of improving learners' knowledge, broadening their perspectives or increase their sensitivity to the actions of others. This was separate from education and development. The connotations of training were of specific kinds of formal learning provided in the workplace.

Development: This maintains distinct status from education and training but also seen as an ongoing process and outcome associated with both. Development was about the change of the whole person, not just the academic or vocational pieces of knowledge or skill needed for work. Development is the behavioural modification of people through continuous learning practices. Development relates to non-technical organisation functions such as problem solving and decision making relating to people. In the context of work and organisations, development was usually used to describe training for managers and professionals. Employees had to be trained; managers and professionals had to be developed. Development therefore signifies superior and more elaborate learning. However, now that personal development is becoming an integral part of life for all employees, the concept of development is being applied more broadly to learning. Training and development is an individual or organisation effort which is vital for employees effectiveness (Devi and Shaik, 2012).

Concept of Matrix Structure

There are numerous definition of matrix structure because many see it in multi dimensional ways which means different things to different people and system. John (2013) comprehends the concept of matrix structure as a structure where two or more employees are working both under a departmental head as a project manager of an interdisciplinary project team. The extent of the matrix depends on complexity, flexibility and adaptability of organisation. Matrix structure flew in the face of many organisational principles outlined by the early management writers. Span of control grew, unity of command was forgotten and line of authority causes confusion, yet the form persists because it responded to a particular need, experience in the aerospace industry. A matrix structure is an organisation where employees have to report to more than one boss. The matrix organisation structure is the combination of project organisation and the functional organisation and take the best out of both (Binaya, Rasna, Kritartta, Aashma and Yasuf, 2014). Knowledge, skills and talents of employees are required to be shared between the functional departments and project management. It is pertinent that high level of trust, communication, negotiation, teamwork, ability to shift focus and priority and attention to detail are essential to managing and working in a matrix. Matrix organisation structure is classified into three types: strong matrix organisation, weak matrix organisation and balanced matrix organisation.

- A. **Strong matrix:** In a strong matrix organisation, functional managers have limited role. The functional managers only assign resources for the project and provide technical consultation as at when needed. Power and authority lie on project managers to oversee, control the budget. He also supervises the project and equally responsible for completion of the field work.
- B. **Weak matrix:** In a weak matrix, all staff involved in the delivery process of project remain under the control of the functional manager. While project managers are formally designated to oversee the project across different functional areas. As a result, project managers have limited power and authority, they have the role of coordination. However, the functional manager retain primary responsibility for their specific segment of the project.
- C. **Balanced matrix organisation:** In a balanced matrix, power and authority are shared between both managers. The functional and the project managers control and shared responsibilities for the project resources. Under this form of matrix, project managers are designated to oversee the project/program and interact on an equal basis with functional managers. Functional and project managers work together, direct and approve technical and operational decisions.

Matrix structure is often used in an organisation where the need for strong technical assistance is required in accomplishment of different tasks. It is popularly used in a large scale consulting aerospace and construction industries (John, 2013).

Matrix Structure and Manpower Development: A Paradigm Shift

2.2 Theoretical Framework

Human Capital Theory

The study hinges on Human Capital Theory propounded by Schultz in the year 1961. The theory states that the level of education, training and development of an individual determines his economic rewards. Training and development enhance key competences, skills, knowledge of the employee in order to make him functional in the organisations accomplishment. It focuses attention on resources, human resource development, and reward strategies and practices. According to Human Capital Theory, training and development are investments because it is believed that it could potentially bestow private and social benefits. Human capital theorists believe that there is relationship between training and economic rewards, which means, that the more organisation train and develop their employee to improve skills, knowledge and abilities the more it will enhance productivity (Dae-bong, 2009).

2.3 Empirical Review

2.3.1 Matrix structure and manpower development

Many studies were conducted on matrix structure and manpower development. Most of the studies were empirically dealt with. However, for the purpose of this study, only few were empirically studied as follows:

Okudu, Iyi, and Nnadi (2024) conducted an investigation on the impact of matrix management structure on the community development projects by oil and gas industries in Kokori, Delta State, Nigeria. The research design adopted in this study was a descriptive survey method. A sample of 76 was drawn from total population of 189 with the use of Castillo model of determination technique. Questionnaire was used as an instrument for data collection. The data was analysed with measure of central tendency and measure of dispersion respectively. Findings of this study revealed that matrix management project style enhances to a high extent community development based project. It was recommended that matrix management structure adopted by companies for quick and quality project delivery.

Ossai, Madulaife, Udom, Ndukah and Ugah (2023) investigated on the effect of prioritized input of human resources control in departmentalized Markov manpower framework. The purpose was to extend Markov manpower model and incorporate a new class member of a departmentalized manpower system. The original matrix class is an active class while, the new class is called Limbo class. This result to the two channels of recruitment. The brain behind this was the need to retain and or absorb trained and experienced personnel in the system. The stochastic condition of matrix was adopted. The findings revealed that maintaining manpower structure through promotion does not relied on structural form of limbo class when the company is expanding which call for outsourcing. It was recommended that necessary and sufficient avenue should be put in place for maintaining manpower structure through recruitment in an expanding system.

Elvis, Donjeta and Beke (2020) conducted an investigation on how organisation matrix structure can impact in project management success. The purpose was to explore the characteristics of matrix structure and its relationships with project success managers. Both primary and secondary data were made available and used. The study used structure questionnaire as the instrument which was administered to the owners or managers of the companies surveyed. Paired sample test was the technique used to test the matrix structure and problem solving, project management effectiveness, quality of communication and collaboration of the firm. The study concluded that project management success has direct influence on the firm leadership.

Stephanie (2016) also conducted an investigation on matrix organisation; the design of cross-beat teamwork in newsrooms. The purpose of this paper was to explore the cross-beat teamwork in Swiss daily newspaper and investigated journalist experience in particular project. Primary data was used. Data collected and used was through interviewed. The study compared advantages and disadvantages of matrix organisation with journalist experience and drive implications for introduction and design new matrix structure in newsrooms. Cross-beat teamwork has a potential to connect expertise in editorial team and increase its technical excellence.

Burton, Obel and Hakonsson (2015) in their study, how to get matrix organisation work. The purpose was to translate the matrix concept for designers and managers. Three dimensions are critical for organisational success that is strong purpose, alignment contingencies and management of junctions. It was concluded that the success of matrix hinges on how well activities in the junctions of the matrix are managed.

Kuprenas (2013) investigated on the implementation and performance of matrix organisation structure in Los Angeles. The paper described matrix structure, identified and reviewed the creation of the matrix, described problems associated with the implementation of the new structure. The study concluded that due to the development of implementation tools by the leaders or managers, there is upward improvement while working with matrix structure.

Obi-Anike, Ofoburuku and Okafor (2017) conducted an investigation on manpower development and employees performance. The purpose was to examine the impact of manpower development on SMEs in Nigeria. Qualitative method of

Matrix Structure and Manpower Development: A Paradigm Shift

analysis was adopted. The focus group discussion was used the findings revealed that manpower development leads to better employee performance. The study recommends that SMEs organisations must invest necessary resources in developing manpower.

Solaja and Oladimeji (2020) also investigated on the impact of manpower development and organisational performance. The purpose was to examine the effect career advancement has on organisation performance and the relationship between on-the-job training and organisational performance as well determine the effect off-the-job training has on organisational performance. Primary data was used and data collected through questionnaire was used. Correlation and regression analysis was used to test the hypotheses. The findings revealed that there is a positive relationship between manpower development and organisational performance. The study recommends continuous training and development of employees that enhance competitive market dynamics, customer satisfaction, business and financial performance.

2.3.2 Relationship/impact of matrix on organisation

Previous research have shown that organisation structure is an integral part of any enterprise. Thus, organisation structure is related to firm performance. When an organisation project/program/problem do not match its structure that firm performance decline (Elvis, Donjeta and Beke, 2020). A matrix organisation structure is a company structure in which the reporting relationships are set up as a grid or matrix, rather than in the traditional hierarchy. In other words, employee have dual reporting relationships -generally to both a functional head/manager and a project manager. However, in some matrix, when the project is completed and accomplished the structure is terminated and the new one is emerged for a new project. Organisational collaborations create physical and operational boundaries for decision making; they can also reduce or increase complexity through choices made in defining realities, sharing responsibilities, authority and duties. International practices shows that one of the main reasons for the failure of project management in developing countries is their failure to choose the right organisation structure (Elvis, Donjeta and Beke, 2020).

3.0 METHODOLOGY

The study absolutely relied on a secondary data that is concluded studies to enable it draw inference. This according to Selltize (1977) is a systematic, quantitative and objective description of the manifest content of communication referred to as the content analysis. Because of the nature of the study, the study did not look at any population, sample and sampling techniques since it does not practically relied on primary source such as the administration of questionnaire.

4.0 DISCUSSION OF FINDINGS

4.1 Extent to which Matrix structure has improved organisational manpower effectiveness

The first objective of this study is to determine the extent to which matrix structure has improved organisational manpower effectiveness. The fundamental capability of team motivation, collaboration, problem solving, skills and knowledge acquired on the job while working in matrix structure has equipped employee to perform effectively. This translate to organisational manpower effectiveness in the long run. Therefore, findings from the literature that were reviewed also corroborate with the findings of this study which revealed that there is a strong evidence that matrix structure to a large extent has improve organisational manpower effectiveness.

4.2 Ascertain whether Matrix structure increases organisational manpower efficiency

The second objective of this study is to ascertain whether matrix structure increases organisational efficiency. Matrix structure entrenches efficiency of the organisational manpower on increase when it is uniquely designed for a specific application in a particular organisation. The managerial skills required in the matrix structure centred on the positive achievement of the firm and unit or individual's participatory function. Effective reconciliation of conflict between the lateral and vertical sub-units, information overload, excessive planning and resource allocation meetings, and decision delay produce efficiency.

5.0 CONCLUSION AND RECOMMENDATIONS

An effective coordinated climate, incentives and knowledge are ingredients of successful matrix. A matrix system can be efficient when strategic plans are actualized with positive goals. When some factors such as climate, information technology and knowledge are correctly designed, the organisation becomes organized and successful. Inflow of information enlighten the staff of a particular organisation and coordinate them for effective team work and efficient use of organisational limited resources. Therefore, careful attention should be paid to the creation of these matrix structure in terms of coordination, communication and control.

Matrix Structure and Manpower Development: A Paradigm Shift

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