

Matrix Structure and Its Contributions to a Company's Operational Flow Pattern

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Abstract:

Several attempts at structuring organizations have been met with resistance, counter productivity and / or good results depending on the relative outcomes of the exercise. Purposefulness that would create a best-fit is the rule but when neglected often lands the strategist's ship in trouble waters. Thus while several structural forms may exist, the best for any organization is that which suits its peculiarities and delivers on the expectations of the stakeholders. Here, the matrix structure is presented exposing its uniqueness, requirements, and contributions to the operational flow pattern of a matrix organization. An empirical approach using vivid literature review and survey is adopted. It is established that although other structural forms exist and would be good for different situations, given an organizational situation wherein several variables including product, customer, technology, geography, functional area and line of business have roughly equal strategic priorities, a matrix structure is the most effective.

Keywords: Matrix Structure, Matrix Organization, Operational Flow Pattern.

Introduction

The administration of every organization is anchored round a framework that defines the operational flow of the organization. It shows the network of authority and communication flow, and decision making patterns and domiciliation in identifiable measures that could be analyzed clearly to ascertain its impact on the overall life of the focal company. This frame work is technically referred to as the structure of the company's management and exists in different forms such as the functional (arranged based on who does what), divisional (depending on related activities grouped together), the strategic business unit (depending on a system that give autonomy to the divisions to operate as a firm on its own), or combination of both the functional and the divisional in one (the matrix) depending on the mission, vision and ends- in- view of the company.

A journey through the management theory cum studies jungle to unveil the impact of the matrix structure on the operational flow pattern of organizations is the focus of this paper.

ORGANIZATION STRUCTURE DEMYSTIFIED:

Suffice it to open this discourse with a slide through Robert Fritz's submission as we attempt an etymological dimension to defining the term organization structure. The words here are organization and structure. According to Fritz (1996:4), a structure is an entity (such as an organization) made up of individual elements or parts (such as people, resources, aspirations, market trends, levels of competence, reward systems, departmental mandates, and so on) that impact each other by the relationships they form. He further asserts that a structural relationship is one in which the various parts act upon each other, and consequently generate particular types of behavior. An organization on the other hand is the collective relationship of all supervisors and subordinates that defines the authority and responsibility chain of command (Business Dictionary). It is that collective entity that harnesses the synergy between the elements – departments, machines, production system, people etc- within a collectivity in achieving a common set goal / or objective. It could be a physical entity such as a company, a church, an association etc, or a conceptual configuration of various ideas and idealists, system or networks aimed at achieving teleology (Apugu, S.G.C. 2013). It is all about arrangement of man, material, machine and method in a set objective yielding relationship.

Thus an organization structure would refer to the way in which the various parts of an organization are arranged to ensure orderliness and achievement of organizational goals and objectives (Aluko, M., Olusegun O, Gbolahan G., Osuagwu L. 2004). It is a depiction of how jobs are arranged into job centres, or positions in some coherent manner to achieve set goals and objectives. It is the breakdown of all the various tasks involved in the activities of the company in line with its mission, goals / objectives, such that every member of the organization, is identified or identifiable with a task, at a task centre, and his/ her contribution(s) recognized (Apugu, op. cit.). It shows who works with whom, and what order of communication / report channels is at play. Thus a company's structure is nothing more than a managerial tool for implementing a company's strategy and for achieving the stated goals and objectives (Thompson and Strickland 1987). It is the pattern of relationships among positions in the organization and among members of the organization.

The purpose of structure is the division of work among members of the organization, and the coordination of their activities so they are directed towards achieving the goals and objectives of the organization. Simply put, the structure of an organization, defines tasks and responsibilities, work roles and relationships, and channels of

communication (Mullins 1996). He also opined that “structures make possible the application of the process of management and creates a frame work of order and command, through which the activities of the organization can be planned, organized, directed and controlled”. Gibson et al (1985), Daft (1995), and Ottih (2004) agreed that the organizational structure is reflected in the organization’s chart – the visible presentation for a whole set of underlying activities and processes in an organization. Infact Gibson op.cit. identified two aspects of organizational structure as job design and organization design, noting that job design refers to the process by which managers specify the intents, methods, and relationships of jobs to satisfy both organizational and individual requirements; while organizational design is the overall picture of the structure of tasks and authority relationships that will channel the behavior of individuals and groups toward higher level of performance in the organization.

A careful perusal of the literature of Strategic Management reveals a consensus on what structuring in organizations is out to earn, hereinafter referred to as the objectives of structure. These include;

- a) Efficiency – minimization of inputs to produce outputs and judicious use of available resources.
- b) Coordination – harnessing various efforts and work areas for result achievement.
- c) Monitoring the activities of the organization.
- d) Organizational and individual identity - the social satisfaction of members working in the organization.
- e) Job satisfaction
- f) Accountability and responsibility
- g) Communication, and
- h) Flexibility in order to respond to future demands and developments and to adapt to changing environmental influences. (See Ottih 2004, Hunt J.W., 1992, Mullins 1996).

Another dimension in Strategic Management studies is the argument that to every organizational strategy, there must be a supportive structure. (See Galbriath and Nathanson, 1978; Smith, Arnold and Bizzell, 1985; Mintzberg and Quinn, 1991; Stoner and Freeman 1995).

Going the way of the above assertion, organizational strategists have come up with different forms of structures that are adoptable by companies depending on their size, business orientation, management orientation, and availability of resources (David, F.R. 2012). There are basically two broad forms of organizational structure – the functional and the divisional structures. But in the course of adoption modifications have been made paving way for the administration of a seeming combination therapy resulting in the matrix structure or a further delineation of the task groupings along some conveniently chosen parameters creating room therefore for more. In all there is in modern times, seven basic types of organizational structure: functional, divisional by geographic area, divisional by product, divisional by customer, divisional by process, strategic business unit (SBU), and matrix structures (David op. cit.).

It is pertinent to recall here Ottih’s (2004) postulation that though there are many structural patterns in use, none can be discussed and differentiated from the other except by the employment of the descriptive variables which are called structural dimensions. These are those variables which dictates the extent of structuring – the evidence of the pattern at play. They include specialization, formalization, centralization, hierarchy of authority, complexity, professionalism, and personnel configuration.

Take notice that the domination of a particular operational pattern by either of the forgoing variables determines what structural pattern is in use and vice versa. Also, the beauty of Strategic Management study is that all the foregoing structural taxonomies do exert their unique influences on the operations of the company where they are adopted. But as earlier stated, in this paper, the matrix structure is singled out for consideration, to unfold its contributions to the operational flow pattern of a company.

The Matrix Organization Structure:

The matrix structure has been observed to be the most complex of all designs (David 2012 op.cit). This is because it depends upon both vertical and horizontal flows of authority and communication as against its other contemporaries of functional and divisional structures which depend primarily on vertical authority and communication flows. It also organizes work by both function and products. It is a structure characterized by high complexity but good for large organizations especially those with high geographic and product differentiation. Little wonder, David op.cit. noted that despite its complexity , the matrix structure is widely used in many industries including construction, healthcare, research, and defense; notable amongst which are the General Electric Company, Bechtel, Citibank, Shell Oil, Dow Chemical, Texas Instrument, to mention but a few, all of the US. (See, Harvard Business Review, 1978/05).

The matrix structure is a project structure superimposed on a functional structure; where a project organization is a temporary group of specialists working under one manager to accomplish a fixed objective (Dubrin 2006). Introduced in the USA in the early 1960’s and used to solve the management problems in the Aerospace industry (Kalyan-City Life 2011). It is a combination of two and more organization structures. It is therefore a hybrid kind of structure usually for specialized purposes. It is a grid, or matrix, with a two-way flow of authority and responsibility; with the functional departments’ authority and responsibility flowing vertically

down the line, but the divisional authority and responsibility flowing horizontally across the organization structure. It is a combination therapy for administrative situations that cannot be surmounted by just a single pattern. It affords a concert of the merits of the functional and the divisional structures in use. It is therefore a hyper administrative order requiring special resources of skills, materials etc. to be effective. In the words of Dubrin op. cit., a variation of matrix structure is put in place to provide additional oversight to the work of various managers. Its administrative flow pattern is multidimensional thus yielding a multiple operational flow pattern for the matrix organizations.

In practice, the organization is first of all divided into functional areas, then projects and managers are assigned to take charge of each projects or divisions. The employees owe their much talked about loyalty to both the functional as well the project managers, with the authority of the functional managers flowing downwards while that of the project or product manager flows horizontally. It is this crisscross of authority channel downwards and across that makes the structure to be referred to as matrix (Kalyan-city 2011).

RATIONALIZATIONS ABOUT THE MATRIX STRUCTURE:

Claims of fitness for use, and or abandonment hovers round the matrix structure in practice. Hence a discussion of the justifications for and against its applications becomes worthwhile, so that a clearer inference bearing on its impact on operations could be drawn to the fore.

Justifications For Going Matrix:

Several reasons have been advanced to support the use of the matrix structure. This has provided exclusivities on its impact especially in dictating the operational flow pattern of the adopting companies. Amongst these are the following:

- i. Best fit for dealing with high levels of complexity and ambiguity: The law of requisite variety has it that to a given level of complexity, a system of equal or greater complexity should be introduced (paraphrased). So when an organization becomes more complex administratively for example by a higher geographic differentiation, the ideal structure to tame its complexity will be by adopting a complex structure – the matrix. Years back, while justifying the rationale for going matrix, General Electric Company, in its 1976 Organization Planning Bulletin, made this injunction, "...and all of us are going to have to learn how to utilize organization to prepare managers to increasingly deal with high levels of complexity and ambiguity in situations where they have to get results from people and components not under their direct control... Successful experience in operating under a matrix constitutes better preparation for an individual to run a huge diversified institution like General Electric – where so many complex, conflicting interests must be balanced – than the product and functional modes which have been our hallmark over the past twenty years". And it is on record that GE is one of America's billion dollars businesses that had successfully dealt in their various lines of business for decades in the blue.
- ii. Matrix structures are good for highly diversified organizations. This is because it affords a good balance for complex and conflicting interests.
- iii. Satisfies rapid management response to changing market and technical requirements. The business world we know is not stable but constantly in a flux; requiring just- in -time decisions to meet set targets. While functional structures may be unreasonably bureaucratic at times, the divisional structure not been without hold-ups, the matrix structure which is a more dynamic approach in that it allows team members to even share information more readily across task boundaries and also allow for specialization that can increase depth of work knowledge becomes the best structure for the situation.
- iv. When the desire of the manager is to facilitate a rapid management response, to changing markets and technical requirements, the matrix structure remains the answer.
- v. Where there is the need for middle managers to make trade- offs decisions from a general management perspective, the structure that can support same is matrix. Recall that it is a combination therapy. According to the College Accounting Coach, 2014, it ranges from closer to functional to project, with multiple reporting lines, incorporating both solid lines (direct strong reporting) and dotted lines (a weaker reporting relationship, but still indicating some formal level of 'right' to the individual's time) or it may mean multiple solid lines to more than one boss.
- vi. When the intent is to reduce resource wastage and abuse. Functional resources are shared instead of duplicated as in a divisional structure and the use of special equipment / personnel / facilities making shutting down of a project easier, aside clarifying project objectives, and affording the ease of traceability of actions to final results by employees.
- vii. When skills enhancement is a need, then the solution is the matrix structure. This is because the matrix structure has been seen to enhance skills development in workers and thus increasing their

- viii. competencies.
- viii. A matrix design might also be adopted where there is more than one critical orientation to the operations of the organization; or there is a need to process simultaneously large amounts of information; and or there is a high need for sharing of resources (Mullins 1996).
- ix. It is the best suite for situations of performing special tasks that differ substantially from the normal activities of a firm. This kind of situation according to Dubrin (2006) cannot be catered for by a divisional structure.

Casting Stones at Matrix Structures

In the May 1978 edition of the Harvard Business Review, Stanley M. David and Paul R. Lawrence, noted that, no organization design or method of management is perfect. They stated that any form can suffer from a variety of problems that develop because of the design itself; particularly when a company is trying a new form.

Acceding to the foregoing assertion, the matrix structure being one of such designs has its ills to be contended with in an array of practical structure display. According to David op.cit; several demerits characterize the application of the structure. These include,

- i. Its requirement of excellent vertical and horizontal flows of communication – a feat that is elusive to many organizations, and if attained may require so much expenditure of resources.
- ii. It is a costly structure to run given that it creates more managers positions.
- iii. Its application is a violation of the management principle of unity of command, as it is characterized by multiple reporting by employees, and an increased tendency toward conflict.
- iv. It creates dual lines of budget authority with it attendant demands.
- v. It creates dual sources of reward / punishment form the multiple super-ordinates, a tendency that may increase the chances of abuse of such processes.
- vi. It requires mutual trust and understanding, a feat that may not be handy at all times due to individual differences.
- vii. Stanley M.D. and Paul R.L (in Harvard Business Review May, 1978), postulated nine pathologies that a matrix organization may suffer. These include, *tendencies toward anarchy* (describing a matrix organization as a formless state of confusion where people do not recognize a “boss” to be whom they feel responsible); *power struggle -multiple reporting, and dual budget authority creates room for a seeming clash of the titans in the organization*; *severe groupitis* - tendency of people coming together in groups and being too focused on themselves and losing sight of important goals; *susceptibility to collapse during economic crunch* - as resources needed to sustain its requirements may not be found or any projects may be suspended with the project teams discarded as austerity measures; *sinking to lower levels – the morale of the employees is very low*; *excessive overhead* - making it such a costly administrative pattern to adopt; *uncontrolled layering*; *navel gazing*; and *decision strangulation*.

In all, a matrix structure though excellent for some situations, may not work well in all situations. This is because in addition to the foregoing there are evidence of shifting of responsibilities by the multiple managers in case the project fails, there is difficulty of striking a balance between the administrative and technical issues, it is unambiguously complex, and there is the presence of an increase in work load of the employees as more non-routines tasks such as attending meetings, writing reports, committees sittings etc. may also be included in their workload. Therefore, a better consideration and careful choice, taken into cognizance what it can afford and why it is not ideal per time, should guide the judgments of the strategist. Note that David F.R (2012), opined that when several variables such as product, customer, technology, geography, functional area, and line of business, have roughly equal strategic priority, a matrix organization can be an effective structural form.

THE MATRIX STRUCTURE IN PRACTICE

Attempt is here made to proffer conditionalities for the effectiveness of a matrix structure in practice. Like all similar human endeavours, certain conditions are vital either as sufficient or necessary conditions for the effective adoption of a matrix structure by managers. These include:

- a. **Participative planning:**
The organization need to have a system of participative planning wherein those to be involved in both the planning and implementation of the plans must be involved in the making of the plans. This will help clarify the project objectives and the responsibilities of the individual employees to be affected by the plans as per functional delineation.
- b. **Training:**
A matrix organization requires high functionalization and specialization. Thus for its effectiveness, training and retraining to keep fit with the tripartite learning objectives of learning, unlearning and relearning must be systematized. This is what yields skills and competencies development by the workers

in matrix organizations. It is worthy of note that the matrix structure being a peculiar form of management design, requires also, peculiar staff configurations to deal with its operational dynamics.

c. Clear mutual understanding of roles and responsibilities:

Both the man at the top and the one at the bottom/ below, must have a clearer knowledge of what is to be done, how it is to be done, when, why and who is to do what. There should a clear definition of the roles and responsibilities of each manager and team member, and efforts must be made to ensure and ascertain that they are understood. This is very necessary as it will help reduce the level of role / responsibilities conflict.

It is pertinent to point out here that, given the espoused nature of matrix designs to multiple reporting, it takes the singular feat of mutual understanding of why what is been done is done by whom as at when to reduce the responsibilities friction that could spring up (Apugu, S.G.C 2013). Besides, Morgan, Levitt, and Malek (2007:81) assert that “accountability is not complex and it is not difficult. Yet stories and excuses abound. Clear goals and clear metrics render such stories and excuses useless”.

d. Excellent internal communication:

Structuring is about communicating- reporting (Dubrin 20016). A matrix structure engages multiple reporting lines – incorporates solid lines (direct strong reporting) and dotted lines (a weak reporting relationship) and / or even a multiple solid line to more than one boss. A network of communication flow is therefore needed. This is the basic solution to the tendency towards anarchy pathology previously speculated by some researchers and herein referred earlier.

e. Mutual trust and confidence:

The major key to unlocking good understanding and peaceful co-existence between the multiplicities of Managers involved in the matrix administration is trust. This is the ability to rely and depend on someone or things with the certainty of reliability and fitness for purpose any time any day. It is the sole arbiter that can quell and calm all itching nerves and reduce the level of suspicion which may fuel crisis. According to Henson 2014, trust is central to many organizations today. In a matrix of teams, building that sense of trust is the oil that will make this form of organization run smoothly and be successful. He asserted that a careful investment of time and effort early on to build this trust through the operational stages will pay significant dividends later.

Similarly, integrity can take a man to the top of his career but it takes confidentiality, which is the ability to keep what is bequeathed to a man in the most unexposed form, to keep him at the top.

Since high level of communication is the basis for matrix operations, the two most important qualities of effective organizational communication namely trust and confidentiality which are also rudiments for sustainable mutual human relations must be upheld, for the said structure to be successful. Thus an employee must be bold, true and selfless enough to trust his boss – the giver of the order, and confident enough to be able to trust his judgment and rationales especially when it has to do with matters of responsibility accounting and reward for a hitch-free operationalization of the matrix structure.

f. Agreement on performance goals and metrics. This could be done at the start of the operation – either year start or project period beginning, when objectives are been set or to be made when the team is first formed as part of its charter (Ray Henson 2014). This will avoid unnecessary stress; resource wastage and rivalry over target meeting by sub units thus reduce the incidence of groupitis. A draft of this agreed to goals and metrics by the matrix leader must be made and discussed with all the managers to be affected or by or involved in the operation.

g. Predetermined appraisal and reward system:

The system must have a way for the transparent determination of how evaluations and rewards are going to be decided. It must show who will evaluate the performance of the team and the leader and how will rewards be decided. The two bosses – functional and project – must agree on a process and create a mechanism for achieving the foregoing.

MATRIX STRUCTURE AND THE OPERATIONAL FLOW PATTERN OF COMPANIES

An organization’s operational flow pattern is a systematic determination of the organization’s input – output relations / processes that can bring about the meeting of set corporate objectives. It is an analytical view of how the various needed resources are identified, harnessed and utilized in order to produce outputs that can serve a market need at a profit.

Strategic analyses have shown that to achieve a positive or desirable flow pattern, the vision, mission and along strategic flow-charts that will translate the vision, mission, and objectives through a strategy orchestrated by a structural pattern to get the desired result. Note that a chosen structure is the driving force behind all strategic quests especially input-output transformation and revenue generation.

One of such structural form is the matrix structure, which has been found to have made the following contributions to the operational flow patterns of company’s wherein it is in use.

- a. Facilitating dynamism in operation: The matrix structure facilitates a rapid management response to changing market and technical requirements. This has helped in building goodwill and increased turnover.
- b. Optimization of management benefits: The matrix structure being a combination of structures, creams off the best in both the functional and the divisional or project structures and fuse them in use, thereby optimizing the benefits accruing thereto for the company.
- c. Enhancement of Efficiency and effectiveness: One of the advantages of the matrix structure is that it creates room for skills development and competencies building. These are pre-requisites for efficiency and effectiveness.
- d. It enhances shared functional areas, not duplication as in divisional structures. Recall that functionalization increases specialization and the latter is a fertilizer to productivity. Thus, the matrix structure could be said to enhance greater productivity.
- e. Greater employee motivation is enhanced: A matrix structure thrives on teams for the execution of specialized projects / targets. When there is an achievement of target there is a sense of fulfillment. Also, when specialists are allowed to commit their specialized skills in operations at the workplace, there is a tendency towards higher quality of work life with a heightened sense of higher esteem accruing thereto. Again, workers can clearly trace their efforts / inputs to the outputs of the company. All these are intrinsic motivators. The outcome of a structure that paves way for the foregoing to happen is a happier, committed, and virile workforce, with greater organizational membership and team-spiritedness, which reduces labour turnover, and increases productivity.
- f. Facilitates the adoption of improved technology: It calls for the use of special equipments/ personnel / facilities – precursors of efficient and modern production techniques, higher outputs and goodwill. These are tools for effective competitiveness.
- g. Timeliness in decision making: The matrix bridges some functional gaps especially those that are attractive to some bureaucratic bottlenecks and redtapeism, thereby enhancing timely decision making that earns a company time efficiency in terms of production / operations.
- h. Reduction of operational complexities and ambiguities: Although accused of complexity, the matrix structure affords a good balance for complex, conflicting interests, and facilitates rapid management response to changes in the company's business environments. It thus depicts itself as the ideal structure to handle operational dynamisms in an unstable but fast growing environment.
- i. Encourages greater accountability: The channels in a matrix reveal who is responsible for what, from the top most to the lowest ebb of production / operations. So responsibility and accountability is given a good match. Recall that one of the conditionalities for effectiveness of matrix structures is that responsibility must be clear.
- j. Customer service excellence: In a matrix organization, every product / service has a manager or group of individuals who answers the client on the individual product, not on the company's total offering. The feeling of better treatment ignites client loyalty and higher patronage.
- k. Improves strategic management: In a matrix structure, top managers are kept free from routine decisions and thus are espoused to ample time for strategic decision making, instead of been distracted.
- l. Greater room for inter-functional cooperation: In matrix organizations, there is that coordination between the various functional areas for the common good. This to a greater extent tends to paralyze the widely held speculation of conflict amongst the constituent units – an enabling situation for operational bliss.

CONCLUSION

Matrix is a complex, difficult, and sometimes frustrating form of organization to live with...a bellwether of things to come. But, when implemented well, it does offer much of the best of both worlds (G.E. 1976). Thus although the structure may be seen as a daredevil characterized by resource wastage, administrative rifts and rivalries and even confusion of the subordinates on points of loyalty / responsibility, it still waxes strong as a recipe and remedy for dealing with the endemic turbulence of the business world, especially for those organizations in dynamic, fast growth environments. If the excess icing (ills) is carefully scraped off the cake, then such benefits as reeled out above still stand bare to be reaped.

In all, although there are no sacrosanct best structure, factors such as the size of the organization, the environment in which it is operating, the strategy it intends adopting, the technology in use, the nature of the tasks to be performed as well as the goals / purposes sought, must be the guiding angels in choosing a structure. Also, P.F Drucker's (1989) advise that "good structure does not by itself produce good performance. But a poor organization structure makes performance impossible, no matter how good the individual managers may be. To improve organization structure...will therefore always improve performance"; should be borne in mind, and the best-fit for every situation barring all the foregoing considerations, while making a choice. But when several variables, such as product, customer, technology, geography, functional area, and line of business have roughly equal strategic priorities in determining the operational good of a company, then a matrix organization structure

would be the effective form for use.

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