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METHODS OF PERFORMANCE AND PRODUCTIVITY IMPROVEMENT WITH CHANGE MANAGEMENT FOR ARCHITECTURAL FIRMS IN NIGERIA

Abuja Moh'd. Sani Department of Architecture Kaduna Polytechnic, Kaduna

Abstract

Productivity within the service sector is focused upon the flow of human customers internal and external, whereas within the manufacturing sector it is predisposed to the planning, scheduling and controlling of physical materials which is true for Architectural Firms since it is both a service and manufacturing organization because, services provided leads to finished products (Physical Structures). In most organization, productivity is considered as a key contributor to economic growth, innovation and job creation. In achieving these, this paper highlighted methods to improve on the performance and productivity of architectural firms in Nigeria. The paper also shows how the firms will manage the necessary change to be initiated for improved productivity. Finally the paper concluded and made recommendations to be adopted by Architectural Firms in Nigeria for sustainable performance and growth in productivity.

Keywords: Performance, Productivity, Change and Management.

Background to the Study

Architectural firms in Nigeria are experiencing low productivity due to a number of factors that this paper seeks to identify and proffer Management skills that will improve the performance and productivity of the firms and also, indicate how the firms will manage the necessary planned change needed to be executed in anticipation of future events and changes. Low worker productivity is often symptomatic of inefficient managerial systems. Deming (1986) claimed that 85% percent of organizational problems can be attributed to management. Workers are responsible for only 15% of the problems.

Productivity is the ratio of output to input in a production process. Total factor productivity considers all inputs used to produce the output. Partial factor productivity refers to the ratio of output to a single input (Mahoney, 1988). Using this simple mathematical formula for productivity, we can increase productivity by keeping inputs fixed and increasing output, keeping output fixed and decreasing inputs, or increasing output and decreasing inputs simultaneously. This simple formula, however, can be misleading, as not all of the important factors that affect productivity are easily quantified. There are closely-linked technical, social, psychological, and cultural dimensions to productivity (Deming, 1986). At the individual level, productivity refers to the effectiveness

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with which a worker applies his or her talents and skills to perform their work, using available materials, within a specific period of time (Ruch, 1994), and such individual productivity has been associated with group and organizational level productivity (Andersen, 1997; Campbell, 1988; Harris, 1994).

To improve on the performance and level of productivity of the Architectural firms, organizational change must be introduced and the change managed to help the firms accept the changes necessary for improved productivity. Change management is an approach to shifting/transitioning individuals, teams, and organizations from a current state to a desired future state (Ngugi, 2012). Change Management offerings are designed to support change at all levels of the organization. Change management programs assist executives to drive organizational change, empower managers to lead through change, and enable employees to navigate and respond to change appropriately (Deming, 1986). If there is anything that is stead fast and unchanging, it is change itself. Change is inevitable, and those organizations who do not keep up with change, will become unstable, with long-term survivability in question. Therefore, the objective of this paper is to explain how Architectural firms in Nigeria will improve on their performance and productivity, manage the necessary changes that which will serve as a panacea to the firms.

Improving the Performance and Productivity of the Firms.

To improve the performance and productivity, the firm needs to examine and analyze first the dimensions to productivity that is responsible for the low productivity. Failures to examine these dimensions in any productivity analysis will more than likely lead to the failure of productivity improvement efforts (Deming 1986), Also Deming opined that when assessing productivity, it is important to fully understand each of the key drivers that impact productivity. In addition to evaluating each driver individually, it is necessary to determine how well these drivers work together and function as a whole. Changes to one driver might (and probably will) have an effect on others. Effective Assessment involves understanding how each driver contributes to overall productivity.

Drivers of Productivity Growth

There is a general understanding of the main determinants or "drivers" of productivity growth. Certain factors are critical for determining productivity growth. The Office for National Statistics (UK) identifies five drivers that interact to underlie long-term productivity performance: investment, innovation, skills, enterprise and competition. (ONS 3. 20)

- *i*. Investment is in physical capital machinery, equipment and buildings. The more capital workers have at their disposal, generally the better they are able to do their jobs, producing more and better quality output.
- ii. Innovation is the successful exploitation of new ideas. New ideas can take the form of new technologies, new products or new corporate structures and ways of working. Such innovations can boost productivity, for example as better equipment works faster and more efficiently, or better organization increases motivation at work.
- iii. Skills are defined as the quantity and quality of labor of different types available in an economy. Skills complement physical capital, and are needed to take advantage of investment in new technologies and organizational structures.
- iv. Enterprise is defined as the seizing of new business opportunities by both startups and existing firms. New enterprises compete with existing firms by new ideas and technologies increasing competition. Entrepreneurs are able to combine factors of production and new technologies forcing existing firms to adapt or exit the market.

v. Competition improves productivity by creating incentives to innovate and ensures that resources are allocated to the most efficient firms. It also forces existing firms to organize work more effectively through imitations of organizational structures and technology.

In line with the fore going, the productivity improvement analysis of the firm should be conducted at the task or micro level and at the structural or macro level. Task level analysis focuses on accomplishing a specific task as quickly and efficiently as possible. Structural level analysis takes a "big picture" approach and examines the vision of the organization, the business strategy and philosophy, the culture of the organization, core business competencies, management systems, and so on (William, 1999) .

To improve its productivity level Architectural firms needs to adopt the following guidelines. William (1999) lists these steps to productivity improvement:

- i. Develop productivity measures (a very critical starting point!)
- ii. At system level, decide which operations are most critical; identify bottlenecks.
- iii. Develop methods for improving productivity.
- iv. Establish reasonable goals for improvement.
- v. Make it clear that management supports and encourages productivity improvement. Consider incentives to reward workers for contributions.
- vi. Measure improvements and publicize them.
- vii. Establish new policy and procedures in keeping with recommendations for improvement.
- viii. Sell the recommendations to all stakeholders within the organization and conduct training sessions on the new procedures where appropriate.
- ix. Establish a system for the monitoring and review of the new procedures.

Develop Productivity Measures.

Productivity measures are essential in assessing the efficiency, competitiveness and underlying 'potential' rate of growth of a company. Therefore, a "productivity measure" describes how well the resources of an organization are being used to produce input (Vora, 1992). To be meaningful, productivity measurements must show a linkage with profitability; after all, it is the bottom line that is the ultimate barometer of a firm's success.

Types of Productivity Measures

- 1. Partial Productivity: It is the ratio of output to one class of input. For example, labor productivity (the ratio of output to labor input) is a partial productivity measure. Similarly, capital productivity (the ratio of output to capital input) and material productivity (the ratio of output to materials input) are examples of partial productivity.
- 2. Total-factor productivity: It is the ratio of net output to the sum of associated labor and capital (factor) inputs. By "net output," we mean total output minus intermediate goods and services purchased. Notice that the denominator of this ration is made up of only the labor and capital input factors.
- 3. Total productivity: It is the ratio of total output to the sum of all input factors. Thus, a total productivity measure reflects the joint impact of all the inputs in producing the output.

Advantages and Limitations of using the three Basic Types of Productivity Measures in Firms

Advantages Limitations

Partial productivity measures

1) Easy to understand.

2) Easy to obtain the data.

- and may lead to costly mistakes.
- ·
- 2)Do not have the ability to explain overall cost increases.
- 3) Easy to compute the productivity indices
- 3) Tend to shift the blame to the wrong areas of management control.

1) If used alone, can be very misleading

- 4) Easy to sell to management
- 4) Profit control through partial productivity measures can be a hit-and-miss approach.
- 5) Some partial productivity indicator data is available industry wide.
- 6) Good diagnostic tools to pinpoint areas for productivity improvement, if used along with total productivity indicators.

Total factor productivity measure:

- 1. The data from company records are relatively easy to obtain.
- 2. Usually appealing from a corporate Economist's viewpoint.
- 1. Does not capture the impact of materials and energy inputs.
- 2. The value-added approach to defining the output is not very appropriate in a firm setting because it is difficult for operational managers to relate the value-added output to production. efficiency.
- 3. Not appropriate when material costs from a sizable portion of total product costs since the impact of material input is not directly shown in this productivity measure.
- 4. Only labor and capital inputs are considered in the total factor input.
- Data for comparison purposes are relatively difficult to obtain, although for some specific industries and specific time periods, the indices have been published.

Total productivity measure:

- 1. Considers all the quantifiable output and input factors: therefore, is a more accurate representation of the real economic picture of a firm
- 2. Profit control through the use of total productivity indices is a tremendous benefit to top management.
- 3. If used in conjunction with partial measures, can direct management attention in an effective manner.
- 4. Sensitivity analysis is easier to perform
- 5. Easily related to total costs

Source: Productivity Engineering and Management by Sumanth (1984).

Use of Productivity Measures

Productivity is a required tool in evaluating and monitoring the performance of an organization, especially a business organization. When directed at specific issues and problems, productivity measures can be very powerful. In essence, productivity measures are the yardsticks of effective resource use.

Managers of firms are concerned with productivity as it relates to making improvements in their firm. Proper use of productivity measures can give the manager an indication of how to improve productivity: either increase the numerator of the measure, decrease the denominator, or both.

Firm Managers are also concerned with how productivity measures relate to competitiveness. If two firms have the same level of output, but one requires less input thanks to a higher level of productivity, that firm will be able to charge a lower price and increase its market share or charge the same price as the competitor and enjoy a larger profit margin.

Within a time period, productivity measures can be used to compare the firm's performance against industry-wide data, compare its performance with similar firms and competitors, compare performance among different departments within the firm, or compare the performance of the firm or individual departments within the firm with the measures obtained at an earlier time (i.e., is performance improving or decreasing over time?).

Productivity measures can also be used to evaluate the performance of an entire industry or the productivity of a country as a whole. These are aggregate measures determined by combining productivity measures of various companies, industries, or segments of the economy.

Also, Krishna (2009) highlighted the importance of Productivity measures as:

Measures of productivity describe how well the resources of an organization are being used to produce input. They are very useful in achieving and maintaining high level of performance in any organization, particularly in improving the efficiency of various operations within the organization as well as for the total organization.

- 1. Data for computations are relatively difficult to obtain at product and customer levels, unless data collection systems are designed for this purpose.
- 2. As with the partial and total-factor measures, does not consider intangible factors of output and input in a direct sense.

- 2. Productivity measures provide a means to managers to ascertain, plan, control and improve efficiency at different levels of organization. They also facilitate comparison of performance of different firms within a market or industry. This helps the manager to set improvement targets for organization's long term strategic plans, and in developing suitable competitive strategy.
- Productivity measures are also essential for motivating employees through payment of incentive for high productivity. In addition, the availability of comparative performance data itself becomes a tool for self motivation of employees.

In summary we can say that measures of productivity are not just important for good performance in all organizations they are essential. No organization can continue to operate for long without using some productivity measures, and their performance is influence by the nature of productivity measures used.

Productivity Index

Since productivity is a relative measure, for it to be meaningful or useful it must be compared to something. For example, businesses can compare their productivity values to that of similar firms, other departments within the same firm, or against past productivity data for the same firm or department (or even one machine). This allows firms to measure productivity improvement over time, or measure the impact of certain decisions such as the introduction on new processes, equipment, and worker motivation techniques (Plenert, 2001).

In order to have a value for comparison purposes, organizations compute their productivity index. A productivity index is the ratio of productivity measured in some time period to the productivity measured in a base period. For example, according to Plenert (2001) if the base period's productivity is calculated to be 1.75 and the following period's productivity is calculated to 1.93, the resulting productivity index would be 1.93/1.75 = 1.10. This would indicate that the firm's productivity had increased 10 percent. If the following period's productivity measurement fell to 1.66 the productivity index of 1.66/1.75 = 0.95 it would indicate that the organization's productivity has fallen to 95 percent of the productivity of the base period. By tracking productivity indexes over time, managers can evaluate the success, or lack thereof, of projects and decisions.

At system level decide which operations are most critical; identify bottlenecks. Phillips (2008), in his book, Make Us More Innovative: Critical Factors for Innovation Success states that most problems (bottlenecks) with productivity today can be traced to a few factors. These are:

- 1. Unclear Objectives/Priorities- poor management strategies direction and communication
- 2. Too Many Meetings- poor management skills and time management
- 3. Too Much Work/Lack of Resources downsizing and "doing more with less"
- 4. Poor Alignment of Information Technology and/or IT Process to the Business Goals If your organization needs to be flexible, don't put in an inflexible IT system and/or IT process.
- 5. Reliance on Formal IT Process Process is good. Process is necessary. Create process to allow for flexibility, speed and change. Most processes today in the IT world do not follow this mantra. They are created and then their creators expect people to follow them closely with no deviation and no room for change.
- 6. Poor Communication Managers need to understand that in order to get the most of their teams, they need to clearly outline the responsibilities and expectations of the people in their teams. Without this clear communications, people will spend

Time trying to determine what they should be doing and/or who should be doing it.

7. Poor Leadership with good leadership, an organization can overcome many things. Excellent leaders will overcome poor process (by changing the process), poor alignment (by aligning IT and business), and poor communication (by ensuring communication improves).

These factors usually have a nature of correlation and interaction between each other. When one or all these factors are identified by the management, necessary steps should be taking in line with productivity improvement methods to provide copping strategies.

Develop Methods for Improving Productivity.

Architectural firms' needs to adopt the following methods to improve on its productivity as stated by Oyeranti (2000) in his conference paper "Concept and Measurement of Productivity".

- 1. Soliciting ideas from workers [organizing teams],
- 2. Studying other firms' workflow and re-examining the way the work is done.
- 3. Cost saving resulting from the introduction of new technologies (i.e. Reengineering).
- 4. Management improvement measured by attendance at Management training courses and seminars
- 5. Improved methods of accomplishing certain work tasks
- 6. Increased morale and satisfaction on the part of the employees
- 7. More and better products and services
- 8. Focus on quantitative and qualitative indicators of productivity
- 9. Unit of analysis in terms of people, work group, programmes, organizations and society at large using a combination of the above including performance indicators and measuring efficiency, effectiveness, human resources planning productivity analysis, work measurement among others.

As Deming (1986) pointed out, most of your organization's productivity is influenced by the actual production process itself. The equipment you use, the way you process your materials, the number of errors produced by the system, the pattern of workflow-provide the overall constraints of the relative efficiency or inefficiency of the system. He further highlighted methods of improving organizational productivity as follows which the architectural firms can also adopt as measures for improvement.

Measure of Improving Productivity

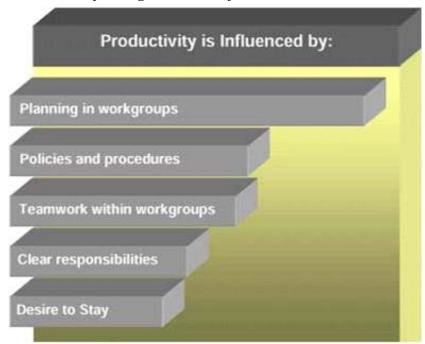


Figure 1: Deming (1988)

1. Planning

The factor that most strongly affected productivity is planning. Workgroups that had adequate planning for their needs are more productive.

Action: Have work teams discuss, "About which aspects of our jobs are we doing enough planning? Which aspects of our jobs would be better with additional planning?" Look at your workflow and decide where planning (often involving teamwork and communication with other departments) will help. The goal is simply to do enough--not to do so much that you are now replacing action with planning or making yourselves inflexible.

2. Policies and Procedures.

The factor that had the second strongest impact on productivity is having policies and procedures that help people do their jobs. Often organizations view guidelines and procedures as ways to control people. They seem to operate from a "fear paradigm" that suggests if employees aren't controlled, the result will bean archy. Action: Approach policies and procedures more like a music score-something to help people coordinate their activities and to help maintain quality. Have workgroups review the policies and procedures that affect them. Identify the ones that are efficient and help get work done. Identify the ones that would be better if revised or eliminated.

3. Teamwork within Workgroups.

The third strongest factor affecting productivity is having good teamwork within workgroups. Workgroups with better teamwork are more productive.

Action: Have workgroups discuss what teamwork means to them in terms of behaviors. When are they doing it well? Identify instances where it could be better. Work hard to avoid blame. Rather than talking about individuals-talk about workflow and how people can coordinate and support each other to increase the team's effectiveness. As you will see in other Special Reports, two factors that consistently affect teamwork are blame and authority. Employees who don't have enough authority to do their jobs or who tend to blame each other are less likely to

work well as a team. Focus your discussion on behaviors and processes.

4. Clear Roles and Responsibilities

The fourth strongest factor affecting productivity is people having a clear idea about what they are supposed to be doing. The more people knew their responsibilities, the higher the productivity.

Action: Have work teams periodically review what each person is expected to do. The more you work on "customized" or changing projects, the more people's responsibilities should be defined in general terms. What you want is a description that is clear enough so everything gets done and you don't find duplication of work. You don't want to be so restrictive that you create an "it's not my job" mentality.

5. Desire to Stay

It is hard to be concerned about productivity if all you want to do is leave the organization or transfer to a different department. Maintaining employees' enthusiasm for their jobs and the organization is important.

Action: Many employees are cautious about indicating a desire to quit for fear of retaliation. If you think employees want to quit or transfer from a particular group (especially if the group has a history of turnover or transfers), then it is appropriate to try to identify the factors that may be encouraging people to want to leave. Interviews, focus groups or anonymous written comments or feedback may help.

While we see similar underlying causes of improved productivity in the firm, each firm is different. If you feel that productivity is low for a group, the five factors identified for these architectural firms can give you ideas of what to look for. However, only an analysis of your organization would identify the factors that may be unique to your firm.

Establish Reasonable Goals for Improvement.

Innovative goal setting, planning, and organizing are essential to improving productivity. Once goals are determined, they have to be measured. The firm should choose a realistic means of measuring progress, and, more importantly, choose realistic goals and performance targets that can be reached through productivity improvements. Aboganda, (1994) opined that employees have no problem spotting and ignoring unrealistic goals that they know they have no hopes of attaining and that goals should be both short-term (monthly) and long-range (annual).

Each department should come up with its own set of goals, but the initial plan must be a firm-wide one with a big picture goal. Once that goal is stated, each department can look at its own operations and come up with a set of smaller goals that are all designed to help meet the larger goal. Departments should not set their smaller goals in a vacuumquite often, the performance of one department is directly dependent on the performance of another department, so it is important that those two departments work together in establishing goals. Also, it is important to note that goals will almost certainly change over time as employees become more efficient and meet the original goals.

Make it Clear that Management Supports and Encourages Productivity Improvement. Consider Incentives to Reward Workers for Contributions.

An underlying theme to all of the motivational theories is that respect and participation are two key items that employees tend to appreciate. Oftentimes, the existence or nonexistence of these two factors can determine how productive an employee will or will not be (Rob, 2004). The key to motivating employees is remembering that not all employees are the same. Something different makes each employee tick. In order to achieve motivation, managers ust know each employee. Managers must have a wide range of motivational techniques available. Each employee has a different set of values and personal experiences that brought them to where they are today. Employees are motivated by learning and should likewise be motivated to learn. Workers should be offered regular opportunities to attend conferences in their field, seminars, or in-house training programs (Buhler, 1998).

Measure Improvements and Publicize Them.

Establish new policy and procedures in keeping with recommendations for improvement. (See item 3.0 no. 2)

Sell the recommendations to all stakeholders within the organization and conduct training sessions on the new procedures where appropriate.

Architectural firms should offer strategic planning and management workshops, consulting and facilitation services in five key areas.

1. Assessing Organizational Effectiveness

Discover an assessment and continuous improvement method proven to uncover issues that are critical to the operational and behavioral functioning of your firm. Not only that, but you leave with a plan to deal with these organizational effectiveness issues.

2 Strategic Management Process

- i Strategic Management: how to develop a mission, a vision, and a coherent strategic plan that creates a focused sense of purpose and is easily understood by everyone.
- Plans and Planning, Goals and Objectives: how to integrate the firm plans (strategic planning and management, marketing, financial, technology, etc.). All its goals and objectives are defined in a daily action plan consistent with the mission and vision.
- iii Create a Learning-Based Organization: the strategic management process encourages employees to constantly learn new ways of doing business and working together, how to improve employee productivity so that you stay on the forefront of the learning curve and ahead of your competition.

3 Ethics and Leadership

Learn the components of an ethical organization and how to implement ethical leadership training and consulting that will set a good example, increase your credibility, and gain cooperation from managers, executives, and employees.

4 People Skills

Today's leaders recognize that people are their most valuable resource. Knowing how to deal effectively with employees is a key component in the success of high-achieving organizations and organizational effectiveness. Workshops in this area should include:

- i Communication Skills: how to positively influence people so that you achieve your goals.
- ii Conflict Management: how to use conflict to create positive changes and generate new ideas and opportunities.
- iii Decision-Making: how to make good decisions in a fast-paced world.
- iv Managing Change: how to thrive in turbulent times.

5 Team Skills

One of the characteristics of an effective leader is the ability to develop teams that know how to work towards a common goal that know how to improve employee productivity. When a team functions effectively, productivity increases and profitability skyrockets. Workshops in this area should include:

- i Group Dynamics: how to use the concepts of group dynamics to bring out the best in your employees.
- Ii Team Building: how to transform a group of diverse personalities into a productive team.

Establish a System for the Monitoring and Review of the New Procedures. (See Item 3.0 No. 3)

Methods for Managing Changes Initiated in the Architectural firm For the firm to manage the necessary change that will be initiated, the basic mechanism for managing change according to Lewin (1951) should be adopted as follows;

1. Unfreezing

Alter the present stable equilibrium which supports existing behavior and attitude of the firm. This process must take account of the inherent threats that change presents to people and the need to motivate those affected to attain the natural state of equilibrium by accepting change. E.g. management improvement measured by attendance at Management training courses and seminars with incentives such as seminar fees and allowances.

2. Changing

This is developing new responses based on new information. E.g. establish new policy and procedures in keeping with recommendations for improvement and performance.

3. Refreezing

Stabilizing the change by introducing the new responses in to the personalities concern. E.g. establish a system for the monitoring and review of the new procedures.

Lewin (1951) also (introduce) suggested a methodology for analyzing change which he called field force analysis necessary for managing the initiated change in the company, this involves

- 1. Analyzing the restraining or driving forces that will affect the transition to the future state, these restraining forces will include the reaction of those who see change as necessary or as constituting as a threat
- 2. Assessing which of the driving or restraining force are critical
- 3. Taking steps both to increase the critical driving forces and to increase the critical restraining forces.

Conclusion

- 1. In short, this paper presents a good holistic approach for performance and productivity improvement starting from its basic concepts, productivity development and productivity measurement.
- 2. This paper also urge upon all workers and managers at all level and in different departments of the company for its application at individual, departmental and organizational level.
- 3. Great opportunity exists for the company to improve the quality of working and social life, improve economy, reduce financial differential and bring harmony to the employees by enhancing productivity.

Recommendations

In order for the company to achieve improved performance and productivity that will enhance sustainable development, the company needs to adopt the guidelines as stated above by William (1999) on steps to productivity improvement. Also the company needs to adopt the basic mechanism for managing change according to Lewin (1951) highlighted above.

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