OFFICE LAYOUT REDESIGN CONSIDERATIONS IN SELECTED SERVICE ORGANIZATIONS IN NAIROBI

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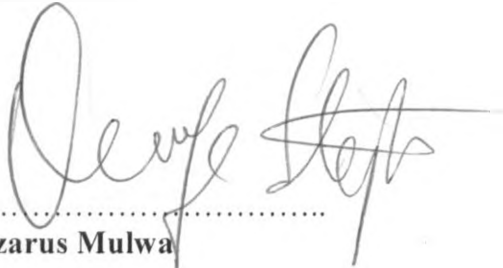
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DECLARATION

This project is my original work and has not been submitted for examination in any other university.

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Date

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This project has been submitted for examination with our approval as university supervisors.

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DEDICATION

To my best friend, Joe

and to my parents, Ruth and Jerry who sacrificed a lot

to make me who I am today.

ACKNOWLEDGEMENTS

ABSTRACT

This research sought to establish the motivations of office layout redesign and the sort of features incorporated in such redesign. It also sought to establish whether there are any benefits perceived, and challenges encountered by organizations in such effort. Further, the research sought comparison of data from private and public organizations to establish whether such redesign effort had been carried out with the same zeal in the two sectors. The survey was carried out in twelve service organizations. A questionnaire was used to collect data from the selected organizations. The questionnaire had two parts, with one detailing demographic data and the other, features in the layout that may have been modified, the motivations, satisfaction with the features present, challenges and benefits of the redesign. Data collected from these organizations was then analysed using descriptive statistics on Microsoft excel then interpreted.

Findings indicate that all the organizations in the sample had renovated their premises in the recent past. The data indicated higher levels of satisfaction with the arrangement of equipment and furniture, and the use of signs, symbols and artifacts than with ambience in the office environment, the primary motivation of redesign being offering better services, support of corporate culture, encouraging teamwork and employee motivation. Benefits accruing to the organization were mainly customer satisfaction and higher employee productivity while main challenges were cited as protocol and approvals, cost and space constraints.

From these findings we conclude that in the Kenyan context, businesses have embraced focus on facility design as a way of maintaining competitive edge while pleasing their customers and employees. The recommendations from this study are that organizations should continue to find innovative, cost effective ways to create an ideal physical environment that pleases the employee and the customer which contributes to achievement of the organizational goals.

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CHAPTER ONE: INTRODUCTION

1.1 Background

Enterprises find themselves in an increasingly tougher competitive environment in undertaking their business operations with more and fiercer competitors, ever more demanding customers, the need to please shareholders while society at large expects higher standards with regard to environment and ethical issues. Organizations have been driven to change by fundamental shifts in society (Joroff and Becker,1997), the global business environment, communications and computer technology (Varlander and Yakhlef, 2006).

Facility layout, says O'Neill (1998), is supported by the fact that control of the physical environment has been shown to support organizational growth, change and effectiveness, achieved through people. The desire to focus on human capital and strong customer satisfaction has generated interest in facility layout which Chary (2004) suggests aims at cost effective delivery of service while providing a safe and comfortable environment for employees and customers. The design of the physical working environment must also be considered in employee productivity measurement. Bajwa (2005), lists design of workspaces as one of many decisions including quality, locations and processes taken to use operations as a competitive weapon. Chase, et al. (2006) offers that a good office layout can provide real competitive advantage by facilitating material and information flow processes. Vedemani (2004) notes that the generic strategies usually employed in service settings include operational excellence, product differentiation and customer intimacy. Physical environment falls under operational excellence.

Office design has been of special focus because there is a lot of knowledge work that occurs in offices and office buildings (Worthington, 1997). With this large number of knowledge workers, there is great potential for leverage in the goal of organizational effectiveness since productivity is improved, there is cost control and effective use of information and communications technology in achieving business objectives (Laing 1997). Joroff and Becker (1997) wrote that dynamic organizations are creating physical workplaces with the flexibility to accommodate changing business conditions, product

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focus, production strategies and patterns of work. The strategy employed is to learn the needs of the organization and its business units then apply a workplace strategy that uses all the available resources of people, time, money and technology to their fullest potential.

Services have characteristics that differ from products (Bajwa, 2005). These characteristics include intangibility; output that cannot be inventoried; high customer contact; short response times; small facilities; labour intensive operations and quality that cannot easily be measured. Customers and employees experience the organization's facility more in service settings than in manufacturing. It is these characteristics that force service firms to focus on the environment in a bid to meet organizational goals. The primary focus is then the office environment which is made up of employees, flow of work and equipment as the main factors, (Quible, 1999).

Ergonomics which is concerned with improving productivity and safety by designing workspaces, tools, instruments that take into account the physical capabilities of people is a driving force behind office layout (O'Neill, 1998). Benefits that then accrue to the organization include people working faster, more accurately and safely; enabling reduction of energy expended; reduced fatigue, accidents, costs of training and improved user comfort and acceptance. Good facility layout should also facilitate customer satisfaction. There should be economy of movement or materials and people (both customer and employee), reduced confusion, greater safety, improved convenience and comfort and greater adaptability to changing conditions (Chary, 2004). For service firms efficient layout results in benefits to the firm that include impressions individuals get of the organization (Quible, 1999); the level of satisfaction employees derive from their jobs by enhancing self motivation, creativity and nurturing passion ; effective allocation and use of buildings and floor space; efficient productive areas for employees; facilitates expansion and/or rearrangement of work areas when need arises and facilitates employee supervision; and increased speed of service . Inman (2006) enumerates the benefits of good layout in an office as the ease of transfer of paperwork and enhancing of communication.

Schmenner (1986) indicated that services may be grouped in four main categories based on level of customer interaction and customization on one scale and level of labour intensity on the other. The processes in the service organization dictate the type of physical layout for the organization. The focus of the paper is on high customer interaction services which include professional services and service shop, as shown in the figure below.

Figure 1.1 Schmenner's Service Matrix

Customer Interaction and Customization

Low → High

	Service Factory	Service Shop
Low	**Service Factory** Examples: Airlines Hotels Fast food Amusement parks	**Service Shop** Examples: Hospitals Auto Repair Restaurants Dentists
High	**Mass Service** Examples: Retailing· Schools Dry Cleaning Photography studios	**Professional Service** Examples: Doctors Lawyers Psychiatrists Investment bankers

Labour Intensity

Source: Operations Management, S. Brown et al.(2001)

The services sector in Kenya continues to record growth in comparison to manufacturing. Statistics released in the Economic Survey 2007 (Central Bureau of Statistics www.cbs.go.ke retrieved 15/10/2008) show that Hotels and Restaurants Industry, Transport and Communications and Financial Services contributed 14.9%, 10.8% and 5.5% respectively to the GDP while manufacturing contributed 6.9%. Slack and Lewis

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(2000) indicate that in most developed economies, service sectors account for the clear majority of economic activity, and this is where Kenya is heading. Given the increasingly competitive environment organizations whether for profit or not are faced with, it is imperative that organizations forge toward operational excellence.

Private firms exist to make profit and maximize shareholder value. Given this characteristic, and the liberalization of markets where there is free entry and exit of firms, there has been increasing pressure for them to continue making high profits in an increasingly competitive environment. With the great strides in economic growth in Kenya in the last 10 years, organizations have resulted to innovation and new strategies especially in banking, hospitality, airline and media industries, to name a few, in order to stay relevant in the industry. In the last five years, private sector organizations have taken to spending millions of shillings in renovation or relocation of offices. According to reports in the dailies, I & M bank after buying stake in First City Bank of Mauritius refurbished the bank with the introduction of new products and services and in a bid to improve its competitive edge(Daily Nation 4/3/08 pp25). Sarova Group in the hospitality industry spent 150 million in refurbishing two of its lodges (Daily Nation 08/09/07 pp 25) while Fairmont hotels spent 6.3 billion in refurbishment 3 years ago (Business Daily 03/07/08 pp 10). Holiday Inn spent 130 million in a facelift for the hotel (Smart Company 27/05/08 pp 9). In another report, the human resource director of Kenya Airways said that in a bid to deliver quality to the customer, the airline had spent 540 million in the construction of a training centre for employees because they believe that delivery to the customer is pegged on employees (Business Daily 11/07/08 pp 12). These demonstrate the shift in focus to facility design, with the hope of reaping huge benefits in the form of increased profitability.

Public firms exist mainly to provide goods and services that the government must provide to its citizens. Most public firms operate as a monopoly, thus not faced with competition in provision of goods and services for example Kenya Power and Lighting Company. However, in the last 5 years, the government has taken to divesting ownership of the firms in a bid to make the firms more competitive in provision of services where other private firms have been licensed to operate. The divestiture of stake in Postal Corporation

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of Kenya and Telkom Kenya among others has led to these firms working towards provision of efficient services to the customer, in order stay relevant in the competitive environment they now find themselves in. Other government bodies, mainly ministries have woken up to huge public outcry, to deliver services to the citizens of the country. It is with this in mind that it has been reported in dailies that the City Council has spent 49 million in renovation of the Machakos country bus station. It has replaced rusty iron sheets and provided room for more vehicles, and better lighting. This has encouraged more vehicles to come into the station, thus raising more money. The bus park also has automated ticket machines and modern kiosks (Daily Nation 31/10/07 pp31). Parliament also approved a 360 million budget for redesign and refurbishment of parliament. The new parliament would look like the US Congress debating chambers (Daily Nation 18/06/08 pp 1). At the immigration and registration of Persons Offices at Sheria house, a digital database has been set up. Sheria house has glass cubicles to enhance transparency and more service counters and a customer care desk (Daily Nation 13/07/07 pp 14).

1.2 Statement Of The Problem

Bitner (1992) fronted that the ability of the physical environment to influence behaviour and to create an image is particularly apparent for service businesses such as hotels, restaurants, banks, retail stores and hospitals.

Wakefield and Blodgett (1996) investigated interior layout and design by using five factors relating to what Bitner (1992) referred to as the 'built environment'; layout accessibility; facility aesthetics; seating comfort; facility cleanliness and electronic equipment and displays and found that all these factors had significant impact on customers' perception of service quality and that overall satisfaction had a positive effect on repeat buying.

Heskett et al,(1994) identified key linkages in the attempt by businesses to be profitable which were identified as; profit and growth are stimulated primarily by customer loyalty; customer loyalty is a direct result of high level customer satisfaction; customer satisfaction is mostly influenced by the value the customer derives from services or products provided; product and service value is created by loyal, satisfied and productive

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employees; and employee satisfaction, loyalty and productivity are the result mainly from high quality support services and policies that enable them to delight customers.

Given this theoretical background, firms must then find ways of using the office environment to aid in the achievement of their business goals. In Kenya, private sector firms faced with stiff competition, have taken the lead in maximizing the benefits that would accrue to the organization by careful consideration of the physical environment in which the business operates. Public sector firms that are mainly monopolies in provision of various services, and partly or fully owned by government are slowly warming up to the idea of pleasing the customer.

Since previous studies as indicated show that the physical environment can influence employees and customers in a positive manner towards achievement of organizational objectives, would this be so for Kenyan organizations, both in the public and private sectors and to what extent have organizations in Kenya adopted design of the physical environment with the aim of maximum utilization all available resources towards achievement of their goals.

1.3 Objective Of The Study
The objectives of this study were to:
   a) Establish the key motivation in redesign of offices in the services sector in Kenya.
   b) Document the constraints that service organizations in Kenya face in achieving efficient and effective office settings.
   c) Determine if service organizations perceive value through office redesign.
   d) Establish whether public and private sector organizations in Kenya differ in redesigning the office environment.

1.4 Importance Of The Study
The findings of this study should be of interest to a number of target groups that include private sector organizations to enable them move to higher levels in their strategic planning and enable them actualize goals of being world class organizations, through motivation of staff and efficient and effective service delivery. Public sector

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organizations may also utilize this study to achieve a faster turnaround in motivating their staff and in service delivery excellence, and to enable them effectively compete with private sector organizations. Architects, planners and designers can use this study to enable organizations meet their goals through effective use of scarce space by making recommendations on best practice office layout that best suits the organization. Given the increasingly tougher economic environment, organizations are faced with shrinking profit margins hence the need to use designers and planners to help in space planning for effective use of available resources within reasonable cost outlays. Finally to future researchers and academicians in exploring further the effects of the physical environment, for example, in quantifying the benefits of office environment and in studying actual time saved by using best practice facilities layout.

CHAPTER TWO: LITERATURE REVIEW

2.1 Introduction To Layout Of Services

Facility layout has been defined by Olsen et al. (1978) as the process by which the placement of departments, workgroups within departments, workstations, machines and stock holding points within a facility are determined.

Brown et al. (2001) indicate that the process or operation configuration of services is closely linked to the physical layout of the service. Schmenner (1986) identified service processes as; Professional Service where the service giver works around the customer. There is a high level of labour intensity and high levels of customer interaction; Mass services that use a highly standardized service to their customers, though they still require labour input to each customer; Service factories that are usually set up around line production and require minimal input to individuals; Service shop which are usually jobbing operations like car repair and hospital activities. There is high individuality in the service delivery with a low labour intensity. Service shop operations may use batch process depending on the level of customization of output for individual customers, and finally craft processes where a highly skilled or knowledgeable person performs majority of the task. These services include blacksmiths, financial advisors and small businesses.

Process choice is one of the strategies employed to determine how a firm competes in the marketplace. How the operation arranges its activities or layout reflects the process types described above. Olsen, et al (1978) suggest in general four basic layout types; Process or job shop layout which is usually for inter departmental flow with a focus on the processes used to make products. This layout determines maximum flow at minimal cost locations for each department; Product layout (assembly line) where operations are arranged in the sequence required to make the product which gives logical sequence to activities undertaken to produce and it usually concentrates on reduction of cycle time; Group Technology (Cellular) layout which involves grouping parts into families that follow a common sequence of steps, identifying dominant flow patterns as a basis for location or relocation of processes and physically grouping machines and processes into cells; and

Fixed position layout which involves arranging materials and equipment concentrically around the production point in their order of use.

In service organizations, there is a trade-off between product and process layouts with consideration of the degree of specialization versus flexibility and also productivity.
In service firms, typical considerations include; volume of demand, range of services offered. degree of personalization of the service, skills of employees and cost.
Process layout is especially useful where there are a wide variety of services on offer to customers with differing requirements such as in hospitals where there is X-ray, theatre, maternity and specialized clinics. Service organizations with highly standardized service tend to use product layouts.

There are three main types of layout when it comes to service organizations. These are;
Retail service layout which is usually found in supermarkets, banks, restaurants and whose main objective is to maximize net profit per square foot of space. Such layouts must consider the presence of the customer and the accompanying opportunity to influence sales and customer attitudes; Office layout, where layout may be in terms of processes or products, as in manufacturing, but there is a middle ground called cellular organization where there is arrangement and re arrangement as work procedures and volumes change. That is why offices are frequently arranged and re-arranged. The decision of how to layout an office is a difficult one, largely because there are no obvious choices and there are a lot of strong, personal preferences. Basic office layout options include offices, cubes or war room; and finally, warehousing and storage layout; which tends to seek an optimum trade-off between handling cost and warehouse space. Here the objective is to utilize the available space while minimizing the material cost.

According to Brown et al. (2001), services differ in that customers are either highly or lowly engaged in the transformation process. There are some customers who do not have high contact with employees. High contact operations are referred to as front room operations while low contact operations are called back room operations. Space allocation usually favours the high contact operations. Facilities and equipment are

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factors that are difficult to change on a short term basis, yet determine a great deal while workforce and inputs are more malleable on a short term basis.

Since most services occur face to face, marks of a good layout in the design of offices according to Olsen (1978) include; easily understood service flow pattern; adequate waiting facilities; easy communication with customers; easily maintained customer surveillance; clear exit and entry points with adequate check out capabilities; departments and processes arranged such that customers only see what they are meant to; balance between waiting and service areas; minimum walking and material movement; lack of clutter; and high sales volume per square foot of facility. Donovan and Rossiter (1982) held that in service firms the ideal is to construct an environment, which provides a balance between pleasure and arousal while at the same time creating operational efficiency.

Bitner (1992) used the term servicescapes to refer to the physical surroundings in which services take place, and how these surroundings affect customers and employees. To create a good layout, understanding of the physical surroundings in which services take place is important. She indicated that in service firms there is great emphasis on three main areas in consideration of the physical surroundings in which the services take place. These are; ambient conditions which refer to the background characteristics such as the noise level, music, lighting, temperature and scent. These affect employee morale and performance, and customers' perceptions of the service, how long they stay and how much they spend; spatial layout and functionality with spatial layout referring to the ways in which machinery, equipment and furnishings are arranged, the size and shape of those items and the spatial relationships between them, while functionality refers to the ability of the same items to facilitate performance and the accomplishment of goals, and; signs, symbols and artifacts which usually carry special meaning.

Chase, et al. (1997) posed the main considerations of spatial layout and functionality as the planning the circulation path of the customers and grouping of merchandise and planning for equipment and furnishings; and thirdly Signs, symbols and artifacts which are parts of the service that usually have social significance. These are often characteristic

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of the design of the building, like ambient conditions, although the orientation, location and size of many objects and areas can carry special meaning. They include personal artifacts, style of décor, display of core values and mission statements among others.

Creation of hard and fast rules on servicescape layout is difficult due to the influence behavioural factors (Bitner1992). However, there are basic principles that apply to meet the goals of employee motivation, health, safety, teamwork and productivity, process flow, organization profitability and customer satisfaction. Such include the thinking of the organization as a system; purposeful design of the organization; focus on output and not processes and involving employees in the design of the facility.

Van Meel et al. (1997) noted that office layouts particularly touch upon the needs for status, privacy, territory and social interaction of their inhabitants. These needs are deeply rooted in human characteristics. Konz (1985) offered that business offices produce information disseminated in physical, electronic or oral form and that office layout criteria, though hard to quantify, would be minimization of communication cost and maximization of employee productivity.

Thompson (1997) indicated that for office settings to add value to the organization, new models must be constantly sought because as there is more and more automation of processes, the office then becomes a place for stimulating intellect and creativity. The office must in his view, provide high quality and attractive features to meet the demands of knowledge workers while at the same time, minimize occupancy costs by effective use of space. It is then imperative to observe offices, and if they are underutilized, use the space more effectively. Worthington (1997) noted that the modern workplace in the information age shall be for social activities like meetings, conferences, groups and teamwork or for concentrated individual work with use of special equipment and facilities not available elsewhere.

Organizations, offered O'Neill (1998) should use an investment model to assess the effectiveness of the investment in the physical environment and not merely a cost model, the rationale being that the physical environment supports work style and business

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mission, being the culture and values of the organization. The environment is then designed as part of a strategic planning process that carries the expectation that the work environment will support work processes and, in turn, creation of value to the organization.

2.2 Benefits Of A Good Service Layout

Vedemani (2004) offered that a well planned and designed service organization achieves various goals for the organization including; Enabling smooth and efficient customer flow especially for high contact services; fixtures and fittings direct the customer to the appropriate desk and help them reach the service, without fail; helps create a feeling of comfort in the mind of the customer since there are no obstructions or bottlenecks; the aesthetics of a well planned service area are a visual feast and trigger the 'come back' feeling in him or her while creating a sense of belonging in the environment; ability to sell more effectively and retain customers; employee satisfaction; employee motivation; marketing objectives eg relationship building (Crosby, Evans & Cowles, 1990); encourage social interaction; encourage user participation; allow for many diverse activities to occur simultaneously; facilitate administrative control ;maximize desirable effects (accessibility, control, multi use); and minimize conflicts like noise and activity incompatibility.

2.3 Types Of Office Layout

Office layout is the environment in which employees work and is based on the interrelationships between three primary factors; employees, flow of work through the various work units and equipment. Office layout determines the way resources are placed and the space provided.(Quible, 1999).

There are two types of office layout; Cellular or traditional style office layout and open plan or flexible office layout (Magro O, Robbie, 2007). Cellular layout is characterized by small rooms with offices of one or two people. These are usually allocated per function. Cellular layout offers advantages such as privacy, security of belongings and documents. It also offers the employee the opportunity to organize their resources and

design the working environment. Disadvantages of this layout include isolation, employees work independently (not part of a team) and also affords limited space per employee. Flexible or open plan office layout encourages employees to work together and affords each employee some privacy through the use of screens or dividers. The advantages of open plan layout include; easy communication, better use of space through shared resources, easy supervision, speed up of flow of work and it fosters team work. The downside of this type of layout is that there is less security for personal belongings and confidential work, lack of privacy, employees may not manage time well as there are too many distractions, impersonal atmosphere, infections such as colds spread easily and are generally noisier making it difficult to concentrate.

There are three different approaches, according to Quible (1999) used in designing space around the open office concept. These are the modular workstation approach, cluster workstation approach and landscape approach. In the modular approach, an employee has own desk space, file space, storage space and work area lighting. It is well suited for situations that require considerable storage space and the workspace can be easily modified to the needs of the user An example is accounting staff.

In the cluster workstation approach, employee work areas are clustered around a common core. The employee has a work area that is mainly a writing surface and small storage area. It is not an elaborate setup and is ideal for employees who do not spend too much time around their work area, for example, journalists or salespeople. There is relative ease of layout changes and is also a cheaper alternative.

The last is the landscape approach originally developed in Germany. It may be seen as a blend of modular and cluster approaches though with abundant use of plants and foliage in the decor. This acts as an aesthetic enhancer as well as a visual barrier. Whereas cluster and modular approaches tend to use rows, the landscape approach tends to arrange work areas in different angles. This approach however requires higher capital investment and more space. According to Quible (1999) open plan offices have replaced the status accorded to employees in conventional private offices through other aspects such as location and size of work area and the amount and type of furniture given.

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2.4 Motivation Of Layout Redesign

There are a number of theories put forward in support of layout redesign. In this paper, we start with two, though opposing theories on the physical environment; the empiricist world view and the organismic world view. The empiricist world view is supported by the theory fronted by Skinner (1958) where he offered that the environment can be designed to shape human responses and behaviour, implying that it is possible to design the environment to cause people to behave in specific, predictable ways. The shortcoming of this theory however was in its failure to consider group or organizational behaviour. The organismic world view on the other hand fronted by Altman and Rogoff (1987) held the view that the world is made up of dynamic systems of which people and environment form sub systems, each influencing the other. The implication here was that there is potential for purposeful design of a system of workers and the environment. The system is then capable of changing over time to adapt to changing environmental conditions or demands.

In his research Laing (1997) indicated that Frederick Taylor's ideas of the mechanical workplace implied that the system should be designed first leading to buildings and office environments that do not match the activities of the occupants, while the system perspective fronts for change from the strategy of control over people to providing employees with optimal control over the work environment.

The system theory strongly supports the changes in facility layout, especially for service operations. The work environment is designed with work team support as opposed to visual monitoring by supervisors. The system perspective is in support of knowledge work in which the work process is inherently unpredictable. Since customer demand and market conditions change frequently, the work environment should be flexible enough to respond to those shifts. (O'Neil, 1998). Internal flexibility is thus key in the ability of the organization to respond to rapid changes in the external environment. Laing (1997) holds that offices must be redesigned to cater for; Highly mobile and nomadic work patterns; use of multiple shared work group settings; diverse task based spaces; extended and erratic periods of working; varied patterns of sometimes high density space use and more shared and temporary ownership of settings within the office combined with teleworking

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and home working. Organizations have then had to grab opportunities of new technologies and have redesigned their work processes as well as work spaces. This has led to office environments looking more like domestic environments with more relaxed intimate spaces and furniture that would be found at home, lounges, use of ergonomics in design features of furniture among others. The design of the office therefore is thought as the structure and shape of the organization is being transformed. Office design then follows the strategic thinking of the organization.

Worthington (1997) advocates for open plan layout as opposed to the traditional office setting by the realization that status, roles, norms and responsibilities have little effect in supporting the mission of the organization because change from sources external to the organization cannot be quickly applied through the organization with rigid grasp to rules and roles assigned in the organization. Thus the design of work spaces reflects the purpose and mission of the organization rather than, say, individual status.

Slack and Lewis (2000) saw the shift in focus to office redesign as a result of the change in organization structures whereby organizations are tending towards flatter organization structures in an attempt to respond to pressures of serving turbulent markets whose requirements are always continually changing while preserving and extending the essential capabilities that enable them to differentiate themselves from competitors. Companies are shifting to embody trade-offs and improvements, in reconciling themselves to the changes in the environment. The redesign is also supported by the need to maintain a certain culture and values of the organization that serve as a guide to employees in helping the business achieve its set objectives.

Worthington (1997) indicated that the focus on office design is aided by advances in information technology. Organizations are faced with implementing office automation and networking on old structures which are not effective, hence the need to reconstruct, discard inappropriate space, re planning that which continues to be appropriate and acquiring new premises to provide for new requirements. Previously, computers in the workplace were used to increase the quantity of work done by the employee. Over time though, there has been increased sophistication of hardware and software giving rise to

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tools that not only simplify work, but also enhance intellectual work. Computers are able to give solutions to complex problems and instead of the employee collecting, summarizing and passing information to the manager for decision making, managers access information through wide area networks and local area networks, and in real time, for the same purpose of decision making. This new technology has necessitated the upgrade of physical structure of the organization.

O'Neill (1998) suggests that demographics may also be seen to have played a role. The move to redesign office spaces may have been influenced by the need to accommodate religion say for Muslims to pray at the required times during the day, culture and racial diversity as there is a general trend to eliminate any form of discrimination at the workplace.

Hertzberg(1964) after extensive research in behavioural sciences to find out what motivates people at work, categorized employee motivators into two; hygiene factors and true motivators. Examples under hygiene are salary, status, job security, policies and administration. Sagimo (2002), offers that stressing on true motivators fires the inner person and these include interest in work, satisfaction, a sense of achievement, recognition and personal growth leads to higher productivity of employees. He continues that physical conditions such as safety and lighting, some as basic as stools in a mail room are vital concerns for employees. Improvement in technology and surroundings can make a major difference in the productivity of the system, he adds.

Redesign of office spaces O'Neill (1998) notes, may also be linked to re-organization trends where the focus is on a reduced workforce and obtaining work tools, namely computers and supporting technology. Sagimo (2002) linked office redesign of Telkom Kenya as part of its reorganization effort where the achievement of organizational objectives was partly through the creation of more flexible and strategic business units within the organization which would be more responsive, lean, process focused, less layered, and empowered management teams that would also be cross functional. This would be through office redesign and culture change within the organization.

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From the above, it is clear that organizations are constantly re thinking their strategies aimed at motivating staff to be productive, who in turn please the customer, on whom the organization depends on to meet objectives such as profitability and sustainability of a competitive edge in a fast- changing environment.

2.5 Tools Of Redesign

In planning and designing office layout, Quible (1999) suggests a number of considerations namely; Workflow, where the goal is to design a pattern in which work moves in a straight line direction with minimal, if any, back tracking or crisscrossing patterns. Source documents are usually used in analyzing workflow; An organization chart which helps determine which units should be physically located near each other; Projection of number of employees needed in the future to accommodate future growth; Communication network where if employees generally relate more to certain other employees, it makes sense to place them physically closer to each other; Departmental organization where due regard is placed for departments that need to be placed next to each other; Ratio of private to general offices where the trend has been to more general offices leading to easier central heating, cooling and lighting systems, it is easier to accommodate change and also providing for economy of space; Space requirements where total area required is in turn determined by space requirements for each employee plus job function and hierarchical position; Specialized areas like receptions, boardrooms, storage, kitchens; Safety considerations including aisles that are of sufficient width, and exits that provide quick evacuation in cases of emergency; Barrier-free construction where there is due consideration of ease of movement of people with disabilities; Expansion which ensures the organization is proactive rather than reactive to future space needs; and finally Equipment and furniture needs.

Layout is planned using a variety of tools including templates, cut-outs, plastic models, magnetic boards, relationship charts like SLP (systematic layout planning), management opinion regarding strength of relationships and computer aided design (CAD). Computerized tools however are more in use as layout design turns toward being more complex. The primary concern in layout would be ensuring that all aspects of the layout

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are scaled properly and consistently including the perimeter, structural features and equipment and furniture components.

The most common software tools in use include CRAFT (Computerized relative allocation of facilities technique), ALDEP (Automated layout design program, CORELAP (Computerized Relationship Layout Planning) and RMA Comp 1 (Richard Mather Associates) says Chary(2004). Jeenanunta (2006) notes that optimum layout results from use of mathematical procedures, probability model, graph theory and heuristics which can be classified as construction and improvement methods whereby construction methods develop a new layout from scratch whereas improvement methods generate alternatives based on initial layout. Construction tools include ALDEP, CORELAP and PLANET (Plant Layout Analysis and Evaluation Technique) while improvement tools include CRAFT and COFAD (Computerized Facilities Design) (Belzer 1977).

CRAFT was proposed by Armour and Buffer (1963) and is a popular computerized layout procedure. Input data is flow data and cost data in the form of a 'from-to' chart and an initial layout. CRAFT obtains improved layout by inter-changing locations of departments. Inter-changes are only allowed for adjacent departments or equal size departments. COFAD on the other hand was presented by Tompkins and Reed (1973). It combines the layout procedure of CRAFT with a material handling equipment selection procedure proposed by Webster and Reed. The sequence for the approach is to specify a layout; select the material handling system which is 'best' for the layout; then given the material handling system, determine the 'best' layout (Belzer et al, 1977).

Computerized programs like CRAFT aim at minimization of cost in a manufacturing set-up. In a service setting there should be economy of movement of people and materials, built in safety and flexibility Chary (2004). There must however be consideration of human relations and psychology which are not usually incorporated in computer programs. The optimal solution incorporates the most effective exchanges with consideration of the space and configuration constraints.

2.6 Challenges Of Redesign

There are various challenges to redesign which include great difficulty in reaching decisions on alternatives used in designing space around the open office concept. Bedford and Tong (1997) indicated that planning the office environment requires a balance to be struck between meeting the goals of the individual, and those of the organization as a whole. Private offices may be used to reward hard work, and also to motivate junior staff to strive for. Redesign also involves making assumptions regarding the future which may not be very clearly defined. For example a merger that was not anticipated may happen leading to more staff than originally planned for in an office plan.

Another challenge is availability of funds. Redesign is an expensive affair as it involves paneling, partitioning, carpeting, cabling, new furniture among others. According to reports of refurbishment and redesign of offices, many have cost millions of shillings indicating that organizations must plan well ahead of the refurbishment to undertake the projects. DT Dobie a leading car maker is reported to have already spent 40 million of a targeted 210 million for its showroom in an effort to focus on the customer (Daily Nation 24/6/08 pp29). I & M bank after buying stake in First City Bank of Mauritius refurbished the bank with the introduction of new products and services and in a bid to improve its competitive edge(Daily Nation 4/3/08 pp25). Sarova Group in the hospitality industry spent 150 million in refurbishing two of its lodges(Daily Nation 08/09/07 pp 25). Fairmont hotels spent 6.3 billion in refurbishment 3 years ago(Business Daily 03/07/08 pp 10). Holiday Inn spent 13Q million in a facelift for the hotel(Smart Company 27/05/08 pp 9). The Human Resource Director of Kenya Airways said that in a bid to deliver quality to the customer, the airline had spent 540 million in the construction of a training centre for employees because they believe that delivery to the customer is pegged on employees (Business Daily 11/07/08 pp 12).

Trade-off between proximity and privacy is another key consideration. With most redesign keen on modernizing office spaces, there is the move to open plan layouts. With this comes a trade off on privacy for proximity. There is often staff resistance if private offices are torn open and a manager being made to sit in an open area. Van Meel et al (1997) indicate that personalization of workplaces is a normal human reaction of

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territorial demarcation and that the resistance against desk sharing is seen as a territorial fight. Managers view such a move as detracting from their position in the organization. Workplace design must be well thought out because though technology changes, human nature does not. An ignorance of status, for example, can lead to difficulties in attracting and retaining highly qualified staff, and ignoring needs of privacy can lead to stress and arousal of people, which in turn leads to absenteeism. The way to deal with redesign resistance according to Van Meel et al (1997), is to change the attitude of the people involved, but not merely create flexible, cost-effective workplaces. For successful redesign, issues that must be addressed include; communicating effectively, helping employees adapt to change, inviting and facilitating employee involvement, allowing adequate time for change, maintaining a consistent sense of purpose and offering training.

Noise and activity levels that disrupt normal work, is a constraint in redesign effort. Noise, vibration and uncomfortable temperatures may arise from renovation work (www.bc.edu; Accessed 8/10/08) generating complaints from occupants. Heating, ventilation and air conditioning can be disrupted by renovation and vibration can cause displacement of materials and equipment. Late in 2007, Dyer and Blair were redesigning their offices at the critical time of the Stanbic Uganda initial public offering (IPO). Many customers were unhappy that they could not get served expediently due to confusion among workers coupled with noise and dust as construction went on. Similarly, some three years ago there were frequent movements of departmental staff from floor to floor in an attempt to redesign at the Nation Media Group premises while causing as little disruption as possible to normal operations.

Projects tend to have paintwork, new fittings, demolition, noise which expose employees to health and safety hazards as indicated in www.bc.edu (Accessed 8/10/08). Construction and renovation projects present situations which may release contaminants and pollutants affecting the workers. These include compounds in building materials emitted in form of a gas which in high levels may cause headaches and drowsiness and irritation. There may also be biological pollutants like dust mites and fungi from tearing down previously sealed areas.

2.7 Knowledge Gap

Wakefield and Blodgett (1996) investigated interior layout and design by using five factors relating to what Bitner (1992) referred to as the 'built environment'; layout accessibility; facility aesthetics; seating comfort; facility cleanliness and electronic equipment and displays and found that all these factors had significant impact on customer perception of service quality and that overall satisfaction had a positive effect on repeat buying. It would be worthwhile to find out if Kenyan firms have experienced repeat and increased sales with investment in the physical environment.

Worthington (1997) indicated that in the USA in the last 10 years there has been change in organizations and their workplaces with terms such as outsourcing, downsizing, job sharing, desk sharing and networking as some of the terminology in the workplace environment.

Research undertaken by Leaman (1997) indicates that cost effective operations are a huge consideration in workplace trends. As many companies such as British Airways moved towards cost cutting measures, so did workplace reorganization and redesign take place. More employees are encouraged to work from home thus reducing overhead costs for the company. Organizations then lease smaller office space with greater incidences of 'hotdesking'. This trend benefits the organization and the individual in that there are cost savings to be made from reduced overheads and travel; and individuals feel more in control of their lifestyles. Hotdesking though, is only suited to certain types of workers, and there may be a desire to have a base to work from for individual sense of security. In Kenya Landmark Hotel has adopted this concept and Aron (2008) indicates that the concept has been adopted by Eden Square Business Centre and International Life House.

Harris (1997) observes that employers are recognizing that the quality of work space can have a direct effect on employee satisfaction and that individuals are now more choosy about the quality of their working environment. Those who work see the office as the source of their well being. Therefore in an effort to improve people's work environment, space to eat, relax and work out in is being specified by developers and occupiers. There is constant weighing of options where there is the battle between meeting comfort needs of the individual and wanting to reduce costs like lighting and rent. In the Kenyan

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context, the Occupational Health and Safety Act has minimum requirements for organizations but have organizations complied, while facing lower profit margins driven by high energy costs and consumers hit by high inflation rates.

The Kenyan Occupational Safety and Health Act of 2007, in the Health General Provisions (Part VI, sections 47—54)) takes into account cleanliness in workplaces, citing that premises should be repainted every five years; tackles issues of overcrowding, ventilation, sufficient and suitable lighting (whether natural or artificial); effective drainage and sanitary conveniences, and proper separate accommodation for each sex.

In the Safety – General Provisions (Part VIII, Sections 73 – 82), the same Act covers issues on storage of goods (how and where they should be stocked and in what manner); adaptation of workplaces to fit employee ability and protection against mental strain; proper construction and maintenance of floors – steps and stairs. The provisions also advocate for clear warning signs, handrails for safety along the stairs, fire prevention drills (locking of certain doors). Every workplace has to provide readily accessible means for extinguishing fires and evacuation procedures in the event of a fire.

The Welfare—General Provisions (Part X – Sections 91-95) categorically states that the employer shall provide drinking water for all employees; suitable facilities for washing – clean and orderly – and suitable facilities for resting, sitting for those whose jobs require standing for long periods.

Harris (1997) indicated that a key consideration in obtaining the most appropriate design depends on how the company is organized, what work processes are involved, and how to get the most from the workforce while giving a responsive workplace. Responsive workplaces in this context consider minimum wastage, provision of an effective, efficient and healthy workplace, promotion and support team working, enhanced communication, give flexible layout, support corporate culture and offer individual control and amenity.

Van Meel et al. (1997) noted that the form and extent to which needs of status, privacy and social interaction are expressed differ from society to society. The Kenyan practice

for example, has been to associate status with progressively higher levels in a building. There are VIP lifts in most buildings housing government units and in Nation Media Group the company occupied 2—5 floors with 5th accommodating the CEO. However additional space requirements have seen the organization own ground to 7th floors with the CEO still accommodated on the 5th floor.

Finally, Ark et al (1998), indicates that objects in an ecological layout have individual locations as well as some form of connectivity for an overall physical sense. In office layout, there are many considerations to produce an aesthetically appealing environment, and these should be well considered in the layout of the office.

CHAPTER THREE: RESEARCH METHODOLOGY

3.1 Introduction

This chapter gives the details of the approach and methodology used in the research project. It includes population of study, the sample, the type of data collected, method of data collection, and also the data analysis and procedures applied.

3.2 Research Design

Survey design was used to ascertain various aspects of office layout and redesign in Nairobi. According to Cooper and Schindler (2003) survey method is often used to study the general condition of people and organizations as they investigate the attitudes, perceptions, expectations and opinions of people usually through questioning them.

In this regard, an elaborate questionnaire was distributed to the respondents which was used to solicit office managers' and employees' opinions regarding office layouts for various organizations in the services provision sector. The questionnaire was chosen as it was inexpensive, standardized and relatively easy to administer.

3.3 Population and Sampling

The population of the study consisted of private and publicly owned organizations in the service sector in Kenya. The selected firms were obtained from listed companies in the Commercial and Services, and Finance and Investment sectors in the Nairobi Stock Exchange on www.nse.co.ke/newsite/inner.asp?cat=companies retrieved 10/7/2008. The sampling method employed was the probability sampling with use of systematic sampling method given 23 organizations in the list.

Given the total number of 23 in the commercial and services sector with a requirement of 5 firms, the interval size was 5. With the first random integer as 3, the members selected were 3, 8, 13, 18, and 23. However, data was obtained from Nation Media Group, CFC Bank, Pan Africa Insurance Holdings, National Industrial Credit and Standard Chartered

Bank. UAP Provincial (Part of ICDC Investment) and PDM Kenya were sampled in place of Car and General.

To enable successful research for the public sector organizations, the non-probability sampling method was adopted and specifically judgemental sampling. The organizations chosen were within Nairobi, and in the researcher's point of view reflected the characteristics under investigation. The method was also effective in facilitating accurate data collection from organizations that met set criteria of redesign. The disadvantage of judgemental sampling being that there was no way of knowing whether the sample was representative or not.

3.4 Data Collection

Primary data was collected by the researcher through the use of a structured questionnaire to get brief but objective data. The researcher did not use observation as most organizations staff were not willing to allow the researcher a walk through their premises. Photographs were also prohibited. The questionnaire was distributed to twelve organizations based on the sampling data.

In this study, 40 questionnaires were administered to the selected organizations. A response rate of 90% (36 questionnaires) was obtained with at least one respondent, and a maximum of four in an organization, administered mainly to facilities, finance or operations managers, persons' heading office redesign project teams and other employees. This choice of persons was based on the need for reliable and authoritative answers from the target respondents so that the research could be a source of dependable recommendations. These numbers were expected to assume normal distribution on which general observations could be derived.

The questionnaire consisted mainly of closed ended questions with a few open ended ones. There were two sections in the questionnaire of which section one comprised questions demographic in nature. Section two comprised information on characteristics of the current office layout and the challenges faced with office layout redesign. The questionnaire also sought to establish the respondents' general comments on the aspects

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of office layout and the features of ideal layout. The drop and pick later method was adopted which gave respondents enough time to fill in the questionnaire. Follow up was done by use of telephone calls. The researcher took the opportunity during pick up of the questionnaires to look at the office set up and to ask respondents whether any difficulties were encountered in completing the questionnaire.

3.5 Data Analysis

The data was checked for accuracy, uniformity of responses, consistency and completeness. Out of the 36 questionnaires received, 4 were not used in the analysis as they were incomplete. The responses were aggregated and tabulated for analysis using Microsoft Excel. The questionnaires used in the analysis consisted of 16 questionnaires each from public and private organizations. Descriptive statistics with tabulation of findings and use of frequencies was used. Pearson Correlation Co-efficient was also used to quantify the relationship between public and private organizations renovation data by comparing the results from both sectors. For this analysis, 12 questionnaires each from the two sectors were used. The technique gave a numerical value to show the degree of correlation between the sets of data.

CHAPTER FOUR: DATA ANALYSIS, FINDINGS AND DISCUSSION

4.1 Introduction

The findings below were the aggregation of 32 questionnaires from 12 firms in the services provision sector. The responses were aggregated and analysed using Microsoft Excel. Out of the 40 questionnaires fielded, 36 were received but 4 were excluded from the analysis as they were incomplete.

4.2 General Findings

Demographic data from Part I of the questionnaire to profile the organizations in the sample yielded the following;

Respondents were asked to state the number of years their organization had been in operation and 78.1% indicated over 21 years. This was important for the research because length of time in operation would indicate higher probability of having renovated the premises.

Table 4.1 Length Of Organization Operations In Kenya In Years

Number of years	Frequency	%	Cumulative %
0-5 years	7	21.9	21.9
6-10 years	0	0	21.9
11-15 years	0	0	21.9
16-20 years	0	0	21.9
Over 21 years	25	78.1	100.0

Source: Research data

Respondents were asked to state whether the organization owned of rented the office premise and 40.6% of the respondents indicated ownership while 59.4% indicated rental. This indicated toward the sort of challenges the organization would face in renovating their business premises since most rental premises would face lease agreement restrictions. The respondents were classified as 50% working in public organizations and

50% in private organizations, which was an even sample for analysis of the similarities or differences between public and private organization redesign considerations.

The respondents were also asked to indicate the position held in the organization. Table 4.2 summarises these. It was important for the data to be drawn from different levels in the organizational hierarchy for successful research.

Table 4.2 Level In Organization Hierarchy

Level	Frequency	%	Cumulative %
Sub-ordinate	6	18.8	18.8
Supervisory	17	53.1	71.9
Senior Management	8	25.0	96.9
Other	1	3.1	100.0

Source: Research data

The research targeted various personnel in different departments in the organization. Table 4.3 illustrates the findings from the respondents. The aim was to obtain answers from operations and administrative personnel who would in the researcher's view, be privy to redesign strategies of the organization and subsequent implementation of the plan. The survey also targeted lower level employees to gauge the impact of the redesign effort since they are able to interact more closely with customers and also experience the facility more closely.

Table 4.3 Department Of Respondent In The Organization

Department	Frequency	%	Cumulative %
Operations	13	40.6	40.6
Finance & Admin	11	34.4	75.0
Other	8	25.0	100.0

Source: Research data

The results in the Table 4.3 indicate 40.6% being in operations which would be the heart of redesign efforts in the organization and 34.4% in finance and administration which is

key in controlling redesign budgets and steering such effort. It can thus be said that the target respondents were reached.

Table 4.4 further examines the estimation in the respondent's view of the level of skill in the particular organization. This was intended to ascertain whether organizations are redesigning with high level skilled workers in mind.

Table 4.4 Estimation Of Highly Skilled Vs Unskilled Labour In The Organization

Level of skill	Frequency	%	Cumulative %
50% Highly skilled, 50% unskilled	5	15.6	15.6
25% Highly skilled, 75% unskilled	2	6.3	21.9
75% Highly skilled, 25% unskilled	10	31.2	53.2
90% Highly skilled, 10% unskilled	15	46.9	100.0
10% Highly skilled, 90% unskilled	0	0.0	100.0

Source: Research data

The findings indicate that majority of the organizations have highly skilled labour (78.1%) with 75:25 and above in favour of skilled labour. This confirms previous research studies by Worthington (1997) that showed redesign efforts are partly triggered by the need to accommodate knowledge workers who are highly skilled by ensuring they have necessary tools and equipment to aid in performance of their allocated tasks. This is further reinforced by the finding that 100% of the respondents indicated that the organization had been renovated in the recent past.

The respondents were asked to indicate the main reason for renovation, which was used as a check for consistency of responses to subsequent questions. The results in Table 4.5 indicate that majority of the organizations sampled cited operational requirements as the main reason for renovation. It can be said that as businesses grow, they are constantly rethinking their operational capabilities and adjusting their environment to align themselves toward meeting their operational goals.

Table 4.5 Main Reason For Renovation By The Organization

Reason	Frequency	%	Cumulative %
Operational requirement	21.5	67.2	67.2
Update in technology	3.5	10.9	78.1
Customers	2.5	7.8	85.9
Employee comfort	1.5	4.7	90.6
Industrial trends	1.0	3.1	93.7
Parent company standard	1.0	3.1	96.8
Critism	1.0	3.1	100.0
Competitor pressure	0	0	100.0

Source: Research data

4.2 Redesign Considerations

The research was carried out to determine what organizations considered in redesign. The tables below summarize the findings where there is an indication of various factors in three main areas of focus in service layout, which are arrangement of equipment and furnishings, ambience and signs, symbols and artifacts. The questionnaire had a before and after renovation section indicating presence or absence of various features whose findings are summarized in Table 4.6.

Table 4.6 Presence Or Absence Of Features In Layout

	Presence		Absence	
	Before	After	Before	After
Observations	579	905	690	364
Mean	12	19	14	8
Standard deviation	4.66	4.68	5.06	4.68

Source-Research data

It is clear from Table 4.6 that organizations were intent on redesign with a purpose; to include various features that were not present before. There were 326 responses indicating positive changes in the environment. The summary table 4.7 indicates the 5

most frequently identified features and the 5 lowest identified features before and after the redesign.

Table 4.7 Frequent Features Before Redesign

Before (Highest)	Frequency	Before (Lowest)	Frequency
Shared Office Equipment	22	Piped music	26
Adequate Lighting	21	Temperature control	24
Fire Equipment	20	Tasteful furnishing	21
Cubicles for one or two staff	19	Directional signs	21
Kitchen area	19	Adequate filing area	20

Source: Research Data

Table 4.8 Frequent Features After Redesign

After (Highest)	Frequency	After (Lowest)	Frequency
Easy communication with customers	26	Piped music	23
Shared Office Equipment	25	Anti-glare screens	18
Workstations close together	25	Temperature control	16
Waiting facilities	24	Equipment in noise controlled area	15
Ease of movement around office	24	Cubicles for one or two staff	14

Source: Research data

From the analysis, it can be said that organizations have been focusing their redesign effort on more open plan offices, with a consideration for their customers and general comfort for employees in the office environment. The movement of tasteful furnishing, adequate filing area and directional signs from the bottom five before renovation further reinforces the argument. It can also be deduced that there is no need for music in an office environment as opposed to a retail environment, as knowledge work is done in offices, as opposed to leisurely activities. However organizations need to focus more on

greater comfort for the employees and also health considerations as this has an impact on employee productivity.

Bitner (1992) indicated that in service firms there is great emphasis on three main areas in consideration of the physical surroundings in which the services take place. These are; ambient conditions which refer to the background characteristics such as the noise level, music, lighting, temperature and scent, spatial layout and functionality with spatial layout referring to the ways in which machinery, equipment and furnishings are arranged, the size and shape of those items and the spatial relationships between them, while functionality referring to the ability of the same items to facilitate performance and the accomplishment of goals, and signs, symbols and artifacts which usually carry special meaning.

Respondents were asked to indicate features in the layout before and after redesign for each of the three main areas of service layout. Data was analysed and the following information obtained. This comparison intended to study the pace of change for each of the areas of consideration in service settings.

Table 4.9 Analysis Of Components Of Servicescapes

Component	Before	After	Change	Change %
Equipment & Furnishing	400	604	204	51.0
Ambience	108	175	67	62.0
Signs, Symbols & Artifacts	71	126	55	77.5

Source: Research data

Table 4.9 indicates the largest change of 77.5% in signs, symbols and artifacts and the lowest in equipment and furnishings. From the results, it can be said that the organization redesign effort has been focused mainly on creating a sense of identity and also minimizing confusion in the office setting. The low change in equipment and furnishing can be attributed to the fact that modernization of tools and equipment happened before

the focus on office layout, thereby not necessitating the need for overhaul of the tools and equipment.

Table 4.10 illustrates the findings on the adequacy of each of the features in the three main components in service layout setting. This was intended to show the case for purposeful redesign with the intended objective achieved by ensuring that the added features seem to make a difference to the customers and employees.

The numbers 1-5 were allocated to Strong Disagreement, Disagreement, Neither Disagree or Agree, Agreement and Strong Agreement respectively, in order to obtain a weighted average of the rating by respondents and develop a ranking for the various features.

Table 4.10 Summary Of Adequacy

Category	No.of respondents	No. of features	Mean	Std dev
Equipment & Furnis	32	30	3.75	0.56
Ambience	32	10	3.34	0.72
Signs, symbols, art.	32	7	3.49	0.31

Source-research data

The responses indicated clearly the satisfaction with equipment and furnishings or spatial layout and functionality, with the lowest rating for ambience. From the previous analysis, equipment and furnishings were present in the layout, and the employees expressed satisfaction with the equipment and servicing with ambience as the least of the factors. While the organization was working to include ambient conditions, there is still some work to be done to keep the employee motivated.

Another aspect of the redesign considerations was the motivation behind redesign. On a scale of 1-5 with 1 being Strong Disagreement, 2-Disagreement, 3-Neither Disagree or Agree, 4-Agreement and 5- Strong agreement, the respondents view on the impact of various reasons for the redesign of the particular organization's office layout are summarized in Table 4.11. The ranking was obtained by assigning values to each of the elements on the scale as indicated.

Table 4.11 Motivation For Redesign

Motivation	Weighted Av	Ranking
Need to provide better services	4.13	1
Enhance employee motivation	3.91	2
To support corporate culture	3.91	2
To reduce wastage	3.75	4
Reduce accidents & hazards at work	3.75	4
To address employee needs	3.72	6
To encourage teamwork	3.66	7
To please the customer	3.63	8
Re-branding	3.59	9
To keep with modernization trends	3.53	10
Adopt latest equipment technology	3.53	10
Innovations in security	3.53	10
Innovations in lighting	3.41	13
Accommodate new customers	3.41	13
Aesthetics consideration	3.38	15
To give the customer value for money	3.31	16
Improve storage spaces	3.31	16
To offer new services	3.25	18
To include innovations in acoustics	2.84	19
Location requirements	2.84	19
Competitor moves	2.56	21
Poor workmanship of previous effort	2.56	21
Parent company requirement	2.28	23
To sublet or give up unused space	2.16	24
Acquisition or merger	2.09	25
Downsizing	1.94	26
Other: Space for more employees	5.00	27

Source: Research data

The data indicates that the primary motivations are to provide better services, to promote corporate culture and enhance employee motivation. This is consistent with the responses on main motivation where majority of the respondents indicated operational requirements. It is also in line with the effort by organizations to provide signs, symbols and artifacts which serve to reinforce corporate culture within the organization. The data also indicates the focus on the employee to be as productive as possible coupled with

existing tools and equipment. It is such alignment that would see the organization reap rewards in the form of realized goals.

4.3 Perceived Benefits Of Redesign

The research sought the respondents' views on the benefits that accrued to the organization with the redesign of the office environment. Table 4.12 summarises the perceptions of the respondents. The respondents ranked various benefits on a scale of 1-5. The numbers 1-5 were allocated to the responses on Strong Disagreement, Disagreement, Neither Disagree or Agree, Agreement and Strong Agreement respectively and the following ranking obtained.

Table 4.12 Perceived Benefits Of Redesign

Benefit	Weighted av.	Ranking
Safe hazard free environment	4.00	41.9
Customer satisfaction	3.94	35.5
Customer attraction	3.84	29.0
Higher employee productivity	3.81	29.0
Affiliation with co-workers	3.74	19.4
Better teamwork	3.71	22.6
High employee morale	3.55	38.7
High flexibility to cope with external pressure	3.45	19.4
Customer retention	3.39	12.9
High level of innovation by employees	3.23	22.6

Source: Research data

From Table 4.12 the greatest benefits arising from redesign are the creation of a safe, hazard free environment and high customer satisfaction wit the respondents indicating agreement. The responses on features in the layout can be shown to be leading to focus on employee comfort which is in line with the desire to create a hazard free environment. The desire to achieve organizational objectives can be seen in the effort to satisfy the customer who continues to purchase various services from the organization thus generating the much needed revenue on which redesign effort would be focused. The lowest ranked benefit is innovation by employees. An environment that encourages high

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levels of innovation is very relaxed with ambient conditions and more 'home like' settings which are not apparent from the features present in the office layout.

4.4 Challenges of Redesign

Given the findings in Table 4.12, what then would be the greatest hurdle to achieving the desired benefit? On a scale of 1-5 where 1 represented Strong Disagreement, 2-Disagreement, 3-Neither Disagree or Agree, 4-Agreement and 5- Strong Agreement, with allocation of the same numerals to each of the responses, the respondents offered the following information with regard to challenges faced in the redesign effort, and the extent to which each of the listed challenges posed a threat in the various environments.

Table 4.13 Challenges Of Redesign

	Weighted av.	Ranking
Cost	3.88	1
Protocol and approvals	3.81	2
Space constraints	3.72	3
Original design of building	3.34	4
Technology investment	3.28	5
Size of the organization	3.28	5
Disruption of normal operations	3.00	7
Landlord restrictions	2.91	8
Health risks	2.72	9
Ability to hire experts	2.66	10
Uncertainities about the future	2.53	11
Noise and distraction	2.28	12
Staff resistance	2.16	13

Source: Research data

The greatest challenge in Table 4.13 arose from cost, protocol and approvals and space constraints. It is clear from this data that the organizations do not view the constraints as greatly hampering the redesign effort, with the highest value 3.88 close to agreement. The lowest ranked challenge is staff resistance but considering the data was mainly obtained from middle and lower level employees, this would be expected. Previous studies show that senior managers are often in a peculiar position with more office spaces tending to open plan design. The staff resistance score is also supported by the features

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responses where employees indicated existence of managers' offices, hence not subjected to an open plan setting. Businesses also seem to be well adjusted to use of technology and minimization of health risks while tools and equipment used in redesign may be quieter, or conducted only at night to minimize noise and distraction.

Other responses on challenges in the strong agreeable view of the respondents were availability of funds, corruption, occupation of several floors in a building for a single department and lack of support of redesign initiatives by top management.

4.5 Ideal Office Layout

The research also posed to respondents the question of ideal environment. Given that organizations seem proactive in creating a comfortable working environment, what more did the respondents feel the organization could do to enhance their well being? The following is a summary of features that employees felt should be included in the office set up. The question was open ended and content analysis was used to generate the main themes from the responses.

Table 4.14 Additional Features

Feature	Frequency	Frequency %	Cumulative %
Better workstations	3	9.68	3
Kitchen equipment eg Fridges	4	12.90	7
Staff lounge, TV, radio, mother's room	4	12.90	11
More signs and staff notice boards	2	6.45	13
Staff Recreational area; gym, canteen	3	9.68	16
Better storage facilities	1	3.23	17
Better client waiting area, washrooms	3	9.68	20
Focus on ventilation and air-conditioning	2	6.45	22
Creation of better ambience	5	16.30	27
Effective use of space with emphasis on equality	2	6.45	29
Incorporation of latest technology in equipment	2	6.45	31

Source: Research data

From the analysis, ambience (16.3%) is a key concern, and a driver for employee productivity. The focus seems to be the creation of a 'home like' setting in the office

environment as a key driver (25.8%) which would boost employee creativity especially where there is great competition and the desire to provide added value to the customer to maintain loyalty for the organization's service.

4.6 Comparison of Public and Private Organizations

This study aimed at ascertaining whether private and public service organizations are at par in redesigning the office. From the demographic data, 78.1% of the organizations surveyed have been in operation for over 21 years necessitating renovation of the office premises. The study intended to assess whether there was a significant difference between renovation efforts by public and private service organizations. 12 respondents from each sector were used for this analysis. Pearson correlation co-efficient was used to draw the comparison with the testing of the hypothesis that there is no significant difference between redesign efforts in the public and private sector organizations with the alternative hypothesis being that there is a difference between redesign effort in the two sectors.

4.15 Comparison of Public and Private Organizations

	Public Organizations			Private Organizations		
	Before	After	% change	Before	After	% change
Equipment	156	245	57.05	206	285	38.35
Ambience	45	78	73.33	52	78	50.00
Signs, Sy.	35	58 ·	65.71	29	55	89.66
Total	236	381	61.44	287	418	45.64

Source: Research data

At 99% level of confidence, one tailed test, the following results were obtained;

Public/ Public	0.99959694
Private/Private	0.99863769
Public/Private Before	0.99651689
Public/Private After	0.99847534

The findings indicate a significant difference between the public and private sectors leading us to reject the hypothesis.

The conclusion is therefore that redesign effort in the private sector service organizations differs from that in public organizations. Private organizations have redesigned the office more than public organizations. If public organizations are to realize similar benefits from careful consideration of the physical environment, they must take cue from private organizations.

CHAPTER FIVE: SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

The chapter gives a summary of the findings indicated in the previous chapter and recommendations to organizations with regard to office layout and design. It also gives an indication of inaccuracies that may be experienced due to various limitations of the data on which the recommendations have been made.

5.2 Summary Of Findings

From the survey, organizations with high levels of skilled labour have taken to redesign of their office settings with the primary motivation being better services, employee motivation and promotion of corporate culture seeking certain benefits which include a safe hazard free environment, and high customer satisfaction while cost, protocol and approvals and space constraints being the barriers that greatly hamper redesign effort. Of the three main components in a service setting, a lot more needs to be done in the office setting with regard to ambient conditions. Private service organizations are slightly ahead of public organizations in their renovation of office spaces.

5.3 Conclusion

The survey was conducted with the objective of obtaining data from service organizations with respect to redesign of the office setting. It sought to establish what the motivation of redesign would be, the challenges experienced by the organizations in their redesign effort and the benefits if any that accrued to the organization from such redesign. It also set out to obtain an indication of how radical the redesign of the organization was by comparing features in the layout before and after the redesign. This was achieved through the administration of a questionnaire to selected organizations. The data collected indicated that all firms in the sample had redesigned their offices and there were perceived benefits from the effort, in line with previous research in layout design.

Organizations are faced with a high number of knowledge workers with a high level skill to be harnessed. Clearly, organizations have taken to office layout design as a tool to stay competitive because the benefits include customer satisfaction and higher employee productivity. It is also worth noting that most organizations in the survey cited operational requirements as the key motivation rather than industrial trends or competitor pressure. This means that organizations have taken a very proactive approach to staying competitive in the industry. Organizations can thus be said to be constantly looking for new ways, of which facility layout is one, to utilize all available resources in the most efficient manner which steer the organization toward operational excellence, thus achieving the set goals of the organization, while pleasing the customer who rewards the organization with loyalty for its services.

5.4 Recommendations

Facility layout is important in harnessing high levels of output from employees in a bid to utilize resources in the most effective manner to aid in attainment of organizational goals. From the survey, there still remains some work to be done by organizations, hence calling for a more serious consideration of ideal working environments. With the myriad of challenges businesses are facing today, the business must look to more creative ways of staying in business and achieving their goals. Adoption of latest office designs is one such way as businesses move toward more flexibility. Employees feel cared for by the organization and are motivated to give the maximum possible output. Organizations must also look to flattening structures and making senior managers more accessible to staff by using more open plan settings. The impression that people get from the organization is a very powerful marketing tool for the organization. With the office layout carefully selected and designed, impressions that stick in the mind of the consumer are made, and this is especially key in the service industry where intangibles make a huge impact on the satisfaction derived by the customer in obtaining the service.

From the results of the study, the focus of further redesign should be in creation of ambient conditions, as indicated by the survey. The office must have a 'home like' atmosphere where employees are happy to spend their time, hence contributing to the organizational goals. The survey also indicated that the primary motivation has been

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provision of better services to customers in order to please them, supporting of corporate culture, encouraging teamwork and employee motivation. These will definitely lead to high levels of customer satisfaction and high employee productivity. The service organization must however be able to overcome the main challenges of protocol and approvals, cost and space. The organization should also consider having employees working from home and sharing of office space by working shifts and encouraging flexi-hours, as long as the overall daily working hours are met.

5.5 Limitations Of Study

In interpretation of the findings of the survey, a number of limitations must be considered. It must be noted that the recommendations are based on the response of 12 organizations in the services industry. Many people were unwilling to fill in the required information, and company policy restricted the researcher from taking photographs and walking around the office premises. Also, the research for office layout before renovation was based on the memory of the respondent which may not have been very accurate if it was undertaken a while back. There are also general errors that could arise out of misunderstanding of the questions. The respondents also complained that the questionnaire was lengthy which may have hampered the quality of output given time constraints cited.

5.6 Suggestions For Further Research

This research was an exploratory survey. Further research may be undertaken in considering the influence of corporate culture, cited as a key motivation in this study, on the layout design of an organization. Future researchers may also delve into quantifying the perceived benefit from careful consideration of layout on the bottom line of the business. The only limitation here is that the effort is usually done hand in hand with other corporate activities, which makes it difficult to isolate the effect of such setting. It would also be worthwhile for a researcher to obtain the opinions of customers as this study was focused within the organization. Since there are certain perceived benefits, does the customer feel valued, and do they consider the office layout in their buy decisions. This is critical especially for those high touch services that the customer cannot obtain outside the organization premises.

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16th Oct 2008

Janet Mungai
P.O Box 12976-00100
Nairobi.

Dear Sir/Madam,

RE: A SURVEY INTO OFFICE LAYOUT REDESIGN CONSIDERATIONS IN SELECTED ORGANIZATIONS IN NAIROBI.

I am a postgraduate student undertaking a Master of Business Administration Degree at the School of Business, University of Nairobi. I am carrying out a research on office layout in service organizations.

My objective is to provide insight into the area of facility layout in organizations. Facility layout encompasses the arrangement of equipment and furnishings, ambience and signs, symbols and artefacts. Attached is a questionnaire whose purpose is to obtain accurate and objective information regarding office layout in your organization.

It is a unique study in the Kenyan business context, and I hope you, as the respondent will contribute freely to enriching the knowledge in this area of study.

The information obtained from this questionnaire shall be treated as confidential, and shall be used for academic purposes only.

Yours Faithfully,

Janet Mungai
D61/P/8420/05

L. Mulwa
Supervisor

<u>**QUESTIONNAIRE**</u>

<u>**RESEARCH TITLE: OFFICE LAYOUT REDESIGN CONSIDERATIONS IN SELECTED ORGANIZATIONS IN NAIROBI**</u>

Please tick (√) or fill in the appropriate information in the spaces provided.

<u>**PART I: BACKGROUND INFORMATION**</u>

1. Indicate the name of your organization (Optional)

   ....

2. How long has your organization been in operation in Kenya (in years)?
   A. 0 – 5
   B. 6 – 10
   C. 11 – 15
   D. 16-20
   E. Over 21

3. Does the company own or rent the office premises?
   A. Own
   B. Rent
   C. Other (Please specify)..........................

4. What is your position in the company?
   A. Subordinate
   B. Supervisory
   C. Senior Management
   D. Other (Please specify)..

5. In which department or section of the organization do you belong?
   A. Operations
   B. Finance & Administration
   C. Human Resources
   D. Other (Please Specify)..

6. What would you consider as a reasonable estimate of highly skilled vs unskilled workers in your environment?
   A. 50% Highly skilled, 50% unskilled
   B. 25% Highly skilled, 75% unskilled
   C. 75% Highly skilled, 25% unskilled
   D. 90% Highly skilled, 10% unskilled
   E. 10% Highly skilled, 90% unskilled

7. Has your company renovated the premises it now occupies?
   A. Yes
   B. No
   C. Do not know

8. What would be the main reason for the renovation by your organization?
   A. Customers
   B. Parent company standard
   C. Operational requirements

D. Competitor pressure
E. Industrial trends
F. Update in technology
G. Other(Please specify)...................................

PART II: OFFICE LAYOUT

9. Does the organization have an organizational chart?
   - A. Yes
   - B. No

10. Is your organization grouped in departments?
    - A. Yes
    - B. No

11. Where Y means present and N absent, please indicate whether the following characteristics are/ were present in the organization layout **before** and **after** renovation.

Feature	Before		After	
	Y	N	Y	N
Small offices for 1or 2 staff				
Open space with desks in rows or clusters				
Open space with small offices for managers only				
Workstations close together				
Shared office equipment				
Ease of movement around the office				
Clear entry and exit points				
Lack of clutter				
Adequate waiting facilities				
Easy communication with customers				
Clear signs showing different service points				
Customers only see what the organization wants them to see				
Minimum walking and material movement				
Conference room for privacy and large meetings				
Tea/coffee station				
Kitchen/ food area				
Wide aisles				
Glass or wood partitioning for desks				
Low partitioning between desks to facilitate communication				
Desks with adequate working area				
Anti-glare screens				
Desks arranged so as not to face each other directly				
Large reception area				
Adequate filing area				
Adjustable, mobile furniture				
Comfortable chairs and desks				
Well serviced and running office equipment				
Easily accessible shared equipment				
Employees sitting area removed from equipment area				

Carpeting					
Fire equipment					
Notices on evacuation procedures					
Well marked emergency exit					
Air conditioning					
Temperature control mechanism					
Noisy area eg fax, copiers sealed off for noise control					
Piped music					
Proper ventilation					
Adequate natural/electrical lighting					
Control of odours from washrooms					
Co-ordinated colours/paintwork					
Signs to show different service areas					
Directional signs for offices					
Organization awards/achievement/products display					
Plants/flowers					
Tasteful furnishing					
Organization mission/vision/values prominently displayed					
Other 1.					

12. On a scale of 1-5 with 1 representing strong disagreement and 5 strong agreement, Please indicate by a (√) the adequacy of the following features in your current office layout.

Feature	1.	2.	3.	4.	5.
Small offices for 1or 2 staff					
Open space with desks in rows or clusters					
Open space with small offices for managers only					
Workstations close together					
Shared office equipment					
Ease of movement around the office					
Clear entry and exit points					
Lack of clutter					
Client waiting facilities					
Easy communication with customers					
Clear signs showing different service points					
Customers only see what the organization wants					
Minimum walking and material movement					
Conference room for privacy and large meetings					
Tea/ coffee station					
Kitchen/food area					
Wide aisles					
Glass or wood partitioning for desks					
Low partitioning between desks to facilitate communication					
Shared desks					
Anti-glare screens					
Desks arranged so as not to face each other directly					
Large reception area					
Filing area					
Adjustable, mobile furniture					

Comfortable chairs and desks					
Well serviced and running office equipment					
Easily accessible shared equipment					
Employees sitting area removed from equipment area					
Carpeting					
Fire equipment					
Notices on evacuation procedures					
Well marked emergency exit					
Air conditioning					
Temperature control mechanism					
Noisy area eg fax, copiers surrounded by cubicle walls					
Piped music					
Proper ventilation					
Natural/electrical lighting					
Control of odours from washrooms					
Co-ordinated colours/paintwork					
Signs to show different service areas					
Directional signs for offices					
Organization awards/achievement/products display					
Plants/flowers					
Tasteful furnishing					
Organization mission/vision/values prominently displayed					
Other 1.					
Other 2.					
Other 3.					

13. On a scale of 1 - 5 with 1 representing strong disagreement and 5 strong agreement, please indicate the extent to which the factors below prompted the redesign in your organization.

Reason	1.	2.	3.	4.	5.
Rebranding					
To please the customer					
To give the customer value for money					
To accommodate new customers					
To offer new services					
Competitor moves					
Need to provide better services					
To reduce wastage					
To reduce accidents and hazards at work					
To address employee complaints/needs					
To enhance employee motivation					
To support corporate culture					
To encourage teamwork					
Aesthetics consideration					
Downsizing					
To sublet or give up unused space					
To keep with trends/modernization					

To adopt latest technology in equipment					
To include innovations in security					
To include innovations in lighting					
Improve storage spaces					
To include innovations in acoustics					
Poor workmanship of previous redesign effort					
Location requirements					
Acquisition/ Merger					
Parent Company requirement					
Other 1.					
Other 2.					
Other 3.					
Other 4.					

14. On a scale of 1-5 with 1 being least and 5 being the greatest challenge, please indicate the extent to which each of these factors pose a challenge to renovation efforts by your organization.

Challenge	1.	2.	3.	4.	5.
Cost					
Protocol and approvals					
Technology investment					
Ability to hire experts					
Original design of building					
Disruption of normal operations					
Staff resistance					
Health risks					
Uncertainities about the future					
Noise and distraction					
Size of the organization					
Space constraints					
Landlord restrictions					
Other 1.					
Other 2.					
Other 3.					

15. On a scale of 1-5 where 1 represents strongly disagree and 5 strongly agree, please indicate whether the following benefits of redesign may have accrued to your organization.

Effect	1.	2.	3.	4.	5.
Customer Attraction					
Customer Satisfaction					
Customer Retention					

Increased Employee Productivity					
Affiliation with co-workers					
High employee morale					
Safe hazard free environment					
Better teamwork					
High flexibility to cope with external pressure					
High level of innovation by employees					
Other 1.					
Other 2.					
Other 3.					

16. What would you include in the office layout that is currently not in your environment?

....

....

....

....

THANK YOU FOR TAKING THE TIME TO RESPOND.

This questionnaire can be mailed on the enclosed self-addressed envelope.

LIST OF RESPONDENTS

The organizations included in the study are;

Public Sector
1. National Oil Corporation
2. Office of Public Communications
3. Office of the Immigration and Registration of Persons
4. Nairobi City Council
5. Kenya Bureau of Standards

Private Sector
1. Standard Chartered Bank
2. Nation Media Group
3. CFC-Stanbic Bank
4. Pan Africa Insurance Holdings
5. NIC Bank
6. UAP Provincial Insurance
7. PDM Kenya Ltd