

M.Nemarumane^{1,a} and C. Mbohwa^{1,b}

¹Department of Quality and Operations Management, University of Johannesburg, P. O. Box 524, APB Campus, Auckland Park 2006, Johannesburg, South Africa

tnemarumane@uj.ac.za ; cmbohwa@uj.ac.za

Key Words: Layout, Customer satisfaction, Conflict, Motivation.

ABSTRACT: This paper focuses on the redesign of the No-Limits Design Studio's layout with a view to improve its organisational efficiency and effectiveness. It was found that the studio's existing layout resulted in employee stress, low employee motivation, low customer satisfaction, and also to employees not performing at their full potential. Data were collected using interviews, to reveal the problems that existed within the studio from both the customers' and employees' viewpoints. Non-participatory observations were also conducted and these focused mainly on the studio's daily operations and activities over a period of one year through action research methods involving on the job experiential learning. The study demonstrated that, for an organizational layout to be effective, the organization has to plan the desired layout, implement the layout according to the plan and integrate it to form part of the organization's culture. It was found out that the studio should redesign its layout, focus on the motivation of employees and improve conflict management strategies in order to improve its organizational capabilities.

1. INTRODUCTION AND BACKGROUND

1.1 Introduction

Any major organisational change, such as an office reorganisation or move, needs to be considered from both the physical and users' perspective. It is relatively easy to plan for the "hardware" aspects of a move, but without a human centred approach, the co-operation of staff may be lost, along with the potential improvement opportunities of the move [1]. Facility design consists of non-human elements, including equipment, facility layout, lighting, and colour which influences human cognition, emotions, and behaviour [2]. Such designs should be focused upon maximizing the positive and meaningful impact for the customers [3]. Facilities can have an important influence on service operations, for instance and on the behaviour and satisfaction of customers, queuing systems, and sales [4]. Facilities are especially important in service settings, because these are the places where customers and organizations still meet face-to-face, the moment of truth [5]. As such, customers can be expected to have a holistic spatial experience in which facilities, services, products, and operations are intermingled. This paper proposes an improvement in a design studio's layout by placing the products effectively and by utilising the excess space such as the storage room, to contribute to the extension of the floor area.

2. LITERATURE REVIEW

The layout of an organisation impacts on many factors both structural and behavioural. These can include stress, employee motivation and performance, customer satisfaction and the potential for conflict. When a layout is not properly implemented, it limits employees potential to meet the

expectations of customers and becomes a disadvantage to the organisation resulting in loss of competitiveness. This means that an organisation has to prioritise layout design in order to improve and/or maintain its place in the market. The layout of the workplace should be ergonomic [6]. This suggests that many alternatives should be investigated before any designed layout is implemented and a selection of a layout design that best suits the company's procedures, products and services should be decided upon. This would enable better placing of the products and increase the floor space utilisation. A poorly-installed layout can lead to serious inefficiencies [7].

Employees should be highly involved when designing a new layout and their comments should be invited at all stages of the process. This will provide for better understanding of how to utilise the implemented layout and will be a source of self-actualisation for the employees since they would have been considered as a vital part of the organisation. It is essential for companies to identify the various constraints and requirements posed by the work system that have to be considered during workstation design; this includes any element or situation that may interfere directly and indirectly with the work design [8]. The type of work system that is used within the organisation determines the necessary layout design in order to have a proper flow of activities and information.

One of the reasons for companies to hold more inventories on their floor area is to increase customer satisfaction [9]. This is done in a way that may require high levels of inventory and assumes that the more the inventory the higher the level of customer satisfaction. However more inventories can limit freedom of movement thus decreasing customer satisfaction because of the poor environment in which the service is rendered. [9] The work floor area ambiance and aesthetics are important in the service industry. It gives the first impression to the customer before attention is paid to the products. The physical working environment also contributes to the level of motivation and job satisfaction of the employees. It can be the basis for attracting good employees compared to the competitors or other businesses in the same industry. If the working environment is cramped and stuffy and the management demonstrate that they are doing their best improve it employees would respond positively.

An organisation can have a less effective and less efficient layout and compensate that with service excellence [11]. Service excellence begins with highly engaged employees who have an intrinsic desire to go beyond and above to take care of and delight the customer. Such employees require minimum comfort in the working area. An ineffective layout cannot therefore be substituted by excellence in service delivery only. On the other hand, an effective layout supports excellence in service delivery. Before determining a layout that is suitable in any organisation, there has to be the determination of customer expectations in the type of layout in that specific organisation [12], this includes

- Access: accessibility at a time and by a method convenient to customers
- Resolution of service issues: flexibility of the organisation, being knowledgeable, and willingness to take the time to listen and resolve problems
- Treatment: How friendly and caring the employees are in meeting customer's needs.

The level of customer satisfaction also depends on the type of layout in a specific organisation. Therefore, before a layout is implemented it has to be evaluated in terms of at what degree it meets customer expectations. When this degree is high, the layout design is important. The layout should satisfy the following employee needs to improve motivation [13];

- Physical needs: This is done by providing comfortable work spaces.
- Security needs: Employees who are worried about their physical safety cannot concentrate at their work hence precautions should be taken against physical danger.

There are two basic elements on which every plant layout problem rests [14]:

- Product: When a layout is designed without analysing the contents of the products being produced, then the necessary equipment to support such products is not made available. The layout should be well planned to fully support the products.
- Quantity: Knowledge of forecasts of quantities helps in placing of products appropriately in storage and display areas. Space requirements can be estimated more accurately.

3. METHODOLOGY

A Qualitative case study methodology was used to conduct the study. This was done to enable the researcher to reveal the nature of the current way of working within the Design Studio and also to reveal the relationship that exists between employees. The qualitative research also helped to develop new concepts of operation, therefore allowing for the introduction of new procedures within the Design Studio. The design studio studied is a shop based in the Gauteng province, Johannesburg, which sells exclusive and hand made pots used to decorate inside and outside the house. Within the Design Studio, all employees were interviewed using open ended and close ended questions and forty customers were randomly chosen for the interviews. The interviews were conducted to collect data from the employees and customers. They focused on the identification of problems and the evaluation of the impacts of the existing layout. During these structured interviews, all participants were given the chance to freely express their views and opinions about the organization. The interview started by asking the participants to describe the organization in question in terms of their experiences within the Studio. This helped to set the basic understanding of how the participants felt about the organization.

Advantages of interviews

- They allowed the researcher to address issues in-depth and with more attention being paid to the complexity of layout problems and impacts
- They made it possible to for the researchers to prod the experience or perspective of people in a variety of social settings
- They were able to deal with a wide range of topics and access immediate feedback from the customers and employees
- They were found to be more socially acceptable compared to observation [15].

Disadvantages of using interviews

- The interviewees at times gave false or misleading information for self-preservation or protection. Some customers felt that the study was meant to victimize the employees, hence they tended to be protective of them
- There is an assumption that the interviewee has all facts on hand and this was found to be not the case.
- The data gathered reflected the experience of a small group only
- It was difficult to address routine work systems and procedures verbally

To overcome the above disadvantages, triangulation was done by using non-participatory observations. These focused more on daily activities and the manner in which the organization's layout was designed. The direct and indirect observations were done over a period of one year,

when one of the researchers was attached to the company. This was done so as to gain enough insight on the organizations practices, procedures, cultures and protocols.

Advantages of Observations

- They helped the researchers to overcome issues of validity and bias
- They were useful to dig out data and information in areas where the subjects could not provide required information
- They enabled the filtering out of inaccurate data and information

Disadvantages of Observations

- It was difficult to avoid the Hawthorne effect when subjects felt observed.
- It is difficult to gauge the attitudes and mental state of the subjects in question
- It was difficult to select the sample to be observed and the area to focus on

4. FINDINGS, RESULTS AND IMPLEMENTATION

4.1 Background of the Design Studio

The design studio is a shop based at the Design Quarter mall in Fourways. The studio sells exclusive and hand made pots that are made in Tzaneen, stored in the no-limits warehouse and delivered to the studio on a monthly basis. The studio is owned by four employee-shareholders who in addition have two employees. The pots are made by the owners thus they internalise labour costs. The studio's customers are mostly people in the middle and upper class as the studio's product-prices are above average and the store is placed at an upmarket complex. This identifies the studio's target market to being working individuals with spacious houses for the placement of the pots.

The following figure illustrates the leadership style and structure of the No-Limits Studio.

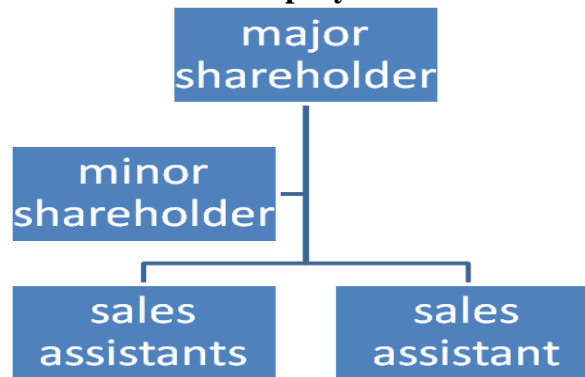


Figure 1: Leadership style at the No-limit Design Studio

The company has major shareholders who own 75% of the business. They give orders to all the members of the company are responsible for long term planning. The minor shareholders own 25% of the company and have no part in the decision making process and do not participate in the running of the business. They are updated monthly through financial statements. The manager is responsible for the day-to-day operations of the company and for implementing the changes and decisions that the major shareholders present. The duties include merchandising products, giving instructions to the subordinate and providing performance reports to the

shareholders when required. The company's mission is to serve the best hand made product, in the African soil, to create a home for all proudly South African customers and to establish a stop where one remembers and connects with their roots.

The studio has limited floor space hence the exclusive fragile clay products stocked could easily break. The merchandiser placed small pots on walls and scattered the other pots on the floor.



Figure 2: Old layout with products too high for customers to reach

The pots on the walls were too high for employees and customers to reach, thus a ladder was needed for viewing and for purchases by customers. This was extremely inconvenient and cumbersome. This also took space and increased chances of damages and resulting losses. The large pots on the floor were not worsening damage losses. Customers were inconvenienced since it was company policy that the customer must pay a full price for anything they break. The scattered pots on the floor were positioned in a way that did not allow more than two people within the aisles. This created lack of free movement for both customers and employees.

4.2 Implications of the Design Studio Layout

The design of the Studio increased the employee's stress. They were unable to change the working environment and were frustrated by the layout design. The working space was very cramped and inconvenient. They had to constantly warn customers to be careful to avoid damaging the fragile pots. The study found out that this increased employee stress especially when customers broke the products and refused to pay for them. Company policy stated that if a customer refused to pay for a damaged product, the employee on duty had to pay for it. Responsibility and accountability was incorrectly assigned to them in such a case.

The employees were also de-motivated as a result. This was worsened by being cramped in a small working area with large products surrounding them. The threat to their income is compounded by possibilities of injury from falling and damaged pots.

The work performance of the employees was affected by focusing on proper handling of products to avoid damage as opposed to selling. They became more protective of the products turning off and angering the customers. This led to lower sales reducing revenue and profits.

Customers were dissatisfied due to limited shopping and viewing mobility. They felt harassed and could not examine the products more closely and freely. Some of the customers were lost because of that.

There was constant conflict between the company and the employees over poor sales and compensation for damaged products. It was assumed that if the customer refused to pay for the broken pot the employee was at fault.

4.3 Implementation

The layout was redesigned with the full involvement of all the employees in three phases: the planning phase, the action phase and the integration phase. In the planning phase, the researchers gathered information on how to change the company's layout and how to design an appropriate layout model that would best suit the operations of the company. It was decided to extend the floor space; to provide better viewing of products on walls; and to provide extra security measures for products that were on the floor. The number of products on the floor was reduced and some were placed in the store room that was upstairs within the studio, which was converted into a display room for the excess products. The large pots were made secure using stands and the pots that were hanged high on walls were set at viewing height, within reach of the customers.

During the action phase, the organisation implemented the changes suggested moving the organisation from its present state to the desired state. Once the new layout was implemented, a weekly analysis was done to review how affected the company's operations. There was positive feedback from the employees on how efficient and effective the new layout was. The integration phase was concerned with stabilising the changes made so that they became part of the company's daily processes and operations. This was done by monitoring the changes and involving employees in the change processes, enabling cyclic continuous improvement.

The following figure illustrates the new placements of products for easier access by customers.



Figure 3: New Layout of Products at the Design Studio

Conflict management: Both the employer and the employees were introduced to the collaborative style of conflict management. This focused on finding integrated solutions that satisfied both employers and employees. This style included the ways to manage cooperative and

assertive behaviours and finding ways to present a win-win option in a conflict situation. The style helped the employers and employees to perceive conflict as natural and constructive. In less formal situations, they were encouraged to be open and honest and to believe in and commit to a collective problem solving. In these counselling sessions, they openly shared their opinions and feelings with each-other, listened actively with empathy to opinions of each-other and reached a consensus on the issue that was at hand. This helped improve the working relationship and the work-environment. It also strengthened team-work within the work-place.

Performance related pay system: A reward system based on the performance of employees was introduced. This was found to encourage and motivate employees to carry-out their tasks with excellence. The employees felt that their efforts were appreciated and recognised. They were more motivated to add value to the company's objectives and to its goals. Employees with the highest amount of sales were given an additional twenty percent on their salary, and if they maintained high sales for three consecutive months they were offered a day off. It was observed that healthy competition between the employees and a vibrant working environment was the result. Employees became confident and energetic in the carrying-out their tasks. High organisational efficiency and effectiveness was also noted. This system has proved to be positive for the company because turn-over increased significantly.

5. CONCLUSION

The layout of the design studio was a cause for stress, de-motivation, poor employee performance, customer dissatisfaction and also led to conflicts between the employees and the employers. This is because the studio's products were either placed too high for an average person to reach, or required customers to wait longer than necessary for the employees to get hold of the right handling equipment among many other problems discussed in this paper. The lack of free movement and scattering of these pots on the floor limited both customers and the employees from free movement and viewing of the store's products, this in turn, directly affected the operational performance of the studio. A redesign of the studio's layout improved customer satisfaction, motivated employees and decreased the level of conflicts between the employer, employees and the customers. This was done focusing on a number of key organizational development methods including employee involvement on solving problems and an application of the collaborative style and model of conflict resolution. Furthermore, this discourse demonstrated that improved product layout can have a positive impact on organizational efficiency and effectiveness.

REFERENCES

- [1] A. Brooks *Ergonomic approaches to office layout and space planning*. MCB University Press Volume 16 · Number 3/4 (1998) 73–78
- [2] J. A. Tompkins. J.A. White. Y.A. Bozer. J.M.A. Tanchoco. *Facility Planning*. 4th edition. Wiley, Chichester. (2010)
- [3] G Berridge. *Event pitching: the role of design and creativity*. International Journal of hospitality Management. Vol. 29 No. 2, pp. (2010) 208-15.

- [4] J. A. Fitzsimmons. M.J Fitzsimmons. *Service Management*, 5th ed., McGraw-Hill, New York, NY. (2006),
- [5] E.A.Wall. L.Berry. *The combined effects of the physical environment and employee behaviour on customer perception of restaurant service quality*. Cornell Hotel & Restaurant Administration Quarterly, Vol. 48 No. 1, (2007), pp. 59-69.
- [6] P. Smith, and L. Kearny: *Creating workplaces where people can think*. Washington. National society for the performance and instructions. (1994)
- [7] C. Carlise: *Work study: production and productivity improvement series*. Pretoria. Van Schaik. (2008)
- [8] G. Salvendy: *Handbook of human factors and ergonomics*. Third edition. New Jersey. John Wiley & sons Inc. (2006)
- [9] B. Londe, and M. Cooper: *Customer Service: A management perspective*. Oak Brook. Council of logistics management. (1998)
- [10] R. Sutermeister: *People and productivity*. Third Edition. Washington. McGraw-Hill inc. (1976)
- [11] T. Jamison, and V. Bright: *The six principles of service excellence*. Indiana. Author House. (2005)
- [12] S. Marras, and W. Karwowski: *Fundamentals and assessment tools for occupational ergonomics*. Second edition. Kentucky. Taylor and Francis group. (2006)
- [13] L. Banks: *Motivation in the workplace inspiring your employees*. Iowa. American Media Publishing (1999)
- [14] L. Muther: *Printing plant layout and facility design handbook*. San Francisco. Jossey-bass/Pfeiffer. (1991)
- [15] G. Whitehead: *Office procedures*. London. St Ives plc. (1994)