

Accommodating expanding company personnel after office building space limit has been reached

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Abstract — *For this project, the problem of needing to further hire employees after a company has reached its maximum employee limit was considered to be solved. Several options were put to use in an effort to stave off exceeding the limit thus risking business stagnation and losing projects to competitors. The objectives were met by a combination of sending employees to work from home, reorganizing the office layout, and reusing the cafeteria to make space for more desks. All these measures were taken at the expense of employee productivity/morale to various degrees, and as such, to ensure that the effect is not too drastic, an employee satisfaction survey was developed to be recurrently deployed between each process step. Other options considered, but not employed, included adding trailer space for rent and ultimately moving to a new building, the latter of which is still recommended if the hiring tendency is maintained.*

Key Terms — *Employee limit, Office layout, Building capacity, Work-from-home.*

INTRODUCTION

All buildings have a physical occupancy limit, constrained by space, chosen layout, and legal regulations. A serious problem arises if a company needs to keep hiring and accommodating new employees to stay in business after the point when this limit has been reached. In order to keep increasing sales by taking on more projects that require additional personnel, management has to tackle how to either make more space available for them or change the business model to find alternate solutions that could circumnavigate the issue.

This is a problem that the company Infotech Aerospace Services is facing right now. Since it specializes in providing engineering design, modeling, analysis, and support in airplane engine

manufacturing, it relies on a constant and increasing stream of projects to drive sales and keep on top of the competition. Proper managing techniques will decide whether the company succeeds in obtaining and maintaining these new projects, leading to increased sales and revenue, or it falls prey to stagnancy by being unable to expand. In order to achieve this, the following objectives have been set:

- Properly accommodating expanding personnel under current building space/legal constraints
- Effectively managing to maintain employee productivity and satisfaction in the expansion process

BACKGROUND

What is most important to understand, given the stated problem, is that there are consequences if solutions are not found. By not managing to fit more personnel into the building, new hires can't be brought to work on new arriving projects, which would end up in the hands of competition, unless preventative measures are employed.

First of all, an assessment of whether more space is actually needed has to be performed, by gaining insight from other companies and how their office space has been seeing a reduction over time [1]. Studies in areas concerning office layout are very useful when planning for reconfiguring desks, cubicles, offices and general areas as possible with the goal of creating more seating space for additional employees. All this, in turn, is balanced with an analysis of whether or not the solutions presented are permissible within the current business model and if they are practical and of benefit to the company and its employees.

Constraints, under which any proposed solution has to fit, have to be respected and include the maximum amount of possible seating space

according to office layout design, fire department building capacity regulations, and employee productivity/morale, the latter of which will unavoidably be affected whether or not the ends justify the means. In line with this, an employee survey was created to measure satisfaction with the changes, by focusing on their related disadvantages.

METHODOLOGY

In order to find a solution to the problem at hand, in the most efficient way possible and under the timeframe required, below are the sequential steps that were followed for optimization of results:

- **Manager Weekly Meeting:** A recurring round table with company managers to brainstorm and discuss ideas and keep track of employee supply/demand metrics.
- **Employee Demand Forecast:** Necessary prediction to have a better grasp of the urgency with which steps need to be taken.
- **Assessment of Feasible Options:** These include work-from-home arrangements, reuse of available space, and additional space viability.
- **Generate Employee Survey:** Meant to measure the possible negative effects of changes on employee productivity/morale.
- **Office Layout Optimization:** Planning and execution of layout changes as the need arises.
- **Additional Space Cost Analysis:** The last of the above mentioned feasible options to be considered and only if necessary.

The following sections highlight the different proposed ideas considered to tackle the problem in varying degrees of effectiveness.

Work-From-Home Arrangements

A significant amount of company space can be freed by considering the possibility of sending employees home to work. This requires an individual evaluation of whether it is practical for each employee depending on their particular line of work requirements and customer interaction.

Office Layout Reorganization

The current desk layout used in the office consists of L-shaped cubicles organized either in row/column format or small square “rooms” of four cubicles, one in each corner. By discarding this layout in favor of long single benches for side-by-side sitting, a considerable amount of additional seating space can be created, but at the expense of personal space and comfort [2].

Reuse of Available Space

There are several office space areas that are dedicated to uses different than seating; these include manager offices, conference rooms, halls, bathrooms and cafeterias. Of course, not all of these can be developed and turned into seating space, but conference room and cafeteria use can be studied to analyze the viability of reusing some of this space to accommodate additional desks if necessary.

Additional Space Viability

As a last resort, paying rent for additional space, preferably in the form of trailers, is an available option. If the need for space exceeds what a couple of trailers can offer, then moving the whole company to a bigger building could be considered as well. If the latter is deemed to be absolutely required, then the rest of the options would still have to be employed in the meantime since the move would require an extended period of time to be carried out in its entirety.

RESULTS

According to the plan as originally laid out, the first step taken was to create an employee demand forecast to predict the urgency with which actions had to take place, as shown in Figure 1. Even though the nature of predictions always has to involve a certain degree of uncertainty, Figure 1 still proves very useful to at least give an idea of the urgency of the matter at hand. In any case, it was developed using data from upcoming projects, even though these are subject to change.

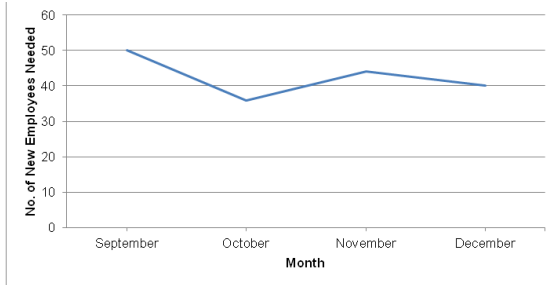


Figure 1
Prediction of Employee Demand

As stated above, since any scheduled upcoming projects are in no way definitive, and new ones are constantly being brought into the pipeline, the forecast is a dynamic one to be kept updated monthly as new information is taken into account.

With this information, the numbers can be presented to be shown in a clearer light. The total number of employees working in the company initially is 930, with seating space for 970. With 50 employees projected to be hired in September, 36 in October, 44 in November, and 40 in December, the total will reach 1100 by the end of the year. The limit imposed by the fire department on the building is 1000 employees, and this number will be reached in October if no actions are taken to prevent it.

With this in mind, an assessment was made to find which solutions fit our case the best. To this end, the simplest and first solution to be considered is sending employees to work from home. The associated cost of this option is low, since it only involves assigning each one a laptop, and for each employee sent home we have now freed a desk that can sit a new hire. The only problem is that not all employees can be set up for this arrangement. After careful consideration, it was concluded that about 46 employees could be sent home to work, which gives enough room to clear October at exactly 970 and extend reaching the fire department code limit until November.

As per the seating space, reorganization of the office layout was settled favoring long partition-free benches, which in some cases can add up to 25% seating space [2], but not all areas of the company will undergo the change. This involves a bit higher cost but, most importantly, is limited by the fire code

so only 30 more seating spaces can be made available, which hinders the possibilities that this option offers. Still, the change will go through to make use of the full building seating capacity, as it is still helpful, and will be performed on the department that happens to need the most new hires company-wide.

This leaves an excess of 64 people that will still need to be seated by the end of November, considering those 30 additional seating spaces to have been created by then. To solve this without having to add any additional space, there exists the possibility of using the cafeteria to set up more desks. As a separate building with a capacity for 80 people at any given time, it provides the perfect solution to fit the remaining projected new hires, even if it represents the highest of risks to employee morale. When the employee satisfaction survey is finally rolled out and then again subsequently after each change, it can be used to gauge the reaction to each of the options and then compare against this.

CONCLUSION

Each of the changes implemented to solve the problem will undoubtedly take a toll on employee productivity/morale. Work-from home conditions may create resentment on those employees that are not considered for it [3], office layout reorganization could make way for distractions and affect personal space [2], and lack of a cafeteria will be the end of a basic employee benefit.

For now the objectives were completed, the necessary space was created while proper measures were put in place to appropriately gauge employee reaction to each of them. But, since in any case the next year will see the need to keep hiring additional personnel, the final recommendation would be to start thinking of moving the company to a bigger facility in the long term. Such a move would definitely take a lot of time, effort, planning, and cost, but it better start being considered while other options are available, in the form of adding trailers for rent, for example, to keep hiring employees in the meantime without facing a dead end.

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