E-Dining Expansion Project Proposal

Approved by: _____ _____
Name, Title, Organization Date

INTRODUCTION

E-Dining's demand is growing beyond its current capacity; packing and shipping need to be reorganized and streamlined to meet customer demands. The customer base is not as diverse as it could be; though its base of operations is on the outskirts of a major university, it receives relatively low student patronage. Both of these issues can be addressed by reorganizing and expanding the current facility to include a walk-in store. The walk-in store would attract college students and other new markets, while the reorganization would allow E-Dining to handle an increased demand for shipping orders. Because this expansion has just become possible (by the closing of the hardware store next door) you have asked Consultant Experts, Inc. (CEI) to construct a plan to improve and expand the E-Dining facilities.

We will deliver to you two designs that you can directly employ or use as a basis to create a customized design of your own. The designs will be the product of a thorough analysis of the current and proposed systems. This analysis will include data collection, current system modeling and simulation, facility layout reconstruction, and final system modeling and simulation. One of the final models will completely remove the wall between the stores, the other will keep the wall and add an opening.

In this proposal we present a summary of the actions we will take to create the best possible layout alternatives. The proposal includes the following elements:

- An overview of the current system
- The project goals and objectives
- The project scope
- A detailed action plan
- The project timeline
- A list of the deliverables to be provided upon completion
- Our qualifications
- Investment considerations

BACKGROUND

The following is a summary of the current situation of your company its environment.

Employees

A total of 15 people work full-time for E-Dining. You, the owner, handle sales, financial activities, and personnel issues. Four employees process the online orders and ten employees prepare orders for shipping. They work in two shifts, with two of the processors and five of the preparers working from 6am-3pm and the rest working from 1pm-10pm. This overlap in shifts exists to handle the daily peak that occurs normally in the afternoons.

Orders

Demand for E-Dining kits has been increasing steadily over the past few years, and the trend is expected to continue. Currently the majority of E-Dining's customers are parents with

children, but you hope to increase market share and customer diversity with the storefront expansion.

E-Dining receives between 215 and 290 orders a day, each requesting 1-6 kits. There is a slight peak in order frequency from 12pm to 3pm daily. A more general rise in demand occurs during the holiday season.

All orders received before 3pm Monday through Friday are shipped that day and any orders received after that time or on the weekends are shipped the next business day. These shipments are sent out twice a day, Monday through Friday.

Kits

There are 21 kinds of kits, all nearly equal in popularity. Two of the kits are completely vegetarian. Each kit contains two refrigerated items, four non-refrigerated items, and weighs between 3 and 5 pounds.

Inventory

One week of refrigerated goods and two months of non-refrigerated goods are kept in inventory at all times. The refrigerated foods can be stored for up to one week. Three of the four non-refrigerated items can be stored for up to one month; the fourth can be stored indefinitely. All of the ingredients arrive in shipments twice a week.

Current Facility Layout

The current facility floor is approximately 1800 square feet and the hardware store to be added is approximately 1200 square feet. There is an alley and parking lot behind the buildings, though currently the only entrances to either building are in the front.

The hardware store contains:

- a cashier station
- a display area with shelving
- an office
- a small storage room
- a rest room

The current E-Dining facility includes:

- a workbench for kit assembly
- a large office space
- a rest room
- an office and cleaning supply storage closet
- an overflow area for extra boxes
- a break room with a table, chairs, and a vending machine
- refrigerated storage space

- non-refrigerated storage space (with shelves)

Procedure

At the beginning of the shift all workers first check the office for order forms that contain shipping and kit information. Then, for each order, the worker will: gather kit ingredients, package for shipment, handwrite shipping info on package, and place ready-to-ship box near door. Depending on the size of the finished kits, they are packaged into one or more boxes of three different sizes. These empty boxes are scattered in the hallway without an overall organization strategy. This procedure of processing, assembly, packaging, and shipping is not standardized; all operators use whatever strategy they find to be the most effective.

Issues with the Current Layout and Procedure

The current layout and procedure are suboptimal for a number of reasons. One large issue is the fact that the facility was designed to produce only a small fraction of the current demand. This means that bad habits and inefficiencies are built into the system, as the system was created in a time where efficiency was not necessary. Another issue is that there are not designated areas for specific items. Areas that are used for walking are also used for storage of both empty and full boxes. This causes problems with both congestion of foot traffic and lack of organization of the boxes. These issues coupled with the expectation of continued increase in demand have created the need for reorganization and expansion.

GOALS AND OBJECTIVES

The primary goal of this project is to determine the most efficient layout plan for the newly expanded E-Dining facility. The new facility will be more productive in its output of online orders, which will keep costs down as demand increases. To achieve this goal we will collect data on current procedures and use that data to standardize the assembly and packaging processes. We will also create two efficient layout plan options, one retaining the wall that stands between the hardware store and the E-Dining facility and one that removes it.

Both new layouts will include a walk-in store where patrons will be able to purchase kits directly. A secondary goal of this project is to minimize walk-in patron wait time, which we will address by examining the advantages and disadvantages of keeping an assembled kit inventory on hand. Assembled kit inventory may be shown to be unnecessary if the assembly process can be drastically quickened.

An overarching goal for this project is to maintain the quality and reliability established by the current layout and processes. These aspects of production and service are especially important because E-Dining customers have come to expect them.

PROJECT SCOPE

This project will include the examination of:

- Current processes and their capacity for improvement
- A diverse set of layout options, both with and without the separating wall
- Addition or removal of entry/exit points and interior walls
- Personnel organization, responsibility delegation, and employee scheduling
- Automation as a possible addition
- Pre-made kits for walk in orders
- Ability of facility to respond to continued growth in demand for the next 5-7 years
- Future systems with the following qualities:
  - Walk-in store open from 10am-8pm M-F, 11am-5pm Sat-Sun
  - A range of 30-50 customers/day at the walk-in store
  - A range of 1-3 kits ordered per customer at the walk-in store
- Future layouts with the following qualities:
  - One office space
  - One break room/area
  - One restroom for both customers and workers

This project will not examine:

- The invention or implementation of new kit types
- Estimated production downtimes due to layout and process implementation
- Other costs associated with layout implementation
- External facility appearance

ACTION PLAN

To create the optimal layouts and processes we will create simulations based on real world data. This data will include employee recommendations, standardized work element times, and facility layout dimensions.

Data Collection

Study Employee Surveys

We will examine the employee surveys that were conducted in August 2006 to help formulate early ideas about areas for improvement and definite elements to avoid implementing. If this existing survey is found to be inadequate for our purposes, we will perform another survey or a series of short interviews. If such a survey or interview is created, we will first ask for your approval before interacting with your workers.

Analyze Process Time Data

We will attempt to measure the time required to perform all of the steps in the current procedures. First, we will perform a small number of our own time studies and compare the results to the data gathered by the workers. We will statistically analyze the two data sets to identify significant. If such differences exist we will perform time studies on all existing processes. For this portion of the data collection we will need access to the E-Dining facility, though production need not be stopped for the data gathering.

Measure Interior Space
To create an accurate simulation, the dimensions of the existing floor space will be measured in great detail. This measurement can take place during business hours with minor production interruption, or if you prefer we can measure the facility on a non-business day.

Analysis

Create Current State Simulation
With the gathered process and layout data we will construct a computer simulation of the current state of the facility. This simulation will be used as a basis and comparison point for the new designs.

Design Alternate Facility Layouts
Using mathematical systems analysis, facility planning procedures, simulation, and our engineering expertise, CEI will develop, test, and continuously improve several layout designs. This process will continue until we have found two decidedly optimal layouts, one with and one without the dividing wall.

If new work elements are required in the new processes, we will need to perform additional time studies on these elements. The same requirement of access to the E-Dining facility without production disruption would be required if these additional time studies were performed.

TIMELINE

This is a worst case scenario timeline, with all of the possible analyses that we could perform. In reality, the project will probably take much less time than is indicated here, though we can maintain the scheduled dates if you prefer.

Receive project approval	By November 7th
Analyze existing survey data	November 8th
Develop new survey/interview	November 9th
Analyze time study data	November 10th-13th
Receive approval for patient survey	By November 13th
Survey workers	November 14th – November 16th
Perform time studies*	November 14th – November 28th*
Measure interior dimensions*	November 14th – November 28th*
Create current state simulation	November 29th – December 4th
Design new facility layouts	December 5th – December 10th
Perform additional time studies*	December 11th – December 12th*
Continue designing new layouts	December 13th – December 15th
Deliver final project report	By December 22

* These are times that CEI will need access to the facility; they overlap where possible to minimize interruption

DELIVERABLES

Upon project completion, CEI will deliver a final project report that contains:

- Two floor plan alternatives, one with the current dividing wall and one without
- Written instructions on how to implement new processes, including training suggestions and step by step process descriptions
- Explanations behind all of the layout and process changes that we made
- A copy of the original and final simulations, as well as a sampling of the intermediate simulations

QUALIFICATIONS

Consultant Experts, Incorporated has handled 27 facility layout projects in 2006 alone. The average estimated gain for these projects is $200,000 a year. In July, CEI finished a project with a similar online sales company, and the week after we sent him the final report, the owner sent us this email:

> *To Whom It May Concern:*
>
> *Your service has been, by far and away, the best investment that I have ever made for my company, and I cannot express how grateful I am for the hard work performed by you and your team.*
>
> *Sincerely,*
> *(Name withheld)*

We are well trained: over 90% of our employees have degrees in operations management, and 25% of those degrees are Masters and PhD. All of our full time consultants have been working here for at least two years, and all have experience in the field of facilities planning.

INVESTMENT CONSIDERATIONS

CEI will perform the proposed project for a $50,000 payable according to the following schedule:

$7,500 due upon project approval
$7,500 due upon survey approval
$15,000 due upon completion of facility data collection
$20,000 due upon project completion

The task breakdown of the $50,000 is as follows:

$7,500 for survey work

$15,000 for facility data collection
$20,000 for simulation and facility design
$7,500 for final report composition

If at any time during the project, E-Dining requests changes to the project scope or deliverables, E-Dining and CEI will discuss how these changes might impact the project fees. If changes occur, CEI will document them for E-Dining's approval.

CONCLUSION

E-Dining would like to merge its facility with the newly vacant facility next door to create a more efficient assembly and packaging system and to add a walk-in store. To make the new facility as efficient as possible Consultant Experts, Inc. will collect and analyze data to construct two improved facility design options. These designs will be described in full in a final report delivered to E-Dining no later than December 22nd, so that E-Dining can begin the implementation as soon as January. Implementing the recommended changes in layout and process will increase output and worker efficiency, and the addition of the walk-in store will expand market share and increase demand. These benefits together will raise overall profits.