

March 21, 2000

Feasibility Analysis

by D. A. Gordon

Sales Tracking System analysis for Summer's Inc. Office Supply

1.0 Management Summary

Joel Summer of Summer's Inc. Office Supply obtained the services of Gordon & Company consultants to gather information and submit a Feasibility Analysis advising on further automation at Summer's. The purpose of this study is to ascertain the options, cost and advisability of automating Summer's retail sales to floor processing procedure, which, at the present time, is written, tracked and input manually by company employees.

The Consultants gathered data about the current business environment and potential system solutions through joint application development meetings, management and employee interviews as well as workflow observation and paperwork analysis.

Gordon & Company consultants propose that Summer's management accept the Alternative A proposal defined in this study. This proposal recommends purchasing Point-of-Sale (POS) hardware and software in place of cash registers as well as extending the Company LAN to include these POS registers. This plan will facilitate immediate database updates as sales occur on the floor. Installation of this plan will reduce manual sales slip processing and paper handling, speed all processes, and reduce errors.

The cost of this plan, including hardware, cables, software and installation, implementation and training, will be \$ 7,460.

2.0 Current Technical Environment

2.1 Overview

Two years ago, Gordon & Company worked with Martha Summer in implementation and installation of the automated accounting and inventory system currently in use at Summer's. Joel Summer plans to automate as much of the Company's processing and procedures as possible, with the stipulation that any proposed system would interface with the existing systems. The new system should:

- Keep track of all sales
- Decrease inventory for each item sold
- Provide an interface to the A/R system for credit sales.

2.2 Current Technology

The four salespeople at Summer's utilize two cash registers situated on the salesfloor. These cash registers are stand-alone devices used to record the sale and facilitate the handling of cash and other types of payment.

The current LAN consists of six networked computers:

- 4 Pentium PCs used by Accounting and Inventory personnel
- 1 Pentium Server for the DB
- 1 Pentium PC used by the manager, Joel Summer

The LAN utilizes UTP Category 5 cable and contains no routers, switches or hubs; three printers are shared. The topology is peer-to-peer while the communication software used is MS Outlook. Joel Summer's PC is connected to the Internet via a 36.6 modem with a local ISP.

2.3 Inventory Database

The Inventory Database (DB) contains information on each item the Company sells, all of which are available to Summer's from any of four different vendors. Therefore, vendor information will often be repeated for each available item. Since Summer's deals with many vendors, units information is also often repeated. The DB contains detailed information about each vendor, including price, delivery lead time, last order date and discount schedule.

The inventory DB needs to be updated by subtracting quantity sold from units on hand for that specific unit type. Currently that information is input manually from sales slip data.

2.4 Accounting System

Appropriate information is applied to the automated Accounting System, such as: accounts receivable, daily and weekly sales figures and accounts payable. This system interfaces with the Inventory Database.

3.0 Current Work Procedures

3.1 Sales Floor Procedures

The sales floor has four salespeople who together serve an average of 100 customers per day. These salespeople assist customers with selection and purchase of any of the 15,000 items for sale at Summer's. Some customers pay for their purchase at the time of the visit; those with an established credit account have the option of charging purchases to their store account. If someone selects an item not currently available on the shelf, a salesperson assists the customer with an order.

3.2 Sales Slip Procedure

The Accounting and Inventory managers receive copies of all sales slips generated on the salesfloor; the managers and clerks manually input the data into the current systems, updating inventory records and keeping track of sales volume and data.

3.2.1 Cash Sales

For cash transactions, a Sales Slip is filled out with the item name, manufacturer's item number, retail unit price, number of units, type of units, extended price, sales tax (or exemption) and sale total. The sale total is entered into a cash register and the money (or check or credit card receipt) is placed in the register drawer. The cash registers do not interface with the current automated accounting system. A copy of the sales slip is given to the customer.

3.2.2 Orders

When a customer places an order for items not currently available, a sales slip is created containing all of the items listed on the Cash Sales Slip, along with the following additional information: customer name, customer ID number, sale date and salesperson's initials. The customer receives a copy of the sales slip and an additional copy is forwarded to the Order & Inventory Clerk for processing and ordering.

3.2.3 Credit Sales

For credit sales, the generated sales slip includes all of the items listed in the Cash Sales and Orders Slips, but processing a Credit Sales Slip also involves sending a copy of the transaction to the Accounting Department for creating an invoice. A copy of the credit sales slip is given to the customer.

3.3 Data Input Procedures

At start-of-business, lunchtime, end-of-shift (4:30 pm), sales slips are carried from the salesfloor to the Accounting and Inventory Managers. The managers and data entry clerks enter the data in order to update the main database. Information from the slips is typed into the computers, phone orders are placed with vendors and charges are added to customer accounts. Periodically the sales slips are filed for backup purposes. A part-time data entry clerk works an evening shift from 4:30 pm until 8:00 pm.

3.4 Strengths and Weaknesses of Current Procedures

As a family-owned business, rapport with customers and employees is important to the owners of Summer's. The present procedure offers much personal attention to the customer from the floor salespeople as they fill out the sales slips. However, the present system is labor-intensive because several data entry clerks are required for inputting the data from sales slips, including an evening worker. This process can easily be automated, thereby reducing Company overhead paid in wages.

4.0 Proposed Solution

4.1 Scope of Proposed Solution

The scope of the proposed solution includes:

- Replacing current cash registers with POS cash register PCs
- Networking the POS registers to Inventory and Accounting system PCs
- Adding barcode readers to POS registers
- Installation of hardware and software

- System implementation and review
- Employee training

4.2 Functional Requirements

The proposed automated system must interface with the current system and satisfy the following requirements:

- Provide direct connection between the POS cash registers and the A/R system for updating credit accounts
- Accommodate cash and credit sales
- Facilitate faster ordering for items not in stock
- Create customer a copy of the sales slip
- Interface with Inventory Database to automatically adjust number of items in stock
- Provide on-line, real-time information on items in stock and items on order
- Provide fast customer service through automated sales slip completion
- Reduce the man-hours required for inputting sales slip data

5.0 Technical Alternatives

Both Alternatives would serve to reduce Company operating costs by reducing staff. Through automation of the sales slip and credit procedures, two clerical data entry positions will be eliminated, saving the Company \$30,000 a year. In addition, either Alternative:

- would reduce order and inventory errors by reducing the amount of manual database input
- would serve to increase the efficiency with which floor salespeople can assist customers.

5.1 Alternative 1

5.1.1 Description of Alternative

Alternative 1 involves purchasing a 4-user POS software package for Win 95 from Cougar Mountain Software, along with POS hardware from IBM (SureOne POS). Gordon & Company personnel will be responsible for installing, implementing and testing the new system along with training employees in its use.

5.1.2 Benefits of Alternative

IBM has customer service representatives who regularly service IBM equipment in the area. The SureOne POS Cash Register is truly integrated, offering additional ports and capacity for adding more communication devices and installing off-the-shelf applications. The system will be fairly easy to install and training should be easy and straightforward.

Cougar Mountain POS software is flexible, upgradable, powerful and fast. Separate modules are available for future expansion. It is designed to provide quick and accurate information on sales, inventory and customers.

5.1.3 Risks of Alternative

The only risk with this alternative would be the potential for the company to outgrow the out-of-the-box software and/or the hardware purchased for this project. If a company-offered upgrade of either would not solve the problem, new equipment and/or software would have to be purchased at a future date.

5.2 Alternative 2

5.2.1 Description of Alternative

For Alternative 2 we considered the prospect of hiring SE programmers at Gordon & Company to develop an individual, personalized system for Summer's. Since Gordon & Company personnel developed the original Inventory and Accounting systems, they would be the most reasonable choice for such an endeavor.

5.2.2 Benefits of Alternative

This Alternative would offer Summer's the advantage of having every aspect of their business considered in program development. The hardware could be purchased from various vendors in order to facilitate an exact match to the needs of the Company and the newly developed system.

5.2.3 Risks of Alternative

This Alternative would prove more costly for Summer's, which is a fairly small company with limited resources for software development. The estimated cost for developing this system would include:

Analyst	40 hours	25.00/hr	1,000
Programmer	100 hours	38.00/hr	3,800
Installation/ Implementation	40 hours	25.00/hr	1,000
Training	40 hours	25.00/hr	<u>1,000</u>
			<u>6,800</u>
POS PCs & printers	2	\$ 2,300 @	4,600
Network Cables, back office to store front			<u>400</u>
			<u>5,000</u>
Total			<u>\$11,800</u>

In addition to the higher cost, a customized system would be difficult for Summer's employees or other consultants to maintain. Since there are no IS personnel at Summer's, there would be no one in the company to assist with system maintenance.

6.0 Recommended Technical Solution

Alternative 1 involves purchasing two POS registers with accompanying barcode readers and printers. These are very popular items for small businesses. Additional network cables will be required for connecting the new equipment with existing equipment. Printers will be required for printing sales slips; these are included in the IBM SureOne Kit. The Cougar Mountain software package allows for integration between the sales floor and the back office. Both Cougar Mountain software and IBM hardware offer free online and phone technical support for one year.

7.0 Project Plan

A breakdown of the proposed schedule and implementation plan along with project staffing costs is attached in an MS Project document.

8.0 Costs

8.1 Cost of Proposed Alternative Hardware and Software

Hardware:

Network cables	400
SureOne Kit	3,260
(486DX2 66MHz/4M / 850M Hard Drive, 9" Monochrome VGA monitor, 96 keys, 2-track magnetic stripe reader, 40 column receipt printer, cash draw w/till, cable and lock)	

Software:

Cougar Mountain POS Program	
(4 user)	<u>1,600</u>
Total	<u>\$ 5,260</u>

8.2 Cost of Implementation

Gordon & Company

Installation, Implementation, Training			
40 hrs	Analyst	20/hr	800
28 hrs	Installer	20/hr	560
36 hrs	Implementer	25/hr	900
<u>40 hrs</u>	Trainer	35/hr	<u>1400</u>
Total			<u>\$ 3,660</u>
Total Cost			<u>\$ 8,820</u>

9.0 References

Blackbox Catalog. www.blackbox.com

Conger, Sue. The New Software Engineering. Wadsworth Publishing Company:
Belmont, California, 1994.

Cougar Mountain Point of Sale Software. www.pacificnet.net/products/cougposw.htm

IBM SureOne POS/Cash Register System www.pacificnet.net/products/ibmsurel.htm

Worthen, Bruce. "Week 3 Lecture," January 28, 1998. CSS 553 Software Engineering
class, UoPhx Online Campus.