BCO2041 Systems Analysis and Design



Case Study

(For Assignments)

Note: The case study below may not provide all of the information necessary to complete the assignment. Students will have to use their personal experiences to complete some aspects of the assignment. Students may also seek clarification from their tutor during tutorials or office hours.

City Glaziers

City Glaziers is a medium business operating in and around the Melbourne metropolitan area. The company supplies glass for windows and doors, and other structures within the Melbourne area. Glass can be ordered in bulk as part of a construction project, or in smaller quantities as replacement for broken windows, doors containing glass, bus shelters, and larger areas such as internal feature walls etc. The company began by operating in the Melbourne CBD originally, but has since expanded its operations to include most of the surrounding metropolitan area.

The company has built a reputation for providing high quality glass, as well as excellent service to it customers.

Background

The owner of the company, Robert Johnston, began the company in 2001, operating a single glaziers truck from a warehouse in North Melbourne. Robert operated successfully in the Melbourne CBD, providing a high quality service to his clients. The business has steadily increased over the last 14 years, and Robert now operates a fleet of 11 glazier trucks and has expanded the operating territory to cover the entire Melbourne Metropolitan area.

The Business expansion has included a move to a large warehouse and glass preparation area, with the head office located next door in a modern office block. The business seems to be expanding and Robert is now beginning to consider opening franchises in outer Melbourne areas, to be serviced from the central warehouse operation. Robert also has arranged to deal exclusively with a large glass manufacturing plant, **Melbourne Glass Plant**, located in an outer Melbourne suburb. By becoming a large customer of Melbourne Glass Plant, Robert gets lucrative discounts which he can pass on to customers, helping him compete in this competitive environment.

The size of the business has now reached a stage where Robert can see major issues arising. As the business has grown, the operations have become more complex, and this will only become more so if franchises are added to the current operations.

Robert has decided to employ your team to investigate the business needs and to conduct an initial feasibility study into the possible options for computerizing part or all of the operations.

Description of the Current System

The current system is a manual based system which has served the company well, but is now becoming outdated and causing bottlenecks due to the increased workload demand. Currently the business has two main areas, the Large Projects Section, and the Repair Section.

Large Projects

Anna Fields works for Robert in heading up this section of the business. In the Large Projects section Anna and her staff put together quotes for whole jobs by responding to a construction companies RFQs (Request For Quotes). The quotes are for complete supply of glass needs for major construction projects such as new building projects or reconstruction projects on large premises.

The team begin by identifying construction projects and responding to the company RFQ. The team will contact the company to request precise specifications and put together a quote for materials, delivery and installation. If the quote is successful, City Glaziers will then develop a timeline document for approval by the company, and begin the ordering process. A timely order will be placed with Melbourne Glass Plant for the raw material, and these will be delivered to the warehouse. A Work Order is generated which includes a copy of the original quote and specifications and sent to Glass Preparation, where the work will begin in preparing the glass panes according to the specifications and delivery schedule.

Once the glass is prepared and cut to size, an Installation Order is prepared and a glazier truck booked for the delivery and installation date.

Repair

Ben Hanscom is the head of the repair section, and also manages the Glazier Truck fleet.

Customers will ring in to the Repair section with requests for repair, or for replacement, and the schedules will be checked to find the closest Glazier Truck. The repair request will be slotted into the schedule of the closest truck, and usually result in a same day service. When the Glazier arrives at a customers site, they will quickly check to see if the job can be performed immediately, or if a special Work Order needs to be completed.

Each Morning, the Glazier trucks are outfitted with a standard compliment of glass sheets of varying thicknesses and sizes. Over time this standard fit-out seems to cover a Glazier for most of the day for their standard type repair jobs. The glass preparation area is responsible for outfitting the truck each day with the standard compliment of glass, based on a compilation of the completed Job Sheets completed each day by each Glazier. The only exception is when a truck is specifically booked for a large project delivery and installation.

If a Glazier arrives at a repair job and cannot complete the job because they lack specific materials, then a Work Order is completed and bought back to the warehouse so the Glass preparation area can prepare the material for installation in the next day. If the Glazier can complete the Job on the same day, then after finishing, they complete a Job Sheet, detailing the material used so the Glass preparation area and replace the material used on the truck for the next days work schedule.

Payment

When City Glaziers are awarded large scale projects with successful RFQ submissions, they are given accounts with the company that awards the projects. They receive payment by direct debit after they submit invoices to the company for materials and time (as per the awarded contract).

For smaller repair and replacement work, when a Job is complete, as well as filling in the Job Sheet to detail the used material, the Glazier will also prepare an invoice to give to the customer on the spot. The Glazier also returns a copy of the invoice to head office at the end of the day when they return to the warehouse. The customer can choose to pay via the terms on the invoice, 7 days payment, or receive a 5% discount and pay on the same day via credit card, or personal cheque with identification. Some Customers have accounts with City Glaziers, and will receive a monthly statement through the post. These customers have longer terms, such as the end of the month in which the statement is issued.

When a customer payment is received, a copy of the payment is sent to the head office accounts section, where the payment is matched against the invoice and a receipt will be issued through the post.

Regular reports need to be generated to list those invoices over their due dates that have not been paid.

Supply Orders

The Glass preparation area in City Glaziers is responsible for collating all the Job Sheets and Work Orders so that stock levels can be monitored and stock re-ordered when levels fall below threshold levels.

Also, large project orders will need to be dealt with quickly so that existing stock levels for the repair and replacement section is not affected

Issues

A number of issues have arisen that have prompted City Glaziers to contract you to look into the system.

- It is difficult to keep track of the Work Orders and Job Sheets to re-order stock before it falls below threshold levels.
- When Glaziers need to raise work-orders at a client site because they don't have the material, it is not till the end of the day when Glaziers return to the warehouse that these can be collated to begin preparation for the next day, resulting in some delays.
- Sometimes paperwork has gone missing for large scale projects and needs to be tracked careful to avoid delays and loss of awarded contracts
- The fleet of Glazier trucks needs to be managed better as sometimes with the paperwork double booking can occur and result in frustration and delays
- Additionally, we need to keep better track if kilometers travelled so trucks can be services in a timely manner.
- Delays in sending paperwork to our suppliers can cause delays in order processing and result in longer delivery times of stock.
- The level of paperwork is increasing and the accounts department is having trouble keeping up with the timely production of monthly statements, processing of payments and general financial reporting.
- With customers beginning to ask for different methods of payment such as email, PayPal etc, we need to look at incorporating this into our business processes somehow