



MIST401 Project Report

Gulf for Auto Spare Part (GASP)

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Abstract

This project studies how to improve daily work process at GASP by developing an information system. The present paper system has been studied and compared to proposed computerized information system, the study focused on four sides Economic side, Technical side, Social side and operational side.

GASP Employees have been interviewed in order to understand the exact task of each one and related difficulties.

After the study completed it has been found that the proposed computerized information system saves time, effort and minimize human mistakes and that has a positive impact on the cost saving and business improvement.

1 Project overview

1.1 Introduction

For many organizations, computerized information systems are now the heart of daily activities and a major consideration in decision makings. Without computerized assistance organizations will face difficulty in managing the work due to huge number of information.

Therefore, the development of information systems made revolution in business managing and have played a dominant role in improving of information economy.

1.2 Objective

The main objective of this project is to run the daily work smoothly and this required the proposed system to be reliable and efficient transaction management system. The system must be user friendly and at the same time powerful enough. It has the capability to save time, effort and to keep the entire information of a transaction to reproduce it whenever required.

1.3 Background

Gulf for Auto Spare Parts (GASP) is Automobile spare parts retailer company. They purchase spare parts from four different global sellers in mass and resale to local customers.

They deal with hundreds types of spare parts with different models and specifications, they sell about 40 to 50 spare parts per day. They have one large warehouse with three store keepers. They have five salesmens those receive customer order over the desk and pass the request to store keepers.

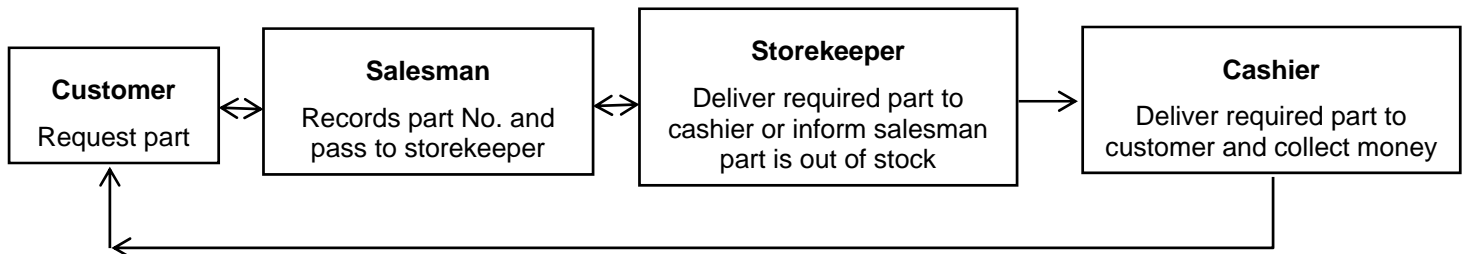
GASP wish to have a computerized information system to organize the process of daily activity mainly updated reports about stock, daily sales..etc. in addition to save time and efforts and also minimize human error.

1.4 Current System

So far GASP using paper system to manage the daily activity such as tracking the stock, order to suppliers, invoicing, transactions..etc.

The detail of daily activity is as follows.

1. Salesman receives the customer on desk and records the needed parts on request sheet and pass it to store keeper. A copy of request sheet will be handed over to customer.
2. Store keeper to check the required part, identify the shelf location from warehouse index and deliver to the cashier who will call the customer based on request no. written on the request sheet.
If the required part is out of stock, then storekeeper to inform the sales man who will convey the same to customer.
3. Customer issue payment along with the request sheet and take the part.
4. At the end of each working day, store keepers check the sold items and confirm the new data about parts availability in the warehouse and update the stock files accordingly.
5. Supply department will review the stock files on the next day and issue purchase orders to suppliers to replace the sold items in the warehouse. A copy of the PO will be given to finance and to store keeper for shipping follow up.
6. Storekeeper to receive the shipment and position each part in its shelf.
7. Finance to receive supplier invoice and pass to storekeeper for approving before issue the payment.
8. Finance department to make monthly and weekly reports for GASP Management about sales revenue and expenses.



Block diagram shows the process summary of daily activity at GASP

While interviewing GASP Employees it has been discovered that human mistake is repeated and has taken a lot of business time, some examples as below.

1. Sales man writes an unclear part no. on paper and sends to store keeper. This cause either sales man to report part unavailability or, issue wrong part. In both cases the customer will be unhappy because of delay.
2. At end of working day, storekeeper has to update the inventory by checking what has been sold and quantity remaining and hence supply dept. place order accordingly. It was found that earlier wrong part or wrong quantity was ordered because of wrong data in the updated file and that was mistake of storekeeper when he counts.
3. Finance also has to double check all report details before send to management as their business plan and decision depend on finance report.

1.5 Proposed System

So as above mentioned manual work processing taking a lot of time and effort, GASP Management seeking to implement a computerized information system. The new system to operate as follows.

1. Salesman receives the customer on desk and enters the needed part information to the computer, the system generates request no. for customer.
2. Storekeeper receives the request through the system in the warehouse, the system provides storekeeper with location of the requested part.
3. Store keeper scans the part through barcode and deliver the part to the cashier who will call the customer based on request no. generated by the system earlier.
4. Customer issue payment along with the request sheet and take the part.
5. At each new working day Supply department will check the stock availability through the system and issue purchase orders to suppliers to replace the sold items in the warehouse. The system will notify both the finance and storekeeper for the issued PO.
6. Storekeeper to receive the shipment and position each part in its shelf and update the system through barcode.
7. Finance to receive supplier invoice and confirm the parts delivery through the system before issue the payment.
8. GASP Management can access the system and view all updated finance reports related to sales revenue and expenses at any time.

The above is an MIS System, which helps management for different decisions such as which part is being sold more and accordingly more quantity to be ordered.

2 Feasibility study of proposed system for GASP Company

Feasibility study is a way to identify an idea in business can be successful or not. To write the feasibility we need to identify how the business can be benefited and also related implementation cost.

In our feasibility study we will identify the effect of new system in all departments at GASP Company such as Sales, Store, finance and management. This will be through four views as follows.

2.1 Economic view

It is Cost Benefit Analysis. The system that can be developed must be profitable for the organization. The primary objective of cost benefit analysis is to find out whether the proposed system is worthwhile to invest in. Financial benefits must be equal to or greater than the costs. If the returns on the investment is good then the project is considered economically.

Furthermore, the cost of project represent all the items of outlay associated with the project for example the area that the new system will take for the equipment such as dedicated room for server and network switch.

Economic benefits outcomes from proposed GASP IS Project are as follows.

1. The system minimizes the quantity of paper therefor reduces operation cost.
 - A) GASP Management can access the system and view all updated reports such as sales revenue, expenses, stock availability..etc without need of printed copy reports from finance.
2. Minimizes time, effort by the employees and human error, both time and effort are money. Human error sometimes is costly and also wasted time in correction.

The new system saves about fifty percent (50) of the time and efforts spend by old manual system. This also helps in handling more customers per day.

- A) In old system when customer requests part, the salesman has to search in the spare part catalog to find the correct part no. for very old car models salesman may not find easily, also storekeeper has to refer to warehouse index to locate the part location, at the end storekeeper may report back to customer through salesman that the part is out of stock. Salesman has no system to show him that part is out of stock so customer will not wait. However, in new system salesman can find the correct part no easily through the spare part database with its location in the warehouse and storekeeper will deliver the part to the cashier through barcode who will call the customer based on request no. generated by the system earlier. If the required part is out of stock then the salesman will inform the customer directly.
 - B) The system also provides ready reports about stock status which helps Supply department for decision of issue purchase orders to suppliers to replace the sold items in the warehouse, therefore store keepers does not need to check the sold items manually and confirm the new data about parts availability in the store.
 - C) Finance to receive supplier invoice and confirm the parts delivery through the system before issue the payment without referring to storekeeper.
3. With the system less man power is required to run the job.
- A) Salesmen to be reduced from four persons to three persons.
 - B) Storekeepers to be reduced from three to two persons.
 - C) Cashers to be reduced from three to two persons.
 - D) Finance members to be reduced from three to two persons.

2.2 Technical view

The Technical Feasibility Study assesses the details of how a product or service can be delivered (i.e., materials, labor, transportation, where your business will be located, technology needed..etc.

Also how it works on a simple personal computer, what are hardware and software requirement and how it can produce output within a given limited time. It has ability to process small volume of transaction at speed and provide a great friendly environment to user.

In our case the following can be addressed.

1. The system operates with Microsoft Windows 7, most of the employees need to be trained as they have never used it.
2. GASP needs also to hire an IT specialist person for technical support of new system.
3. Installation of the new system needs some building work such as cabling, drilling..etc.

2.3 Social view

Social factors also to be considered, socially means how will the new IS affects working lives. The new IS has social impact on both GASP workers and customers.

1. One of the system advantages is making the process faster, the customer can receive his order in half of the time required with old manual system. This will make the customer happier.
2. GASP Workers will spend less time and less effort in processing their assigned tasks, this will reflect positively on their health.
3. The new system also helps in improving the environment by reducing amount of paper.

2.4 Operation view

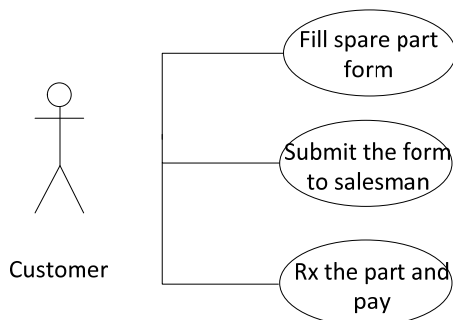
Suppose for a moment that technical and economic resources are both judged adequate. The systems analyst must still consider the operational feasibility of the requested project. Operational feasibility is dependent on human resources available for the project and involves projecting whether the system will operate and be used once it is installed. *(Adapted from Kendall & Kendall, Systems Analysis and Design, fourth edition, 1999, pp. 56-57.)*

1. The time required the new system to be in operation is one month. One important matter is the transition stage from old system to new system, this must not affect the business. Therefore, it has been planned to train users on weekend so on the new working day they will be ready to serve customers through the system without any problem.
2. GASP Employees feel using of new system is more comfortable as it reduces work load, save time and minimizes human mistakes. Managers also able to do fast decision as an updated report about stock, sales, purchase..etc is always available.

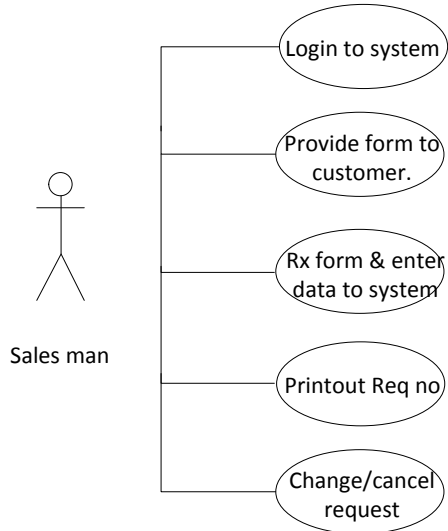
On the other hand, some have fear in using computerized system for below reasons,

- Computerized system may lead to reduce man power in the company. GASP Management assured to employees that no one will be affected, as company is expanding due to increase in demand of auto spare parts.
 - Some employees are not enthusiast because they have never worked with such system, this can be solved by providing training.
 - Also some of users asked “What happen if system went down? How we can keep the work running in such situation?”
3. Users have to provide information about the existing manual system and how they deal with any problem it may face. Managers also must provide information about company rules and regulations and also departments task.

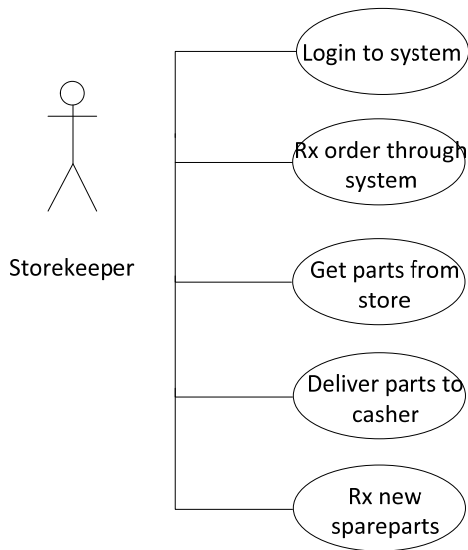
3 Use Case Modeling



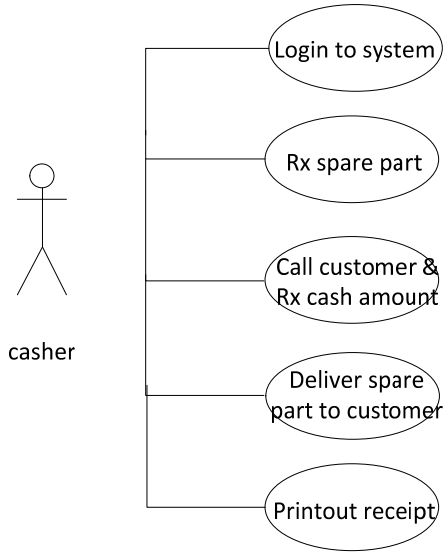
Use Case	Brief
Fill spare part form	Customer to fill a special form provided by sales man to indicate required informations such as car name & model..etc.
Submit the form to salesman	Customer has to submit the form to salesman.
Rx the part and pay.	Customer has to pay the cost and collect the spare part.



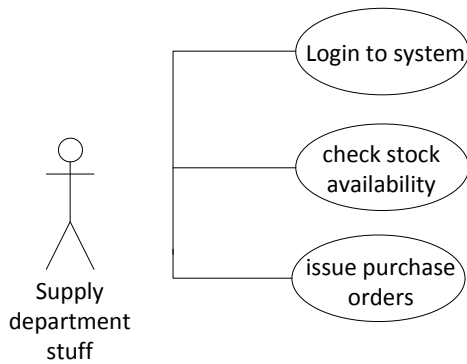
Use Case	Brief
Login to system	Sales man has to login to the system using his user name & password.
Provide form to customer	Sales man to provide spare part request form to customer.
Rx form & enter data to system	Sales man to take back spare part form from customer will necessary information about required part and enter to system.
Printout Req no.	System will generate request no. that sales man has to provide it to customer.
Change / cancel request.	Sales man can cancel or change customer request.



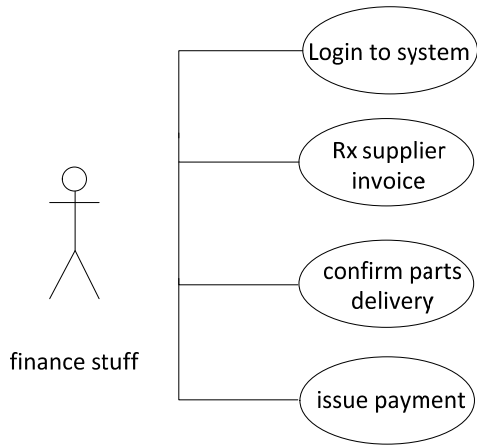
Use Case	Brief
Fill spare part form	Storekeeper has to login to the system using his user name & password.
Rx order through system	Storekeeper receives customer order entered by sales man through system.
Get parts from store	Storekeeper has to get the requested spare part from shelf in the store.
Deliver parts to cashier	Storekeeper to deliver requested part to cashier.
Rx new spare parts.	Storekeeper to receive new spare parts ordered by supply dept, log into database using bar code and locates them in the shelves.



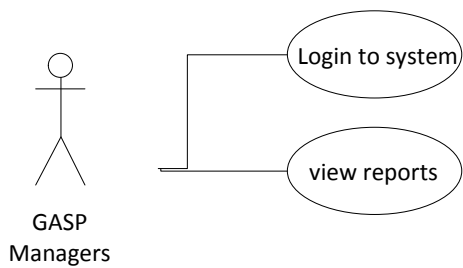
Use Case	Brief
Login to system	Casher has to login to the system using his user name & password.
Rx spare part	Casher to receive the requested spare part from storekeeper.
Call customer & Rx cash amount.	Casher to call the customer based on Req. no. and receive cash amount.
Deliver spare part to customer.	Casher to deliver spare part to customer.
Printout receipt	Casher to printout receipt for customer.



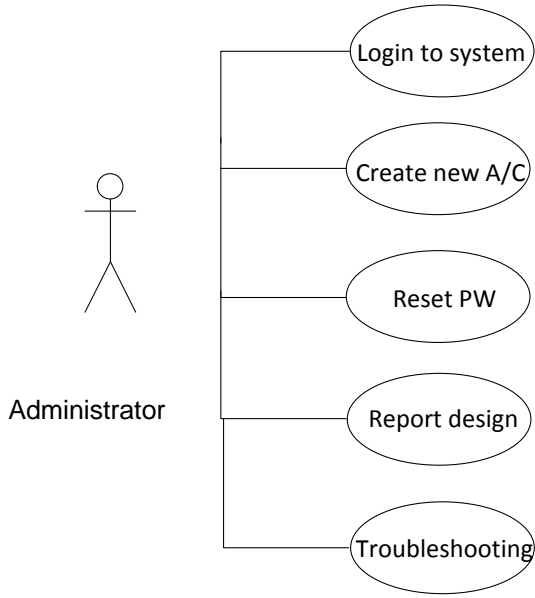
Use Case	Brief
Login to system	Supply Dept stuff to login to the system using his user name and password.
Check stock availability.	Supply dept stuff to check stock availability At each new working day.
Issue purchase orders	issue purchase orders to suppliers to replace the sold items in the warehouse.



Use Case	Brief
Login to system	Finance stuff has to login to the system using his user name & password.
Rx supplier invoice	Finance to receive supplier invoice against purchase order.
Confirm parts delivery.	Finance stuff confirms the parts delivery through the system before issue the payment.
Issue payment	Finance stuff to issue payment to supplier.
Printout receipt	Casher to printout receipt for customer.



Use Case	Brief
Login to system	Supply Dept stuff to login to the system using his user name and password.
View reports	Managers can view all updated reports about finance and stock status.



Use Case	Brief
Login to system	Administrator has to login to the system using his user name & password.
Create new A/C	Administrator to create new A/C new users.
Reset PW	Administrator can reset the password of any user.
Issue payment	Finance stuff to issue payment to supplier.
Report design	Administrator can design required reports for management.
Troubleshooting	Administrator responsible also to troubleshoot the system.

4 Required items for GASP Project

Following are all items required for implementing the project.

Hardware

Item	Specification	Quantity	Remarks
PC's	2MB RAM, 2.3 GHz CPU, 300GB HDD with Network interface port.	6	1 storekeeper, 2 Sales men, 1 Supply Dept, 1 Finance, 1 Manager.
Server	8GB, 10GHz Dual CPU, 10TB HDD		Common system
Rack	Rack cabinet	1	For server and network switch
Printers	HP Laserjet with network port	5	1 storekeeper, 1 Sales men, 1 Supply Dept, 1 Finance, 1 Manager.
Scanner	HP scanner with network port	2	Common
Barcode scanner	USB	1	For storekeeper

Software

Item	Specification	Quantity	Remarks
PC Operating system	MS Windows7	6	For each PC
Applications	MS Office 2010	6	For each PC
Applications	Java applications	6	For each PC
Server Operating system	MS Server2008	1	For server

Networking

Item	Specification	Quantity	Remarks
Network switch	16 port	1	
Ethernet cables	CAT6 UTP	Lot	

Furniture

Item	Specification	Quantity	Remarks
Printer desk		5	
PC Desk		6	

5 User Interface

The screenshot shows a web-based form titled "Gulf for Auto Spare Parts" with the subtitle "SPARE PART REQUEST FORM". The form contains the following fields and values:

- Request No.: 2156-11
- Date: 5 Apr 2011
- Customer name: Jassim Ahmed
- Part name: Window motor controller
- Part No.: AH269-001
- Car brand: TOYOTA
- Car name: Camry
- Car model: 2005
- Location in store: 7D3
- Price (BD): 26.000
- Quantity: 1
- Available quantity: 35

At the bottom of the form are four buttons: "Enter", "Check Data Base", "Print", and "New Request".

Annotations and their corresponding actions:

- Two boxes labeled "Generated by system" point to the "Request No." and "Date" fields.
- A box labeled "Generated by system" points to the "Part name" field.
- A box labeled "Generated by system" points to the "Price (BD)" field.
- A box labeled "Sales man to click after entering required data in to the form" points to the "Enter" button.
- A box labeled "If the part No. is unknown, then Sales man has to refer to Data base provided by" points to the "Check Data Base" button.
- A box labeled "To print the request form" points to the "Print" button.
- A box labeled "To take new request" points to the "New Request" button.

6 Conclusion

As we have said in the introduction that information systems playing a dominant role in improving of business process and reflect positively on economic outcomes through organizing different tasks and minimizing the time and effort required to process the daily work.

Through our project we have gone through GASP daily operation and we have seen how employees spend huge time and effort in daily work and possible human mistakes.

However, by using Computerized Information System GASP Management able to achieve more profit via handling more customers as the new system minimizes the time of customer servicing.

This project in fact was beneficial as it gave me a good background and an initial experience of how to study an existing manual system in a business and how to convert it to a modern IS by applying some steps and study the feasibility.

7 Project Management

1. Project overview	5 Hours
2. Feasibility Study	6 Hours
3. Use Case Modeling	4 Hours
4. Required Items for GASP Project	2 Hours
5. User Interface	1 Hour
6. Conclusion	2 Hours

8 References from web:

- 9 <http://womeninbusiness.about.com/od/businessplans/a/feasibilitystud.htm>
- 10 <http://womeninbusiness.about.com/od/startingsmallbusiness/a/techfeasibility.htm>
- 11 <http://doit.ort.org/course/devinfosys/6.htm>
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- 13 <http://www.scribd.com/doc/38972375/Project-Case-Study-of-Spare-Part-Management-System-1>
- 14 <http://gates.comm.virginia.edu/rn2n/Feasibility.htm>
- 15 <http://www.scribd.com/doc/38972375/Project-Case-Study-of-Spare-Part-Management-System-1>