

How 90% data entry error reduced by Process Re-Designing

How data entry error increased customer waiting time in billing counter & dissatisfaction and how 90% data entry error was reduced by re-designing the process.

Naveen who is running a very popular jewelry retail in Mumbai & Gujarat is a very successful in his business. He along with his two brothers runs the chain of five retail stores. He is very cautious that his customers have to be satisfied with the models available in his stores and if the particular model which the customer asks is not available, he makes sure that it is ordered and manufactured as soon as possible. He has also instructed his staffs to give great hospitality to the customers who are visiting the stores. He has successfully branded his stores by making famous serial actor and actress as the brand ambassadors. Now he has recently opened his sixth store in Gujarat.

Problem:

Being very much successful in his business yet something that made Naveen worried about one thing. Every day he receives complaint from the shop that when the billing was about to be made it was found that the weight in the tag was wrong. And because of this the customers were getting upset. Even though the stores person rectifies the problems as soon as possible, Naveen recognizes that if he is going to open more stores the problems will be even worse. Every time when he receives a complaint from the shop Mr. Naveen has to login his system and make the editing in the system or his manager Mrs. Khan has to make the editing. This was the case in day to day activity of Mr. Naveen's Head office. Head office is the place where Mr. Naveen makes the purchase and make entries and tag the jewel with the weight tag.

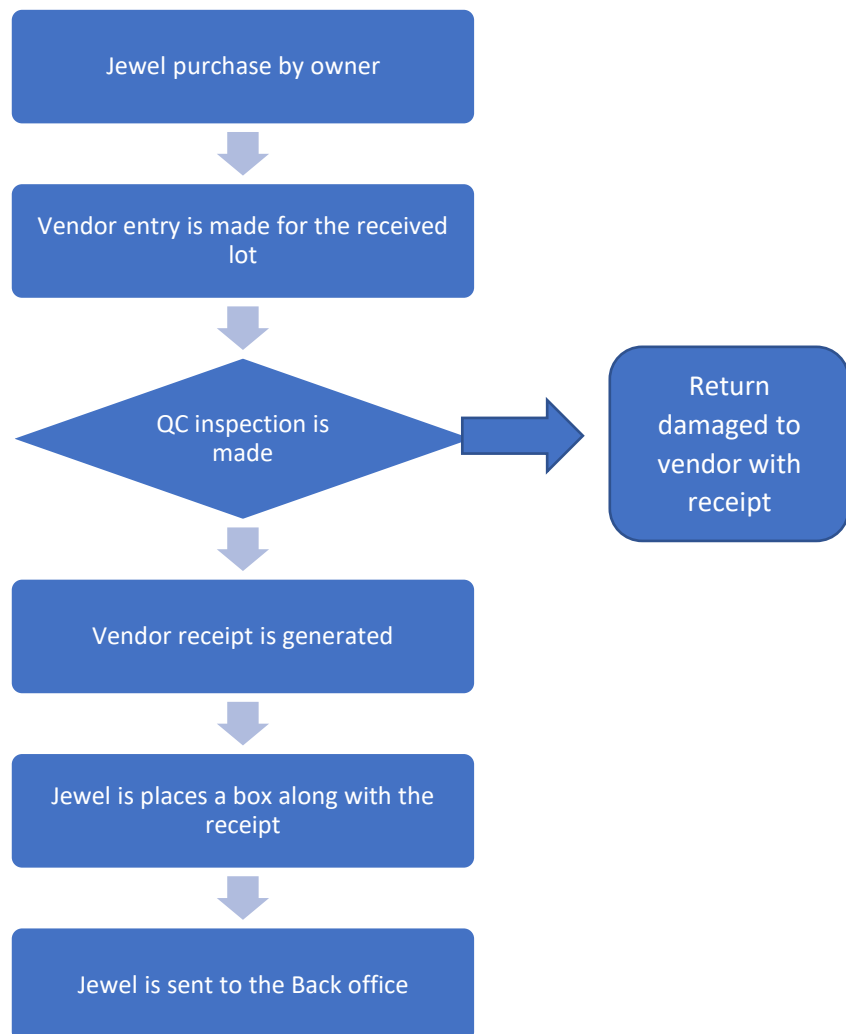
Challenges:

1. The basic process is to make entry in system and tag the jewel but there are too many movements of the jewel before it is transited to the store.
2. Since there are multiple process are involved there is naturally data entry error.
3. Lead time to send a jewel to the store is 1 day.
4. To rectify data entry errors Mr. Naveen has or his manager has to make the correction in the system.

Process in Head office:

Ptl Jewel has two offices which is in the adjacent building. One is Head office where Mr. Naveen is seated and other is Back office (BO). Every day the Head & back offices opens at 9 am. There are 30 staffs working in both the offices. 15 staffs work in one office and the other 15 staffs works in the other office. Vendors comes to HO with their jewels. Mr. Naveen purchase the gold & silver jewels from the vendors who are visiting the head office. Once the Jewel is purchased it is then sent to make entry in Vendor entry software. Once vendor entry is made as a lot then the individual jewels are inspected and if any damage is found it is then returned to the vendor with the return receipt generated in the system. Next the Jewel is sent to the BO. The activities that are carried out in the Head office is given the below flow chart in **Exhibit 1**

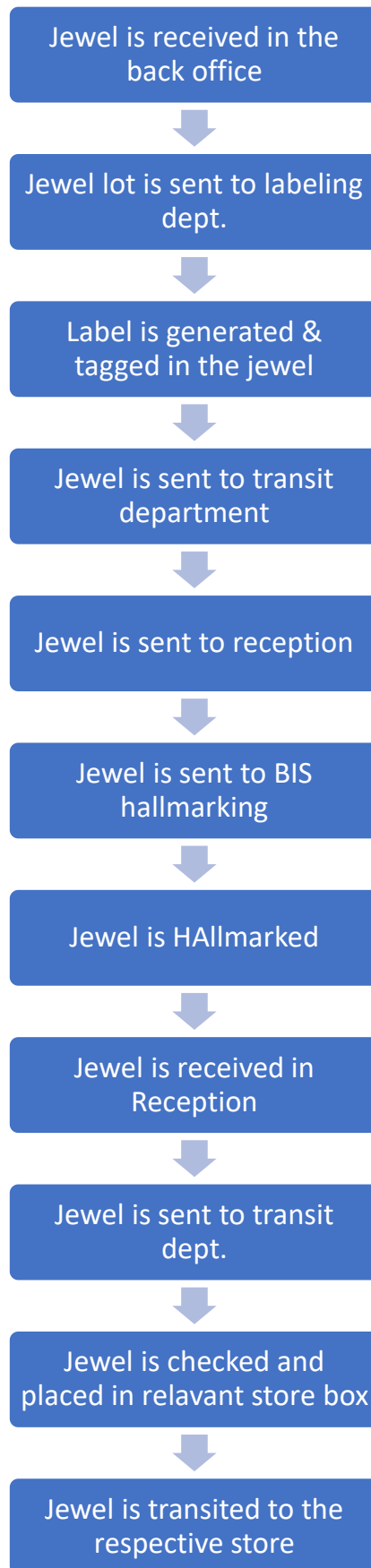
Exhibit 1: Process in Head office



Process in Back office:

A receptionist inwards the Jewel lot. Then the jewel lot is split as individual jewel and the weight of the individual jewel is weighed and the tag is generated. Then the tag is attached to the jewel. Once this is done it is sent to transit department. The transit person makes her entry in the system and then transfers to the reception. The receptionist calls a person who takes it to BIS hallmarking office that is located close by the office. Then after BIS hallmarking the jewel is returned to the receptionist. The receptionist sends it to the transit department. Then she verifies that all the jewels are received or not. Once it is done again the weight is measured and cross verified with the tag weight. Next the jewels are segregated and kept in a box which is named after the different stores. The processes in the Back office is given in the below process flow **Exhibit 2**.

Exhibit 2: Process in Back office

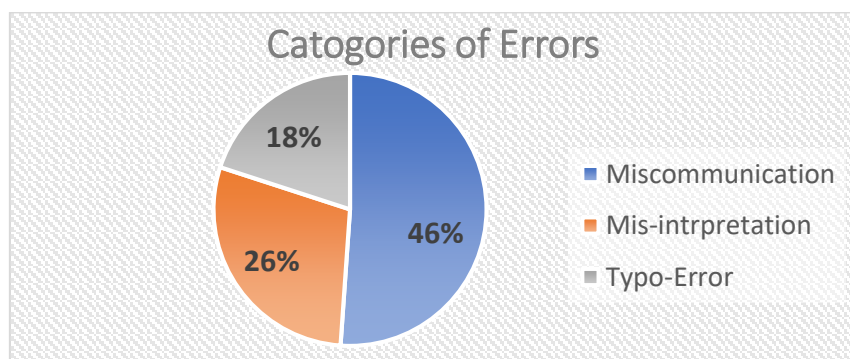


Visit of KIAP consultants:

Mr. Naveen gets to know about Business process Re-engineering consultants from one of his close friends. He was told that they are currently working with KIAP to solve similar problem in their showroom and if he is willing, he will forward the details to him. Naveen told his friend to request the consultants for a visit to his office. so that let the consultants tell whether his problem can be solved or not. Consultants visits his office after a week and they made observations. They found that there is **14% data entry error** made in the back office on a daily basis. Lot of errors are made because of miscommunication and ambiguity in the process. Since one entry is made in HO and the other entries are made in Back office if any doubt in the entry the person has to call the other person in the office and rectify through phone.

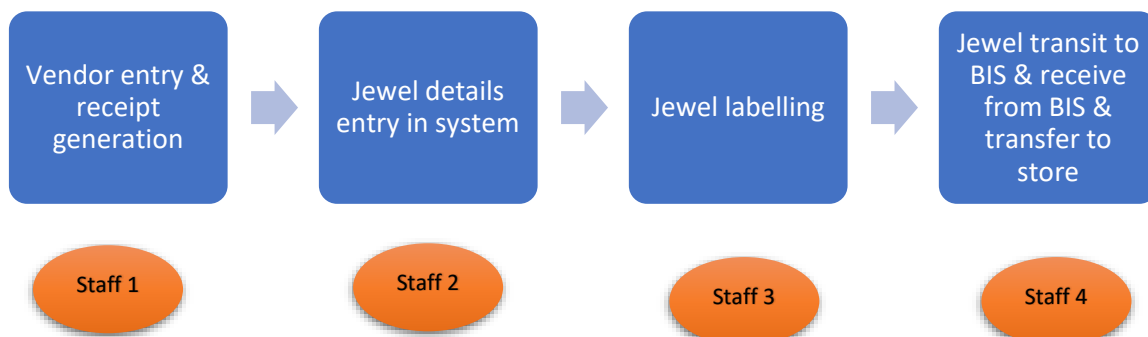
Categories of Errors identified:

1. Error because of miscommunication
2. Error because of mis-interpretation of the receipt given by vendor
3. Typo-errors



Action taken by KIAP team:

Exhibit 3: Physical arrangement of the staff's position



Action 1- Line flow Established: The next day started with a training by KIAP consultants on the topic of Line flow and Internal customer concept. (i.e) the next process is the customer and the customer have to be in alignment to the supplier. Once this is made the problem because of communication will be solved. The staffs are made to sit in the below given order

and the jewel is passed in hand to the next person. Later after a month the entire office is renovated and all the staffs are shifted to HO and the back office is used only for server room.

The staffs were formed as a team of 4 members and some works are combined (based on load leveling). And three teams were formed Likewise. And are made to sit in Head office.

This eliminated movement of people and jewel between two offices. Muda of transportation.

Initially it was hard for the people as the major challenge was one 2 staff in the entire office knows to make vendor entry. The other staffs were trained in making vendor entry and the team started functioning effectively.

Action 2: Then **Quality inspection at the source** concept is also explained. Which means that the QC has to be carried out during purchase so that the rejection can be returned immediately to the supplier.

Action 3: Introduction of Vendor Receipt - Again, the data entry errors were measured and the **parato analysis** is made. Now the major error because the staffs were not able to interpret what the vendor has written in the receipt that he has given (stone weight, stone rate, Weight less % & few other details).

This was solved by introducing a standard format of inward receipt which has to be filled by vendor when delivering the jewel to the QC person. **Vendor Inward Receipt** was developed with the team and deployed. This receipt contains all the minor details that are required by the staff to make data entry.

The form is titled 'Inward Chalan' and includes fields for Date, Material (gold/silver/1gm), Location, and Item Name. It also has a section for 'Remarks' and a 'Signature' field. The form is divided into two main parts: a header section and a table section. The header section contains fields for Date, Material, Location, and Item Name. The table section has columns for Item, Pcs, Gr. Wt., Less Wt., Extra Less, Net Wt., Purity, Wastage, Fine, Stone, Kalamas, Rondon, Pats, Other, and Amount. The form is filled with handwritten data in blue ink.

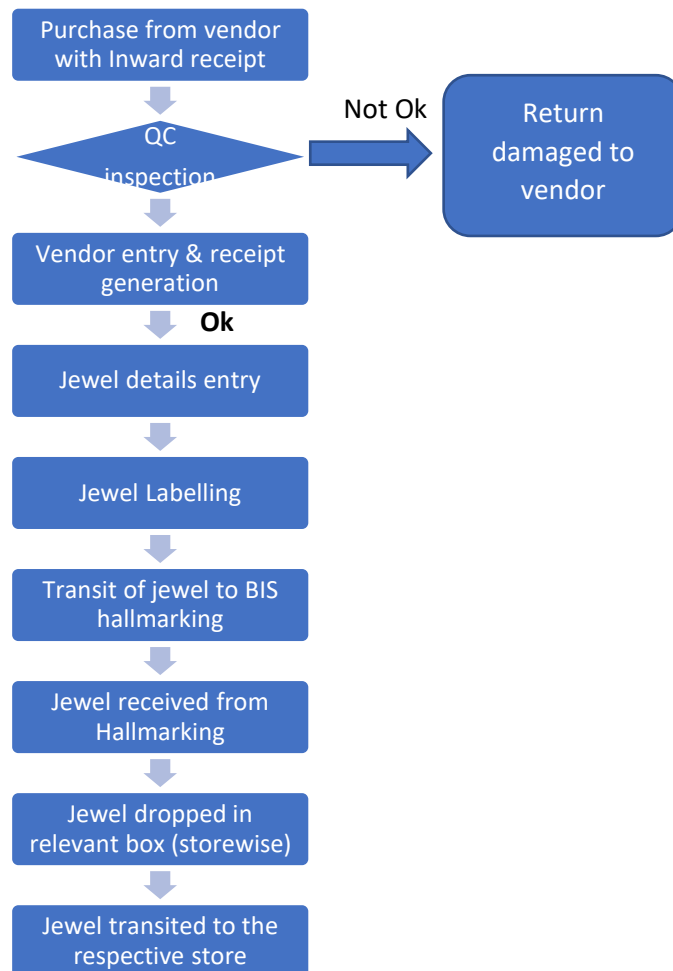
Exhibit 4: Vendor Inward Receipt

The vendor receipt is written with the carbon copy of 2 numbers. One carbon copy is given to vendor and the other is kept for office record and other is sent along with the jewel lot.

Most of the ambiguity in the vendor receipt has been solved by this receipt.

Action 4: Business process Re-engineering – Over all process is studied and redesigned. The new process is shown below. Exhibit 5

Exhibit 5: New process flow in the office



Action 5: Daily meeting & error report - The concept of daily meeting is introduced and the daily work and vendors who are expected today is discussed and daily prayer was also conducted. The daily work management board (Exhibit 6) is also updated post the meeting. During the day whoever makes an entry error has to inform the editing person and then the error correction is made. The daily errors are discussed in the evening meeting. **Daily Closing stock** of items pending for processing is also taken before leaving for the day. By this the staffs are aware of their mistakes and the same mistake is not repeated.

Action 5: The SOPs (Standard Operating Procedure) and OPL (One Point Lesson) was prepared for all the entry process. The team was trained with that as well.

Action 6: Skill mapping was made and the skill matrix was arrived. Then it was displayed in the board. The staffs were initially shocked when first displayed this to them but later it was explained that the staffs have to improve their gaps in skill every month and this will be

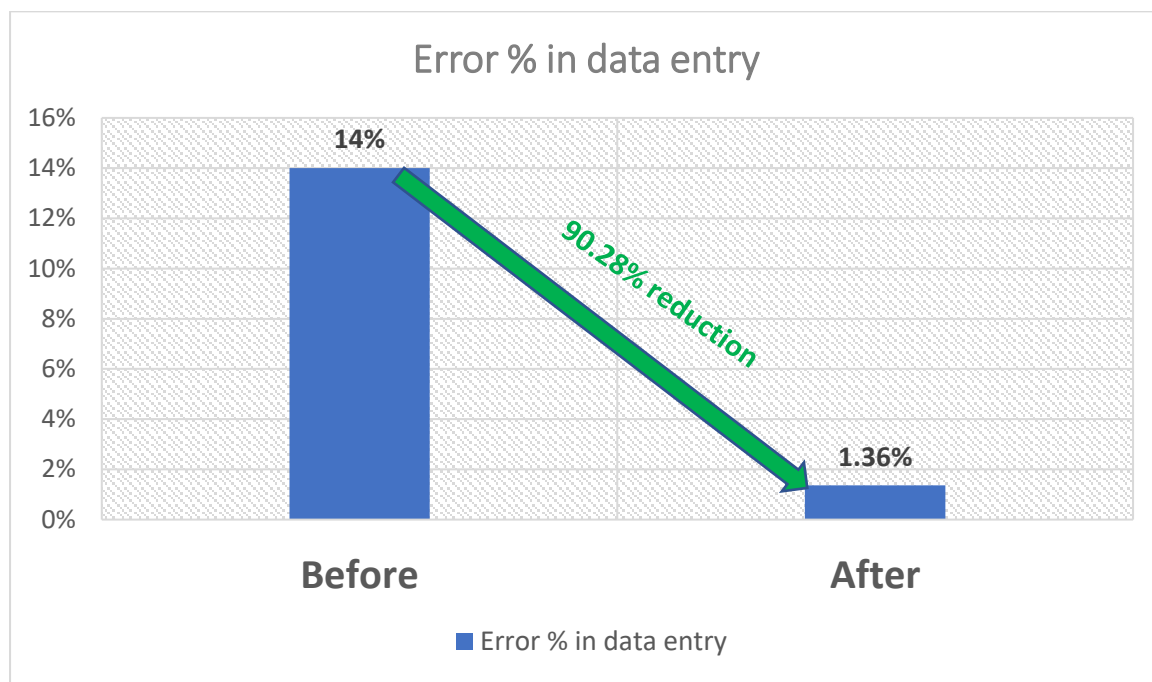
considered during their increment. By the start of the project only the senior manager was skilled in all the activity. But gradually everyone started learning new skills.

Action 7: Time table for vendor & karigar (gold smith) visit:

The earlier unscheduled visit of the vendors and karigar was stopped and everyone was given a time slot and only during that time they were allowed to deliver the jewels by this inward jewel quantity is brought under control. Earlier there used to be huge crowd of vendors on somedays which led to shortage of time in selection of jewel and the office was also not able to process and dispatch all the jewels on time. Then huge stock of jewels has to be maintained in the HO. This situation is eliminated by the time table system.

Result:

1. Every staff was brought to head office and the back office was only used as server room. The office layout was re-designed and all staffs were feeling comfortable working in single office.
2. The error percentage reduced from 14% to 1.36% in 3 months period, which is 90.28% reduction in error %



3. Over all process in the HO is streamlined and the office has become a traditional managed office to a corporate office.
4. The culture of the staffs improved. Everyone was self-motivated to fill the skill gap.
5. Systems introduced
 - a. Error report
 - b. Daily closing stock
 - c. Daily report – Inward & outward
6. Customer waiting time because of wrong tag weight almost become nil.