



open**SAP**

**HEALTHCARE STORAGE CUM
RETAIL FACILITY**



Story

At least US\$550 000 worth of antiretrovirals and 10 million antimalarial doses expired in Uganda's National Medical Stores . Likewise, there has been loss reported due to expiration of drugs in storage facilities. Apart from expired drugs, counterfeiting is another challenge which healthcare and lifescience industry is facing. Multiple laws are enforced that requires drugs to be serialized before entering the supply chain.

"Serialization" refers to applying serial number on each unit of sale using common GS1 standard which is accepted globally.

The Prototype utilizes the feature to ensure drugs storing and dispensing causes minimal loss due to expiry and counterfeit. In addition the solution also help the facility gain credibility in customer base. In addition, the prototype provide full extensibility to track each drug/product movement from manufacturer to retailing facility.

Persona



Williams

[Warehouse / Store Manager]

“I would like to keep systematic stock and ensure least waste due to shortage/overage/expiration of drugs”

About

- 36, married, 9 years of different storage management experience.
- Being the person who makes the inventory request and storage decisions, I have to keep the balance between reducing the occurrence of drugs expiration in shelves and keep optimal stock based on requirement prediction.
- Very mobile, moving from building to building during the day
- I work with the retailer, drug dispenser, Sales person and distributors ...

Responsibilities

- I request inventory based on current stock levels
- I take decisions regarding storage shelves in event of inventory loads.
- I scan drugs and update the system

Main Goals

- To ensure minimal goods wastage
- Minimal product seek time when fulfilling customer requirement
- Monitor sales person activities.

Needs

- I need to know which drugs in storage are nearing expiry dates...
- I need to know which stock requires re-fill.
- I need to monitor the sales activities
- I need to pull reports in case counterfeit is reported.

Pain Points

- I have to manually check the expiry dates on units...
- I have to manually monitor the stock levels
- I have no idea from which manufacturing units the drugs are shipped from.



SALLY

Sales Person

“ I like to get products quickly for end users since I am on the move all the time, dealing with thousands of medicines. ”

About

- 30, married, 5 years of point of sale experience.
- I have to remain pleasing and sell the products efficiently.
- Very mobile, moving from desk to different shelves during the day
- I work with the Storage Manager, Technicians.

Responsibilities

- I am responsible for dispensing products to customers.
- I am responsible for notifying the storage manager in case of new product requirement.
- I spend my time at point of sale with computer

Needs

- I always need the shelf number to fetch medicine. It can become hard to locate otherwise.
- I need to record the selling information for synchronous inventory update. Currently I take notes on paper.

Main Goals

- Ensure to sell as well as update corresponding records.
- Maintain shelves products and notify storage manager.
- Update new product requirements.
- Update expired/counterfeit cases.

Pain Points

- Can't locate which unit of product to be sold first as manual checking is tedious and timetaking.
- There are hundreds of product type which I need to remember to locate there storage.
- Need the ability to notify storage manager on the fly about the new stock requirement.



Point of View (PoV)

Point of View

As a _Storage manager_ I need a way to __track the products nearing expiry dates, storage shelf location, monitor sales person activities while I maintain the inventory. __so that __I can reduce the loss occurring due to product wastage, reduce seek time, get realtime stock level details.

As a _Sales person_ I need a way to __reduce the product fetching time when demand arrives, pick the product unit which is nearing expiry date, update the inventory records, notify storage manager for new and stock renewal requirement __so that __I can reduce the loss occurring due to product wastage, reduce seek time, update inventory status realtime.



UX Journey

User Experience Journey

ACTIONS	Customer arrives	Look at drug prescription	Find the drug Check the expiration date	Prepare Memo	Customer leaves	Update stock data
MINDSET	Don't know which medicine he may ask? Need to deal quickly to avoid long queues in shop	Ahh.. forgot where these are stocked?	I hope I do not miss any box of this drug that is nearing expiry date	Final step	Ah.. one more done for the day ..	Oh , I need to update the stock details after dispense.
FEELING	😊					
	😞					
TOUCH POINTS	Live Webcam feed on entrance	RFID	Drug Portal	Drug Portal	Drug Portal	Drug Portal



Prototype

Prototype screens for an IoT application to solve PoV

Prototype designed using the BUILD comprises of 4 major screens as

1. Selling Booth :

There are three tabs to this module as :

1.1 Live video feed:

The Entrance camera shall be connected to utility. Using the face recognition the customer information can be retrieved if visited already.

1.2 Prescription Details :

As the sales person, Sally enters the Drug name, the available variation in store can be checked as shown in prototype.

Once the drug and quantity is confirmed, System automatically find using the Serial/Lot combination which has nearest expiry date and populates value in shelf and Batch information.

1.3 Invoice:

On completion in prescription entry the invoice tab is enabled and invoice is generated. Also the inventory is updated.

2. Inventory Check-in: The warehouse manager uses this tab to load the inventory data. The Barcode scanner on drugs contains following information :

- Product ID
- Serial number
- Expiry Date
- Batch Number.

The scanning automatically updates the fields data.

Multiple notifications can be set as

- Alert if particular product inventory goes beyond certain limit.
- Alert if product received has already passed the expiry date

Apart from the product data, warehouse manager puts in the shelf ID which can be used for faster retrieval.

3. Customer Base : This contains information of all customer visited with historical invoice information.

Customer details are also included.

4. Analytical Reporting:

This utility can be extended to provide multiple reports as nearing expiry products, Overage, stock replenishment requirements.

Prototype is available at link

https://standard.build.me/api/projects/ec434ead7c6f32f10cd1ead0/prototype/snapshot/latest/index.html#/14773845107501256_S0