

Digital Transformation for GetFreshFood

SA52 Team 02
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SWOT Analysis

Strengths

- Tech savvy staff
- Good relationship with supplies



Weaknesses

- Inconsistent inventory management
- Frequent errors in end of day sales
- Poor cash management



Threats

- Covid-19
- Frustration caused by report discrepancies

Opportunities

- Implementation of new technologies
- Online shop
- Smart cameras

Tech-Savvy Store Man: Tom

Demographics

Age 35

Occupation Store Man

Workstation Supermarket
Storeroom

Location Singapore

"I know everything in my store"

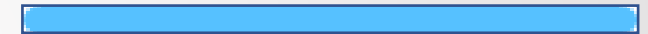


Metrics

Industry Experience (4/5)



Rapport with suppliers(5/5)



Tech savvy(5/5)



Domain knowledge(4/5)



Key Attributes

Language Proficiency Spoken English

Industrial Experience 12 years in retail industry

- IT Literacy
- Proficient in Microsoft Excel
 - Familiar with the use of electronic mobile devices such as smart phones and bar code scanners

Tech-Savvy Store Man: Tom

"I know everything in my store"



Responsibilities

- Accepts delivery of goods
- Checks the type, quality and expiration date of goods
- Provides goods to promoter for replenishment
- Places order based on classification
- Returns expired or damaged goods
- Updates the inventory records

Tech-Savvy Store Man: Tom

"I know everything in my store"



Primary Use

- Check and update inventory
- Check the number of products at each location
- Check how much of a product to re-order
- Keep track of damaged or expired products
- Check the classification of goods

Tech-Savvy Store Man: Tom





















"I know everything in my store"



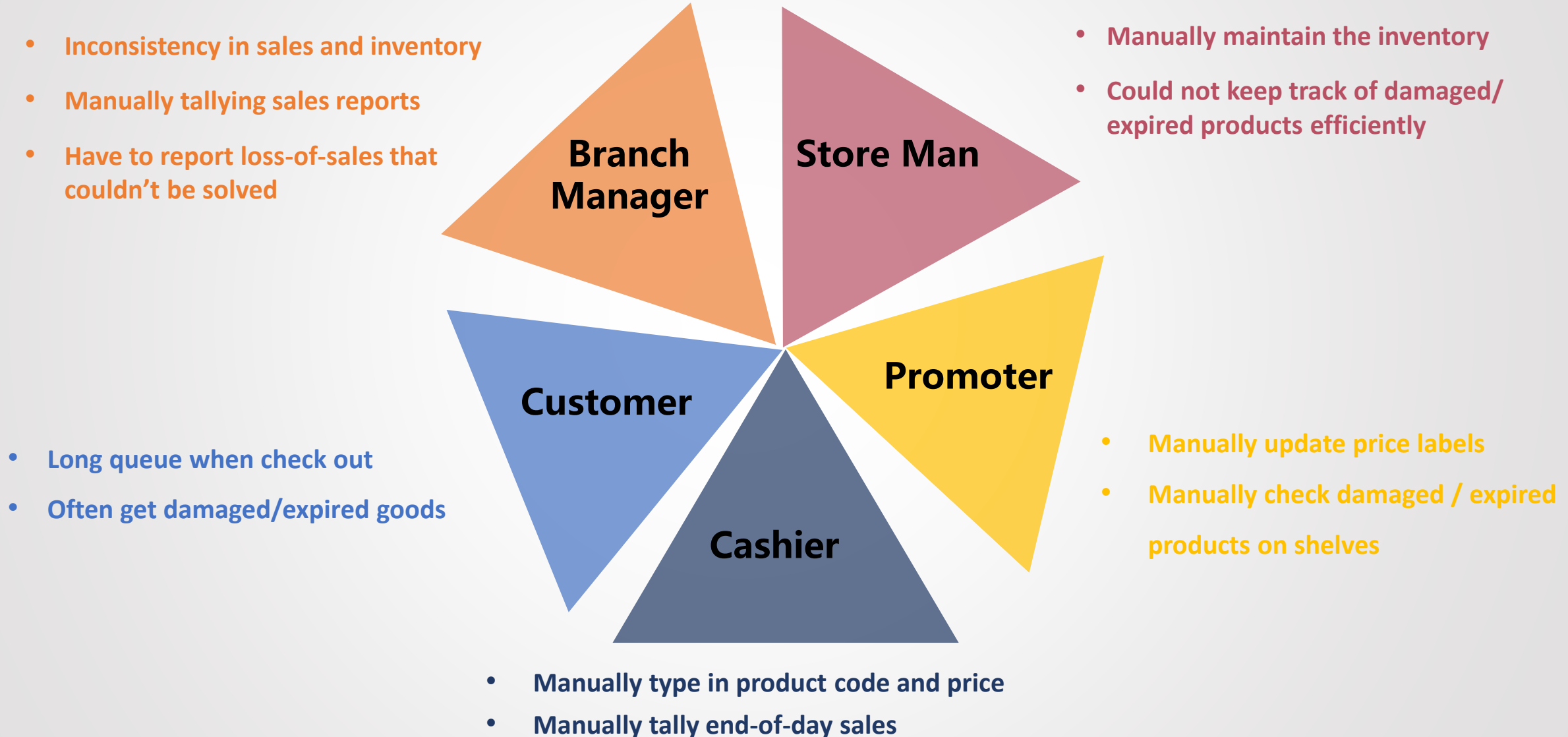
Frustrations

- Very tedious to manually maintain inventory of goods.
- Promoters take stock from storeroom without telling him.
- Promoters put damaged / expired goods into storeroom without informing anyone.
- Inventory records not tallying with actual quantity of goods.
- Difficult to accurately estimate amount of goods to re-order.

Store Man's Journey Map

Stages of Journey	Attending Briefing	Providing stock to promoter	Delivery and return of goods				Placing Order			
Activities	Receive instructions on what products needs to be replenished 	Provide stock to promoter to replenish shelves 	Maintain inventory of all goods manually 	Accept delivery of goods 	Check the storeroom for damaged and expired goods 	Return damaged or expired goods to supplier 	Decide on the quantity to order 	Place order with supplier 	Update the inventory records based on cashier end-of-day record 	Account for discrepancies between end-of-day sales records and records of actual inventory 
Feelings										
Experiences	Happy to get the quantity of goods to replenish	Satisfied when the promoters follow the proper procedure to get the items. However, it is upsetting when promoters take the items on their own	Tiring to maintain the inventory due to the large number of products.	Exhausting to check the quality and quantity of goods, verify SKUs and sign delivery order.	Unhappy when he notices unaccounted goods lying on the platform of his storeroom.	Unhappy with the tedious process of filling in physical triplicate forms.	Satisfied with the current process of checking for stock and categorizing products to place orders.	Happy due to good relationships with all the suppliers.	Tedious to manually update the inventory records.	Frustrated at the discrepancy. Unhappy to spend hours every month doing reconciliation
Expectations	A way to receive quantity of goods to order through system	Should have oversight of all movement of the products out of the storeroom.	Should have digitalize system to maintain the inventory	Should have a computerized system to check on quantity of goods	Promoters must inform him through the system of expired or damaged goods	Be able to automate the administrative portion of the return of goods	Be able to check the classification of the products through the system.	A system to record all suppliers' information	System to automatically update inventory status in real-time.	System to detect cashiering errors like double scanning or missing out scanning an item.

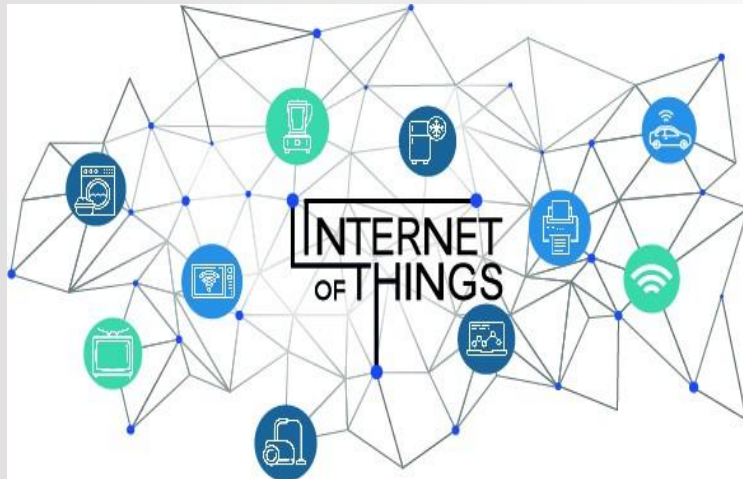
Challenges Faced Currently



Proposed Technologies

Internet of Things

- Accurate and Real-time Data
- Data-driven Decision Making



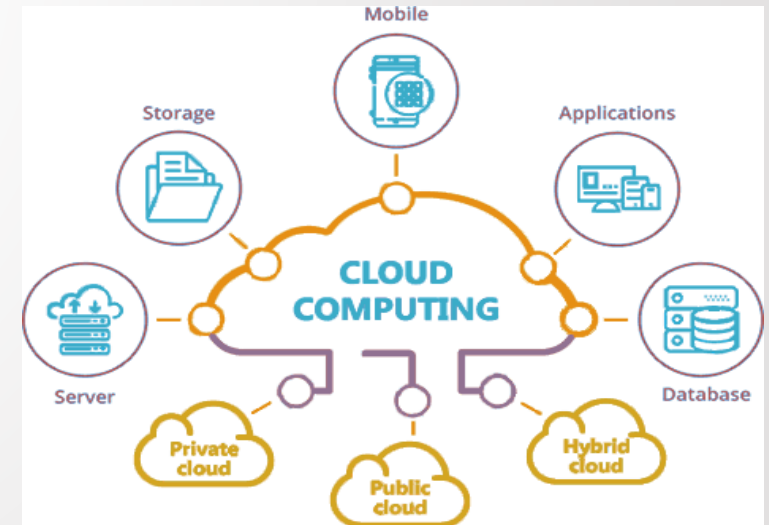
E-Portals

- Improved Employee Productivity
- Improved Customer Stickiness

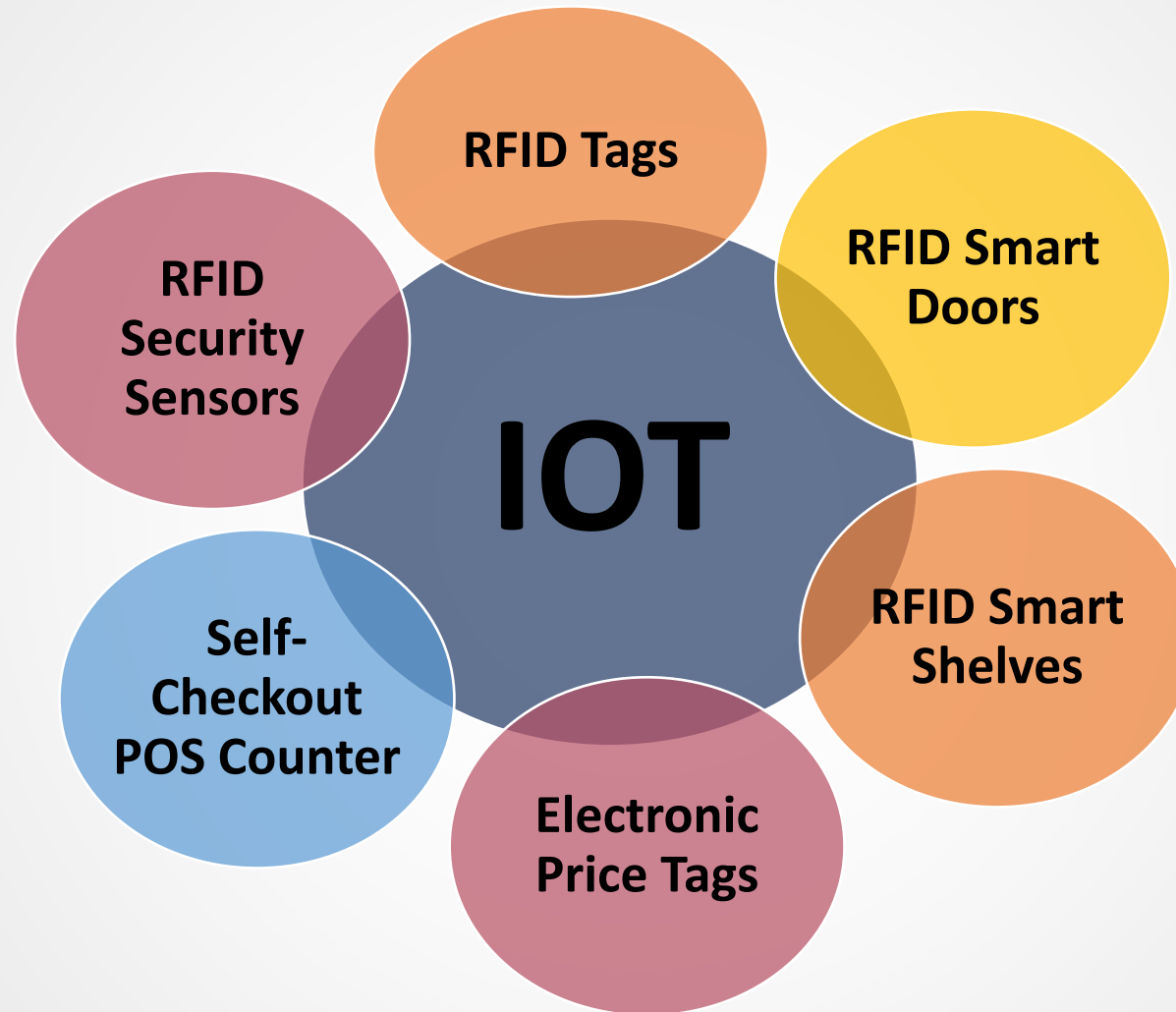


Cloud Computing

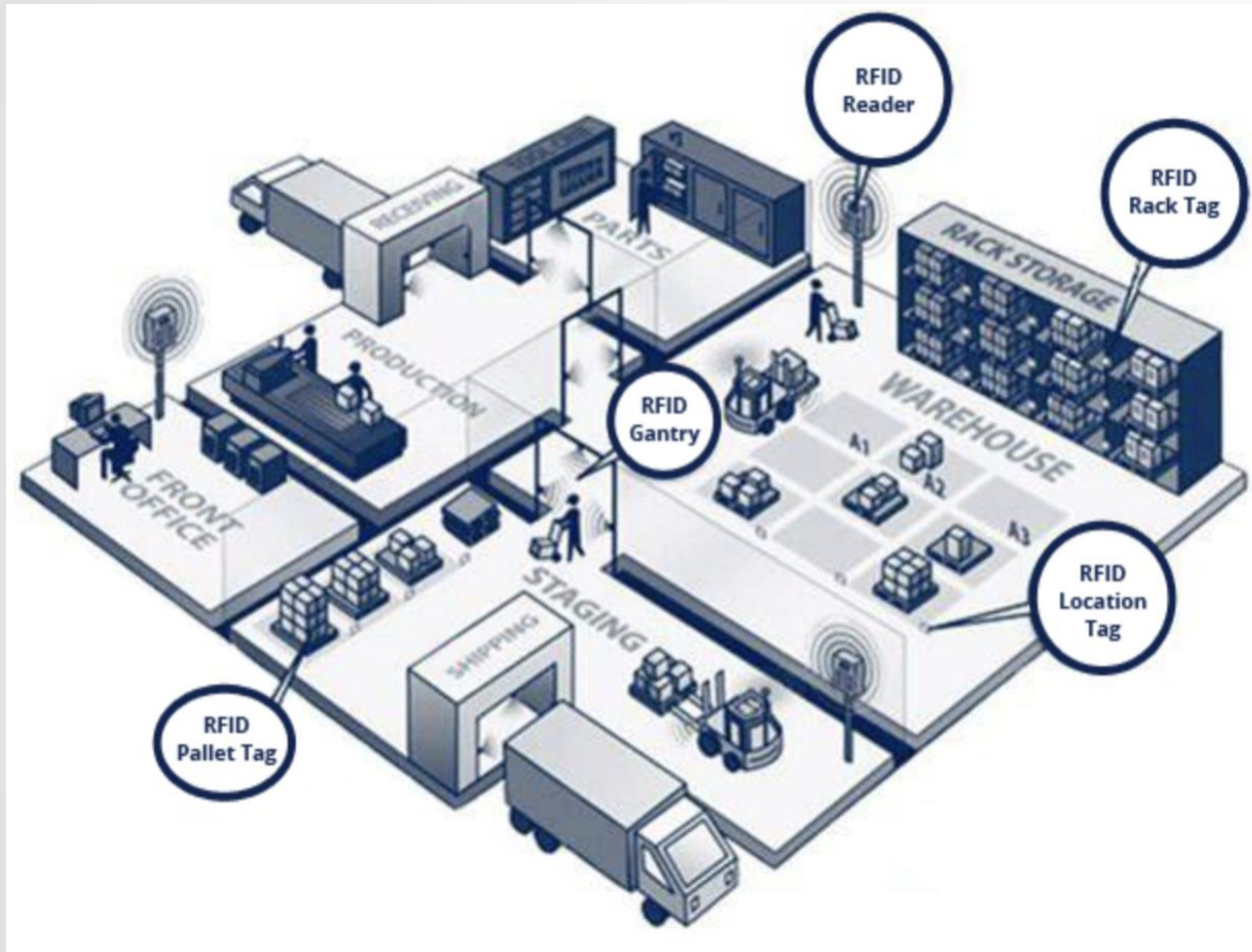
- Scalability
- Data Safety



IOT Implementation

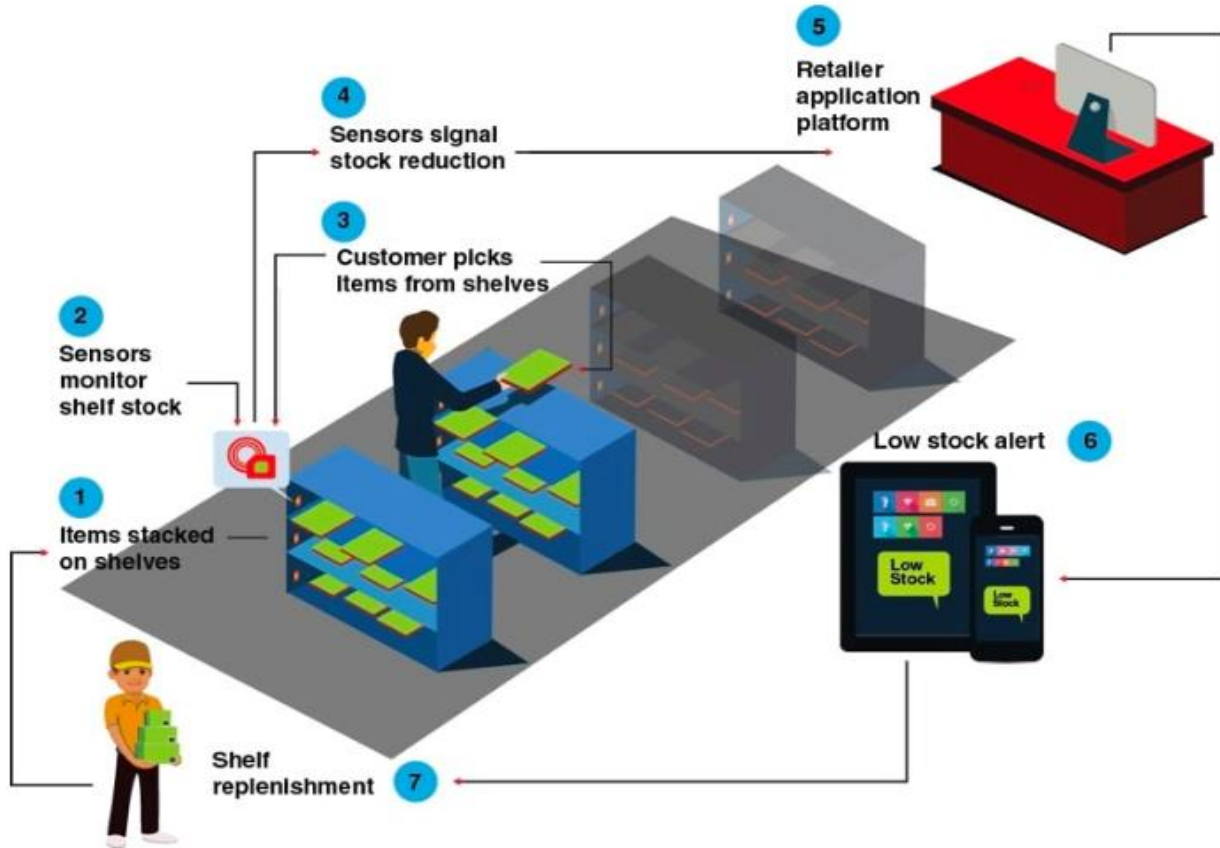


Inventory Management Solutions



- RFID tags will be attached to every product at **RFID Gantry** before moving to the store from suppliers.
- Install **RFID readers** both in store and shopping areas, and install **Electronic Shelf-labelling System** on the shopping shelves.

Shelves Replenishment Solutions



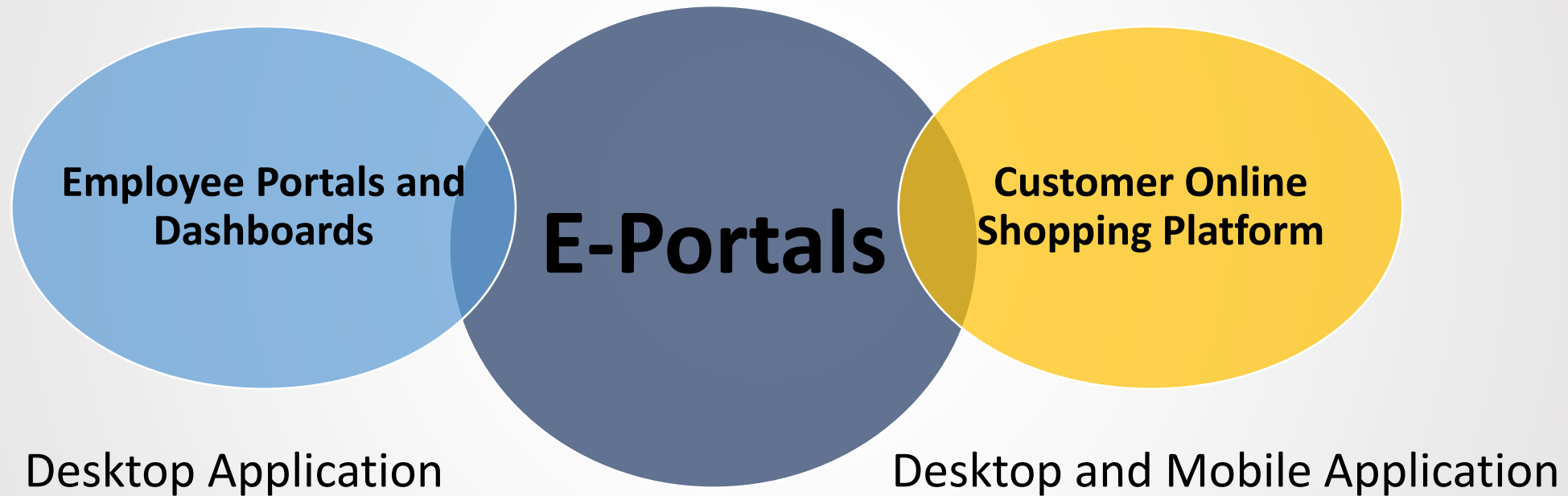
- RFID readers will deduct the quantity of items from shelf stock once items are taken from a shelf by a customer.
- RFID readers will deduct the amount of that product from inventory balance when a product is taken out of the store for replenishment.
- Promoters request price update on tablet with the help of Electronic Price-labelling System.

Self-Checkout Solutions



- Place their shopping basket into the RFID bin.
- Then press scan to have their times read within seconds.
- At the point of transaction, all purchasable items within the basket will be scanned in bulk – simultaneously and instantaneously.
- The counter monitor will return the entire list of items, all feasible modes of payment with the final bill and amount chargeable.

E-Portals Implementation



Customer: Online Shopping

Front Page and Navigation

Gold Fresh Food

Sign In

Your Account:

Manage my Account

Track My Orders

Order History

Logout

Categories:

Meat and Seafood

Fruits and Vegetables

Frozen

Rice, Noodles

Dairy and Eggs

Baking

Condiments

Drinks

Electrical

Household

Luxury and Lifestyle

Beer, Wines and Spirits

Discounts

Ice Cream

Ice Cream Tubs

Ice Cream Cones

Specialty Ice Cream

Frozen Dessert

Frozen Yogurt

Frozen Cakes

Frozen Food

Bread

Patties

Steak

Chicken

Pork

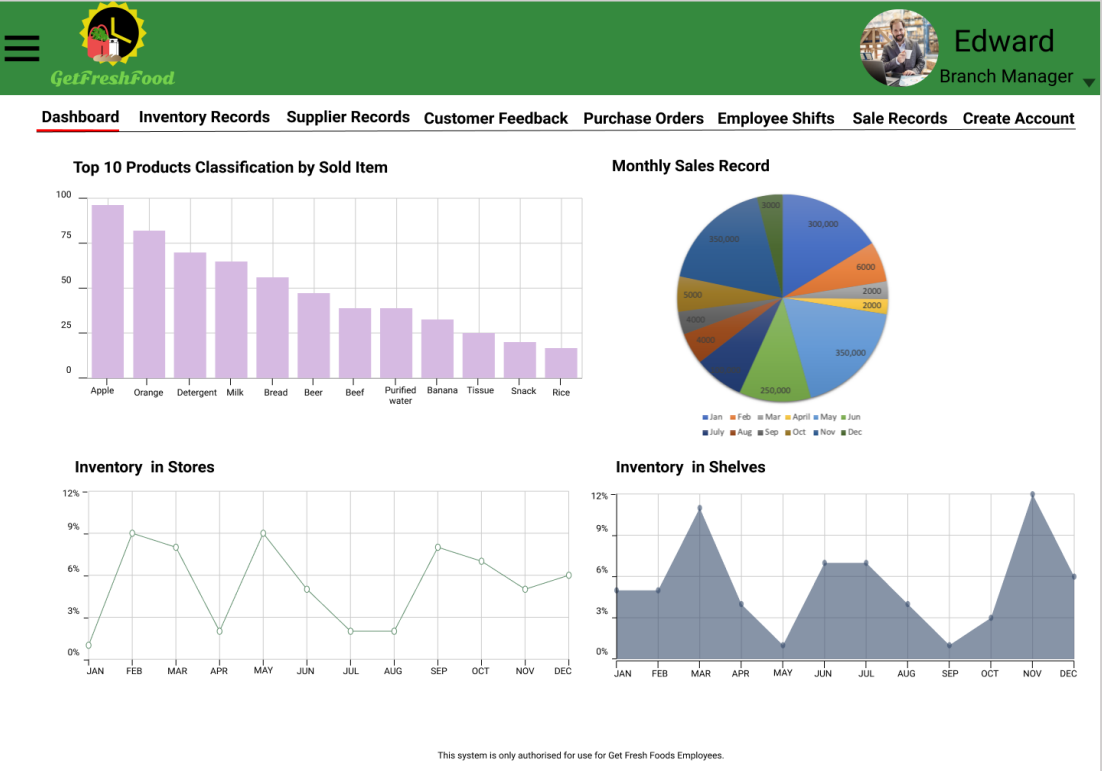
Fries

Hashbrowns

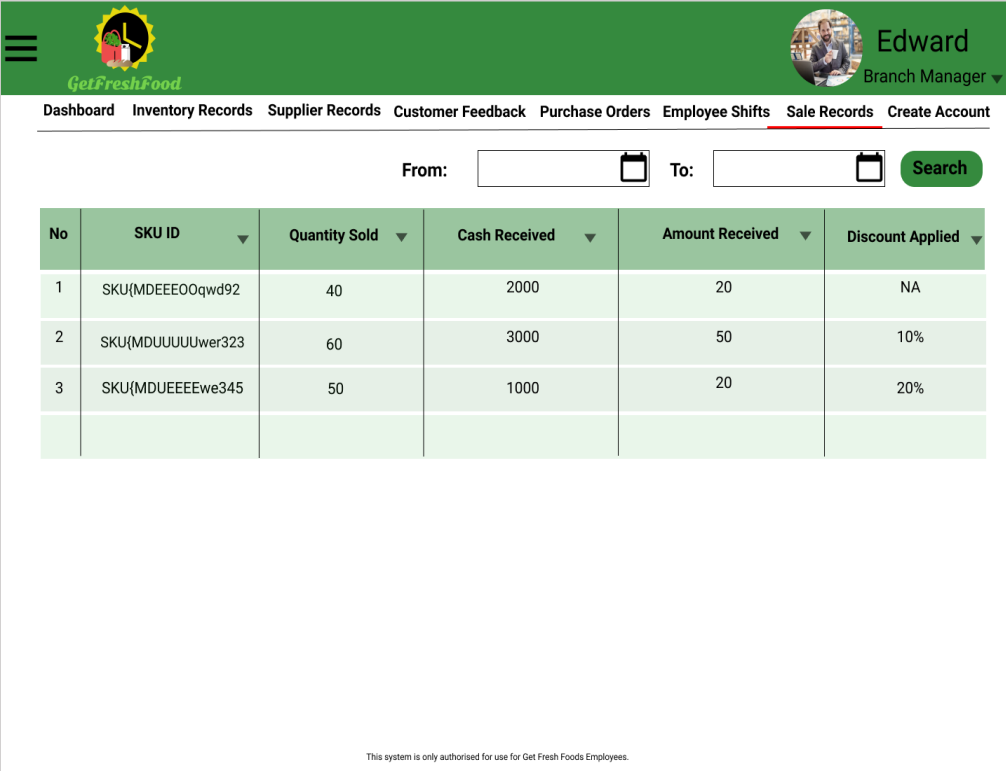
Seafood

Branch Manager: Overseeing Real Time Data

Dashboard for Branch Manager





Sales Records for Branch Manger



Store Man: Inventory and Purchase Order Maintaining

Inventory Records



Tom
Store Man

DashboardInventory RecordsSupplier RecordsPurchase OrdersSale Records



Search UPC ID or SKU ID

No	UPC ID	SKU ID	Product Name	Category	Classification	Expire date	Unit In Stock(Shelves)	Unit InStock(Store)
1	023456723456	SKU{MDEEEEOqwd92	Orange	Perishables	Medium	26-Mar-2021	30	145
2	012434344343	SKU{MDUUUUUwer323	Milk	Perishables	High	25-Mar-2021	26	200
3	012434000012	SKU{MDUEEEEwe345	Bread	Perishables	Low Selling	30-Mar-2021	15	55

Update

This system is only authorised for use for Get Fresh Foods Employees.

Purchase Order



Tom
Store Man

DashboardInventory RecordsSupplier RecordsPurchase OrdersSale Records

Create Purchase Orders

UPC ID:

023456723456

OR

Product Name:

Orange

Quantity:

6

Add

List of Products(Order)

ProductName	UPC ID	Quantity	Remove
Orange	023456723456	6	⊗
Milk	012434344343	4	⊗
Bread	012434000012	9	⊗


Place Order


This system is only authorised for use for Get Fresh Foods Employees.

Promoter: Shelf-Products Maintaining

Make a request for Price Change

Add Damaged/Expired Goods



**Jennifer**
Promoter

Maintain Product

Request Information

Add Damaged /Expired Products

Product Information

SKU ID:

SKU{MDEEEE0qwd92}

Product Name

Orange

Damaged/Expired

Damaged


Date of Damaged /Expiry


Add

List of Damaged/Expired Products

ProductName	SKU ID	Damaged/E xpired	Date of Damaged/Expired
Orange	SKU{MDEEEE0qwd92}	Damaged	19/03/21
Apple	SKU{MDUUUUUwer323}	Damaged	19/03/21
Milk	SKU{MDUEEEEwe345}	Damaged	19/03/21
Bread	SKU{MDUEEEEwe342}	Expired	19/03/21

This system is only authorised for use for Get Fresh Foods Employees.



**Jennifer**
Promoter

Maintain Product

Request Information

Price Change Request

SKU ID:

SKU{MDEEEE0qwd92}

OR

Product Name:

Orange

Original Price

10

Updated Price

12

Add

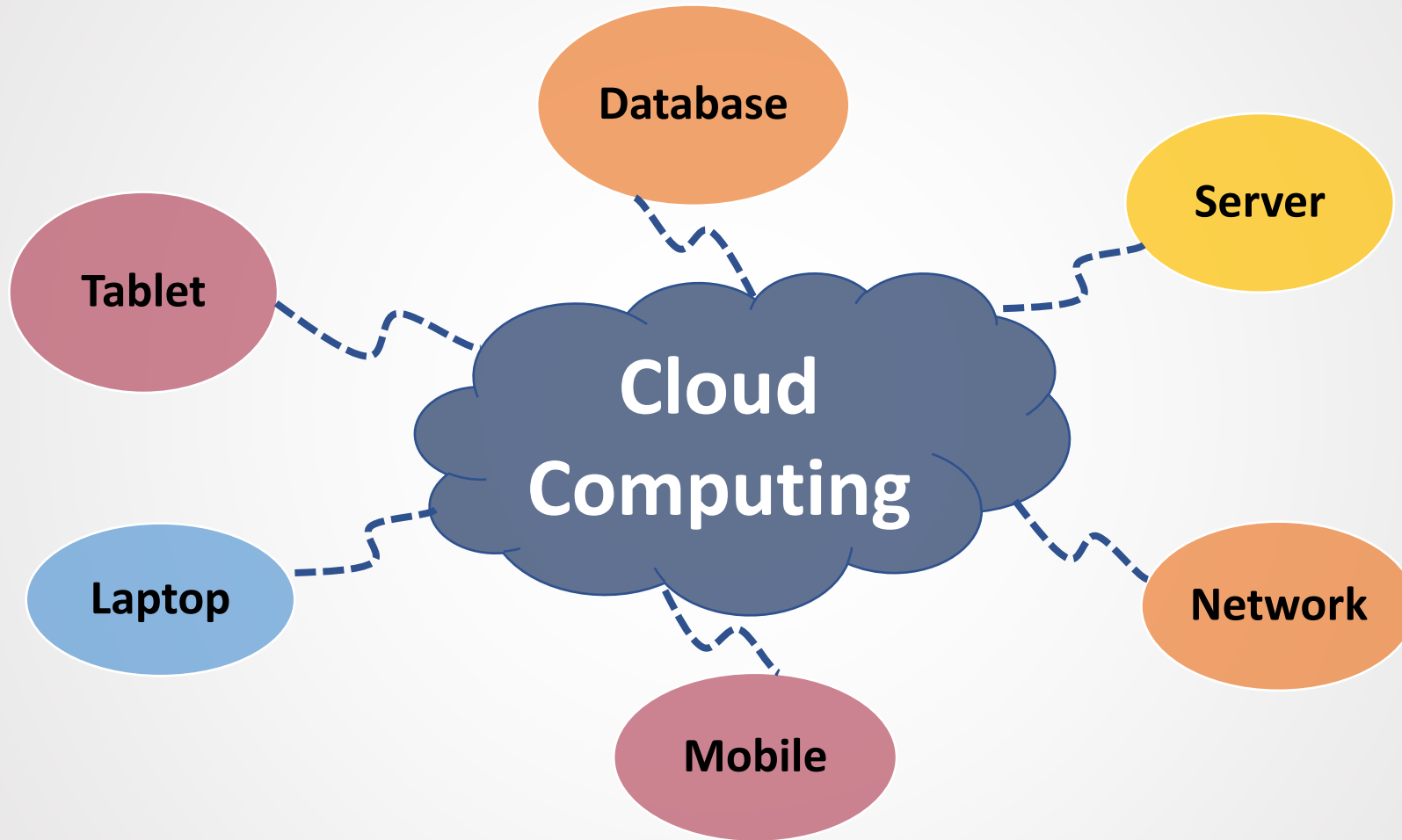
List of Products(Price Change)

ProductName	SKU ID	Original Price	Update price	Remove
Orange	SKU{MDEEEE0qwd92}	10	12	⊗
Milk	SKU{MDUUUUUwer323}	9	5	⊗
Bread	SKU{MDUEEEEwe345}	7	9	⊗

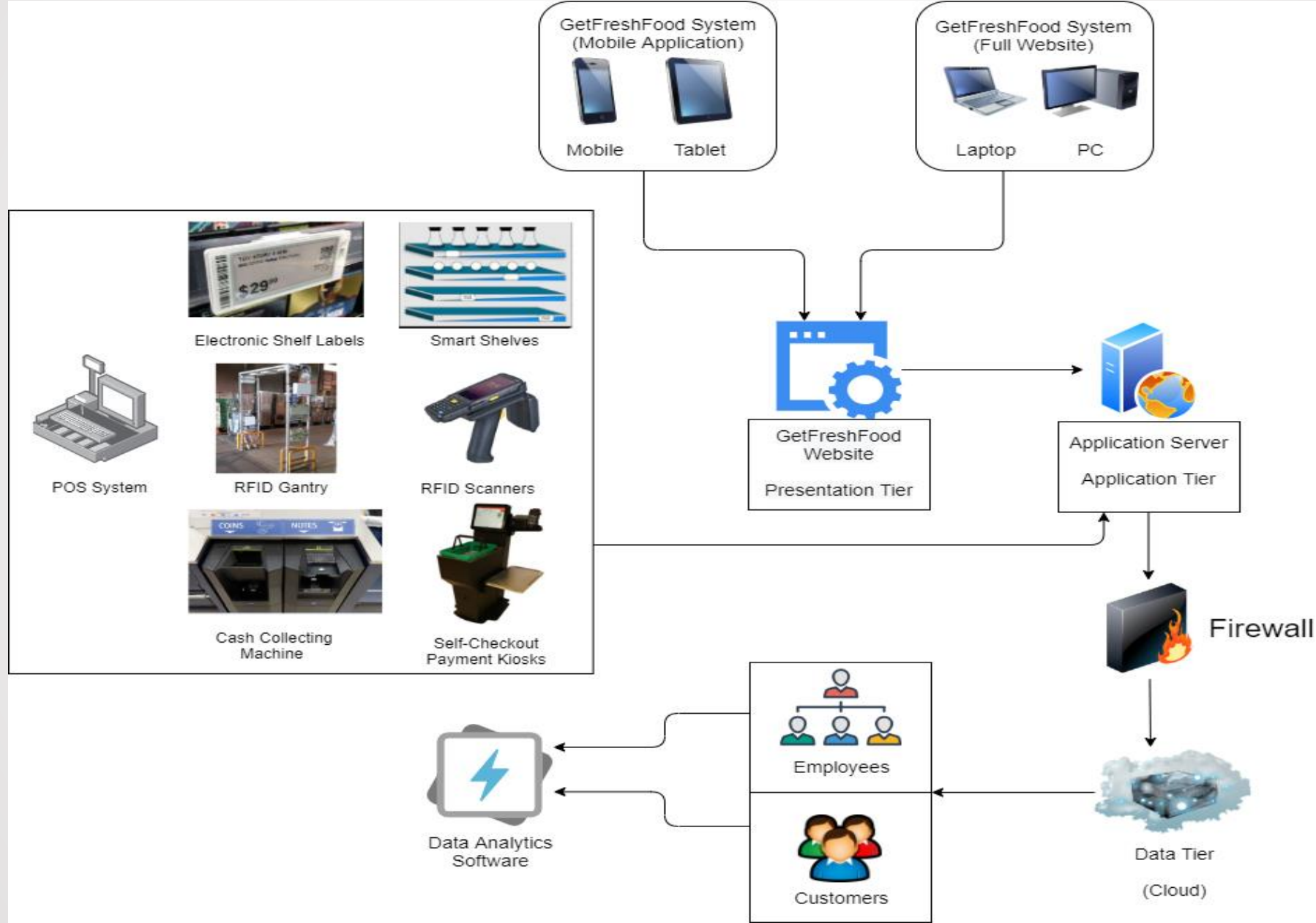
Send Request

This system is only authorised for use for Get Fresh Foods Employees.

Cloud Computing Implementation



3-Tier System Architecture



Conclusions



Root Cause

Manual work leading
to data inconsistencies



Solutions

- **Radio frequency identification (RFID)**
 - Smart shelves
 - Robotic checkout
 - Automated inventory update
 - Automated transactions
- **E-Portal**
 - Employee Portals and Dashboards
 - Customer Online Shopping Platform
- **Cloud Computing**

Thank you for your attention!



Whitestar
Computing

Appendix

"I know everything in my store"



Store Man's Persona

Tom has been working as a store man with "GetFreshFood" for the past 12 years. As a veteran in the company, he plays an important role in leading other store men to perform their daily duties effectively.

Tom has a keen interest in technology and plays a key role in the company's upgrading from a pen and paper-based system to a system based on Excel spreadsheets. He is excited about digital transformations and looks forward to working with a new and efficient system.

Responsibilities

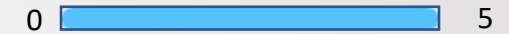
- Accept delivery of goods between 10:30am to 11:30 am in the morning.
- Check the type, quality and expiration date of delivered goods, making sure what is delivered is correct (based on SKU), and signing off all delivery orders
- Provide goods to promoter for replenishment of goods on shelves
- Order goods based on classification recorded on product form
- Return expired or damaged goods to the supplier
- Update the inventory records based on cashiers' end of day sale report

Metrics

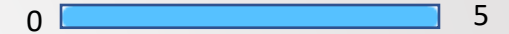
Industry Experience (4/5)



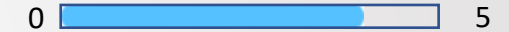
Rapport with suppliers(5/5)



Tech savvy(5/5)



Domain knowledge(4/5)



Tech-Savvy Storeman

Tom

Age: 35 years old

Occupation: Store Man

Workstation: Supermarket storeroom

Location: Singapore

Language Proficiency: Spoken English

Industrial Experience: 12 years in the retail industry

IT literacy: Proficient in Microsoft Excel. Familiar with the use of electronic mobile devices such as smart phones and bar code scanners

Frustrations

- Needs to manually maintain the inventory of all goods which is very tedious
- Promoters often take stock from storeroom without telling him
- Promoter sometimes puts damaged or expired goods in the storeroom without informing anyone
- Inventory records not tallying with the actual quantity of goods in the store
- Difficult to estimate the amount of goods to re-order accurately

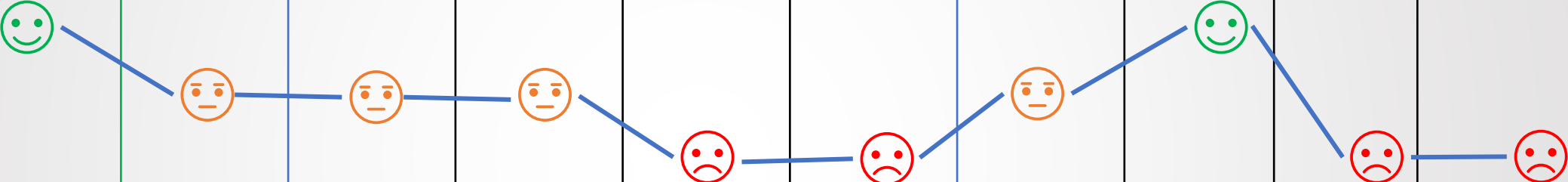
Primary Use

- Check and update inventory
- Check the number of products at each location
- Check how much of a product to re-order
- Keep track of damaged or expired products
- Check the classification of goods

Influencers

- Maximized work efficiency
- Friendly and easy to use
- Resilient / Fault tolerant
- Lag-free
- System uptime

Store Man's Journey Map

Stages of Journey	Attending Briefing	Providing stock to promoter	Delivery and return of goods				Placing Order			
Activities	Receive instructions on what products needs to be replenished	Provide stock to promoter to replenish shelves	Maintain inventory of all goods manually	Accept delivery of goods	Check the storeroom for damaged and expired goods	Return damaged and expired goods to supplier	Decide on the quantity to order	Place order with supplier	Update the inventory based on cashier end-of-day record	Account for discrepancy between end-of-day sales record and record of actual inventory
Feelings										
Experiences	Happy to get the quantity of goods to sell	Satisfied when the promoters follow the proper procedure to get the items.	Tiring to maintain the inventory due to the large number of products.	Exhausting to check the quality and quantity of goods, verify SKUs and sign delivery order.	Unhappy when he notices unaccounted goods lying on the platform of his storeroom.	Unhappy that the manual processes with physical triplicate forms to be filled in.	Satisfied with the current process of checking for stock and categorizing products to place orders.	Happy due to good relationships with all the suppliers.	Tedious to manually update the inventory records.	Frustrated at the discrepancy. Unhappy to spend hours every month doing reconciliation
Expectations	A way to receive quantity of goods to order through system instead.	Should have oversight of all movement of the products out of the storeroom.	Should have digitalize system to maintain the inventory	Should have a computerized system to check on quantity of goods	Promoters must inform him through the system of the returned goods	Be able to automate the administrative portion of the return of goods	Be able to check the classification of the products through the system.	A system to record all supplier's information	System to automatically update inventory status in real-time.	System to detect cashing errors like double scanning or missing out scanning an item.

Branch Manager's Persona



“Data accuracy is the key to Success”

Edward

Being a trusted branch manager of the CEO of GetFreshFood, Edward’s responsibilities goes way beyond overseeing the branch’s operations. While he has a keen eye for details, he believes he could be way more effective if a good IT solution could aid him in areas such as the end of day sales record. The 50% of his time spent on tallying the record and writing an error report daily could be minimized or completely eradicated if the IT solution is done right. This will make Edward a way more effective manager.

Responsibilities

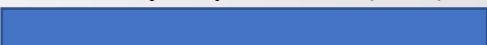
- Daily briefing to staff before the supermarket opens at 7.30am.
- Scheduling daily shifts.
- Compile and analyze daily sales record at the end of the day in order to check if there are sales discrepancies.
- Classify products based on sales volume.
- Implementing Pricing changes after discussion with CEO.
- Weekly meeting with CEO to analyze sales records, report sales discrepancies and plan orders.

Metrics

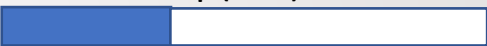
IT literacy (3/5)



Industry Experience(5/5)



Leadership(2/5)



Data Analysis Skills(4/5)



Key Attributes

POSITION	Branch manager
AGE	56 years old
STATUS	Married
WORK STATION	The whole supermarket
LOCATION	Singapore
LANGUAGE	Fluent in English
IT LITERACY	Competent in Excel
	Familiar with handheld devices
	Familiar with bar codes system

Frustrations

- Having to write loss of sales report due to Cash collected by Cashiers not tallying with Sales Records.
- Stocks, inventory and sales record do not tally and having to spend time correcting the reports.
- Barcode scanners are not used correctly and sufficiently by cashiers causing an inaccurate sales reports.
- Promoters sometimes do not update new price labels on products.
- Expired goods are not cleared off the shelves fast enough.









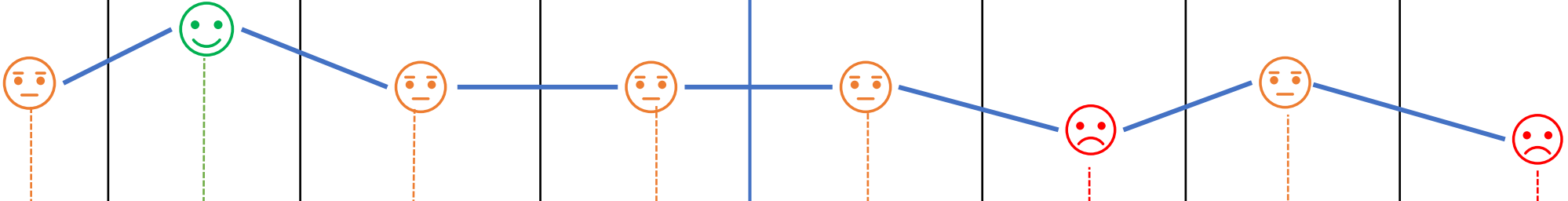
Influencers

- User Friendly Interface
- Fast and responsive
- Stable with low downtime
- Omit Social Media Connectivity

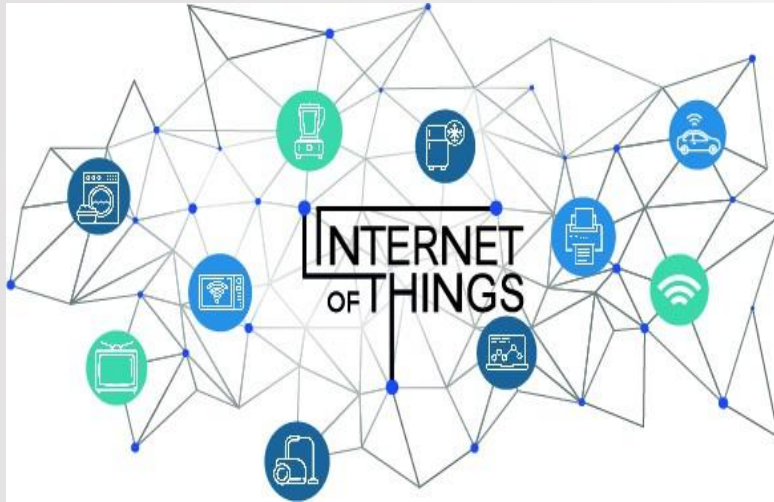
Primary Use

- To be able to view a Dashboard using real-time data.
- To be able to compile sales data automatically and accurately.
- To be able to automatically categorize and sort products based on sales volumes.
- To be able to ensure that the data input from other sources are accurate.
- To be able to change product pricing.

Branch Manager's Journey Map

Stages of Journey	Morning Routine				Evening Routine			
Activities	Daily briefing with all the staff 	Schedule staff shifts for the next day 	Classify products and transfer it to the spread sheet 	Change Product prices in the product form 	Supervise the store front before shutting down 	Tally end of day sales record 	Evaluate how well goods are sold 	Write loss-of sales report to be sent to CEO weekly 
Feelings								
Experiences	Annoyed with the need to remind staff of potential errors made.	Happy because it's the easiest task and non-stressful.	Tedious to manually classify each product based daily sales records which often have errors.	Frustrated that product prices are not updated on the store front by the promoters.	Happy that it is end of the opening hours. But not looking forward to doing reports.	Very frustrated that 50% of his time daily is wasted on rectifying discrepancies.	Frustrated that the records are not accurate when doing evaluation.	Very frustrated to inform the CEO of loss-of-sales because sales discrepancies could not be solved.
Expectations	Staff be able to minimize mistakes.	Easily accessible staff information to speed up the process.	A system able to recommend categories for the products based on sales volumes.	A system able to automatically change the prices on the product shelves.	Staff able to close the store without supervision.	A system that can improve the workflow to eradicate manual work.	A system that could filter and rank sales.	A solution to automate recording of sales and immediately notify CEO when problems occur.

Proposed Technologies

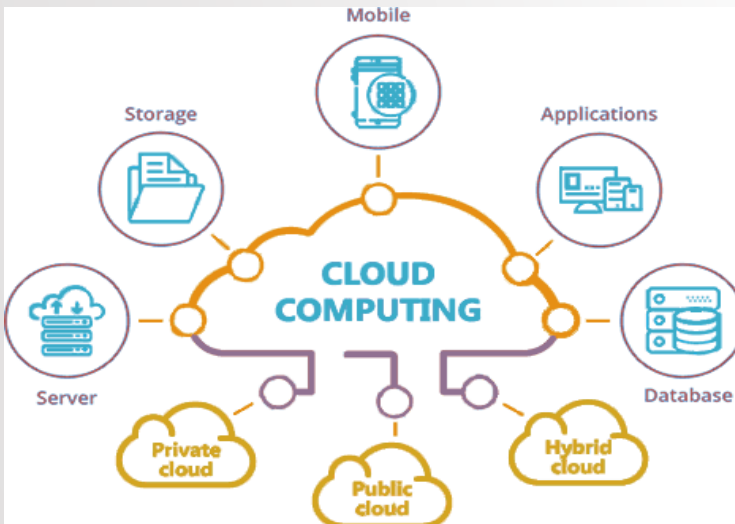


Internet of Things

The interconnection via the internet of computing devices embedded in everyday objects, enabling them to send and receive data.

Accurate
and Real-
time Data

Data-driven
Decision Making



Cloud Computing

- The practice of using a network of remote servers hosted on the internet to store, manage, and process data, rather than a local server or a personal computer.
- Scalability
- Data Safety