Consumer Interaction in Store

Locating products via crowdsourcing

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Disposition

- Context
- Mind map
- Problem
- Approach
- Related work
- Work plan

Context - Coop Case 2

Coop is planning to create a new engaging experience for in-store customers. Coop wants to integrate their warehouse with augmented reality capability in order to give a different experience when buying products. The system could for example tell the history, manufacturing informations or nutritional values for each product.

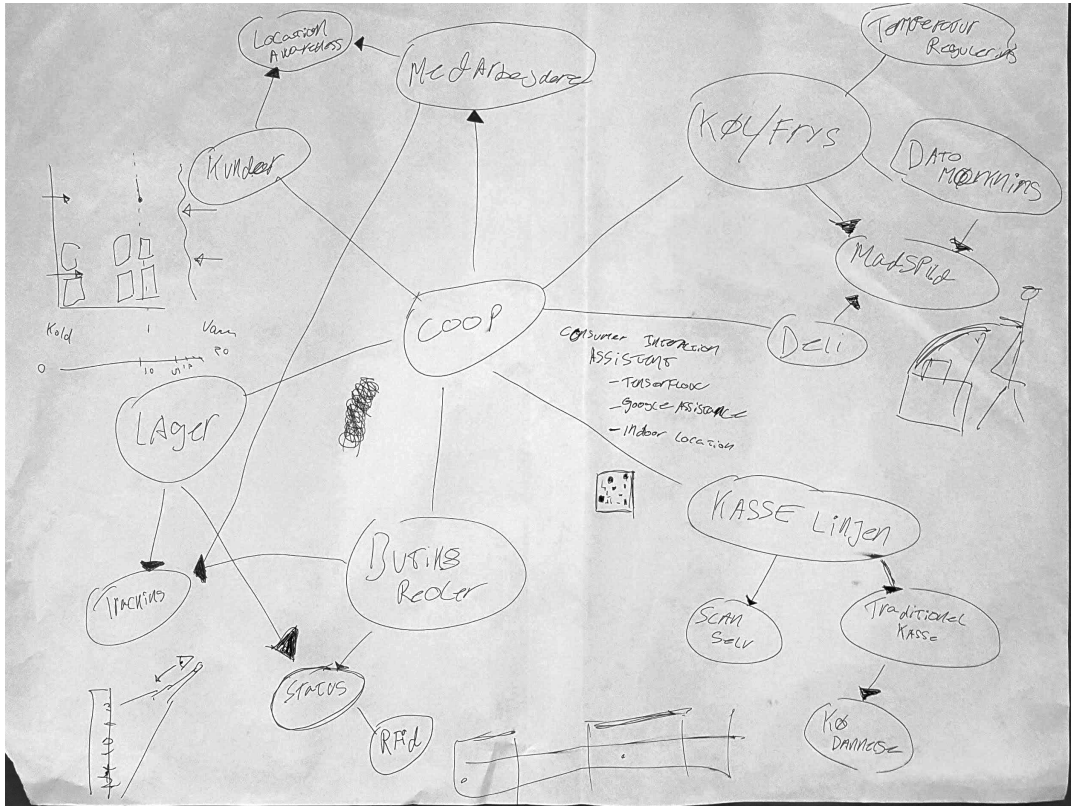
Use Case

Coop has made their shelves to be interactive using augmented reality. In particular the fresh food shelves.

Technology

- Computer Vision
- Embedded Programming
- iOS/Android Programming

Mind map


Location Awareness
Kunder
Kold
Varm
Lager
COOP
Consumer Interaction Assistants
Deli
Kø/Frys
Temperatur Regulering
Dato Mærkning
Madspild
Kasse Linjen
Scan Selv
Traditionel Kasse
Kø Dannese
Tracking
Status
RFid

Problem

There is no good way to map products to a physical location in a store.

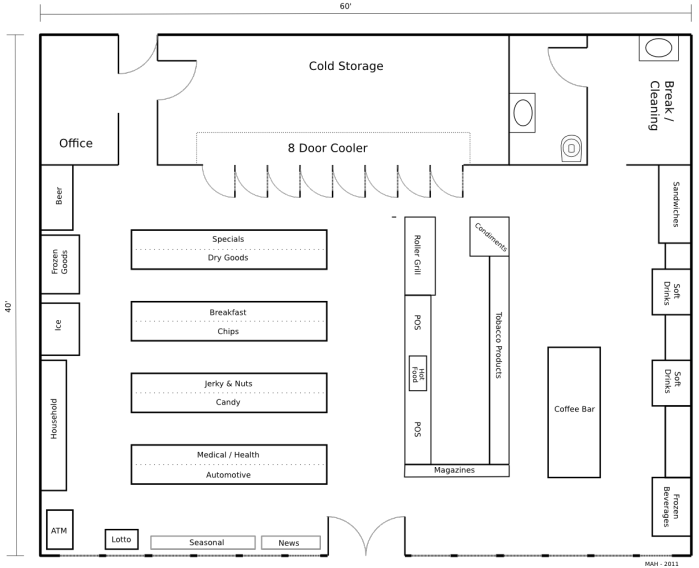
Customers has to search for it themselves or ask an assistant for help.

Rearranging the store will make any prior mapping obsolete.

Approach

We intent to locate the products in the store by a 3 step process:

1. Tracking the customer path throughout the store
2. Tracking the products from the check out
3. Cross-reference each customer's path and checkout list with each other.

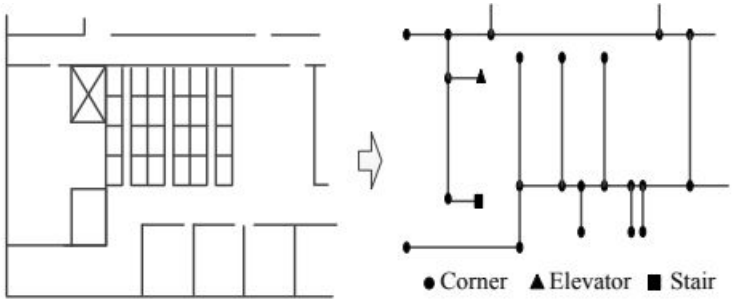


Related work

A Robust Crowdsourcing-Based Indoor Localization System
Zhou et al. 2017

Smartphone-Based Indoor Localization with Bluetooth Low Energy Beacons
Zhuang et al. 2016

An indoor positioning algorithm and its experiment research based on RFID
Bingbing et al. 2014



Work plan

- Build rapid prototype
  - Raspberry Pi as access point
  - LoPy as BLE receivers
  - Beacons in the store trolleys and baskets
  - Java program
- Conduct experiments
  - Laboratory vs field?