



CROWN

Final Design

TEAM 4

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Our Problem Statement

How can Crown Equipment help make the warehouse **safer**, more **productive** and drive profits to the warehouse by **reducing their resource needs**?

Main Issues

(1)Difficult to employ desirable staff strength

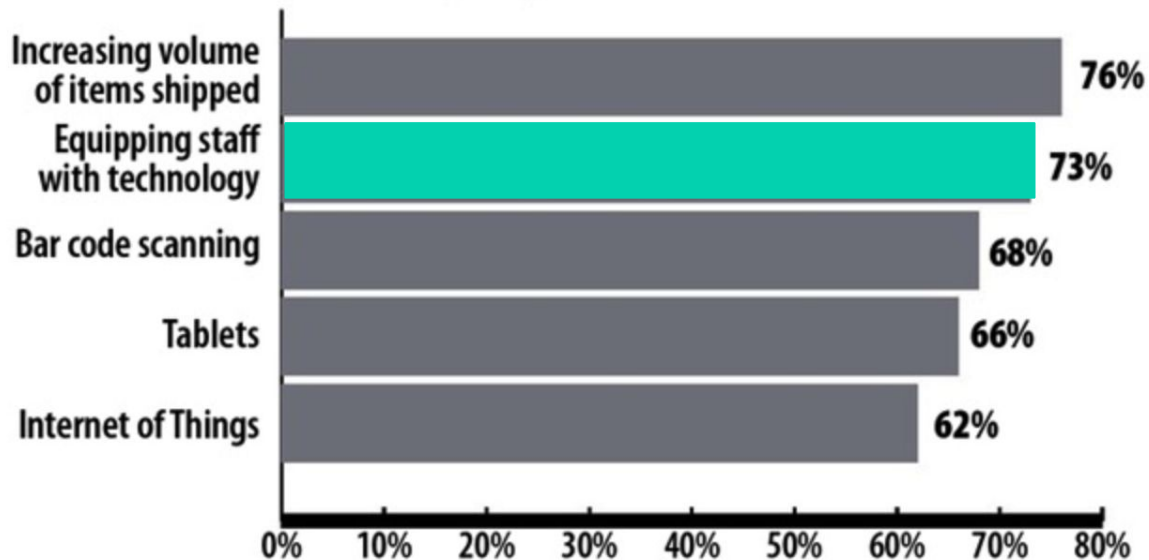
(2)Existing staff are impermanent

(3)It takes around \$10,000 to train an operator and make him/her OSHA compliant

(4)Forklifts account for around 85 deaths every year

Our Analysis

Processes and tools investing in by 2020:



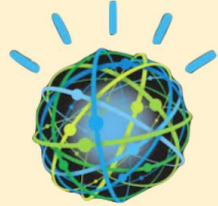
Source: Zebra Technologies' Warehouse Vision Study of 1,378 respondents from 12 countries

Our Solution - Warehouse 2030

MYO BAND



AR GLASSES



Ava
The next step
for InfoLink



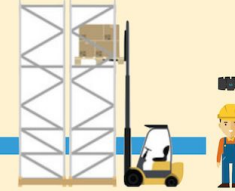
Keeps track of
Inventory and Tasks



Inputs Tasks into Ava



Ava distributes task
amongst the fleet. They
compute optimal routes
and retrieve order



For Higher and Larger
Storing, Operator
controls with MYO from
a distance with option
for gamification



Go back home happy
and safe



Get data with different
levels of abstraction



Better Impact
Communication and
Management



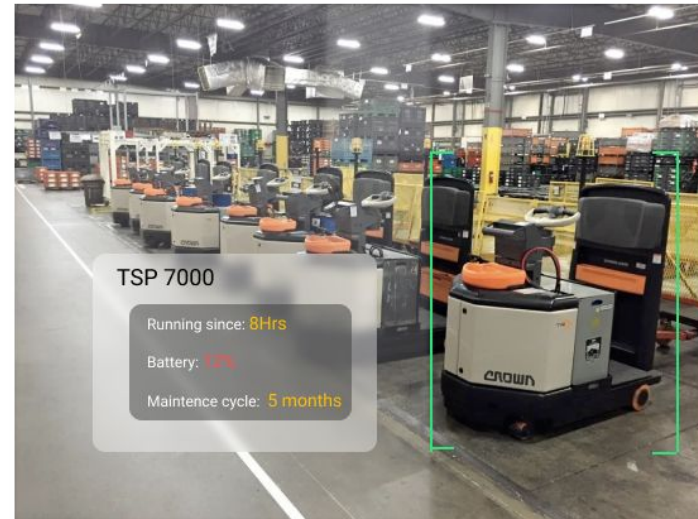
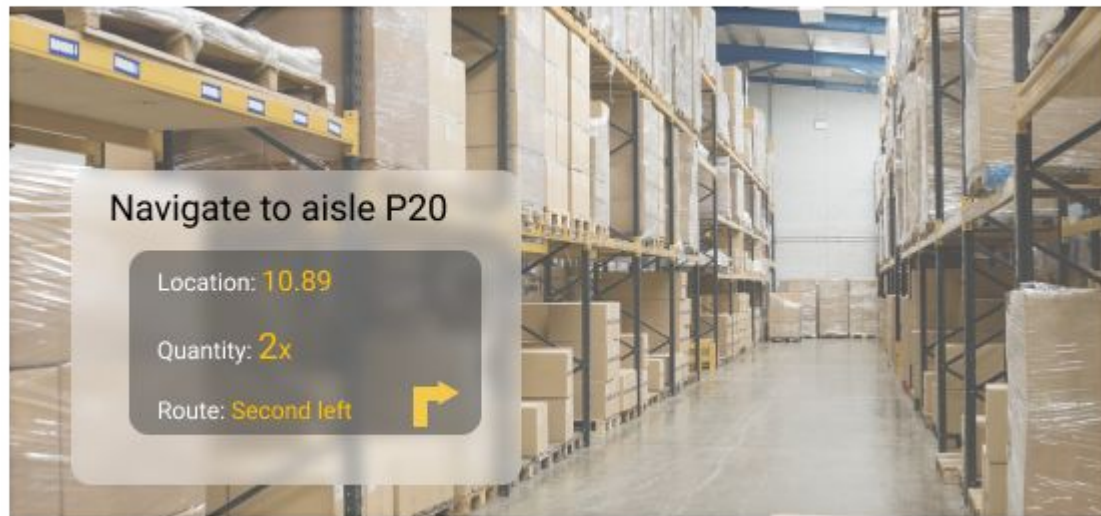
Better Impact
Communication and
Management



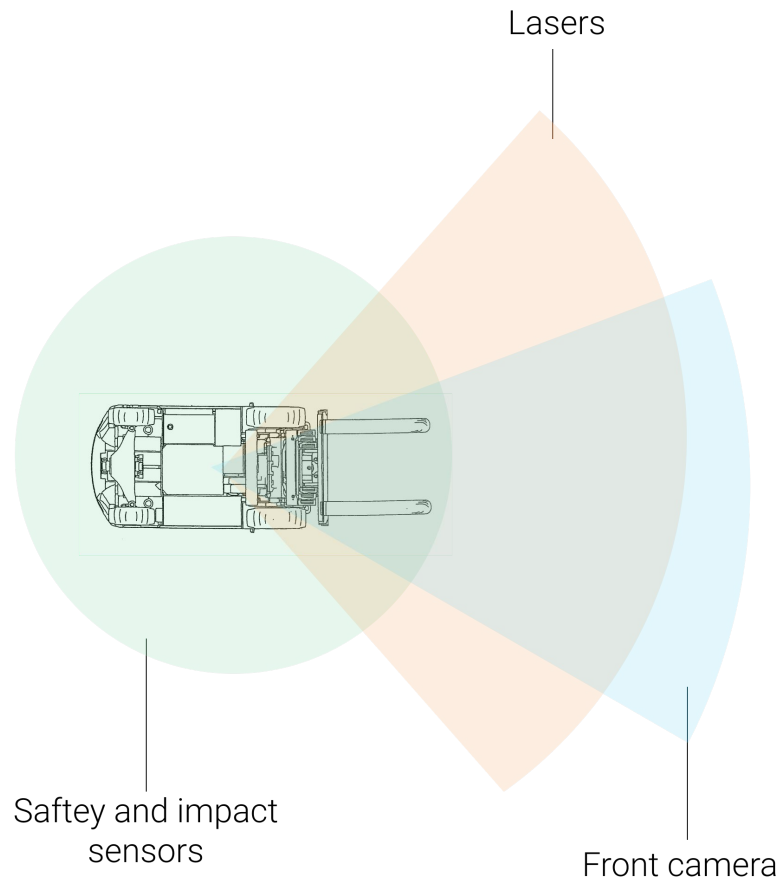
Employee management,
retention and sufficient
workforce all throughout
the year



Hybrids



Hybrids



Customer Segments



Warehouses



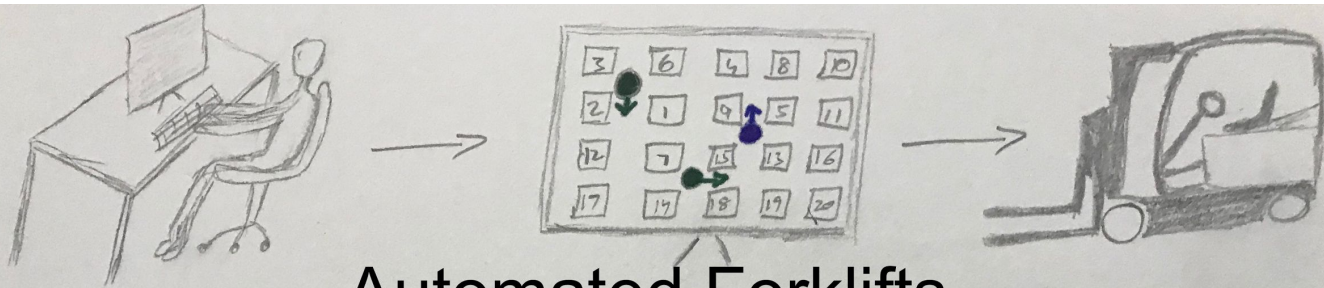
Age: 25-50

Work: Warehouse Manager

Storyboard

Automated Forklifts

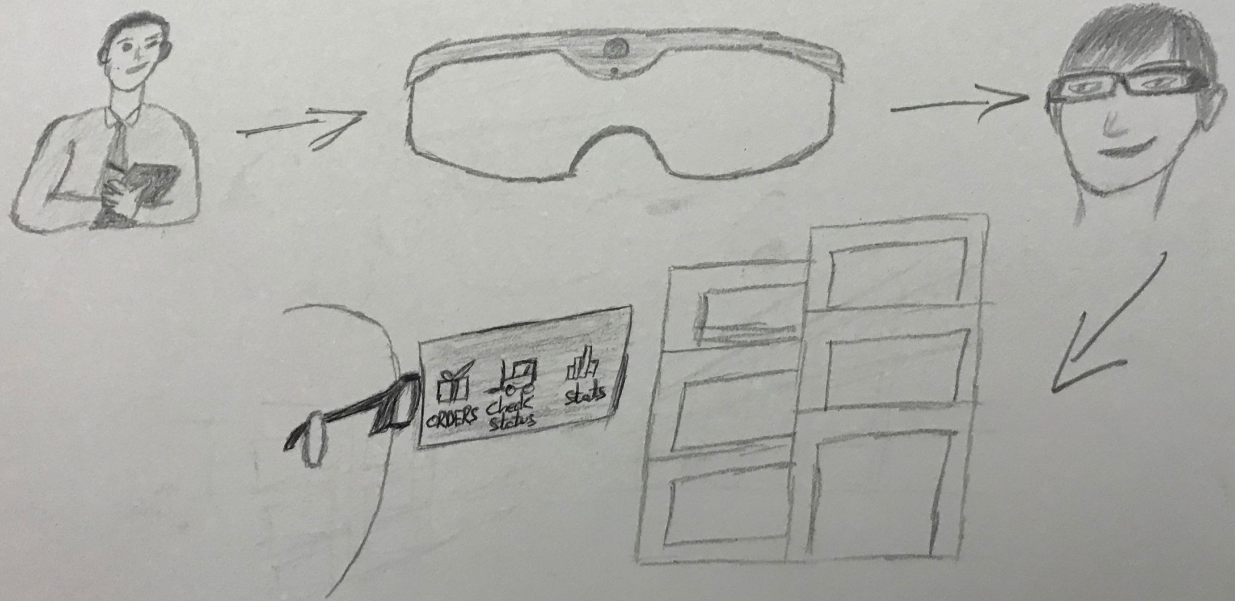
- A controlling station will have warehouse map
- Control station will give commands to the forklift



Automated Forklifts

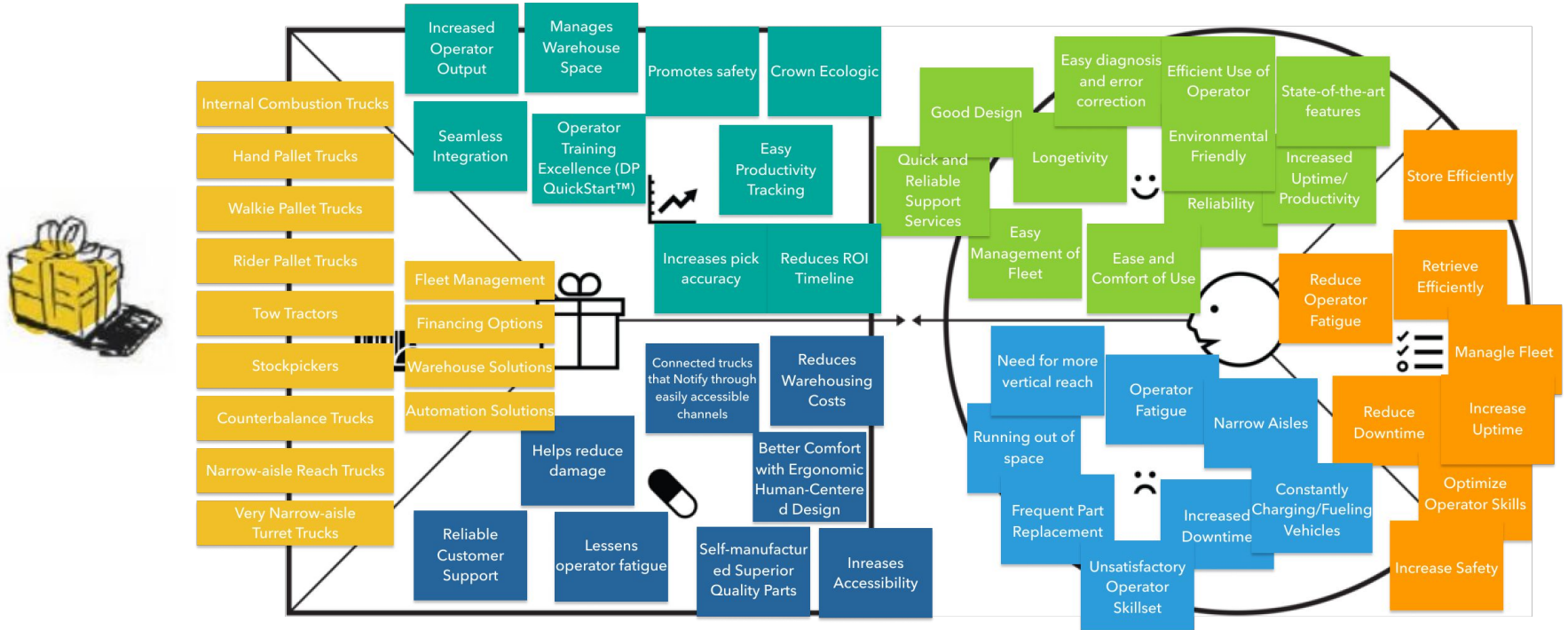
AR Glasses

- Manager will have AR glasses
- Manager can go around the warehouse to check all stats, and productivity



AR Glasses for Manager

Value Proposition



Value Proposition



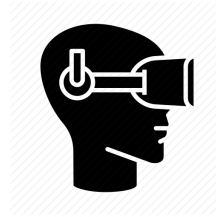
Fleet minimization



Automation



Sustainability
Safety
Save Time



Superior Quality

Channels



Dealers



Website



Retailers

Customer Relationships



Personal Assistance

Automated services

Key Resources



- Manufacturing plant
- Manufacturing machines
- Point of sales systems
- Distribution network
- Raw material



- Infolink platform
- Intellectual patents for AGVs
- Massive financial support from the company



- Human resource
- Developers
- Designers
- Workers
- Managers, etc

Key Activities



- Development & manufacturing of AGV forklifts
- Creating test environment
- Testing those forklifts in test environment
- Selling the new product line to the customers



- Platform development
- Design
- R&D for intellectual properties
- Filing for patents for AGVs
- Massive financial support from the company



Key Partnerships



Automated driving forklifts



Google Glass



MYO Armband

Key Partnerships



- Automated driving forklifts
- Re-invent the automated wheel and delay or use existing resources.
- Big companies like Uber, Google have either partnered or bought CMU department onboard.

Key Partnerships



- Google Glasses
- Glass EE is for industry workers in their workplace.
- Big companies like GE, Boeing, DHL and Volkswagen have already started testing it in their workplace.

Key Partnerships



- Gestures to access forklifts
- If Crown wants this feature to be exclusive they can buy it or put clause in their contract.
- Customized gestures for industry requirement.

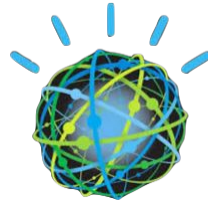
Revenue Streams



Asset sale of the semi-automated vision guided forklifts or Renting forklifts



A cut from the Asset sale for providing more channels for Thalmic Labs



Asset Sale for initial set-up
Subscription fee for additional features



A cut from the Asset sale of Smart Safety Glasses for providing more channels for

Cost Structure



Value Driven - Will never compromise quality, offers personalized services

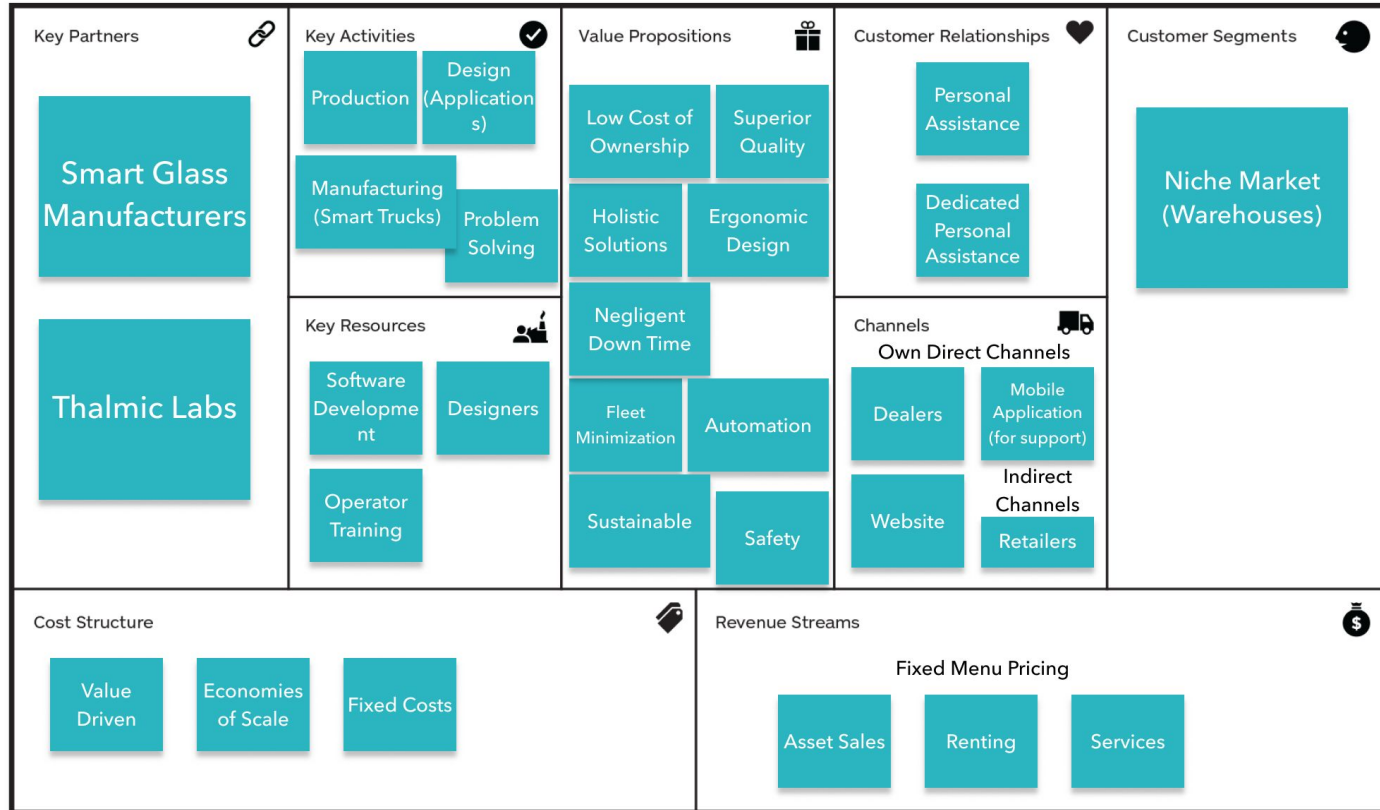


Fixed Costs - Manufacturing has mostly high proportion of fixed costs



Economies of Scale

Summary



With our Solution...



Is the warehouse a safer place?

YES



Has the immense need for human resource reduced?

YES



Has the cost of training and maintaining staff reduced?

YES



Has the uptime increased?

YES



Is there efficient fleet management?

YES