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Spot SECURE PACKAGE STORAGE



PROJECT VISION: to create a secure and efficient storage location for delivered packages

THE PROBLEM

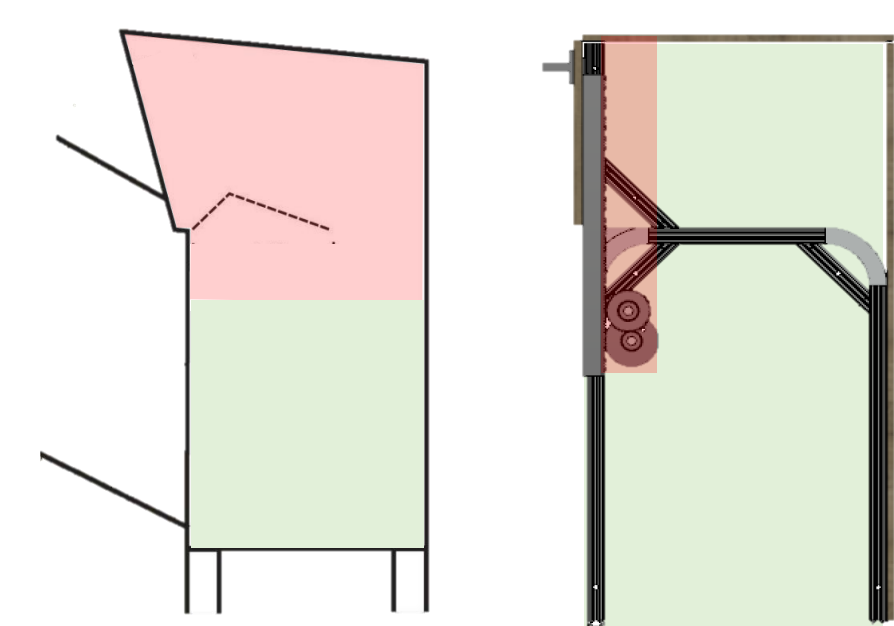
- E-commerce sales projected to grow over **50% by 2022**
- Average American has **4 packages** delivered per month
- Average monthly e-commerce spending: **\$187 – \$221**
- 11 million packages** reported stolen in 2016

Key Stakeholders

- Individual homeowners
 - 200M** in United States
- Package delivery companies
 - USPS, UPS, FedEx
 - 45M** delivered per day
- E-commerce companies
 - Amazon, Walmart, EBay

BENCHMARK COMPARISON

Product	Price	Storage
ElephantTrunk	\$262	2.3FT ³
LandPort	\$600	5.7FT ³
Parcel Box	\$700+	6.4FT ³
Spot	\$300	Up to 8.1FT³



Traditional Parcel Box
 45% wasted space
PARCEL PRODUCTS SPOT
 10% wasted space

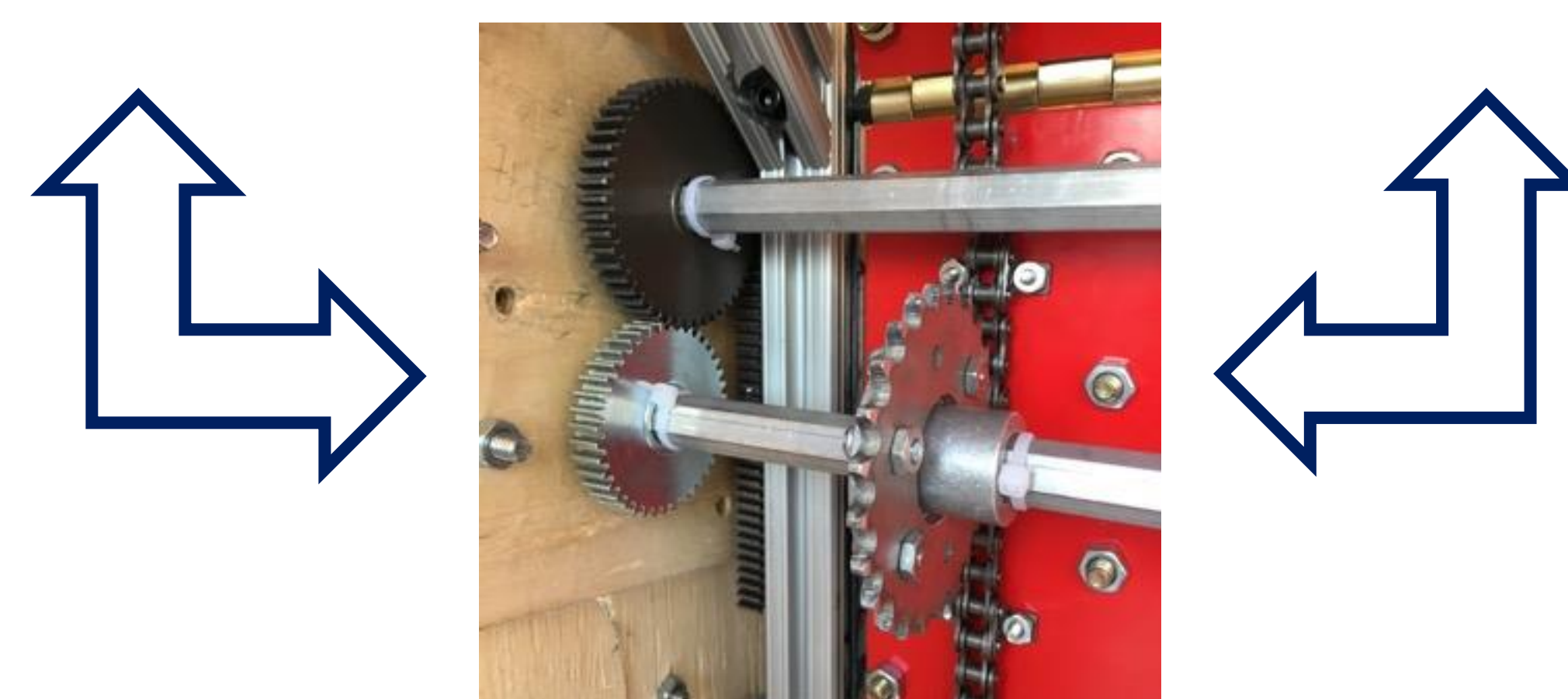
Mechanical Solution

Theft-proof sliding door mechanism controlled directly through user input

Open
 Delivery platform
 Storage bay protected



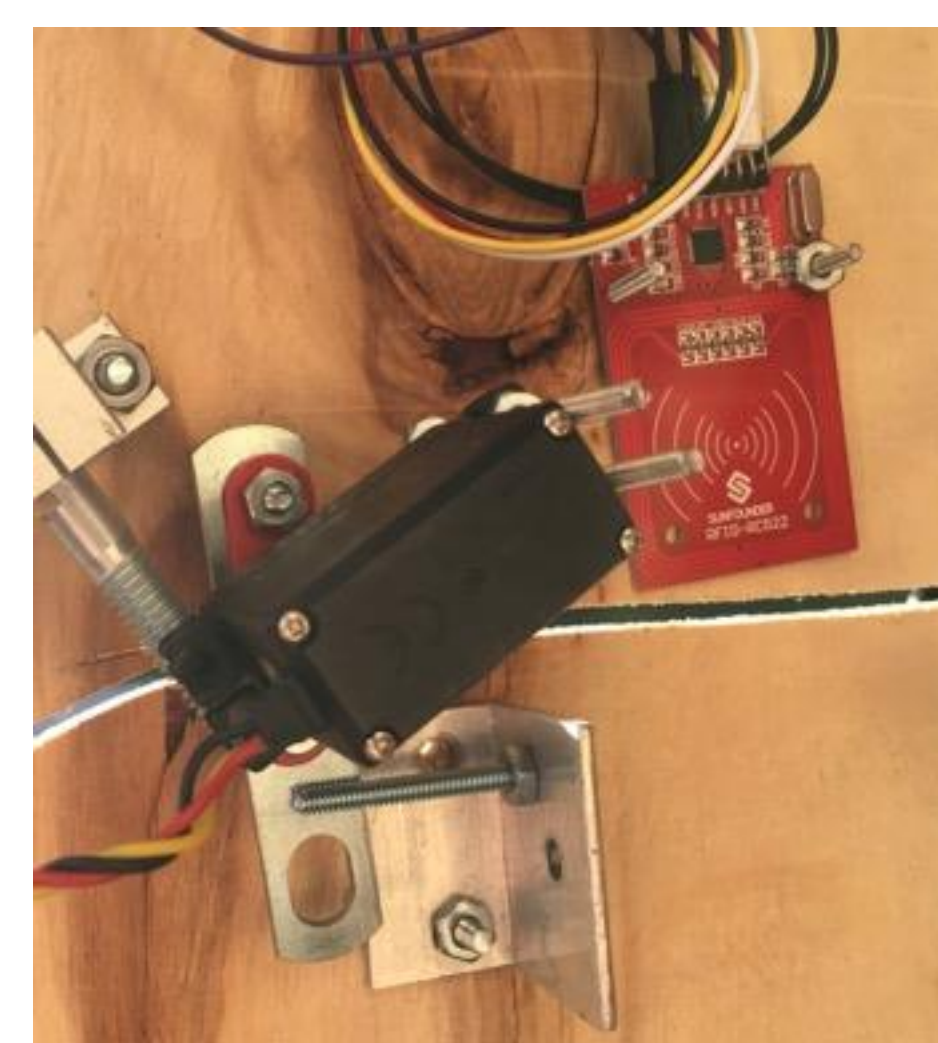
Closed
 Package drops
 Deliveries secured



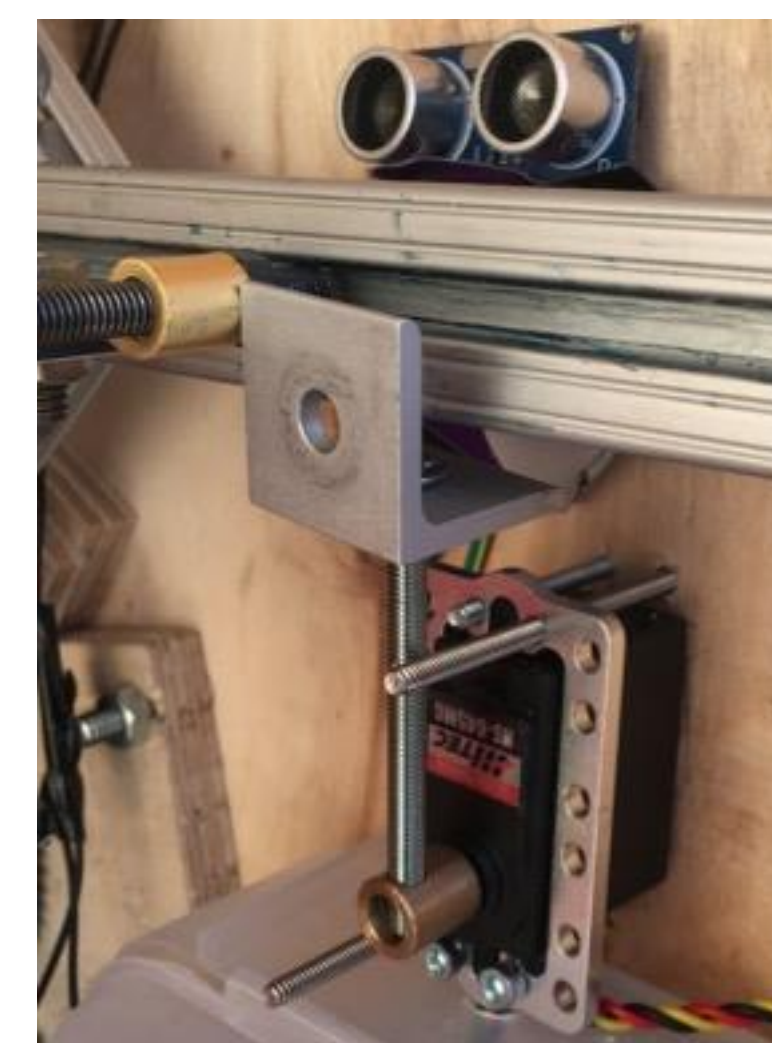
Gear – Sprocket System

Electrical Features

- Capacity lock system
- RFID key-fob retrieval
- Tampering alarm
- Email notifications



RFID Servo Lock



Overflow Servo Lock

FINAL PROTOTYPE DESIGN



Inner Frame



Closed



Open

TESTING

Testing Method	Result
Theft Attempts	10/10 thefts deterred
Durability – Wind	0 movement at 22mph
Durability – Weight	20lbs fully supported
Ease of Use – Delivery	Average delivery time: 7s
Ease of Use – Retrieval	Average retrieval time: 5s

FINANCIAL ANALYSIS

Component	Prototype	Production
Frame	\$141	\$30
Mechanism	\$268	\$148
Electronics	\$18	\$37
Total	\$427	\$215

Estimated retail price: **\$300** 5-Year rate of return: **33%**
 Profit margin: **20%**
 Unit sales per year: **800**

Initial start up cost:
\$13,900