Where are my SCISSORS?!?
Most Difficult to Keep Track Items

- 45% TV Remote
- 24% Shoes
- 33% Cell Phone
- 27% Glasses
- 20% Wallet
- 28% Keys

Most Difficult to Keep Track of Items.
Consequences of Forgetfulness

- late to work or school: 60%
- missed an appointment: 49%
- argued with a significant other: 35%
- missed a plane, train, or bus: 22%
Wasted Time and Money Every Year

looking for lost items
2.5 Days

replacing misplaced items
$2.7 Billion
Keep Track of All Your Things
Object Detection in Action

In Light

Low Light
Search for Items

<table>
<thead>
<tr>
<th>Room</th>
<th>Time</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Matt’s Room</td>
<td>12:34 PM</td>
<td>02/21/2020</td>
</tr>
<tr>
<td>Not In Home</td>
<td>11:01 PM</td>
<td>04/11/2020</td>
</tr>
<tr>
<td>Hallway Closet</td>
<td>09:15 AM</td>
<td>03/20/2020</td>
</tr>
</tbody>
</table>
Typical Home Setup
Make Your Home Smarter

**Inception**
- 50 Common Items
- Rapidly Add New Item Detection

**Services**
- Home Insurance
- Replenishment

**Platformize**
- 3rd Party Apps
People Want It, Cameras are Fine

- 70% want the product
- 73% fine with cameras and images staying local
Market Landscape

Inventory Apps
- Sortly
- Nest

Item Trackers
- Tile
- Pixie
- PopID

Smart Homes
- ring
- Nest

Cashierless Stores
- Amazon Go
- Now
People are Willing to Pay for It

$500 + $10 = TAM

30%  57%  $21B
# How We Make Money

## Standard Home

<table>
<thead>
<tr>
<th>Rooms</th>
<th>Monthly Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>4 Rooms</td>
<td>$599</td>
</tr>
<tr>
<td>Each Additional Room (Up to 8 Total Rooms)</td>
<td>$100</td>
</tr>
</tbody>
</table>

## Large Home

<table>
<thead>
<tr>
<th>Rooms</th>
<th>Monthly Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>10 Rooms</td>
<td>$1099</td>
</tr>
<tr>
<td>Each Additional Room (Up to 20 Total Rooms)</td>
<td>$125</td>
</tr>
</tbody>
</table>

## Services

<table>
<thead>
<tr>
<th>Services</th>
<th>Monthly Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Home Insurance</td>
<td>$10</td>
</tr>
<tr>
<td>Cloud Backup</td>
<td>$5</td>
</tr>
<tr>
<td>Replenishments</td>
<td>$5</td>
</tr>
<tr>
<td>Home Safety</td>
<td>$10</td>
</tr>
<tr>
<td><strong>Bundle</strong></td>
<td><strong>$25</strong></td>
</tr>
</tbody>
</table>
Our Timeline

- **Seed Funding**
  - Now
- **MVP**
  - 12 Months
- **Prototype**
  - 6 Months
- **Ecosystem**
  - 18 Months
- **Product Launch**
  - 24 Months
Go to Market Strategy

1. **Cheerleaders**
   - Trade Shows
   - Tech Conf (AI, Vision, Big Data)
   - Tech Reviewers and Influencers

2. **Retail Channel Demos**
   - Smart Device Retailers
   - Home Improvement Stores

3. **Partnerships**
   - Security Systems
   - Home Builders and Realtors

4. **Targeted Ads**
   - HGTV
   - FB, YouTube
Projected Growth and Financials

<table>
<thead>
<tr>
<th>Year</th>
<th># Unit Sales (Millions)</th>
<th>Revenue</th>
<th>COGS</th>
<th>GM</th>
<th>OPEX</th>
<th>Operating Income</th>
<th>Operating Income %</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>0.05</td>
<td>$33.45</td>
<td>$23.75</td>
<td>29%</td>
<td>$17.19</td>
<td>$(7.49)</td>
<td>-22%</td>
</tr>
<tr>
<td>2</td>
<td>0.12</td>
<td>$80.28</td>
<td>$57.00</td>
<td>29%</td>
<td>$38.06</td>
<td>$(14.78)</td>
<td>-18%</td>
</tr>
<tr>
<td>3</td>
<td>0.30</td>
<td>$200.70</td>
<td>$142.50</td>
<td>29%</td>
<td>$62.50</td>
<td>$(4.30)</td>
<td>-2%</td>
</tr>
<tr>
<td>4</td>
<td>0.60</td>
<td>$401.40</td>
<td>$285.00</td>
<td>29%</td>
<td>$106.00</td>
<td>$10.40</td>
<td>3%</td>
</tr>
<tr>
<td>5</td>
<td>1.20</td>
<td>$802.80</td>
<td>$570.00</td>
<td>29%</td>
<td>$192.00</td>
<td>$40.80</td>
<td>5%</td>
</tr>
</tbody>
</table>
Request $500K for MVP
Responses to Questions
Why now or Tech feasibility?

- **Advances in Image Recognition in recent Years**
  - Computer Vision, in general sense, is clearly far from being solved problem.
  - That being said the technology has gotten fairly good. Both in terms of
    - detecting a finite set of objects.
    - At performance range which makes this use case viable.
    - Example (see next slide for an Image that we processed with [Yolo V3](#))

- **Compute Advancement**
  - Viable compute if available
  - For example SoC - Nvidia Jetson Xavier NX offers 21 TOPS (INT8) @ $399
  - Price to performance expected to get better in coming years looking at pace of development.
Can you really detect Scissors?

**Corollary Question**: What about it in low light situation.

We think it's a very good question.

Before we answer it we have included a similar image to one shown above but this time the image was shot at night with no direct light with ambient light from other rooms flowing and from ceiling height as earlier.

Detector is still able to detect scissors on the table.

...
The reality is, it is a complex problem. It has many layers and a fine balancing act.

- What was the resolution of image? (more bandwidth)
- What was the image size fed to algo; could we have split it? Could we do background elimination to improve performance focus to feed large image. (more processing)
- Was there additional ir lighting (ir), which we had factored for low light in our cost model.
- Specialized Small Object Algos (Feature Pyramid Networks)
- Would it still be tech feasible?

Based on preliminary testing and research we this we can address this.
How did you estimate the Market Size?

Our product is new and is creating a new market and merging different markets. So we defined our TAM by value theory.

- 120 Million Households in USA
  - With our survey, 30% of people were ready to pay over 500$ for our product.
  - Out of this 30%, 57% were ready to pay a 10$/month subscription for value added services
  - $120 Million \times 30\% \times (500\$ + 57\% \times 10\$ \times 12) = 20.5 Billion USD

Additional Market research-

- Online market research by pixie in 2017 shows,
  - Americans on an average spend 2.5 Days a year searching for lost items.
  - Average income of Americans is 56,000$.
  - 2.5 Days a year with average income of 56,000$ for 156 Million employed Americans is 60 Billion USD
  - On an average people spend 2.7 Billion $ every year replacing lost/misplaced items.
    - This only accounts for money spent replacing items, does not account for the consequences people face due to lost items. (missing meetings, air travel)

- 85% of Households in USA have home insurance.
  - Average house insurance premium is 1100$/year.
  - House insurance market size is 120 Million \times 85\% \times 1100\$ = 112 Billion $.
  - Major coverage in house insurance claims is personal property.
  - Our product with value added service in the future can help homeowners claim personal property loss.
Market Size

- Replacing Lost Items: $2.70
- Days spent searching lost items: $60.00
- House Insurance Market size: $112.00
- Searchable Home Market size: $21.00
APPENDIX
Financials

- **OPEX**
  - Salary Average: 300,000$/year
  - Fulfillment By Amazon: FBA online Calculator estimates 50$/Unit
  - Marketing expense ~20% first 2 years to penetrate market
  - R&D expense at 5% first 2 years to deploy new services
  - Employee headcount to increase with Revenue growth
## Projected Growth and Financials (More)

<table>
<thead>
<tr>
<th>Year</th>
<th># Unit Sales (Millions)</th>
<th># Emp</th>
<th>Revenue</th>
<th>SG&amp;A (salary)</th>
<th>R&amp;D</th>
<th>Marketing</th>
<th>FBA</th>
<th>Total</th>
<th>Market % (Revenue)</th>
<th>R&amp;D % (Revenue)</th>
<th>Unit Growth</th>
<th>Revenue Growth</th>
<th>FBA as revenue</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>0.05</td>
<td>20</td>
<td>$33.45</td>
<td>$6.00</td>
<td>$2.00</td>
<td>$6.69</td>
<td>$2.50</td>
<td>$17.19</td>
<td>20%</td>
<td>6%</td>
<td></td>
<td></td>
<td>7%</td>
</tr>
<tr>
<td>2</td>
<td>0.12</td>
<td>40</td>
<td>$80.28</td>
<td>$12.00</td>
<td>$4.00</td>
<td>$16.06</td>
<td>$6.00</td>
<td>$38.06</td>
<td>20%</td>
<td>5%</td>
<td>140%</td>
<td>140%</td>
<td>7%</td>
</tr>
<tr>
<td>3</td>
<td>0.30</td>
<td>75</td>
<td>$200.70</td>
<td>$22.50</td>
<td>$5.00</td>
<td>$20.00</td>
<td>$15.00</td>
<td>$62.50</td>
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<td>2%</td>
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<td>1%</td>
<td>100%</td>
<td>100%</td>
<td>7%</td>
</tr>
</tbody>
</table>
Financials

- Unit cost 599$
- BOM 425$
- Manufacturing --> Assemble --> Package: 50$
- COGS: 425$ + 50$ = 475$
- Subscription COGS: 3$/month

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<td>$602.80</td>
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<td>29%</td>
<td>$152.00</td>
<td>$(40.50)</td>
<td>6%</td>
</tr>
</tbody>
</table>
## On Device Computing

<table>
<thead>
<tr>
<th>Compute</th>
<th>Normal Home</th>
<th>Large Home</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Cost (not pricing)</strong></td>
<td>$451 ($599)</td>
<td>$611 ($1099)</td>
</tr>
<tr>
<td><strong>Cost B.Down</strong></td>
<td>Compute $331 ($299) Nvidia Jetson TX2 ($12) microSD 64GB ($20) wifi/antenna Cameras $120 (4 Rooms, 8 U)</td>
<td>Compute $431 ($399) Nvidia Xavier NX ($12) microSD 128GB ($20) wifi/antenna Cameras $180 (12 U)</td>
</tr>
<tr>
<td><strong>Performance</strong></td>
<td>20-100 FPS</td>
<td>240 FPS</td>
</tr>
<tr>
<td><strong>(960×544, 480×272, 300×300)</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Capabilities</strong></td>
<td>6 Active Camera</td>
<td>20+ Active Cameras</td>
</tr>
</tbody>
</table>
# SoC Capabilities

<table>
<thead>
<tr>
<th>Compute</th>
<th>Nvidia Jetson TX2</th>
<th>Nvidia Xavier NX</th>
<th>Nvidia AGX Xavier</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Cost</strong></td>
<td>$299</td>
<td>$399 (available 2020 spring)</td>
<td>$999</td>
</tr>
<tr>
<td><strong>Stated Capabilities</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Video Encode:</td>
<td>500MP/sec 4x 1080p @ 60 1x 4K @ 60</td>
<td>2x464MP/sec 6x 1080p @ 60 2x 4K @ 30</td>
<td>2x1000MP/sec 16x 1080p @ 60 4x 4K @ 60</td>
</tr>
<tr>
<td>AI Perf:</td>
<td>1.33 TFLOPs</td>
<td>21 TOPS (INT8)</td>
<td>32 TOPS (INT8)</td>
</tr>
<tr>
<td><strong>Object Reco</strong></td>
<td>24 FPS 1-2</td>
<td>240 FPS 24 - 42(30W)</td>
<td>360 FPS 36-64</td>
</tr>
<tr>
<td>(SSD Mobilenet-V2 (960×544)) Resnet (Full HD)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>OR Capabilities @ 4FPS/Cam</strong></td>
<td>6 Active Camera</td>
<td>Practically Unlimited</td>
<td>Practically Unlimited</td>
</tr>
<tr>
<td><strong>FHD OR</strong></td>
<td>2 Active Camera</td>
<td>6-10 Active Cam</td>
<td>9-16 Active Cam</td>
</tr>
</tbody>
</table>