http://shellpoint.org/blog/2012/08/13/10-shocking-statistics-about-elderly-falls/
Vision

Market

1/3 of people over age 65 fall annually

http://shellpoint.org/blog/2012/08/13/10-shocking-statistics-about-elderly-falls/
90% of falls do not result in serious injury
Vision

Target Price

$3,550

Raizer

https://kohls.com/liftup-products/raizer-lift-chair/?gclid=CjwKCAjwpfzOBRA5EiwAU0ccN2cuPFgXipH5QUQGIKikKWi3Buhgtdt6yInLT0Yzfq8Zg8OwZWWahoCCgIQAvD_BwE
Customer Needs

• Easy to get into
• Requires minimal lifting
• Stable
• Easy to store
• Easy to use
# Product Contract

<table>
<thead>
<tr>
<th>Customer Need</th>
<th>Product Attributes</th>
<th>Engineering Specifications</th>
</tr>
</thead>
<tbody>
<tr>
<td>Is easy to get into &amp; requires minimal lifting.</td>
<td>Height</td>
<td>Minimum height is &lt; 0.15 m.</td>
</tr>
<tr>
<td>Easy to store.</td>
<td>Size</td>
<td>Volume is &lt; 0.3 m³.</td>
</tr>
<tr>
<td>Easy to use.</td>
<td>Usability</td>
<td>Force applied to raise oneself is &lt; 10 N.</td>
</tr>
</tbody>
</table>
Subsystems - Stability

Scissor Lift to Bed Connection

Footrest
Subsystems - Usability

Linear Motion

Rotary Motion

https://www.youtube.com/watch?v=AGn6pPgkZUk
Mockup: Set-Up
Mockup: Results

Stability:
✓ Supports a person’s full weight

Usability:
✓ The crank translates linear to rotary motion
✓ Starts low to ground (0.13 m)
Key Risks

- Fatigue & Comfort of User
- Safety
- Easiness of Getting Into Product
- Relative Location of the Device
- Storage
Looking Forward

- User Testing
- Decrease Weight
- Decrease Storage Volume
- Decrease Operation Time