exhale
no compromise packing

presented by team silver
baggage fees exploding...

$120 million

$3.4 billion

1990

2010
why can’t we just bring it all?
bring what you want...
...and don’t check a thing

eliminate...

checked bags

baggage fees

lost bags

baggage claim
pack
zip
start
go.
pump housing
vacuum ports
vacuum bag
retail price: $300
comparable bag: $200
checked bag round trip: $50
pays for the difference in two trips
cost to customers

$0

$75

$150

$225

$300

gross profit margin: 57%

suitcase: $34

vacuum tech: $30
initial investment  
$500,000

return on investment:  
12%

net present value:  
$3.4 million

breakeven point
future expansion: the exhale luggage series
THANK YOU!
from team silver
Acknowledgements

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Alexea Portner
Karen Sum
Kevin Sheehan
Nancy Serrano-Wu
Janice Sedal
exhale

no compromise packing
“Given the recent costs of checked bags and getting everything you need in just a few bags, I'd say it's very valuable.” -Julie

“I think it is very saleable, especially for people who don't want to pay checked baggage fees, but cannot possibly figure out how to live without their favorite sweater...that won't possibly fit in a normal suitcase.” -Nevan

“I can't believe all that fit... I have to say that's very impressive.” -Darcy
## Pump Selection

<table>
<thead>
<tr>
<th>Type of Pump</th>
<th>Pros</th>
<th>Cons</th>
</tr>
</thead>
<tbody>
<tr>
<td>Manual action</td>
<td>Portable Lightweight</td>
<td>Physically involved Non-intuitive, slow</td>
</tr>
<tr>
<td>DC battery</td>
<td>Portable Easy to use</td>
<td>Bulky batteries Insufficient power</td>
</tr>
<tr>
<td>AC plug-in</td>
<td>Easy to use Extremely Fast</td>
<td>Not portable Loud</td>
</tr>
</tbody>
</table>
### Vacuum Dispersion Design

<table>
<thead>
<tr>
<th>Design</th>
<th>Pros</th>
<th>Cons</th>
</tr>
</thead>
<tbody>
<tr>
<td>Single port</td>
<td>Simpler</td>
<td>Uneven compression</td>
</tr>
<tr>
<td>Multi-port</td>
<td>Even compression</td>
<td>Complex</td>
</tr>
</tbody>
</table>
Vacuum Bag Design

- Dimensions match suitcase
- Easy access zipper, intuitive to pack
- Durable material and airtight zipper
- Quick release removable fittings
Pump Box Design

- Rigid plastic mounting box
- Thermoformed shell
- Directional baffling for sound suppression
Wrinkling Test

Before

After
# Usability Study Volunteers

<table>
<thead>
<tr>
<th>Volunteer</th>
<th>Age</th>
<th>Children</th>
<th>Trips per Year</th>
</tr>
</thead>
<tbody>
<tr>
<td>Darcy Duke</td>
<td>41</td>
<td>None</td>
<td>6</td>
</tr>
<tr>
<td>Nevan Hanamura</td>
<td>30</td>
<td>None</td>
<td>6</td>
</tr>
<tr>
<td>Amelia Servi</td>
<td>24</td>
<td>None</td>
<td>12</td>
</tr>
<tr>
<td>Seth Stollman</td>
<td>49</td>
<td>Three</td>
<td>3</td>
</tr>
<tr>
<td>Julie Creamer</td>
<td>45</td>
<td>Three</td>
<td>12</td>
</tr>
<tr>
<td>Kevin Hause</td>
<td>49</td>
<td>Three</td>
<td>8</td>
</tr>
</tbody>
</table>
1st year
- 75 thousand units
- 1.3 million dollars

5th year
- 120 thousand units
- 21.6 million dollars