

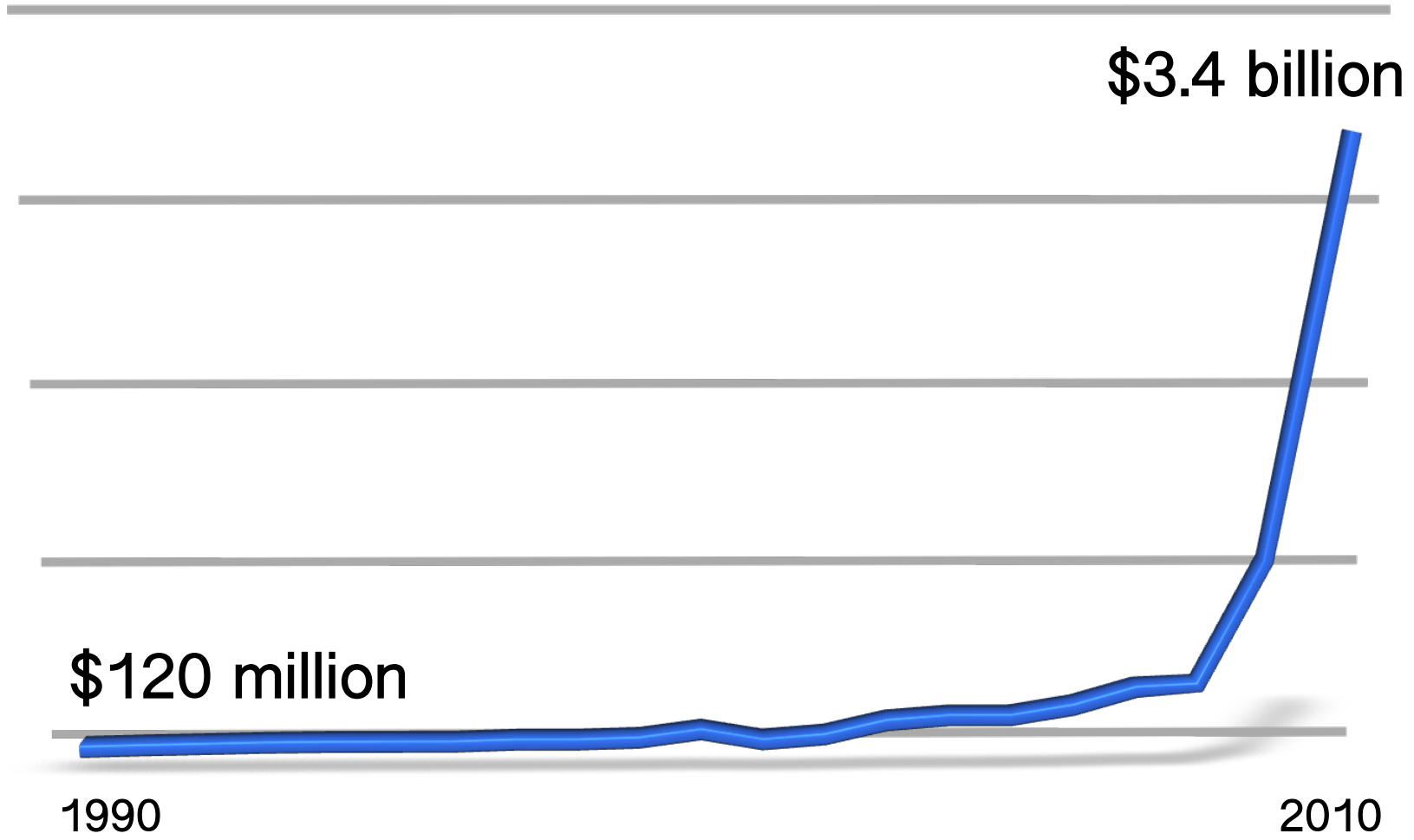
exhale

no compromise packing

presented by team silver



baggage fees exploding...





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



HUGGIES
Snug & Dry

12-18 lb
5-8 kg
2
42

- Long-Lasting Protection
La protection longtemps durée
Protección duradera
- SnugFit® Waistband
Une ceinture SnugFit®
La cintura SnugFit®



pack



zip



start



go.



Vacuum Bag

Control
Panel

Pump
Housing

Vacuum Ports

Suitcase

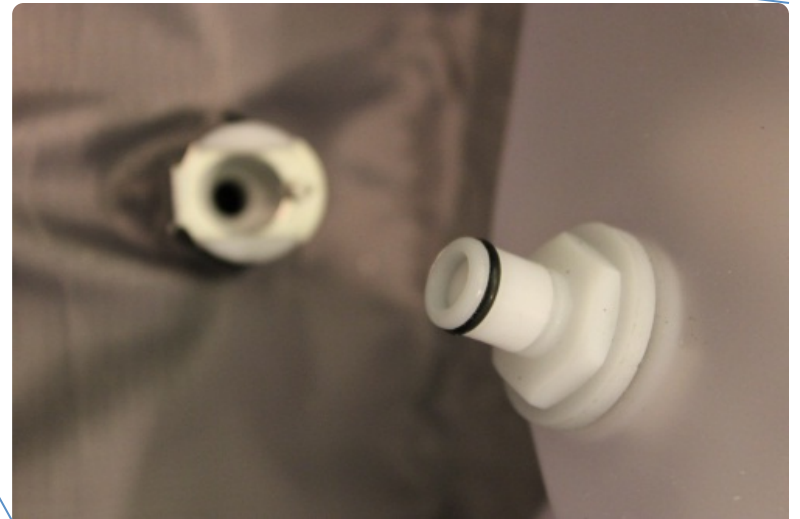


● pump housing

control panel 



vacuum ports 



vacuum bag 



bag exterior 



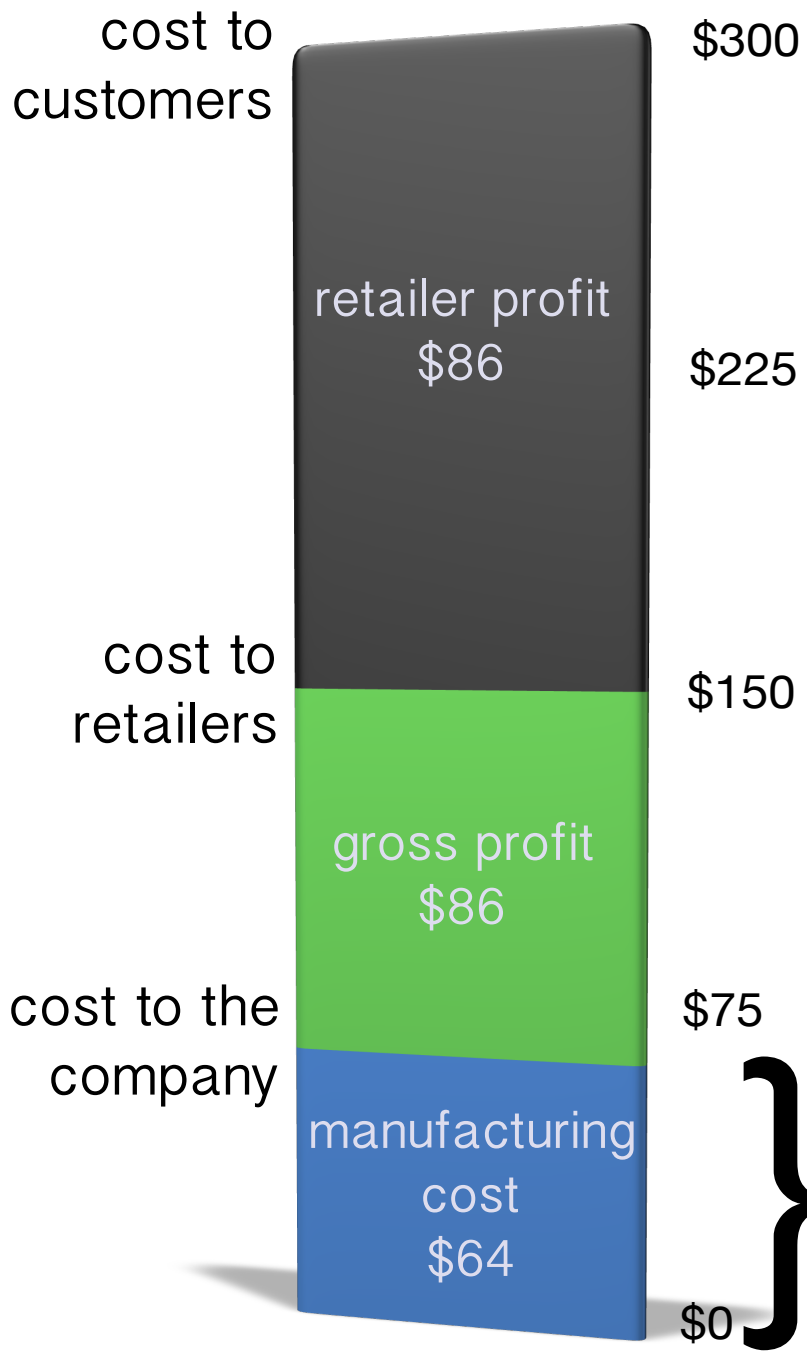


retail price: \$300

comparable bag: \$200

checked bag round trip: \$50

pays for the difference in two trips



gross profit margin: 57%

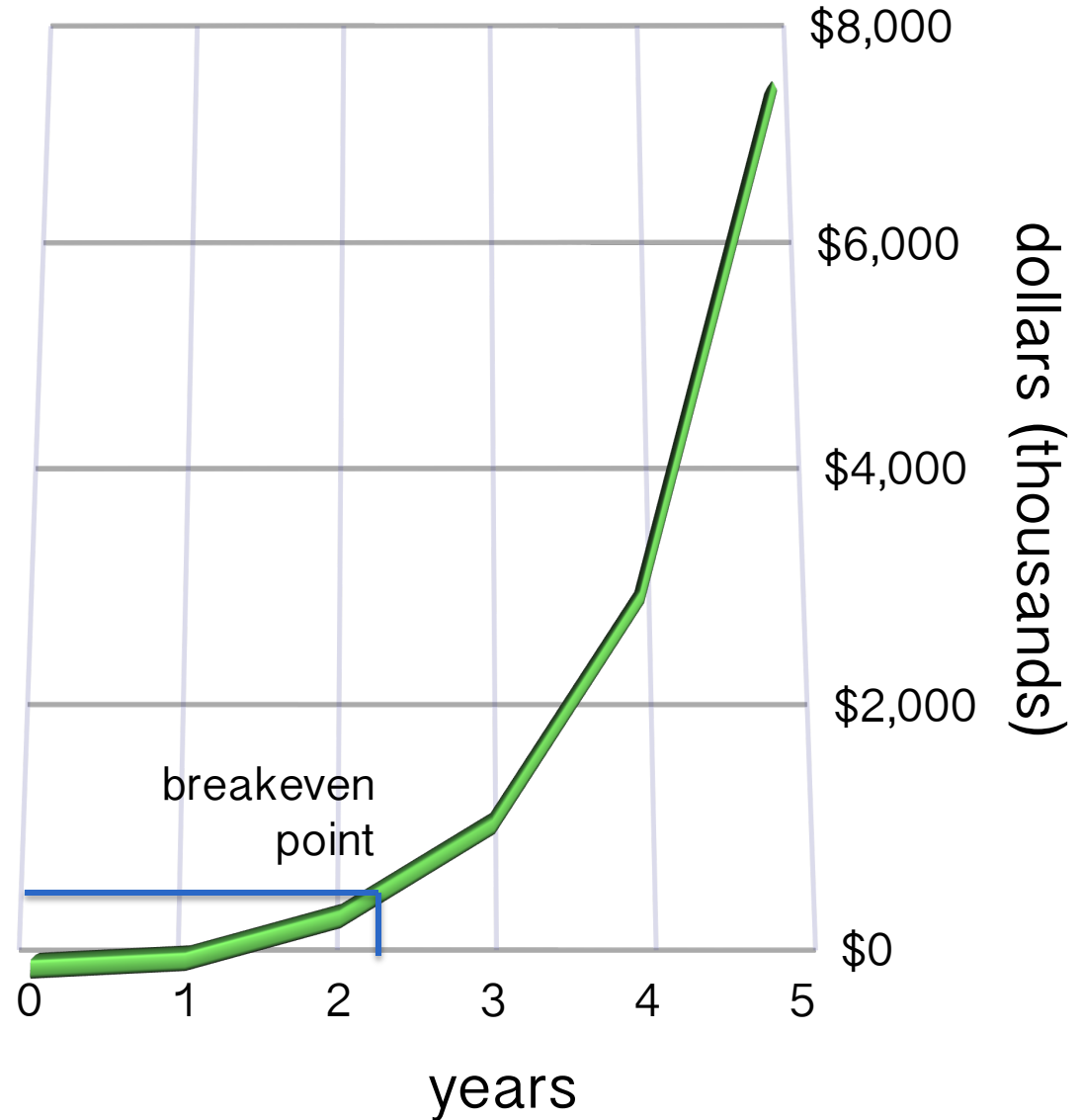
suitcase: \$34
vacuum tech: \$30

total revenue

initial investment
\$500,000

return on investment:
12%

net present value:
\$3.4 million

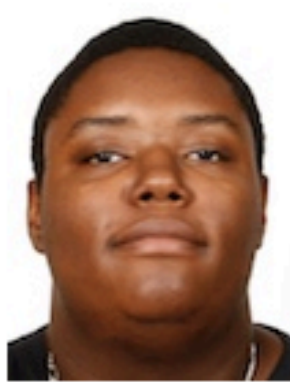


future expansion:
the exhale luggage series





Amanda Turk



E.J. Hester



Krishna Gupta



Kuan Cheng



Tony Hu



Chao He



Joe Conte



Katharine Luginbuhl



Max St. John



Loren Wood



Michael Fowler



Reuben Aronson



Sarah Simon

THANK YOU
from team silver

Acknowledgements

Course Staff

David Wallace

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Melody Kuna

Ilan Moyer

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John Devlin

Justin Lai

Lujie Chen

Robin Miller

Test Users

Darcy Duke

Nevan Hanamura

Amelia Servi

Seth Stollman

Julie Creamer

Kevin Hause

Praveen Prasanna

Karen Prasanna

Alexea Portner

Karen Sum

Kevin Sheehan

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Janice Sedal

exhale

no compromise packing

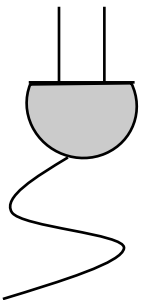
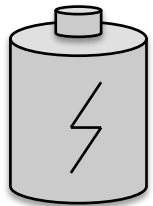
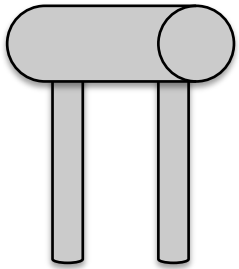


“Given the recent costs of checked bags and getting everything you need in just a few bags, I'd say **it's very valuable.**” -Julie

“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

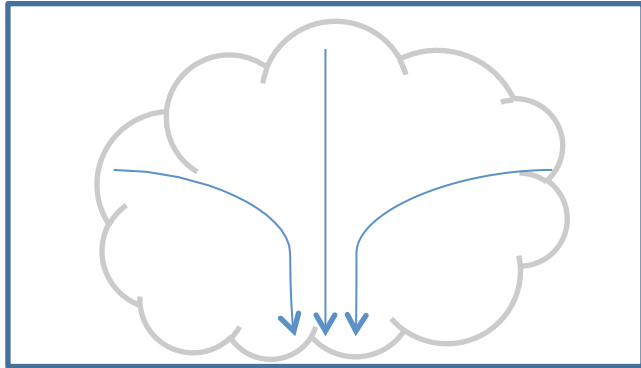
“I can't believe all that fit... I have to say **that's very impressive.**” -Darcy

Pump Selection



Type of Pump	Pros	Cons
Manual action	Portable Lightweight	Physically involved Non-intuitive, slow
DC battery	Portable Easy to use	Bulky batteries Insufficient power
AC plug-in	Easy to use Extremely Fast	Not portable Loud

Vacuum Dispersion Design



Design	Pros	Cons
Single port	Simpler	Uneven compression
Multi-port	Even compression	Complex

Vacuum Bag Design

Dimensions
match
suitcase



Easy access
zipper, intuitive
to pack

Durable
material and
airtight zipper

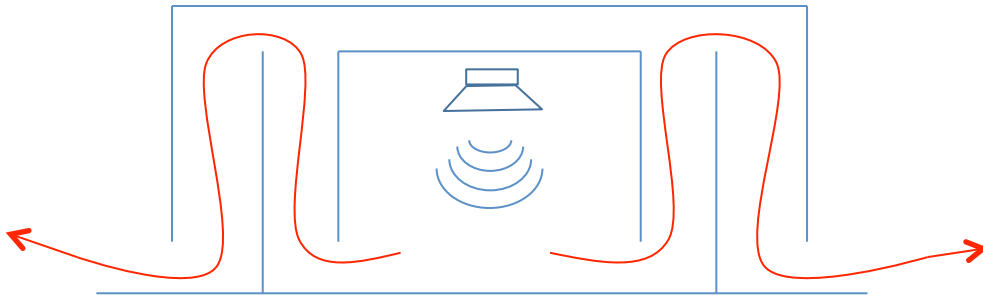


Quick release
removable
fittings

Pump Box Design

Rigid plastic mounting box

Thermoformed shell



Directional baffling for sound suppression

Wrinkling Test

Before



After



Usability Study Volunteers

Volunteer	Age	Children	Trips per Year
Darcy Duke	41	None	6
Nevan Hanamura	30	None	6
Amelia Servi	24	None	12
Seth Stollman	49	Three	3
Julie Creamer	45	Three	12
Kevin Hause	49	Three	8

projected sales

