

# How DFMA Could've Made Me a Millionaire in College

Ryan John, Engineer – Product Costing at KOHLER Co.

# Agenda

- About Us
- Overview
- Opportunity
- Offering
- Business Competitions
- Competitive Landscape (DFMA)
- Revenue Model
- Conclusion

# About Us

- Ryan John
- Engineer,  
Product  
Costing
- KOHLER Co.
- Paul Majerczyk
- Design Engineer
- Nicor Gas
- Aditya Sreekumar
- Business  
Technology  
Analyst
- Deloitte Consulting  
LLP



# Overview Video

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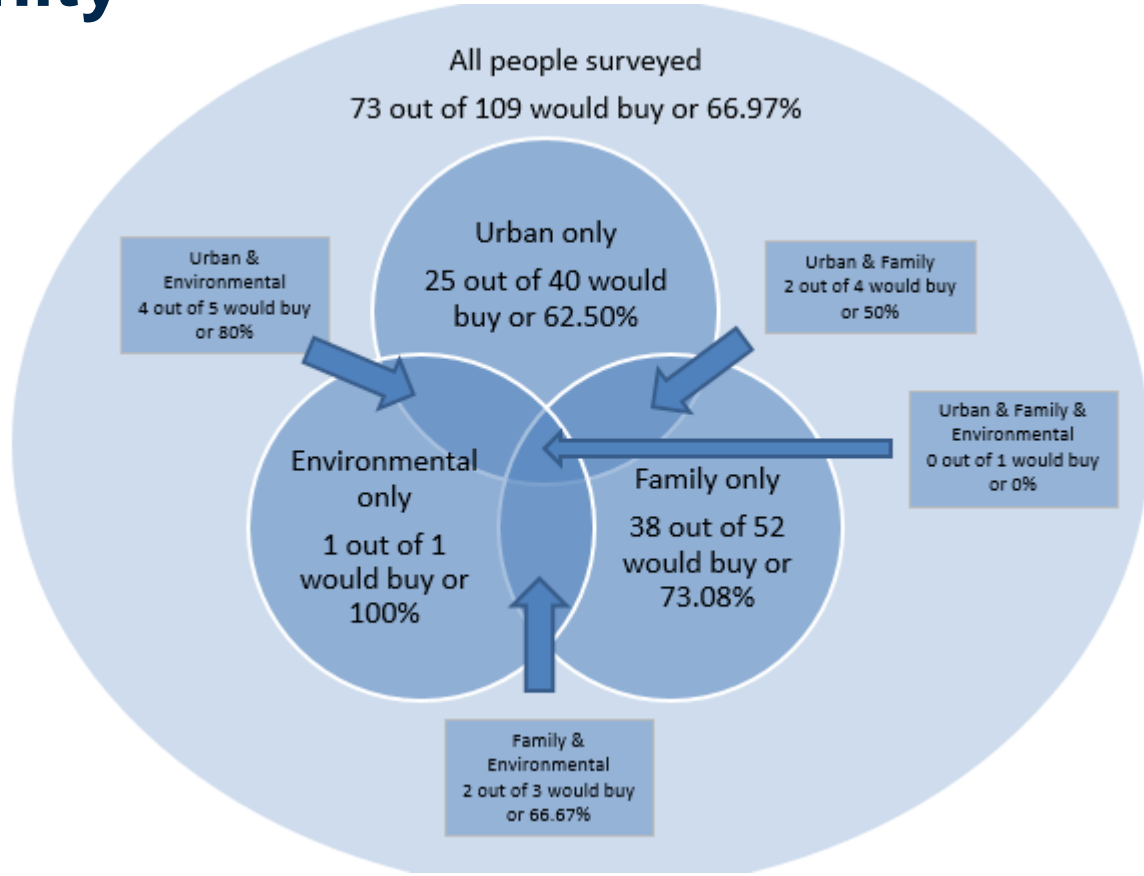
**from Peoria, IL**

# Opportunity

- Conducted in-person surveys
- Surveyed 50 people in Walmart in East Peoria, IL in 2016
- “Will it play in Peoria”
- Results:

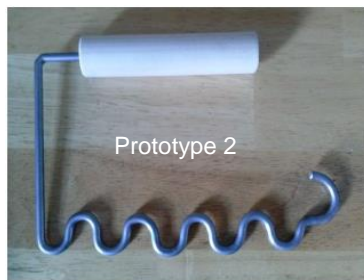
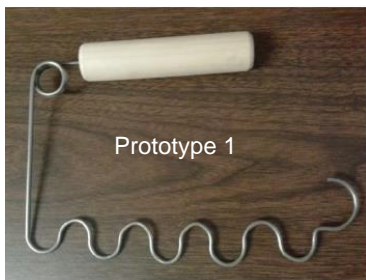


# Opportunity cont'd

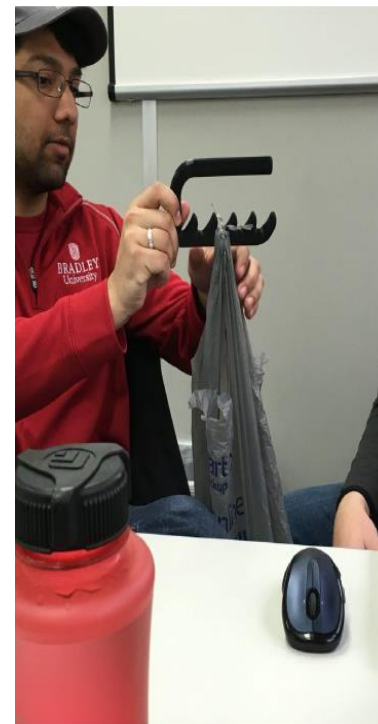


# Offering

- BagBoy
  - Ergonomic grocery bag handle
  - Designed to carry multiple bags
  - Reduces strain on hands
  - Distributes weight
  - 3 prototypes



Prototype 2 in Action



Prototype 3



# Business Competitions

- Competed in 4 business competitions
  - Best placement for BagBoy was 2<sup>nd</sup> place
  - First place prize at larger competitions was \$10,000
- Financials were a weakness
- DFMA would have been ideal

## Brave Pitch Winners Announced

April 4, 2016

Results from the recent Brave Pitch competition are in. Brave Pitch is an "elevator pitch" competition where students have three minutes to describe a new idea, innovation, or social venture to a panel of judges and the student audience. The best three pitches win cash prizes, and the first place winner also earns an all-expense paid trip to the annual conference of the Collegiate Entrepreneurs' Organization.

There were some great ideas pitched by some very creative students this year. The top three awards went to:

1st: Chelsie Tamms, a Graphic Design major, pitched a card design & custom lettering business that she recently started.

2nd: Paul Majerczyk (Mechanical Engineering) & Ryan John (Industrial Engineering), pitched "Bag Boy", a device to help you carry multiple plastic grocery bags.

3rd: Brian Roskuszka, an Electrical Engineering major, pitched an app that will notify purchasers of recall notices on baby products.



Brian Roskuszka, Chelsie Tamms, Ryan John, Paul Majerczyk

# Competitive Landscape: DFMA Model

- DFM model of 3<sup>rd</sup> prototype
- BagBoy made in U.S.A.
- # of customers at East Peoria Walmart in one month:
  - 60,000
  - Using 0.1% would buy rather than 60%
  - 60 twin packs sold in a month in Peoria, IL
  - 4,177 Walmarts in US (2014 CNBC)
  - 6,014,880 *units* sold in a year
  - Using 3 years for Life Volume
- Base Part with Polycarbonate (30% glass filled)
- Handle grip modeled through overmolding process



## ▲ Polypropylene injection molded part

- ▲ Injection molding process
  - ▲ Battenfeld BA 600/200 CDC
    - Injection mold
- Padprint
- Box parts and tape box
- (K) Overmold Tooling (Base Part)
- (K) External Mfr Profit Margin

# Revenue Model

Life volume	Batch size	Cost per part, \$							Initial tooling investment
		Material	Setup	Process	Rejects	Piece part	Tooling	Total	
18,000,000	500,000	0.5001	0.0001	0.2727	0.0017	0.7747	0.0071	0.7818	67,148

- Piece Part Cost: \$0.78
- Twin Pack Cost: \$1.55 (sell two BagBoy's at a time)
- Competitive Price Point: \$3.00
- Gross Margin: 48%
- Gross Margin for all Walmarts: \$4.4 million

# Conclusion

- DFMA can empower students with entrepreneurial spirits
- Provides data for decision making
- Useful for financials in business competitions
- BagBoy team went separate ways after graduation
  - Still friends 😊
- Questions?

