

Power Assist Kayak



IPRO 353



Adapt - A - Yak

Spring 2006

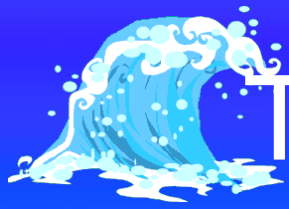
Problem

- Kayaking is a growing recreational activity
 - Many middle-aged couples and active retirees are taking up kayaking as an outdoor activity
 - Energy and stamina issues
 - Emergency situations





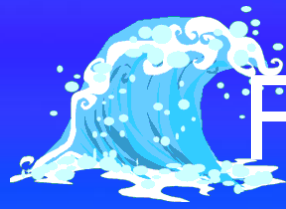
- Design a power-assist device for tandem sit-on-top kayaks
 - Safe
 - Environmentally Friendly
 - Detachable
 - Easy Installation



Technical Challenges

- Design a “universal” mount for a motor to power-assist a kayak
 - The mount should be able to fit the majority of tandem sit-on-top kayaks
 - The mount should be easy to install and use
- Find an ideal battery placement

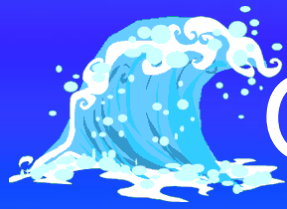




Final Design

- Detachable aluminum frame
- 'Durawood' mounting block
- Base plate
- Rivets
- Nylon straps





Other Components

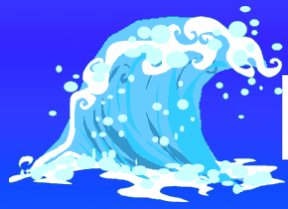
- Motors

- Minn Kota
- Motor Guide



- Batteries

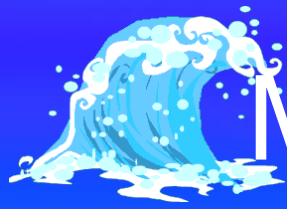
- Common 12V, 32A SLA marine battery
- Lithium ion
 - Future technology
 - Smaller and lighter
 - Easier placement



Marketing Objectives

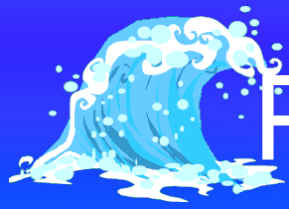
- Investigate market potential
- Determine customers' needs
- Define the target market
- Reach the target market





Market Research

- Top kayak brands (for sit-on-top tandems)
 - Ocean – 44%
 - Cobra – 18%
 - Wilderness – 12%
 - Hobie – 12%
- Online forums
 - www.sit-on-topkayaking.com
 - www.kayakforum.com



Power Alternatives



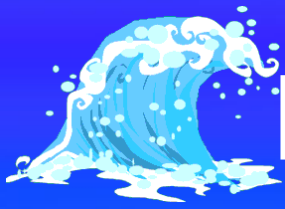
Hobie Mirage



Escape



Sail add-on



Existing Motor Mounts

Custom built kayak
and mount



Canoe mounts



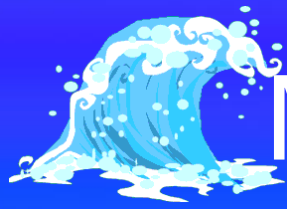
Motor mount for inflatable
kayaks





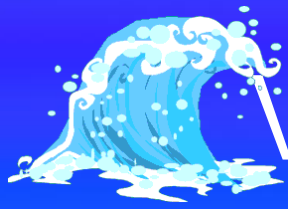
How Large is the Opportunity?

- According to the NMMA, there were 337,000 kayaks sold in 2003
- 77,000 were sit-on-top
- 15,000 of those were tandem
- About 45% of owners were willing to modify their kayaks
- New buyers and buyers from last 5 years are potential customers
- Innovators are initial target



Marketing Strategy

- Beta test to confirm market interest – summer 2006
- Launch motor mount based on response – early 2007
- Design and source purpose-built motor – spring 2008
- Introduce complete system with Li-ion battery, break into single sit-on-top market – summer 2009



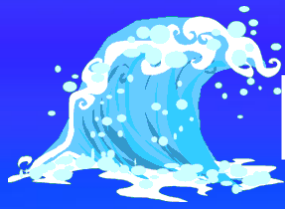
Value Proposition

- Customer
 - More distance in less time and effort
 - Motor and Battery have different uses
 - Only risk in buying is motor mount
 - inexpensive
- Company
 - Low risk and start-up



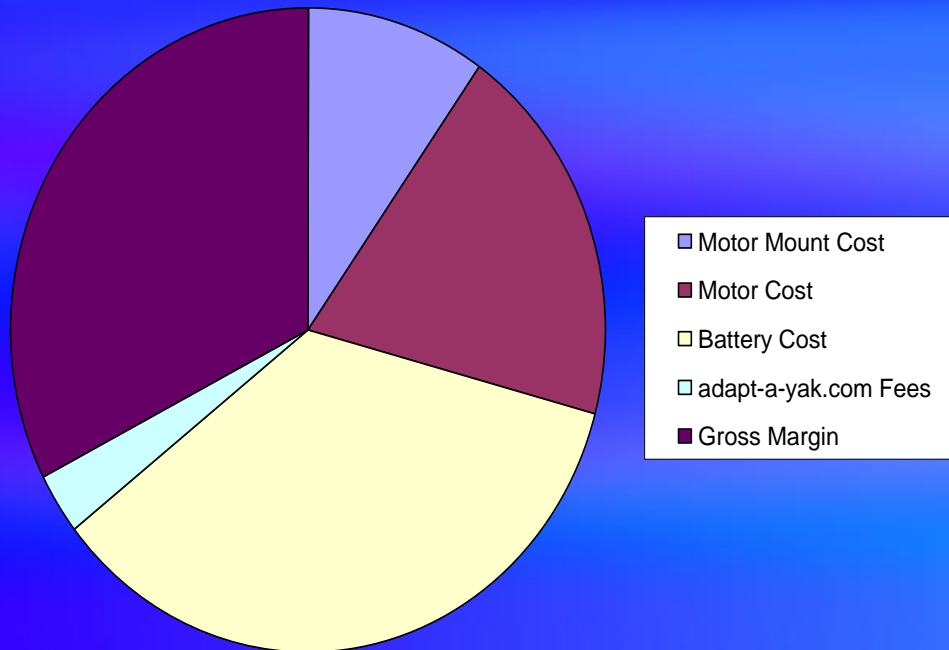
Sales Forecast

	2006	2007	2008	2009	2010
Motor Mounts	0	161	212	301	152
Motors	0	0	81	183	244
Batteries	0	0	0	112	236
Complete Systems	0	0	0	54	557



Pricing and Profitability

	Motor Mount	Motor	Battery	Complete System
Price	\$64.99	\$99.99	\$149.99	\$309.99
Gross Margin	\$34.99	\$40.00	\$40.00	\$110.01



Break even

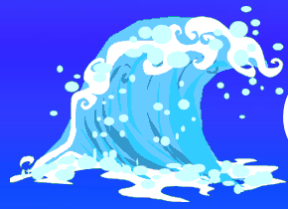
August 2008



Marketing/Promotion

- Free Advertising
 - Databases
 - Newsletter articles
- Pay-per-click banners
- Magazine Article
- Ten samples for beta-testing
- Boat Shows

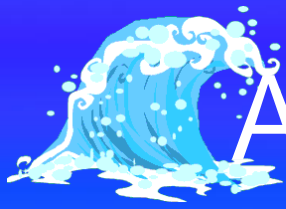




Other Opportunities

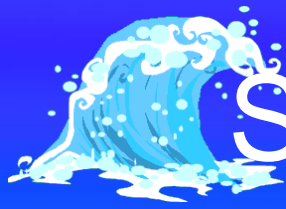
- Sports Fishermen
- Recreational Applications
 - Parks, camps, tourism, etc.
- Family Outings
- People with Disabilities
- Emergency/Rescue Situations





Adapt - A -Yak

- Technical Team
 - Manjeet Inamdar
 - Scott Larson
 - Daniel Netherton
 - Katy Pyles
- Business/Marketing Team
 - Christina Arvis
 - Eliseo Cornejo
 - Michael Merkley
 - Bob Zaprzal
- Faculty Advisor
 - Jim Braband



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- Jim Do from Microsun Technologies
- Thom Dammrich and Jim Petru from NMMA



Questions???