2.009 Fall 2004
Purple Team

Video introduction

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Functional Requirements

- Consistent power supply while running independent of a battery
- Competitive quality and price
- Ergonomic interface
- No Running Interference
- Durable

Design evolution

First generation

User feedback

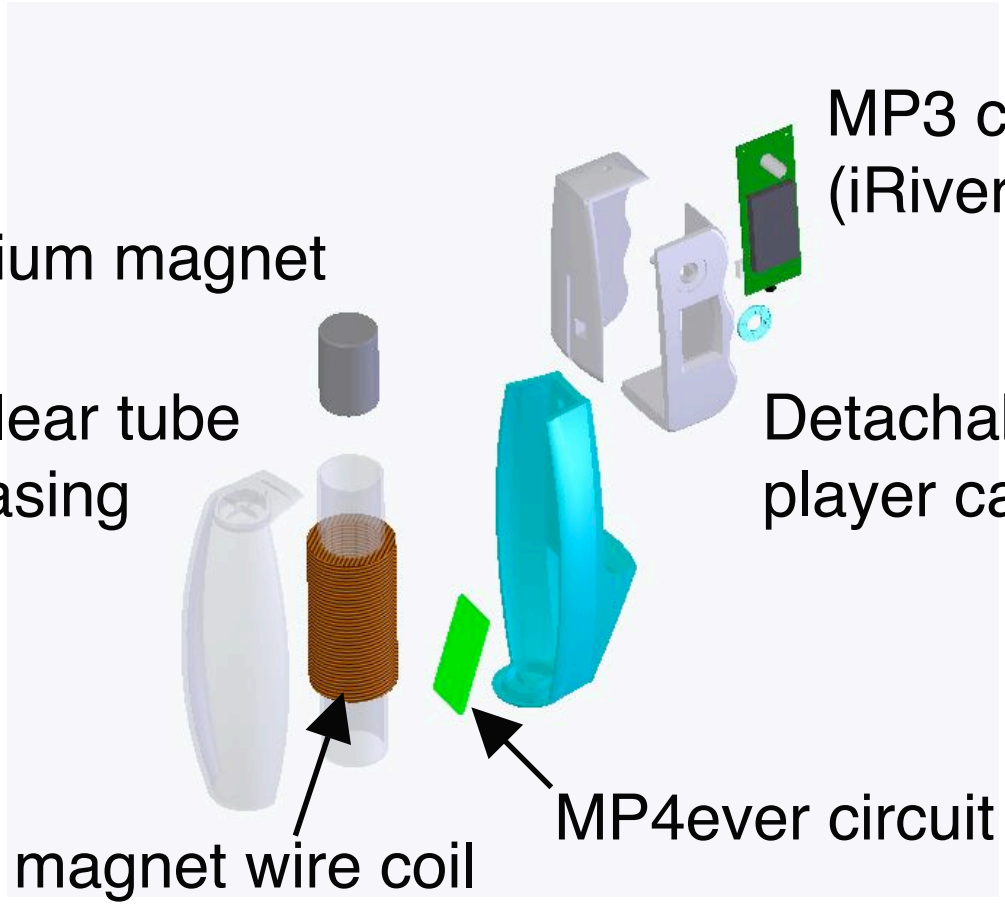
Final design

User Interface

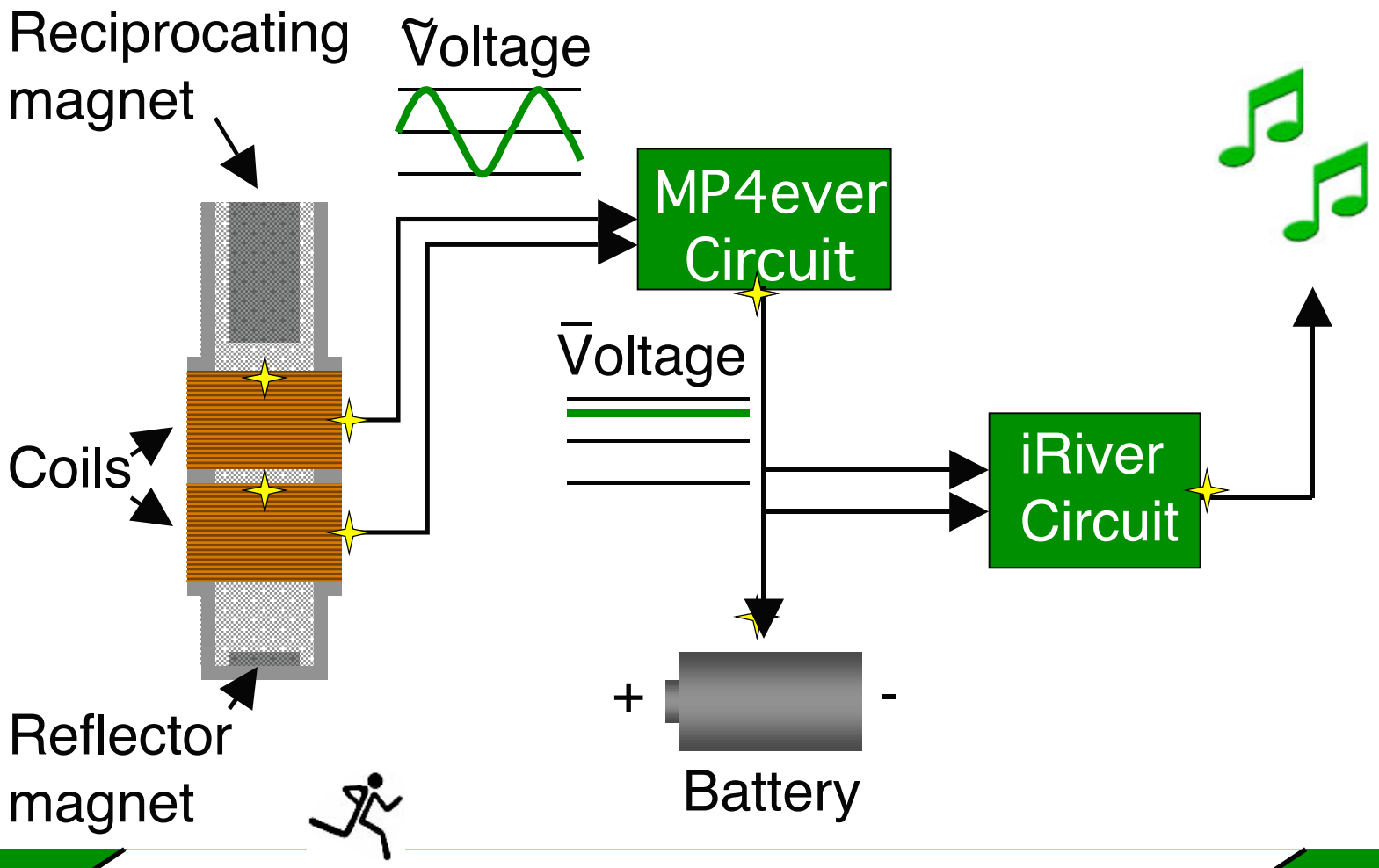
- Modular design (MP3 Player / Power Tube)
- Sliding connector
- Ergonomic design
- Hip Belt docking
- Unending power while running

Internal components

Internal components



How does it work!?



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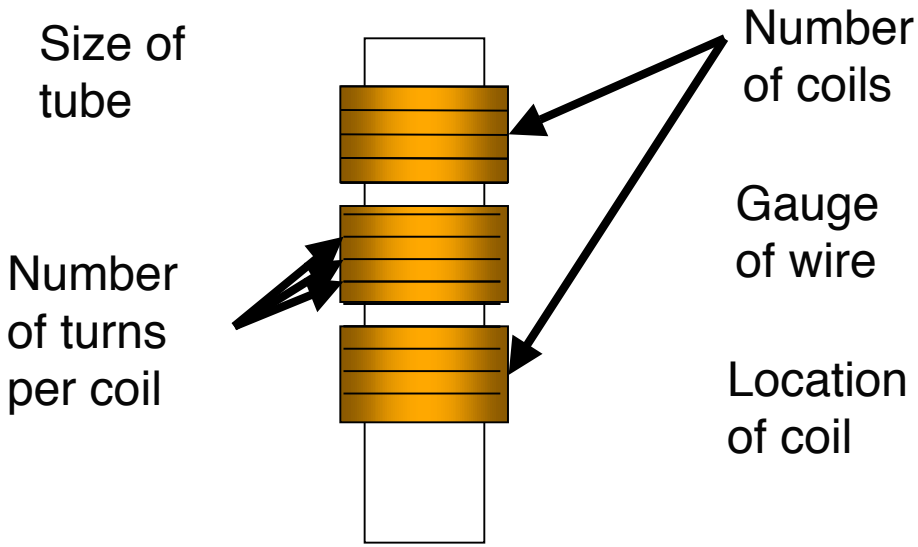
Magnet / Coil details

- Theoretical Model
  - Predict effects of changing variables
- Optimization Tests
  - Final Design
    - Double Coil design
    - 1100 turns each
    - 6 in. tube length
    - 1 in. tube ID
    - 28 AWG wire



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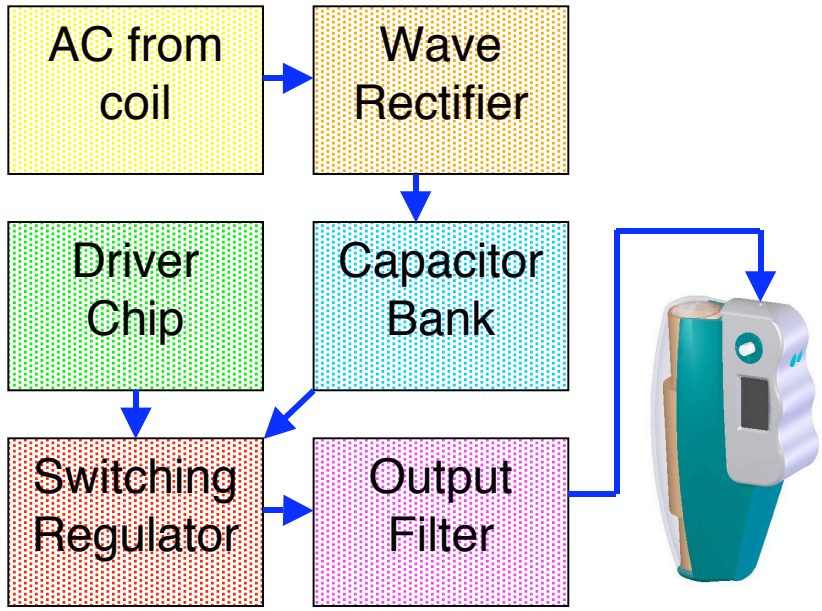
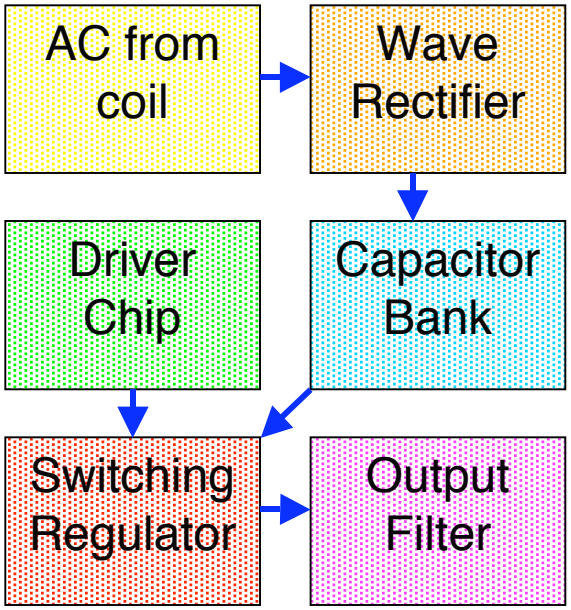
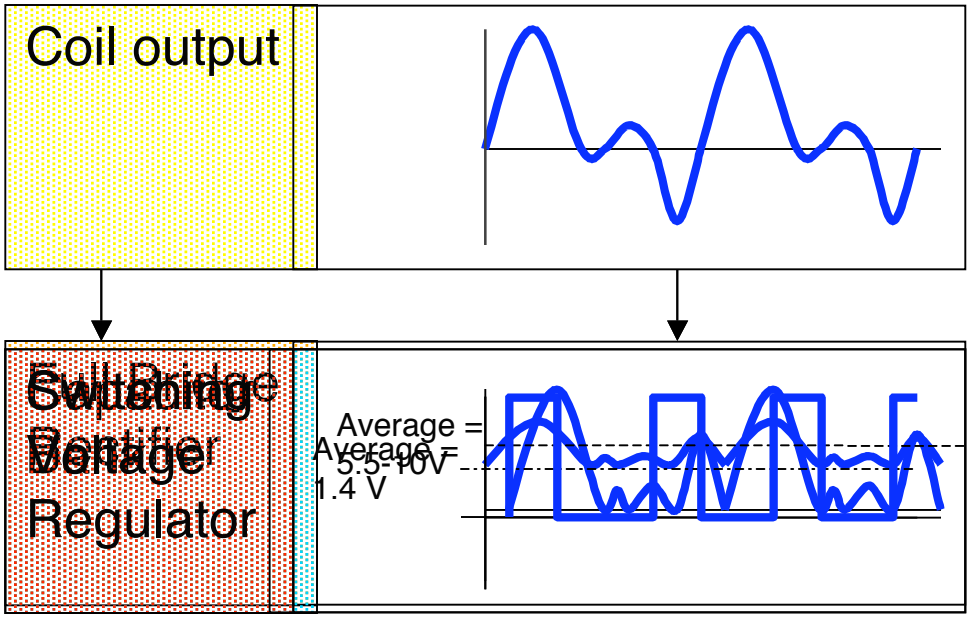
Voltage regulation

- Input
  - 2 Hz AC
  - 10 V Max. peak-to-peak
  - 0.45 W Max.
- Output
  - 1.4 V
  - 0.15 W Min.
  - Steady Waveform

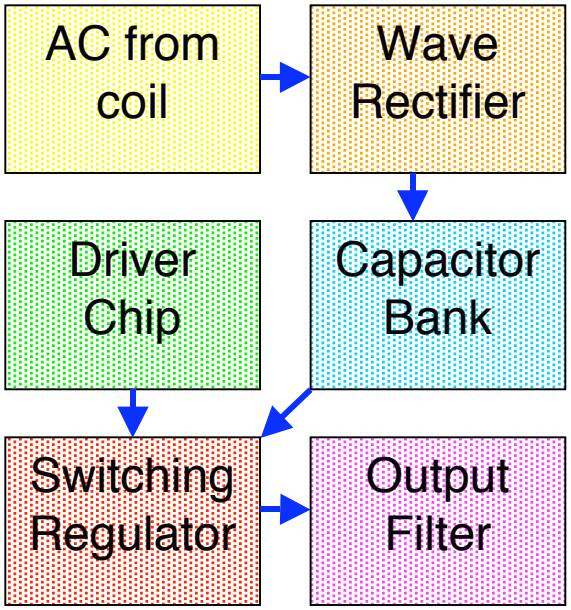


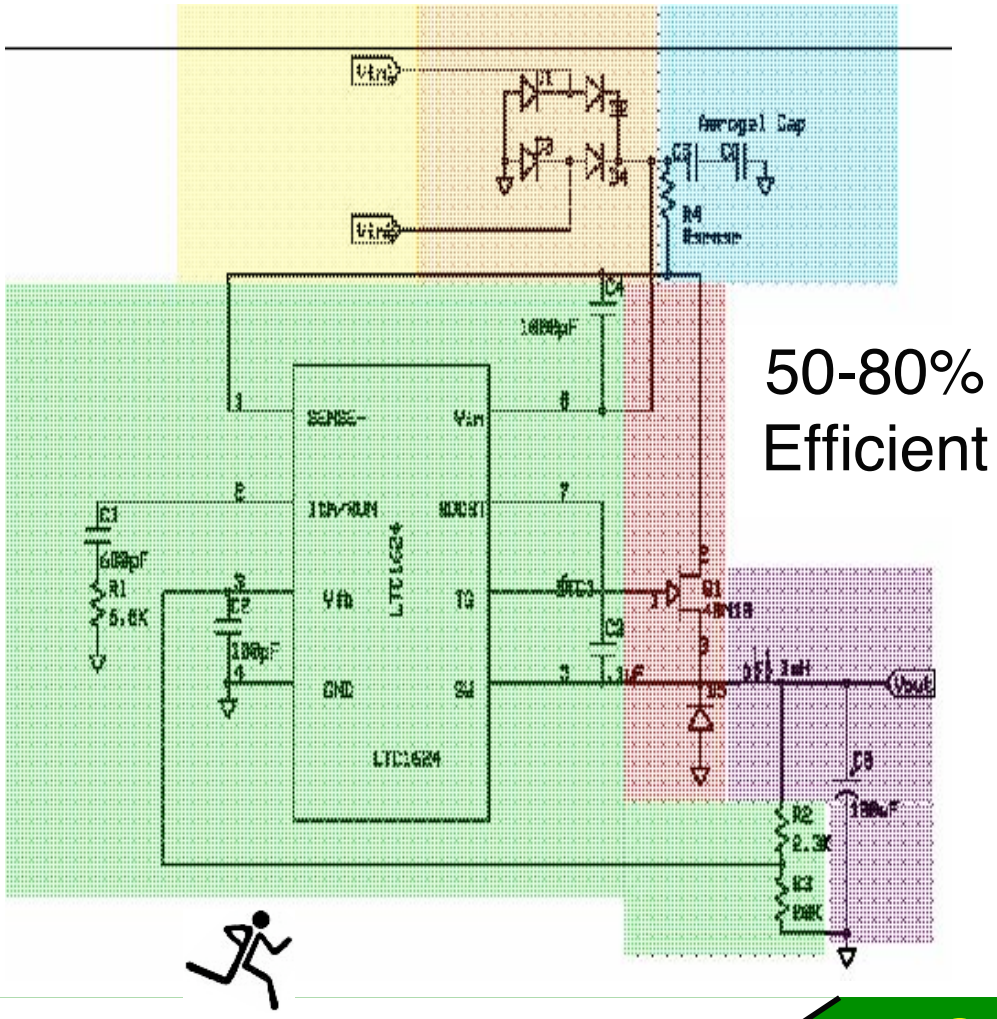
Voltage regulation





Voltage regulation





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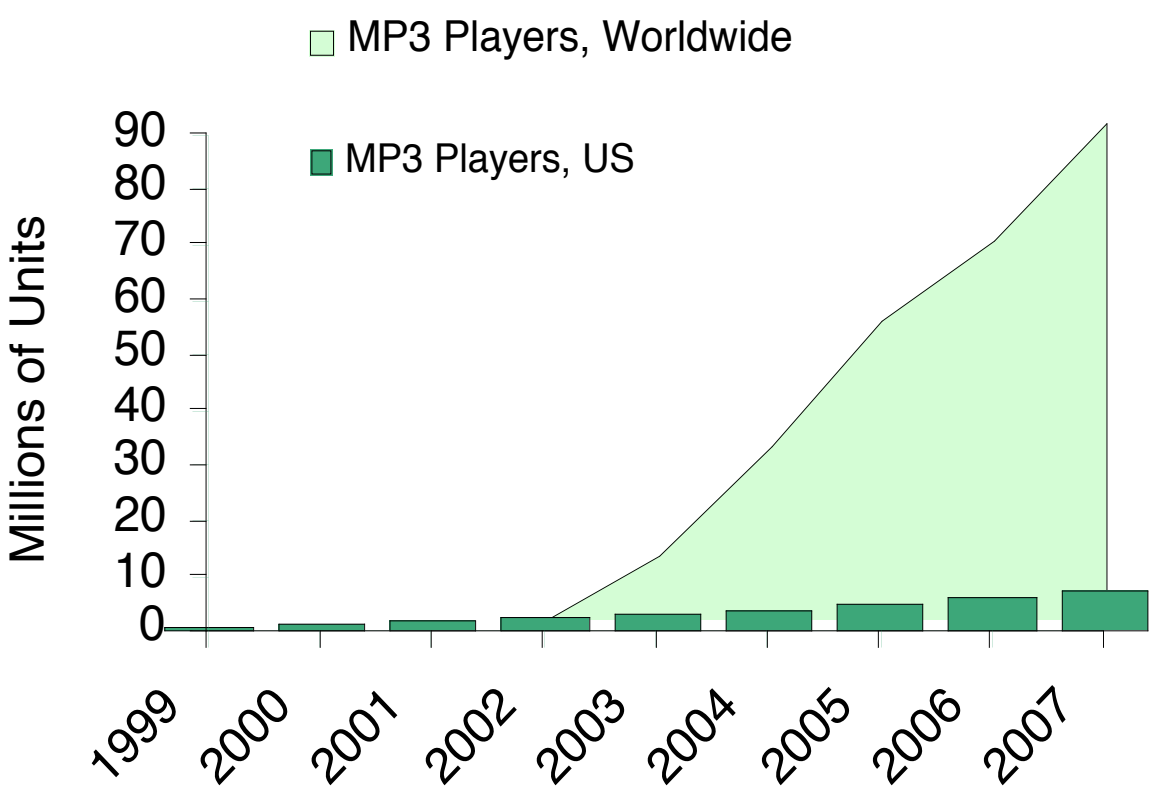
MP3 player sales



Source: Consumer Electronics Assn., Digital Networks N. America, Euromonitor Database, China Daily

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Develop product alone

- Requirements
  - Raise capital
  - Manufacture, market product
- Evaluation
  - No initial brand recognition
  - Crippling initial start-up cost
- Conclusion
  - Might never regain initial capital

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License concept

- Requirements
  - Obtain patent
  - Find partner, broker deal
- Evaluation
  - No running / production costs
  - Collect royalties ~ 5% of sales (wholesale)
- Conclusion
  - Best option for profitability

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Cost and competition

Cost breakdown

MP3 player circuit	$ 5
128MB Flash memory	$ 20
Circuit, coil	$ 10
Magnets	$ 7
Battery	$ 2
Casing	$ 1
Cost to produce	$ 45
Wholesale price	$ 90
MP4Ever Retail price	**$ 150**

Competitor prices

Flash memory

iRiver	**128MB**	**$ 120**
Sony-Philips	128MB	$ 140
MPIO	128MB	$ 114
Rio Sport	128MB	$ 124

HD players

Apple iPod 40GB	$ 400
Apple iPod mini 4GB	$ 250
CL NOMAD 30GB	$ 228

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Future directions

- Improve efficiency and obtain better power output to:
  1) Reduce size and weight of MP4ever
  2) Improve charging capability
- Consider expanding into portable radio market
- Locate interested buyers

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Questions?

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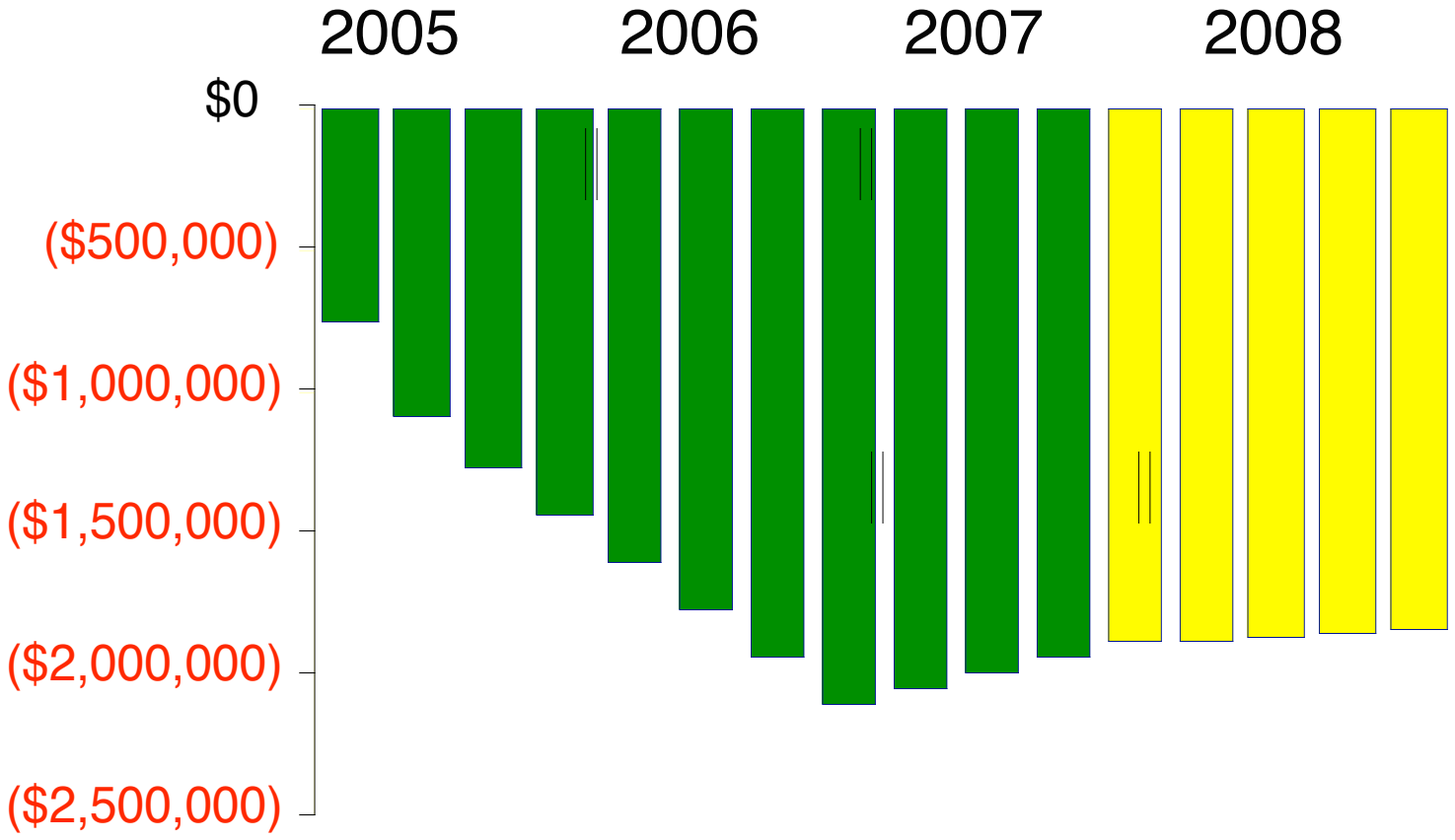
Projected ROI, Option1



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