### Solar-Electric Auto Rickshaw IPRO 351

## **Our Team Mission**

"To provide India with a cleaner and environmentally friendly auto rickshaw that is both economically and technically Feasible"



## What We've Been Doing

#### Research on:

Business and the MarketTechnology





## Background

 Auto rickshaws are the most popular means of transportation

• Available in diesel, CNG, and LPG

Start of a five year vision

## **Business Team**

### Research Objective

- Identify Manufacturers of auto rickshaws; their sales and distribution figures.
- Accomplishment

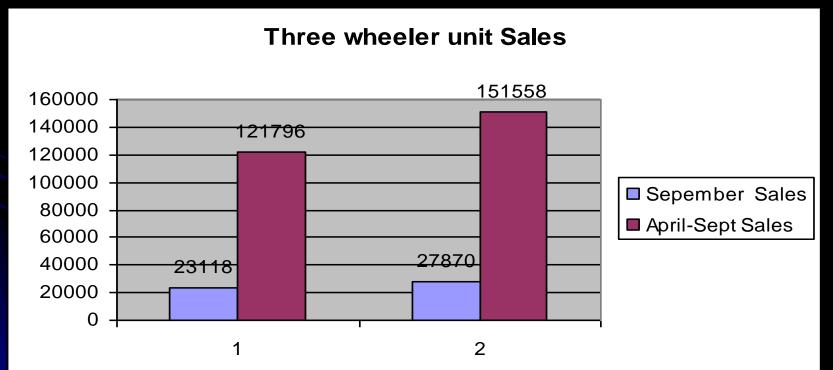
Market is dominated by Bajaj Auto

**Other Manufacturers** 

- Force Motors
- Atul Auto Limited

## Bajaj Auto

# • Three- wheeler market Share of 80% (According to Hindu Business Line)



## **Oil Dependency**

- Research Objective:
- India's dependence upon foreign oil.
- Accomplishment:
- India's imports about 70% of their oil
- Expected to rise by 240% to 5 million barrels a day by 2020.
- (currently about 2.09million bbl/day, CIA Fact book)

## **Government Policies**

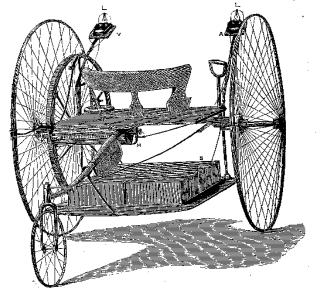
- Reduction of foreign oil dependence
- Promotion of the development of renewable energy source
- Expansion of a cost effective energy supply
- Provide renewable energy to remote areas

## What needs to be done

- The profile of the auto rickshaw owner/operator.
- Summary of Economic Issues, Governmental Issues
- Cost Analysis
- Sensitivity Analysis

## Technology Team









## **Technology** Goals

Design hybrid/solar auto rickshaw for India

Develop energy effective rickshaw

Suggest (high cost or low cost?) rickshaw

## Accomplishments

- Initial design for passenger rickshaw without solar pad
- Simulation result of ADVISOR

### What needs to be done

#### Choose electrical specifications based on simulations

Customize design and leverage costs

## Next Steps

- Interface solar pad in design
- Search for actual electrical components
- Make analysis for cost and efficiency aspects

### Problems

#### User research is taking longer than anticipated

Trim Design Phase

## **Task Timeline**

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## **Final Thoughts**

