



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 Market
- Technology



Background

- Auto rickshaws are the most popular means of transportation
 - Available in diesel, CNG, and LPG
 - Start of a five year vision
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Business Team

- Research Objective

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

- Accomplishment

Market is dominated by Bajaj Auto

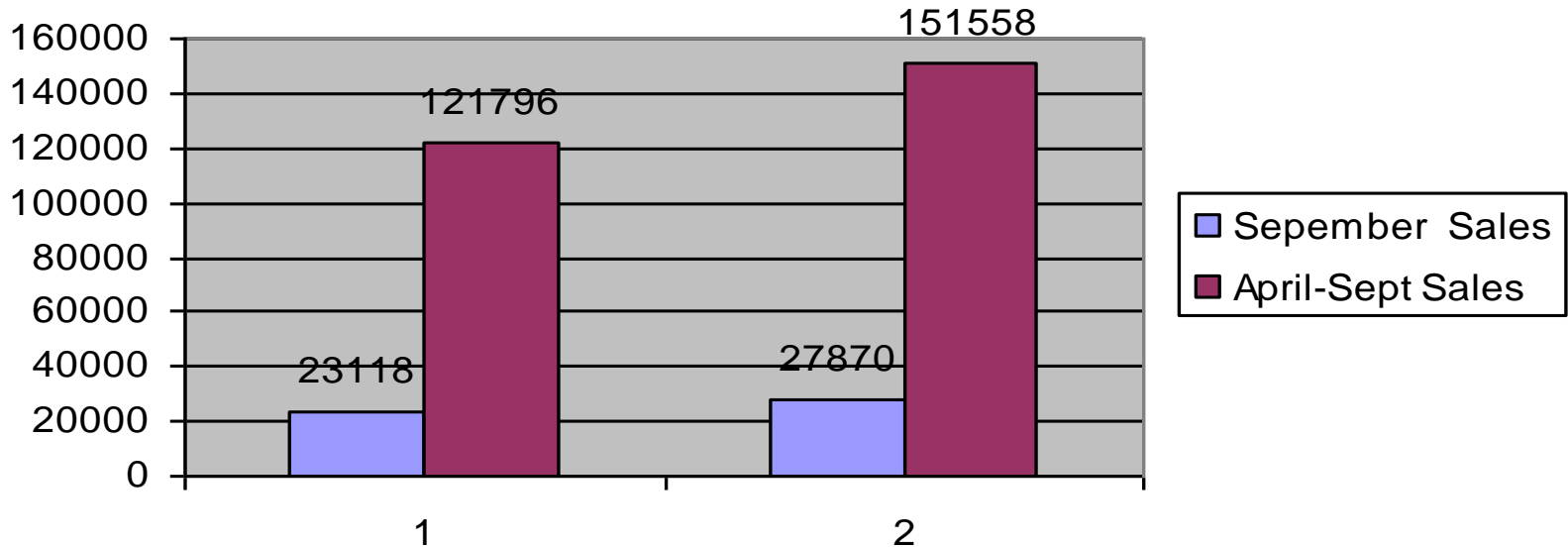
- Other Manufacturers

- Force Motors
- Atul Auto Limited

Bajaj Auto

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

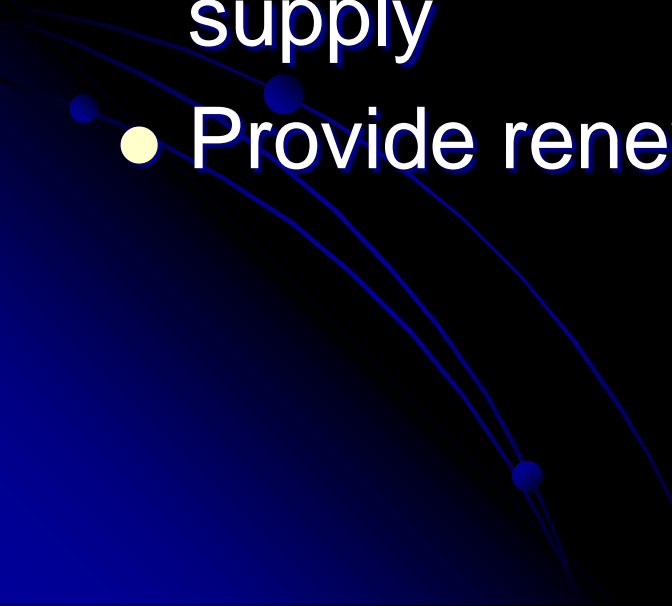
Three wheeler unit Sales



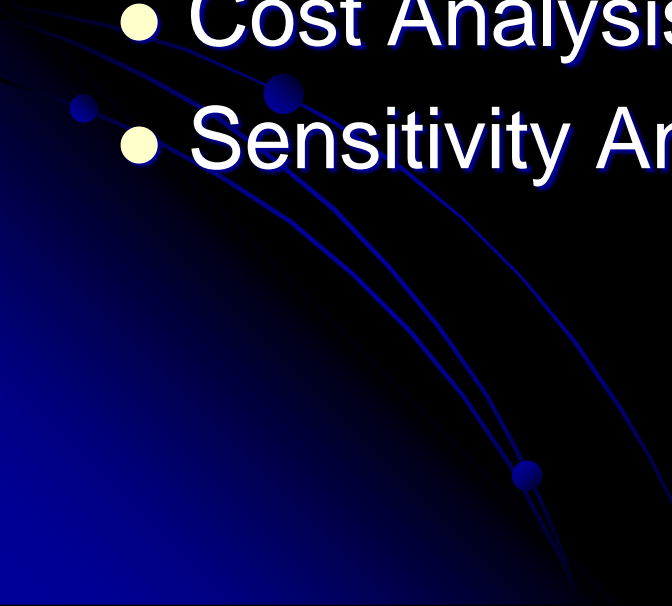
Oil Dependency

- 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*)

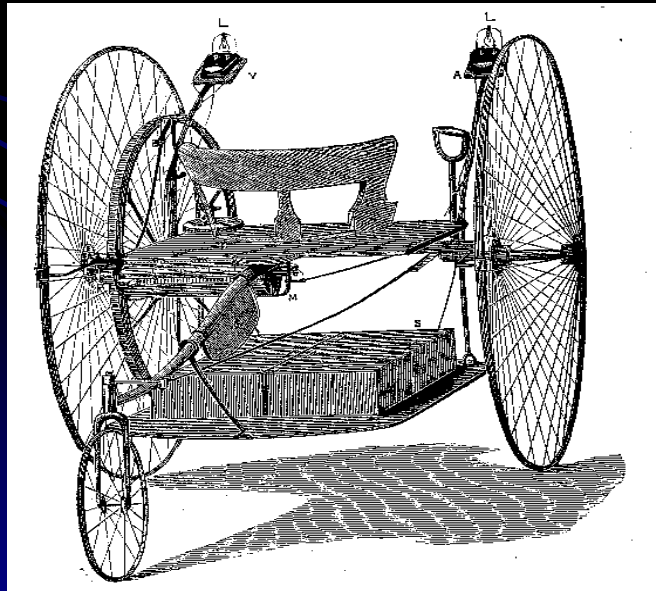
Government Policies

- 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
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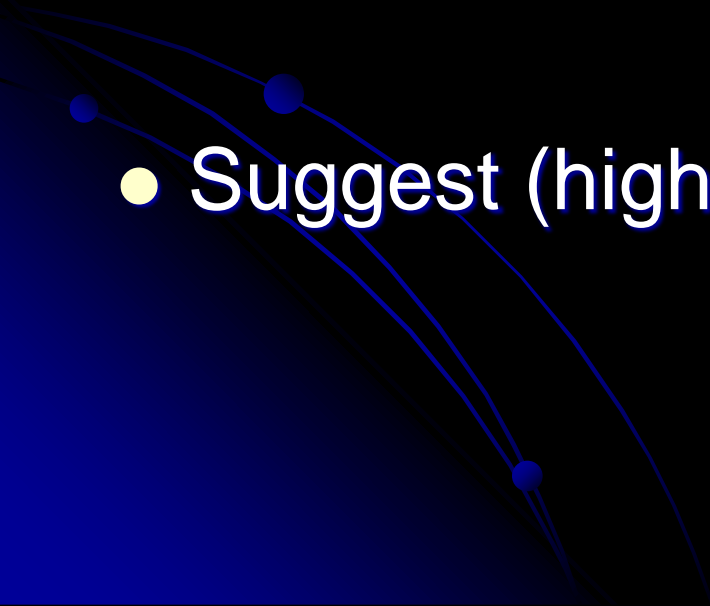
What needs to be done

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



Technology Goals


- Design hybrid/solar auto rickshaw for India
 - Develop energy effective rickshaw
 - Suggest (high cost or low cost?) rickshaw
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Accomplishments

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



What needs to be done

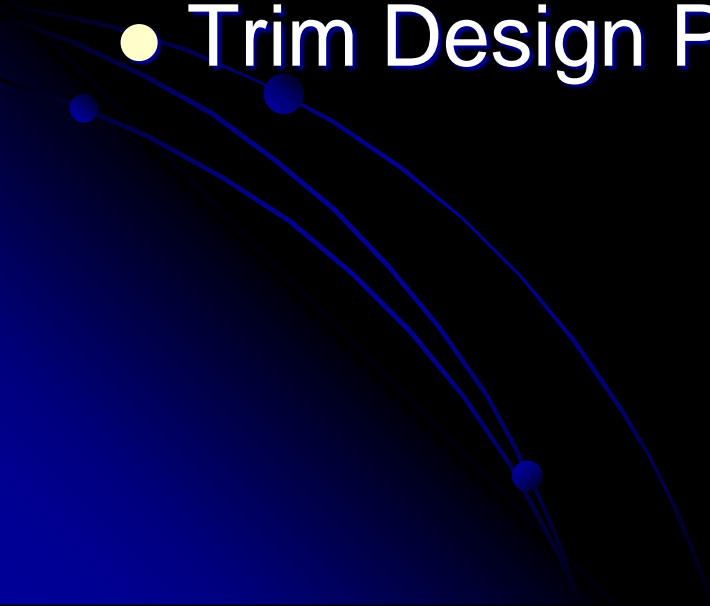
- Choose electrical specifications based on simulations
 - Customize design and leverage costs
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Next Steps

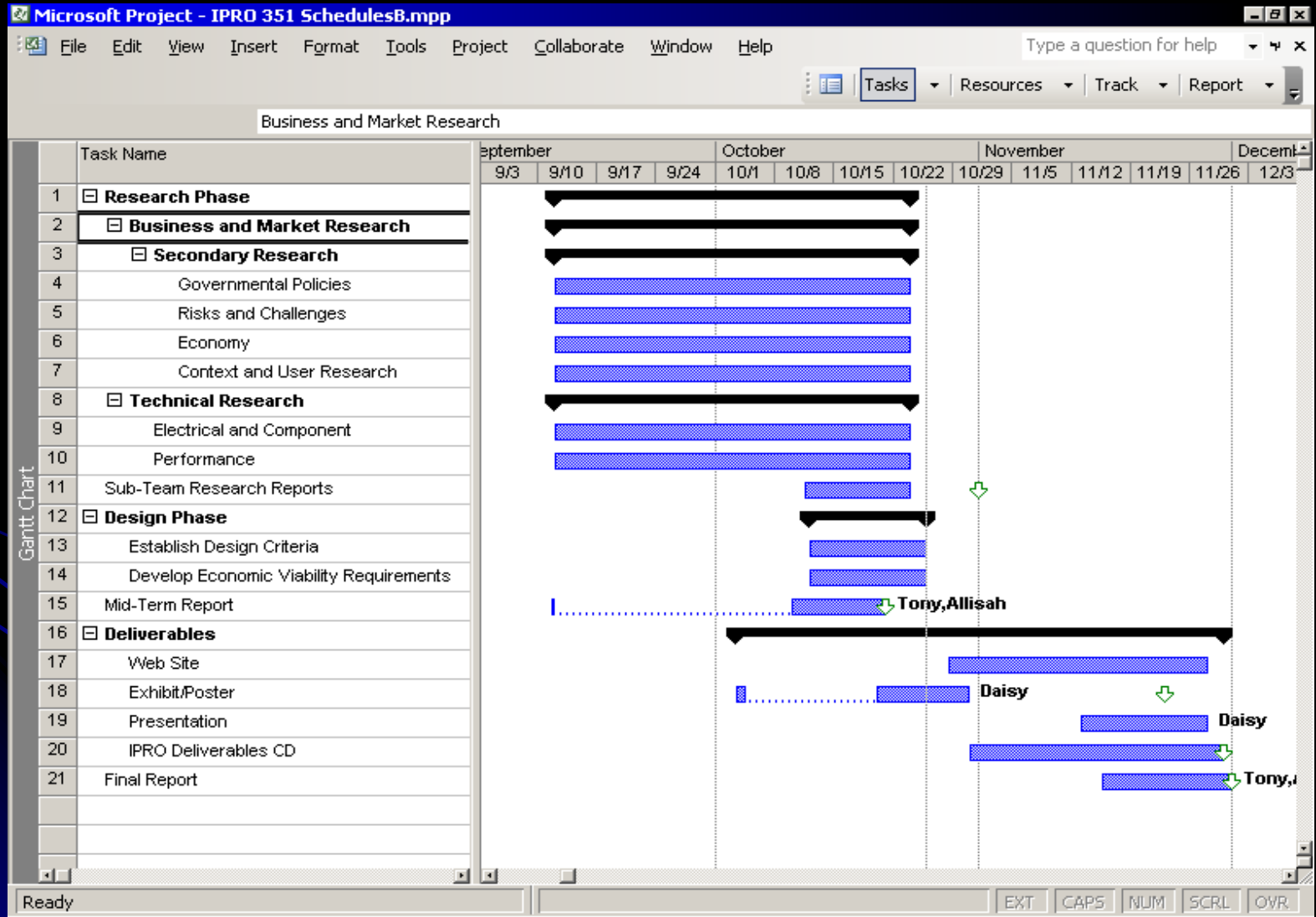
- Interface solar pad in design
- Search for actual electrical components
- Make analysis for cost and efficiency aspects



Problems

- User research is taking longer than anticipated
 - Trim Design Phase
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Task Timeline



Final Thoughts

