

# Design As If People Mattered

## A Case Study of LED Lighting



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# Outline

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Need of the Hour

Why design?

Context and Imperatives

Process, not product!

System Choices

Conclusion



# The Need of the Hour

Integrated Thinking!

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- Urban products + “Rural marketing”  $\neq$  Rural products!



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- The size of the Rural Market implies products must be light on energy and resource usage.



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## Integrated Thinking!

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- Urban products + “Rural marketing”  $\neq$  Rural products!
- Neither meaningful nor relevant in rural context.
- The size of the Rural Market implies products must be light on energy and resource usage.
- Felt Needs and Perceived Needs.



# The Importance of Lighting

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- More than 50 million homes use expensive and unhealthy kerosene lamps.
- Bright, Cheap, Clean lighting needed!



# Why design?

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# Why design?

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- Things as simple as lighting systems need to be designed ?
- All man made objects carry the implicit biases and worldview of its creators.
- Objects shape social and cultural traits as much as they are shaped by society and culture.
- Lighting plays such a large role that it is taken for granted.



# Example

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Figure: Accendo by Thrive

- Visibility, Conceptual Model.



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- Battery flap, Handle.



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- Local production, Closed design.





# Social Context

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- Women as earning members of the family.



# Social Context

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- Women as earning members of the family.
- Increased awareness due to better transport and communication.



## Economic Context

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- Monsoons, Free Market make agriculture a gamble.



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- Distress migration, lack of income generation outside agriculture.
- Disappearance of rural skill-sets (AKA culture!).
- Hesitant buyer, prefers 'by-two' options.



# Imperatives

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- Involve Women.





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- Involve Women.
- Reduce Migration.
- Local production, dignity for rural skills.
- Information and technical interchange between the city and village.



# The Bigger Picture

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- Design-Manufacture-Marketing-Operation-Maintenance-Disposal.



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- Half or “by-two” design.





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- Individualist (computer mouse) vs. Communal (Street Light).



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- Reuse Components — Design for Disposal!
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- Half or “by-two” design.
- Individualist (computer mouse) vs. Communal (Street Light).
- ... and iterate ... (Feedback)



## Technical Choices – LED Lighting

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- Light Source.



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- Optics.



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- Driving circuitry.



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- Optics.
- Driving circuitry.
- Energy source.
- Housing.
- PCB and Thermal Management.





# Conclusions

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- Design not just with user in mind, but also manufacturer, marketer, repairman . . .
- Most design decisions are implicit and intuitive — “explicitize”.
- Product and social infrastructure go hand in hand for a successful venture.