Going Farther: Engineering Design to the Next Level

Terrence Wilson
Director, Lighting and Exterior Systems
Scout Motors

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Heritage …

- ✓ Fully capable
- ✓ Tactile
- ✓ Durable
- ✓ Robust
- ✓ Simple

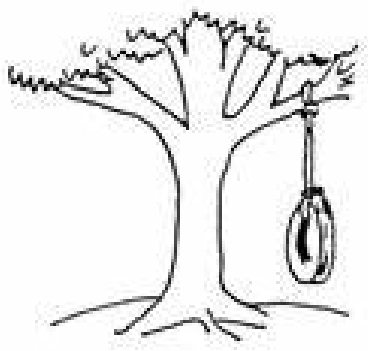
… Ingenuity

- ✓ Fully electric
- ✓ Digital
- ✓ Sustainable
- ✓ Aero
- ✓ Purposeful

Overview

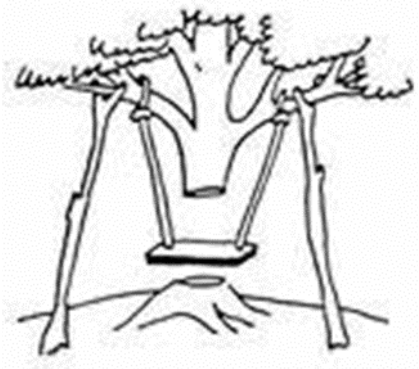
- Understanding the Disconnect
- Understanding the Needs
- How to Solve What Seems Impossible?
- Implement a Strategic Pre-development Cycle

Understanding the Disconnects



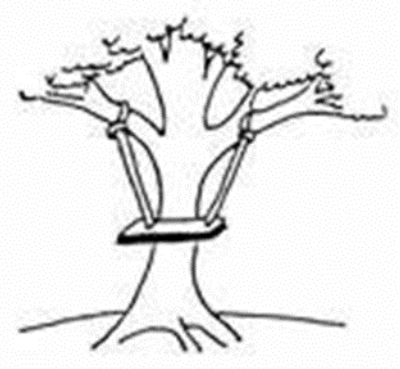
This is what NHTSA says is needed.

Legal Require-ments



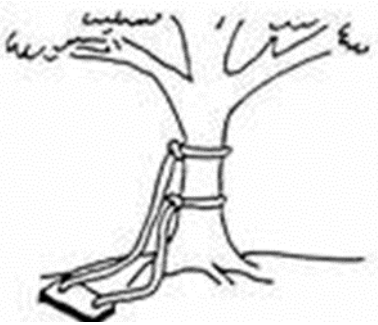
This is Studio DNA Theme.

Studio Theme



This is what Engineering says is feasible.

Engineer -ing Fease



This is what the Program wants to pay for.

Cost Targets

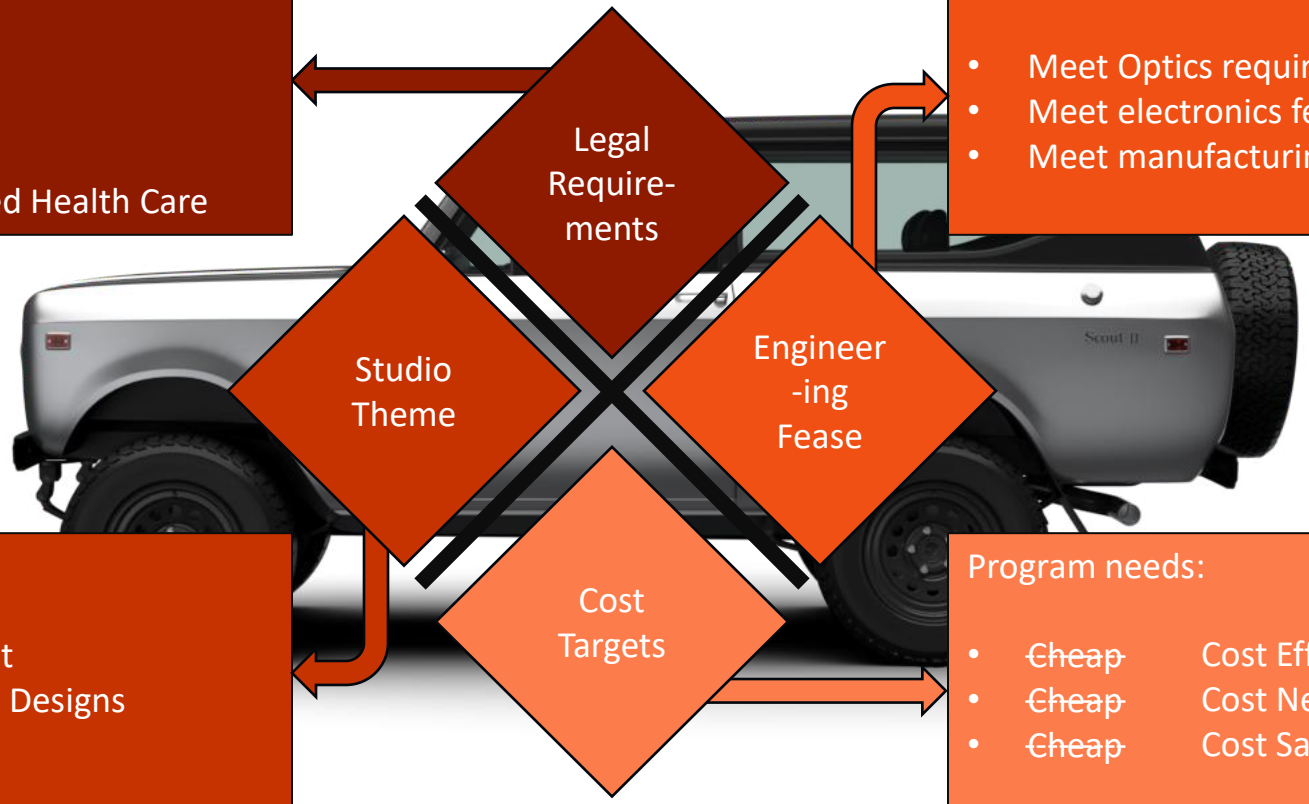
Understanding the Needs

Regulatory needs:

- Road Safety
- Save Lives
- Prevent Injuries
- Reduce Traffic-related Health Care

Engineering needs:

- Meet Optics requirements
- Meet electronics feasibility
- Meet manufacturing needs



Studio needs:

- Customer Excitement
- Unique and Intricate Designs

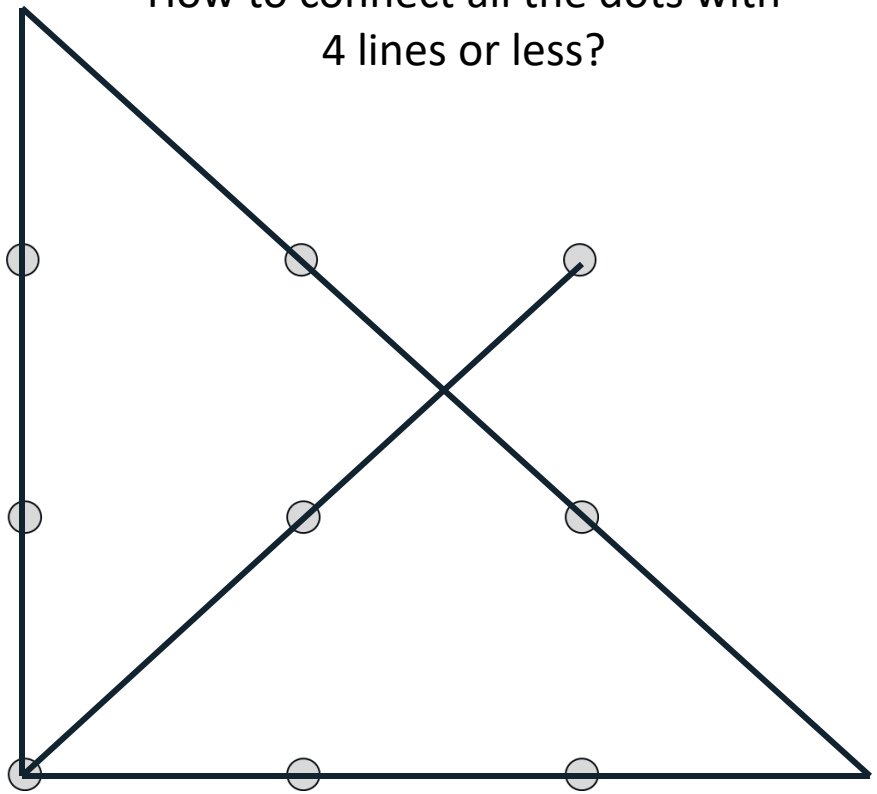
Program needs:

- ~~Cheap~~ Cost Efficient
- ~~Cheap~~ Cost Neutral
- ~~Cheap~~ Cost Savings

We Resolve These Competing and Conflicting Requirements by Developing a Cross (X) Functiona

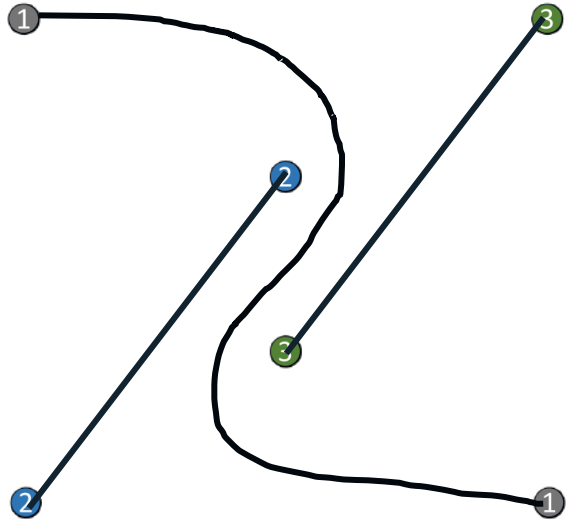
How to Solve What Seems Impossible?

How to connect all the dots with 4 lines or less?



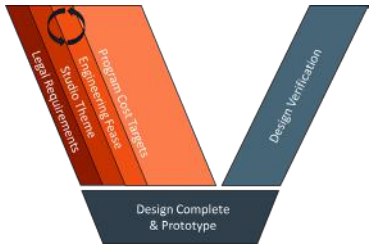
Be willing to think outside of the box.

How do you connect all the dots with lines without overlap?



Learn to read between the lines.

Implement a Strategic Pre-development Cycle that Feeds into the Product Development Process



Strategic Pre-development

Legal Requirements

Studio Theme

Engineering Fease

Program Cost Targets

Design Verification & Validation

Product Quality

Design Complete & Component TKO

- Development of a X-functional development team.
  - Engineering
  - Studio
  - Understanding of Program Cost
- Iterative development not under the threat of causing RISK to program timing
- Developments should be modular, compatible and easily adaptable.

Final Thoughts

- Creating a strong crossfunctional team with more than just engineering is vital.
- The development of a strong relationship outside of the program will create strong synergies within the program.
- The way to reduce development time within the program is to increase development time outside of the program.
- By doing these things, we will be able to Engineer Design to the Next Level.

Be a Scout
Go Farther!!!

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