Deconstructing Design Workshop

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• Where should design be taught?

• How is it different from Product Design

• What are the skill sets required?

• What will make us succeed
What is Design?

- A User centric bridge between **Art and Technology** that includes elements of Usability, fashion, commercial aspects, – the balance between them changing for different streams and product types.

- Design can be what one makes of it – one can address the problems at a very superficial level, or you can take a deep dive, questioning every aspect of it and adding value at every level.
It’s a Right brain activity………

Left brain

I am the left brain.
I am a scientist, a mathematician.
I love the familiar. I categorize.
I am accurate, linear.
Analytical, strategic. I am practical.
Always in control, a master of words and language.
Realistic; I calculate equations and play with numbers.
I am order. I am logic.
I know exactly who I am.

Right brain

I am the right brain.
I am creativity. A free spirit, I am passion.
Imaginary, emotionally, I am the sound of roaring laughter.
I am taste. The feeling of sand beneath bare feet.
I am movement. Vivid colors.
I am the urge to paint on an empty canvas.
I am boundless imagination. I am beauty, I sense, I feel.
I am everything I wanted to be.
Design is about....

Intangibles
- Creativity
- Innovation
- Values
- Aesthetics
- Style

Tangibles
- Form
- Proportion
- Surface detail
- Color & Texture
- Interfaces
- Function
- Fit to purpose

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Design is about......

Human Aspects
- Comfort
- Usability
- Convenience
- Safety

Technical Aspects
- Materials
- Processes
- Reliability
- Quality

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Design is about……..
Its more right brain......... I see us being in the art business. Art, Entertainment and mobile sculpture, which, coincidentally, also happens to provide transportation

Bob Lutz to NYT, on being asked how his approach would differ from that of his predecessors
Car - Product dimensions.

- Product use - Personal
- Application – Mobility
- Environment of Use – Public
- Synthesis of Fashion, Technology, Diverse materials and processes, Usability (interfaces, ergonomics etc.)

- Purchase Criterion –
  - Emotive – Personality, status, peer influence
Design Considerations

PRIMARY INFLUENCERS
• NEED SATISFACTION – PRI & SEC
• VALUE PROPOSITION
• PERSONALITY OR STYLE STATEMENT
• BRAND STORY

SECONDARY INFLUENCERS
• FASHION, TRENDS & TASTES
• USABILITY ASPECTS – INTERFACES, ICE,
• TECHNICAL REQUIREMENTS/EXPECTATIONS
• MANUFACTURABILITY, QUALITY,
• COST & INVESTMENT

TERTIARY INFLUENCERS
• PRODUCT SEGMENTATION
• PRODUCT POSITIONING
• MATURITY OF THE SEGMENT
Differences - Product & Automotive

• **Time Scale**
  – Product development cycle
  – Total life cycle
  – Life Cycle animations.

• **Investment – Capital – direct and indirect.**

• **Product Complexity**
  – Fashion, Technology, Functionality & Usability etc.
  – Passenger & pedestrian safety
  – Multiple materials and processes.
Time frame of a vehicle’s life

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Year

Product Launch
Minor Refresh
Minor Facelift
Minor Refresh
Minor Facelift
Minor Refresh
Top hat change

Product Life span – 20 yrs
Time frame of Development

Year
-4 -2 0 2 4 6 8 10 12 14 16

Sketch Multiple
Digital 4
Physical 2
Maturation 1
Tooling & Productionising
Testing & Validation

1/3 1/3 1/3
Car – Development Process

- Trending and Forecasting
  - Own industry
  - Parallel studies

- Multiple Creative inputs
  - Exterior & Interior
  - Color & Trim

- Design Maturation (arbitration)
- Tooling and productionising
- Testing and validation
- Launch & product life cycle animation
Car – Development Skill sets

**Traditional Functions**
- Exterior Design
- Interior Design
- Color & Trim
- Digital Modeling
- Clay Modeling

**New Specialties**
- Studio Engineering
- Perceived Quality
- Product Design*
- Experience design
- Usability design
- Interface design (HMI)
- Visualization
- Trend tracking & Consumer research
Skill sets required

**Soft Skills**
- Trending & forecasting
- Extrapolation & Creative thinking
- 3D visualisation
- Communication
- Team work
- Internal & external arbitration

**Tools & Techniques**
- Research & analysis
- Product development process
- Sketching & rendering (manual & digital)
- 3D surfacing tools
- Clay modelling
Skill sets required

- Exterior Design
- Interior Design
- Color designer
- Textile designer
- Digital modeller
- Technical surfacing
- Clay modeller
- Animation & visualisation
- Accessory designer
- Graphic design
- Product designer
  - Optics & illumination
  - Clusters & interfaces.
  - Aggregates – seat, steering, switches etc.
- User Interface design
- Perceived Quality.
Skill sets required……

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Fields that have a better alignment to current structure & synergies at IIT’s
Indian Industry - Drivers

- Global Competitiveness
- International platforms
- No cost arbitrage
- Need to identify unique local opportunities & hence connects with customers.
- Mix of local Design activities with varied needs
  - OEM’s (with self grown competency),
  - International OEM’s with support & mentorship
  - Design service organisations – back end work.
Some thoughts......

- IIT’s should capitalise on their ability to network across departments for various specialisations.
- Should not get into specialisation areas where ART is the key driver (it does not fit the selection process (JEE), the structure of curriculum or grading methods etc.)
- Undergraduate programs could create high skill generalists, while PG ones produce specialists.
- Right mix of UG & PG programs based on specific content & the time required to disseminate the same.
- Need to align the programs to suit the practices of the industry.
Thanks