Slide 1

industrial economy
knowledge economy
innovation economy

... a creative economy

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1

Slide 2

Product
Service
Experience

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2

Slide 3

....leveraging users' built-in abilities
... increasingly natural, realistic, or
reality-based interaction.

Interface
Interaction
Experience

- virtual reality
- augmented reality
- ubiquitous, pervasive, and handheld interaction
- tangible user interfaces
- lightweight, tacit, or passive interaction
- perceptual interfaces
- affective computing
- context-aware interfaces
- speech and multi-modal interfaces.

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3

Slide 4

empathy
ethics
environment

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4

sustainable
social
universal

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5

make in India
start up India
digital India

... designed in India designed for India

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SMEs Constitute....
94%
...of Indian Industries

• 73 million Employment

• 40% of total Industrial Produce

Bengal women welfaer association (Dakhin Bishnupur-W.B.)

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Packaging and Branding , Baruipur

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8

Rubber molding and modeling, Howrah.

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Creativity
Design
Innovation

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- Innovation is creating new ideas and getting them to work.
- Innovation is not science or technology
- Innovation creates new wealth rather than knowledge.
- Innovation is turning an idea into a business success
- Innovation must be user-focused

Innovation
Invention + Implementation / Commercialization

Top-down or Bottom-up innovations
- incremental innovations
- new-to-the-market/society innovations
- breakthrough Innovations

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Creativity
"...a process of developing and expressing novel ideas that are likely to be useful"

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Design

..a Systematic Problem Solving Methodology

13
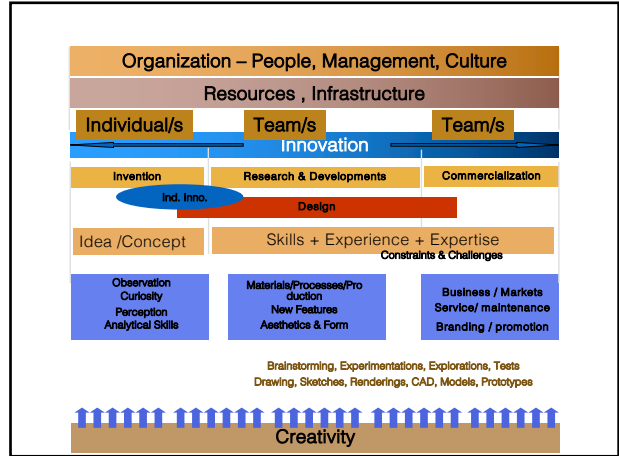
14

Creativity

- *Creative thinking is natural to homo-sapiens as a whole.*
- *Perception, ideas and feelings are combined to create new concept or vision.*
- *Creation therefore, is more in the mind.*
- *The biggest barrier therefore, is 'believing you are not creative.'*

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Creativity

seven habits of the creative or innovative thinkers

- challenging the unconscious assumptions, preconceptions and/or misconceptions
- to be especially aware and observant of everything that is happening in the vicinity - *'chance favors only the prepared mind'*
- to listen to what is going on inside one's depth or unconscious mind - 'Sleeping on a problem'

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Creativity

seven habits of the creative or innovative thinkers

- *"suspended judgment" - 'if you want to encourage new ideas don't evaluate too soon: give your seeds a chance to grow'*
- *to make strange familiar and familiar strange*
- *having a higher threshold of tolerance to ambiguity*

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Creativity

seven habits of the creative or innovative thinkers

- *constantly collecting new ideas, data and/or impression – developing idea bank in our mind*

This calls for inculcating curiosity, observation, listening, reading, traveling and recording as the essential habits.

18

Analysis
Synthesis
Value Judgement

19

Creativity

…pre-conscious
…semi-conscious
…un-conscious

meta-functions..

conscious level
..analysis
..synthesis
..value

sub conscious level
..emotion
..intuition
..motivation

Model of the Mind
John Adair, Effective innovation; How to stay ahead of the competition
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Slide 21

Sensitive   **Open-ended**   Sense of humor
Flexible   Tolerant of ambiguity   **Confident**
Specific interests   **Original**   **Question-asker**
Not motivated by money   Independent   Self-actualizing
Fluent   **Observant**   **Risk taker**
Divergent thinker   **Ingenious**   **Can synthesize**
Sense of destiny   **Severely critical**   Self-disciplined
Imaginative   Perceive world differently   **Persistent**
Curious   **Energetic**   Able to "fanaticize"
Adaptable   **Nonconforming**   Self-knowledgeable
Intuitive   Sees possibilities

...traits of creative people
Design Management review Winter 2004

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Slide 22

learning to learn
learning by doing
learning together

the world is understood through the hand, not the mind - the hand is the cutting edge of the mind.
Bronowski

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Slide 23

the 'IDEO way' of Innovation..

Understanding the problem → Observation → Visualisation → Evaluation and Refinements → Implementation Commercialisation

- *'Prototyping, brainstorming, and observations*
  are the fundamentals as the reading, writing, and arithmetic of innovation..'

- *'Doodling, drawing, modeling...*
  ...Sketch ideas and make things...
  ...and you are likely to encourage accidental discoveries.'

Tom Kelley with **Jonathan Littman**
The Art of Innovation;
Lessons in Creativity from IDEO, America's Leading Design Firm
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Slide 24

the 'IDEO way' of Innovation..

'seeing and hearing things with your own eyes and ears is a critical first step in improving and creating a breakthrough product.'
...Inspirations / new ideas come from being close to the action.

"Build to Learn"
'a picture is worth a thousand words...'
'...a good prototype is worth a thousand pictures.'
Good prototypes don't just communicate – they persuade.

Childlike curiosity and enthusiasm is a second nature at IDEO.
At IDEO one would not find "they"....
..."They" do not innovate, believes IDEO.

'Innovation is about action, it isn't about perfection.'
'the person who toils endlessly at his desk
..is not likely the person who is going to hatch a great innovation'.

Tom Kelley with **Jonathan Littman**
The Art of Innovation;
Lessons in Creativity from IDEO, America's Leading Design Firm
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Slide 25

indigenous **innovation**

Local
Contextual
Responsible

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25

Slide 26

**collaborate
participate
democratise**

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26

Slide 27

Design

..humility
..sensitivity
..empathy

Charles and Ray Eames

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27

Slide 28

Design

Design is essentially a human-centred activity. It strongly believes in a holistic approach with an emphasis on generating new opportunities, improving standard of living and preserving the values of traditional society.

..www.shashankmehta.com

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Slide 29

Systematic..

Problem Solving Methodology

Problem Defining Methodology

29
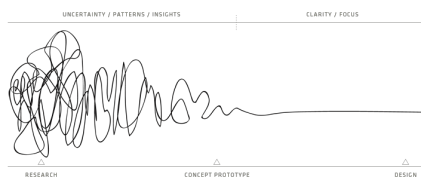
Slide 30

Design Thinking

..a creative approach to problem solving that starts with people and ends with innovative solutions that are tailor made to suit their needs

..human-centered design; IDEO

30

Slide 31

UNCERTAINTY / PATTERNS / INSIGHTS   CLARITY / FOCUS

RESEARCH   CONCEPT PROTOTYPE   DESIGN

The most basic design process may be seen as the famous squiggle drawn by Damien Newman of IDEO, which captures the essential quality of a project that moves from a state of messy questions to a state of polished answers

http://www.thinkinc.com/blog/squiggles-and-diamonds-and-sprints-how-interdisciplinary-teams-visualize-design-process/

31

Slide 32

The overall objective of a design education programme is to develop a creative and unique personality of the designer – a personality characterized by humility, sensitivity to life, empathetic understanding, positive attitude and the confidence to analyze and provide solution to any problem through 'designer thinking'.

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Design Education

32

Design ...

outcome
process

33

Design

Design is the *professional capability* of
creating and developing concepts and
realising them into products and systems
for the mutual benefit of both *user and manufacturer*.

34

Design

the process by which we *device courses of action*
aimed at changing *existing situations into preferred ones*
Herbert Simon

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---

making sense of things
Krippendorf and Heskett

to organize, manipulate, prune and filter
gathered data into *a cohesive structure* for
information building
Kolko, 2007b

Good designers can *create normalcy out of Chaos*
Veen, 2000

Fieldwork, theory and evaluation data provide
systematic input to the process,
but do not by themselves provide *the necessary whole*.
For the latter, there is only design
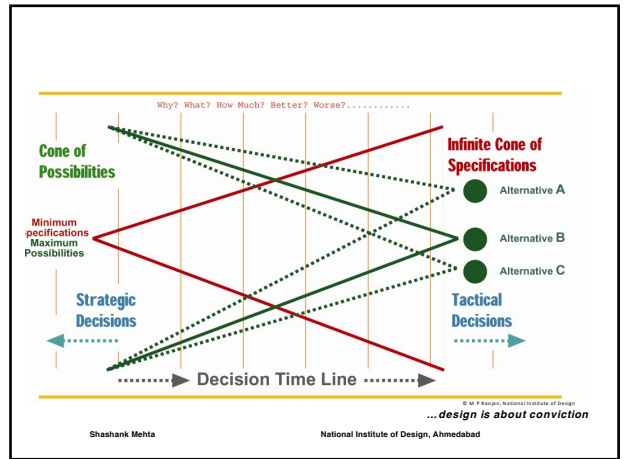*Fallman, 2003*

Design

..the *product of thought and deliberate action*
that is composed by intentions and imagination
and its effects are refined *by iterative explorations*
and supported *sensitive judgments and convictions*
where *actions come before the provision of proof of concept*.   *Ranjan 2014*

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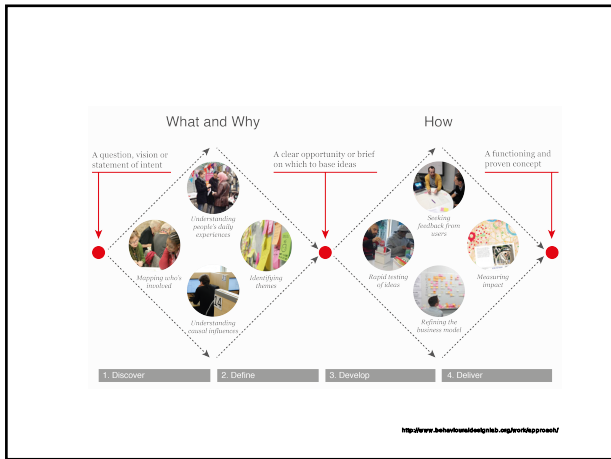
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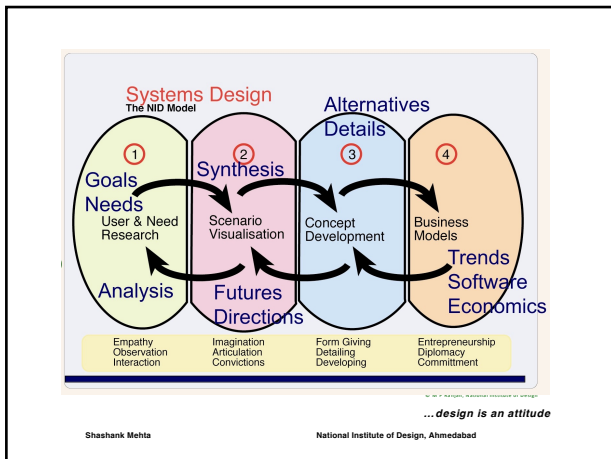
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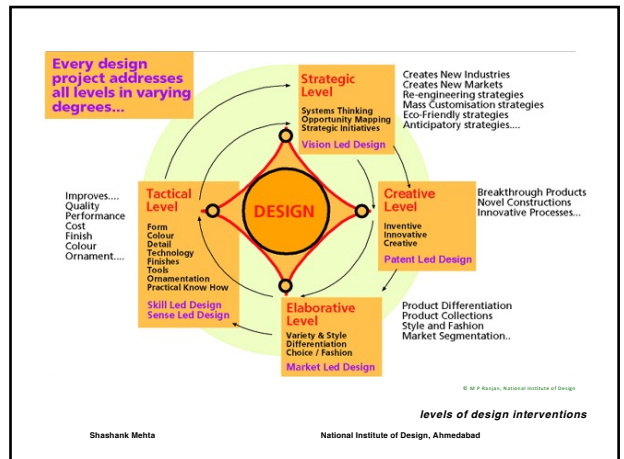
problem

..opportunity

41

mass production..

..mass customisation

42

form follows function..

..form is function

43

tangible

....intangible

44

Slide 45

product manufacturer..

..solution provider

45

Slide 46

2D.. 3D... 4D.....

46

Slide 47

47

Slide 48

Design Thinking is all about organization agility; rediscovering innovation over execution.

In the case of design thinking they will take Post-it notes and use a whiteboard and think about ideas and move them around as if they're sketching the organization, people roles.

So it's the ability to ideate very quickly

.. John Maeda

Design Thinking

48

Slide 49:

- *Can provide the needed spark for creativity to fulfill ones' potential in this era of knowledge economy.*
- *Design, it is realized, can have great impact on ones' ability to solve problems*
- *To help them view the problems from various different perspectives*
- *Develop ability to arrive at multiple alternatives*
- *Sensitize them towards their environment, society and their responsibilities*

Design Thinking

- *Arouse and create inquisitiveness*
- *Create empathy for all life and the surroundings*
- *Broaden their perspective and view of life*
- *Build positive attitude towards life*

...what design thinking offers ?

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Slide 50:

Managers	Designers
focus on profits and returns	*focus on product and service quality*
In for survival	*prefers reform*
think linearly	*think laterally*
Serialists, problem oriented, cautious	*holistic, solution-led, experimental*
Adaptive	*Innovative*

...personality traits

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Slide 51:

Design Research...

methods
techniques
tools

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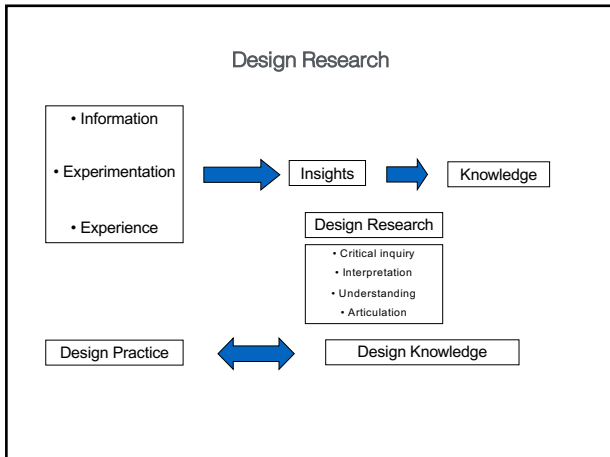
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Slide 52:
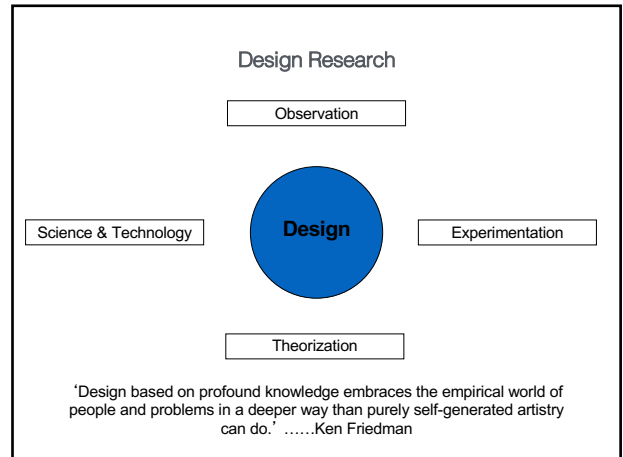
Design Research...

- *Design research constitutes systematic and methodical inquiry into practice*
- *Producing knowledge for, about and through design.*
- *Research carried out, using the tools of design ...Manzini (2007)*
- *Systematic creation of purposeful design knowledge. ... (Alpey)*

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Design Research

- Information
- Experimentation
- Experience

Insights → Knowledge

Design Research
- Critical inquiry
- Interpretation
- Understanding
- Articulation

Design Practice ⟷ Design Knowledge

53

Design Research

Observation

Science & Technology

Design

Experimentation

Theorization

'Design based on profound knowledge embraces the empirical world of people and problems in a deeper way than purely self-generated artistry can do.' ……Ken Friedman

54

Consumer
Customer
user

..persona

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55

Understanding User

Market Research

Consumer Research

Customer Research

User Research

Dealer

Vendor   Retailer

Manufacturer   **User**   Primary User

Worker / Laborer   Secondary User/s

Maintenance / Service personals

Transporter

- Focus Group
- 1-on-1 interview
- Dyads / Triads
- Super Groups / Party Groups
- Online Discussion Groups

- Field Ethnography
- Digital Ethnography
- Photo Ethnography
- Personas
- Participatory methods
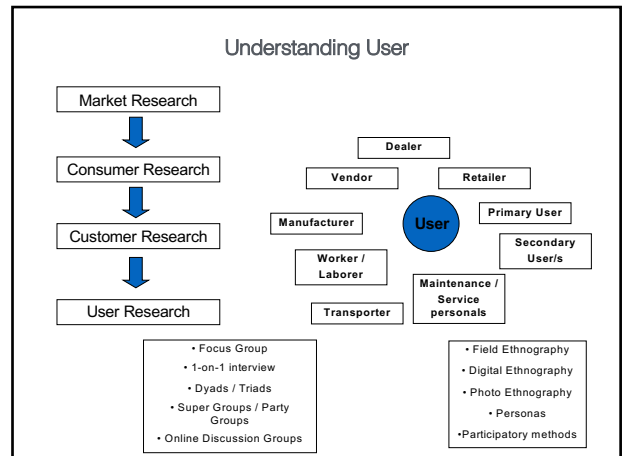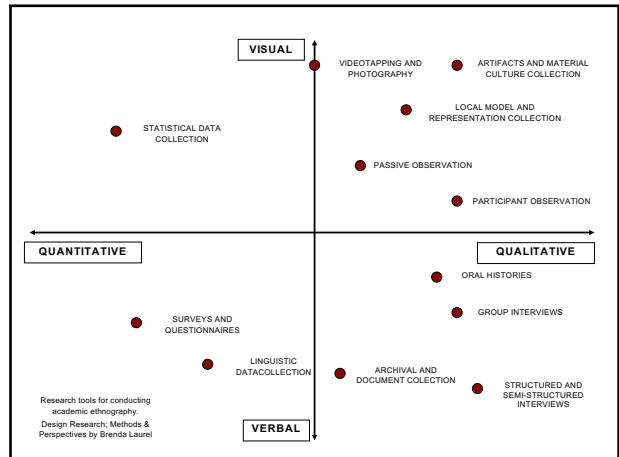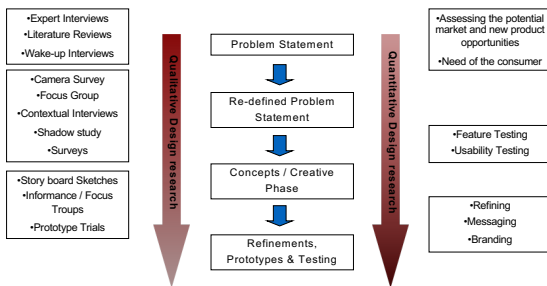
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Understanding User

- **Ethnography**

  - **'a research approach that produces a detailed, in-depth observation of people's behavior, beliefs and preferences by observing and interacting with them in a natural environment.**

- **Anthropology**

  - **'the study of human behavior – how people experience and make sense of what they themselves and others do.'**

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VISUAL

VIDEOTAPPING AND PHOTOGRAPHY | ARTIFACTS AND MATERIAL CULTURE COLLECTION

LOCAL MODEL AND REPRESENTATION COLLECTION

STATISTICAL DATA COLLECTION

PASSIVE OBSERVATION

PARTICIPANT OBSERVATION

QUANTITATIVE | QUALITATIVE

ORAL HISTORIES

SURVEYS AND QUESTIONNAIRES | GROUP INTERVIEWS

LINGUISTIC DATACOLLECTION | ARCHIVAL AND DOCUMENT COLECTION

STRUCTURED AND SEMI-STRUCTURED INTERVIEWS

Research tools for conducting academic ethnography.
Design Research; Methods & Perspectives by Brenda Laurel

VERBAL

58

Design & Design Research

- Expert Interviews
- Literature Reviews
- Wake-up Interviews

- Camera Survey
- Focus Group
- Contextual Interviews
- Shadow study
- Surveys

- Story board Sketches
- Informance / Focus Troups
- Prototype Trials

Qualitative Design research

Problem Statement

Re-defined Problem Statement

Concepts / Creative Phase

Refinements, Prototypes & Testing

Quantitative Design research

- Assessing the potential market and new product opportunities
- Need of the consumer

- Feature Testing
- Usability Testing

- Refining
- Messaging
- Branding

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thank you !!!

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