EXPERIENCE DESIGN E PROGETTO DI PRODOTTI E SERVIZI INNOVATIVI

SARA COLOMBO

PREMISE

DESIGN COMPETENCES

FOR INNOVATION

• **Visualize** knowledge, information, flows, systems, visions etc.
• Create **visions** for “future states of the world”
• Focus on new solutions’ **aesthetics and acceptability**
• Ideate new products/services starting from **users’ needs and experience**
• Ideate new products/services starting from **technological possibilities**
THE ROLE OF DESIGN IN INNOVATION PROCESS

• How can these competences enable collaboration among experts having different skills and coming from different disciplines within an innovation process?

• In what steps of the innovation process are these skills useful?

• What tools?
HOW CAN DESIGN HELP?

DESIGN SUPPORTING INNOVATION
DESIGN SUPPORTING INNOVATION

INNOVATION PROCESS

FEATURES

• **VISION-DRIVEN** PROCESS
• CLEAR-CUT and CREDIBLE **OBJECTIVES**
• **EXPERIENCE** ORIENTED
VISION-DRIVEN INNOVATION

• Most innovation processes start from a vision, also the ones based on technological research

• What is a “vision”?

The Knowledge Navigator by Apple
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INNOVATION PROCESSES

KNOWLEDGE NAVIGATOR
INNOVATION PROCESSES

CREDIBLE OBJECTIVES

- Objectives should be credible, clear, communicable and sharable.
- Credibility is at the basis of stakeholders’ motivation
- Objectives can be temporary, can change during the process, but should always be clear to all stakeholders

Objectives are usually summarized in the PROJECT BRIEF
A design brief contains the design problem analysed, the target user, the boundaries and the requirements the solution should fulfill, ordered by priority.
PREMISE

INNOVATION PROCESS

DESIGN BRIEF EXAMPLE

A design brief contains the design problem analysed, the target user, the boundaries and the requirements the solution should fulfill, ordered by priority
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INNOVATION PROCESS

DESIGN BRIEF EXAMPLE

Steelcase :: Modular Seating
Design Brief for a Sustainable Design of the Product:

Design Priorities

1. Priority: Design for disassembly, recyclability and reuse.
   Metric: 90% of chair materials kept out of the landfill system.

2. Priority: Materials used should be safe for the health of the user and the environment.
   Metric: Reduce the impacts of the material choices from extraction to end of life by 90%.

3. Priority: Offset additional design costs by reducing manufacturing costs.
   Metric: Reduce manufacturing costs by 50%.

Parameters

1. The scope of our analysis included all ecological impacts measured by the TRACI methodology from extraction to disposal (cradle to grave).
2. Our functional unit will measure the ecological impact of the entire lifecycle of the chair based on the weight of the materials per pound.

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INNOVATION PROCESS

DESIGN BRIEF EXAMPLE

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“To design a refrigerator that can cater to all needs of doctors with respect to keeping medicines and vaccines in a more organized way.”
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INNOVATION PROCESS

DESIGN BRIEF

The brief **DOES NOT** describe the features of the final solution, but sets the boundaries. It should leave the designer free to develop and propose different ideas **WITHIN** the identified limits and opportunities.
INNOVATION PROCESSES

EXPERIENCE-ORIENTED

- Considering the User Experience is fundamental for every user-oriented innovation.
- Considering experience only in the end of the process is a big risk.
- User experience implies choosing and designing for the right target.
- User experience greatly affects the success of a new product/service.
THE ROLE OF EXPERIENCE

EXPERIENCE COMPONENTS

SOLUTION

Poetics / Storytelling

Aesthetics / Meanings / Values

Functions

User

Emotional aspects

Sensory and Cognitive aspects

Functional / practical needs

PREMISE
THE ROLE OF EXPERIENCE

EXPERIENCE COMPONENTS

«Tutte le “trovate” high tech infatti (dal collezionismo d'arte digitale alla galleria dei suoni allo specchio che intimava di iniziare la giornata sorridendo all'armadio che suggerisce un look personalizzato) nascevano dal desiderio di interpretare in chiave digitale quelle piccole azioni poetiche del quotidiano che lo rendono memorabile ben oltre l’”efficienza” (il tradizionale cavallo di battaglia di chi si occupa di digitale).

È questo modo di progettare la tecnologia partendo dalla "morbidezza" della vita reale che […] ci farà innamorare della tecnologia più di qualsiasi gadget, scommettendo non sull’efficienza (il mantra dei big dell’high-tech) quanto sullo star bene»

Perché il design serve alla smart home, La Repubblica, 20 aprile 2016
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THE ROLE OF EXPERIENCE

EXAMPLE

SOLUTION

POETICS / STORYTELLING

AESTHETICS / MEANINGS / VALUES

FUNCTIONS

软

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THE ROLE OF EXPERIENCE

EXAMPLE

soft

hard

FUNCTIONS
PREMISE

THE ROLE OF EXPERIENCE

EXAMPLE

soft

hard

AESTHETICS / MEANINGS / VALUES
PREMISE

THE ROLE OF EXPERIENCE

EXAMPLE

soft

POETICS / STORYTELLING

hard
PREMISE

THE ROLE OF EXPERIENCE

EXAMPLE

solutions

POETICS / STORYTELLING

AESTHETICS / MEANINGS / VALUES

FUNCTIONS

design

goald

soft

hard
PREMISE

THE IMPORTANCE OF EXPERIENCE

CASE STUDIES

Smart pen / Livescribe

Livescribe Smartpens

What starts on paper, doesn’t have to stay there. Livescribe smartpens bring your words and ideas into your digital world.

Turn Your Words into Action.

Watch your notes appear instantly on your iOS and Android mobile devices. Paired with the Livescribe+ mobile app, notes become more useful when they are organized, tagged, searchable and converted to text.

LEARN MORE
THE IMPORTANCE OF EXPERIENCE

CASE STUDIES

Smart pen / Livescribe Moleskine + App
THE IMPORTANCE OF EXPERIENCE

CASE STUDIES

Fitbit

“Our goal is to help people live healthier, more active lives”
THE IMPORTANCE OF EXPERIENCE

CASE STUDIES

Fitbit

“Fitbit tracks every part of your day—including activity, exercise, food, weight and sleep—to help you find your fit, stay motivated, and see how small steps make a big impact.”
PREMISE

THE IMPORTANCE OF EXPERIENCE

CASE STUDIES

Fitbit

PERSONAL PROGRAMS

CUSTOMIZED ACTIVITIES
PREMISE

THE IMPORTANCE OF EXPERIENCE

CASE STUDIES

Fitbit

PREMIUM FEATURES

Get More Active or Lose Weight with Fitbit Trainer
Looking to increase your daily activity level? Reach your movement goals more quickly and see results faster with Fitbit Trainer.
How it works: Fitbit Trainer reviews your current activity level and creates a personalized 12-week fitness plan that pushes you to gradually increase your movement.

See In-Depth Analysis of YOUR Data
Are you working towards goals for better health, or looking for trends in your lifestyle? Access your personal reports to quickly identify changes for a healthier you. Reports provide in-depth analysis of your historical trends for sleep, food, and activity.
How it works: Personalized reports give you easy-to-read analyses of your week's data and recommend targets for the following week.

Rank Yourself Against Your Peers
Are you curious about how your personal stats compare to the Fitbit community? Increase your motivation and set new wellness goals by comparing your weight, activity and sleep with others.
How it works: Premium benchmarking is an interactive tool that lets you explore the Fitbit database to see how you stack up against your peers. Are you curious about how your personal stats compare to the Fitbit community? Increase your motivation and set new wellness goals by comparing your weight, activity and sleep with others.
THE IMPORTANCE OF EXPERIENCE

CASE STUDIES
Fitbit

Users can invite friends and family to share stats, send cheers and taunts, and compete on the leaderboard.
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THE IMPORTANCE OF EXPERIENCE

CASE STUDIES

Fitbit

Imposta un obiettivo e vai.

Remani focalizzato sui tuoi obiettivi e trova gli stimoli giusti per essere più attivo con Flex, un dispositivo elegante e soffile che controlla tutte le attività quotidiane, come passi, distanza percorsta, calorie bruciate e minuti attivi.
PREMISE

THE IMPORTANCE OF EXPERIENCE

CASE STUDIES

Fitbit

Prenditi cura di lei per un giorno. Dai una scossa alla sua vita.

ACQUISTA PER LA FESTA DELLA MAMMA
PREMISE

INNOVATION PROCESSES

HOW DESIGN CAN HELP:

• **VISION-DRIVEN** PROCESS
  – make the vision explicit

• **CREDIBLE** OBJECTIVES
  – visualize and clarify objectives

• **EXPERIENCE** ORIENTED
  – create scenarios, analyse and test the user experience, communicate the solution

... with specific TOOLS
DESIGN IN INNOVATION PROCESSES

VISUALIZATION
Visualization is essential in co-design.
WHEN CAN DESIGN HELP?

DESIGN IN DIFFERENT INNOVATION PROCESSES
TYPES OF INNOVATION PROCESSES

Innovation can be driven by many elements

- SOCIAL
- MARKET / BUSINESS
- DESIGN
- TECHNOLOGY
- …
Innovation can be driven by many elements

- SOCIAL
- MARKET / BUSINESS
- DESIGN
- TECHNOLOGY
- ...
DESIGN IN INNOVATION PROCESSES

DESIGN-DRIVEN INNOVATION

IDEAL PROCESS || USER-CENTRED
DESIGN IN INNOVATION PROCESSES

DESIGN-DRIVEN INNOVATION

DIVERGENT VS CONVERGENT THINKING

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DESIGN IN INNOVATION PROCESSES

DESIGN-DRIVEN INNOVATION

Divided into four distinct phases, Discover, Define, Develop and Deliver, it maps the divergent and convergent stages of the design process, showing the different modes of thinking that designers use.
DESIGN IN INNOVATION PROCESSES

DESIGN-DRIVEN INNOVATION

IDEAL PROCESS || USER-CENTRED

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DESIGN IN INNOVATION PROCESSES

DESIGN-DRIVEN INNOVATION

IDEAL PROCESS || USER-CENTRED
DESIGN IN INNOVATION PROCESSES

DESIGN-DRIVEN INNOVATION

Analysis

EXPLORE The content
Proper cooling is essential

ANALYSIS The profession
Integrated and specific solution

STUDY USER’S Experience
Difficult to monitor needs an attendant

DISCOVER Market
35% of vaccines and loss of $20 million yearly due to improper storage

Experience

Analysis

UNDERSTAND THE SUBJECT
OBSERVE, PROFESSION & INSIGHTS

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DESIGN IN INNOVATION PROCESSES

DESIGN-DRIVEN INNOVATION

IDEAL PROCESS || USER-CENTRED
DESIGN IN INNOVATION PROCESSES

DESIGN-DRIVEN INNOVATION

CREATIVE BRIEF

"To design a refrigerator that can cater to all needs of doctor with respect to keeping medicines and vaccines in a more organized way."

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DESIGN IN INNOVATION PROCESSES

DESIGN-DRIVEN INNOVATION

User Requirements

EFFICIENT
- Better Space Management
- Consumption

DEPENDABLE
- Battery Backup
- Carriage for Emergency
- Power Failure Alarm

CONTROL
- Constant Temperature
- Large Control Panel
- App for Monitoring (Tablet)
DESIGN IN INNOVATION PROCESSES

DESIGN-DRIVEN INNOVATION

IDEAL PROCESS || USER-CENTRED

Research

Design area

Experience analysis

INVESTIGATION/NEEDFINDING (ETHNOGRAPHY)  DESIGN SPACE (CREATIVE BRIEF)

Scenarios

IDEA GENERATION

Brainstorming  Choice process

PROTOTYPE /DEMO

CONCEPT DESIGN

Concept development

Creative BRIEF

Technological BRIEF

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DESIGN IN INNOVATION PROCESSES

DESIGN-DRIVEN INNOVATION

Scenarios

MOODBOARD & CFM

CLEAN. Organize. Simple
PRECISION. Intuitive. PURE

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DESIGN IN INNOVATION PROCESSES

DESIGN-DRIVEN INNOVATION

FEATURE RESEARCH

TECHNICAL VALIDATION

USABILITY

IDEATION

Using the existing Platform GENY 190

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DESIGN IN INNOVATION PROCESSES

DESIGN-DRIVEN INNOVATION

IDEAL PROCESS || USER-CENTRED
DESIGN IN INNOVATION PROCESSES

DESIGN-DRIVEN INNOVATION

FEATURE RESEARCH

TECHNICAL VALIDATION

USABILITY

IDEATION

REALISTIC PRODUCT
DEFINE, DETAILS & COMMUNICATE

Using the existing
Platform GENY 190
DESIGN IN INNOVATION PROCESSES

DESIGN-DRIVEN INNOVATION

IDEAL PROCESS || USER-CENTRED

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DESIGN IN INNOVATION PROCESSES

DESIGN-DRIVEN INNOVATION

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DESIGN IN INNOVATION PROCESSES

DESIGN-DRIVEN INNOVATION
DESIGN IN INNOVATION PROCESSES

DESIGN-DRIVEN INNOVATION

Scenarios

CONCEPTS

INTERNALs

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DESIGN IN INNOVATION PROCESSES

TECH-DRIVEN INNOVATION

- Research
  - TECH RESEARCH
  - (TECH SPACE IDENTIFICATION)

- Solution generation
  - EXPLORATION
  - SOLUTION DEVELOPMENT
  - PROTOTYPE/DEMO
  - TEST

- Solution development
  - APPLICATION/SCENARIOS
What role can design have in this tech-based process?

The 3M case
It’s not good enough just to have a great technology to drive the innovation process. We have to be able to identify insights and understand future context that can be translated through design to achieve relevance and impact. It’s about making smart combinations of available knowledge and technologies to create innovative solutions. When done successfully, we deliver customer value that translates to business value.
TECH-DRIVEN INNOVATION

3M Design Mission
Through collaborative creativity, we design meaningful brand experience and enrich 3M innovation. Our diverse design competencies help drive competitive advantage, grow our business, delight our customers and make a positive impact on our world.
TECH-DRIVEN INNOVATION

From Analog to Digital with The Post-it® Plus App
How to make the use of post-it digital?

In 1980, the Post-it® Note revolutionized the way we communicate, and continues to be a mainstay in everyday life as people organize and share ideas. Yet, in today’s digital world, many people are on the go, attached to their mobile devices for 24/7 communication, often in different locations. How could the Post-it® Note sustain the creative process of idea capture, sharing and organization beyond the meeting room?
DESIGN IN INNOVATION PROCESSES

TECH-DRIVEN INNOVATION + DESIGN

Research

- TECH RESEARCH
  (TECH SPACE IDENTIFICATION)

EXPLORATION

SOLUTION DEVELOPMENT

PROTOTYPE / DEMO

TEST

Solution development

APPLICATION / SCENARIOS

Design area

Scenarios visualization

make vision explicit
Our designers took up this challenge, diving into user experience. Collaborating with our technical and business colleagues, we began by examining the ethnography of capturing and sharing ideas during conventional brainstorming meetings.

This led to the development of user experience insights to design a process/product that is as intuitive, natural and creatively inspiring as the analog activity with physical Post-it® Notes.
DESIGN IN INNOVATION PROCESSES

TECH-DRIVEN INNOVATION + DESIGN
We then explored the technical functionality of software and electronic devices to replicate and complement such behavior in the digital world.
DESIGN IN INNOVATION PROCESSES

TECH-DRIVEN INNOVATION + DESIGN

Design area
Research

Tech FRAMING

Exploration

Solution Development

Technological BRIEFS

Prototype/Demo

Test

Solution development

APPLICATION/SCENARIOS
DESIGN IN INNOVATION PROCESSES

TECH-DRIVEN INNOVATION
+ DESIGN

The Post-it® Plus App enables mobile device users to digitally gather ideas and thoughts as they develop them using Post-it® Notes in the analog world, also providing new capability to quickly and intuitively organize, add new ideas, and easily share information with others in formats that work in their digital life.
The Post-it® Plus App enables mobile device users to digitally gather ideas and thoughts as they develop them using Post-it® Notes in the analog world, also providing new capability to quickly and intuitively organize, add new ideas, and easily share information with others in formats that work in their digital life.
DESIGN IN INNOVATION PROCESSES

TECH-DRIVEN INNOVATION + DESIGN

Research

Design area

TECH RESEARCH
(TECH SPACE IDENTIFICATION)

EXPLORATION

SOLUTION DEVELOPMENT

PROTOTYPE /DEMO

TEST

Solution
development

APPLICATION /SCENARIOS

Experience

Scenarios storytelling
DESIGN IN INNOVATION PROCESSES

TECH-DRIVEN INNOVATION + DESIGN

Research

Design area

Tech FRAMING

Technological BRIEFS

EXPLORATION

SOLUTION DEVELOPMENT

PROTOTYPE / DEMO

TEST

Solution development

APPLICATION / SCENARIOS

Scenarios visualization

make vision explicit

Temporary Creative BRIEFS

Experience analysis

Experience

Scenarios storytelling
DESIGN IN INNOVATION

TECH-DRIVEN INNOVATION + DESIGN

Advantages:
- Enable discussion
- Give clear direction to research
- Give references for the project
- Give clear direction to research and solution exploration
- Motivate stakeholders by credible applications
- Critically reason on objectives and features
- Visualize/tell to develop creativity and co/design
- Planning
- Measure
- Critically analyse

Overview of tech blocks
Choice of tech focus (what do we want to develop?)
Boundaries of the solution
Naming system components

- Scenarios visualization
  - Make vision explicit

- Scenarios storytelling
  - Communicate the solution by the proper storytelling and poetic
DESIGN IN INNOVATION PROCESSES

DESIGN CONTRIBUTION

- SCENARIOS VISUALIZATION (make vision explicit)
- EXPERIENCE ANALYSIS + DESIGN BRIEFS (directions)
- TECHNOLOGY FRAMING + TECH BRIEFS (common to different scenarios and briefs)
- EXPERIENCE EVALUATION
- SOLUTION COMMUNICATION
DESIGN IN INNOVATION PROCESSES

DESIGN CONTRIBUTION

SCENARIOS VISUALIZATION (make vision explicit)

TOOLS:
- STORYBOARDS
- USER SCENARIOS
- CUSTOMER JOURNEY
DESIGN IN INNOVATION PROCESSES

DESIGN CONTRIBUTION

SCENARIOS VISUALIZATION (make vision explicit)
DESIGN IN INNOVATION PROCESSES

DESIGN CONTRIBUTION

SCENARIOS VISUALIZATION (make vision explicit)
DESIGN IN INNOVATION PROCESSES

DESIGN CONTRIBUTION

EXPERIENCE ANALYSIS + DESIGN BRIEFS (directions)

- Tools for User analysis

- Design briefs composition (User, Objectives, Constraints, etc.): aim and boundaries of the design activity (MORE THAN ONE)

TOOLS:
- ETHNOGRAPHY TOOLS
- DESIGN BRIEF
- STAKEHOLDER MATRIX
- USER JOURNEY
DESIGN IN INNOVATION PROCESSES

DESIGN CONTRIBUTION

TECHNOLOGY FRAMING + TECH BRIEFS

- What do we want to develop? Which parts of the solution? All its features?
What existing technologies can fit some aspects of the solution?
Frame the boundaries of the technological solution

- Tech brief (common to different scenarios and design briefs):
List the requirements and features of the technological solution

TOOLS:
- SYSTEM MAP
DESIGN IN INNOVATION PROCESSES

DESIGN CONTRIBUTION

EXPERIENCE EVALUATION

- Is the solution acceptable? Is the user experience positive? (also on early solutions)

TOOLS:
- ERROR/CRITICAL ANALYSIS
Thank you