Project Management for IT Projects: part 2

INNOVATIVE PROJECTS

LESSON 6-MAY 2025

DESIGN THINKING

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Course agenda (part 2:INNOVATIVE PROJECTS)

1. INNOVATION AND METHODOLOGIES
2. AGILE CONCEPTS
3. AGILE METHODOLOGIES OVERVIEW WITHOUT SCRUM
4. SCRUM
5. LEAN
6. **DESIGN THINKING**
7. VALUE DRIVEN DELIVERY
8. STAKEHOLDERS,TEAMS,ADAPTIVE PLANNING
9. CASE STUDIES
10. EXERCISES
11. CONTINUOUS IMPROVEMENT AND REVIEW

ACKNOWLEDGEMENTS

These slides are based on

- MANUALE DI DESIGN THINKING

By Michael Lewrick, Patrick Link, Larry Leifer

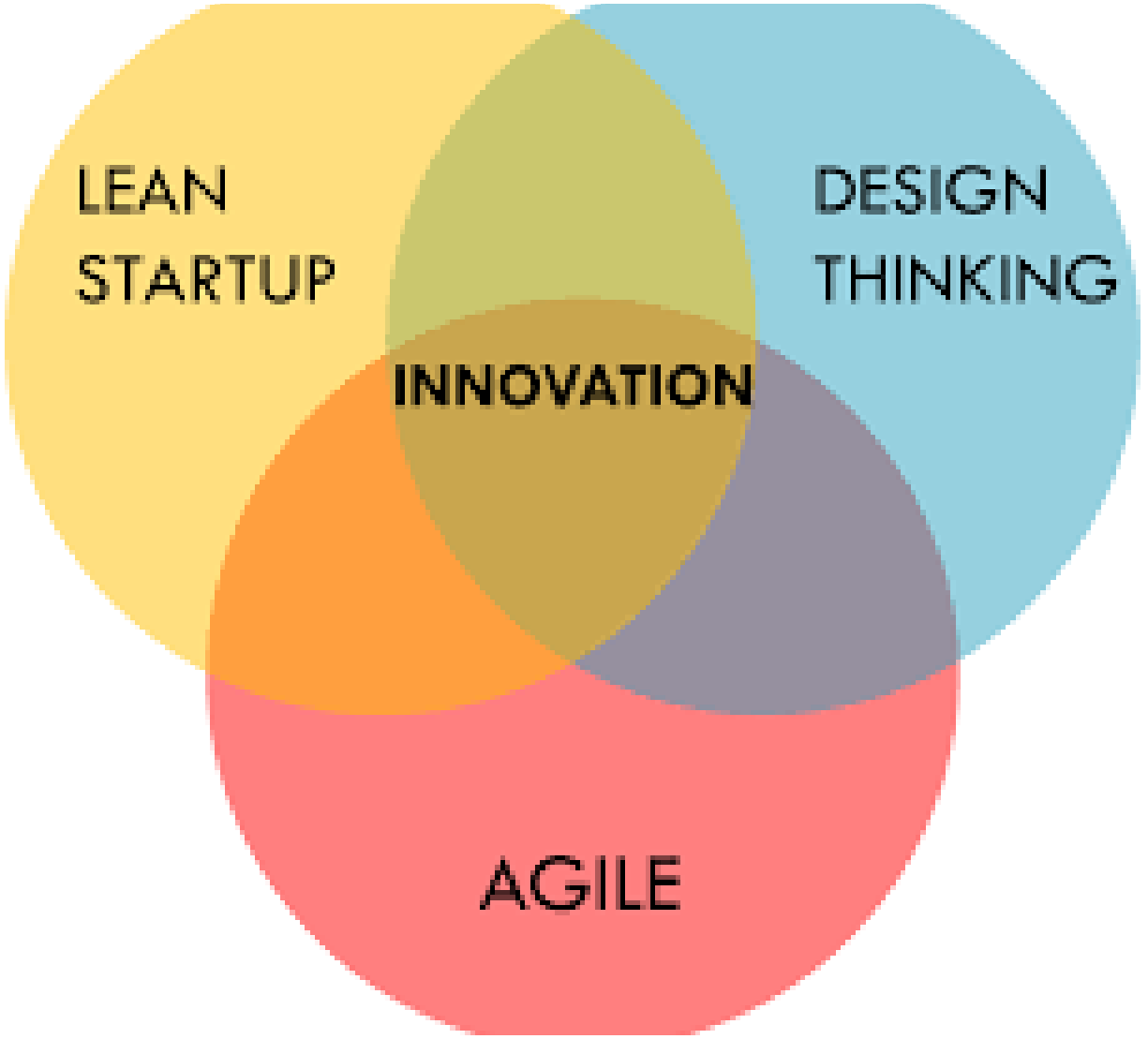
- DESIGN THINKING METHODOLOGY BOOK

By Emrah Yayici

DIGITAL TRANSFORMATION

LEAN-AGILE-DESIGN THINKING

Complementarity derives from the specific benefits of design thinking in the front end of the innovation process combined with the particular benefits of lean startup and agile in the back end.



WHAT IS DESIGN THINKING?

Design thinking is a tool for problem-solving and innovation.

It is a human-centered framework

It empowers businesses to craft solutions

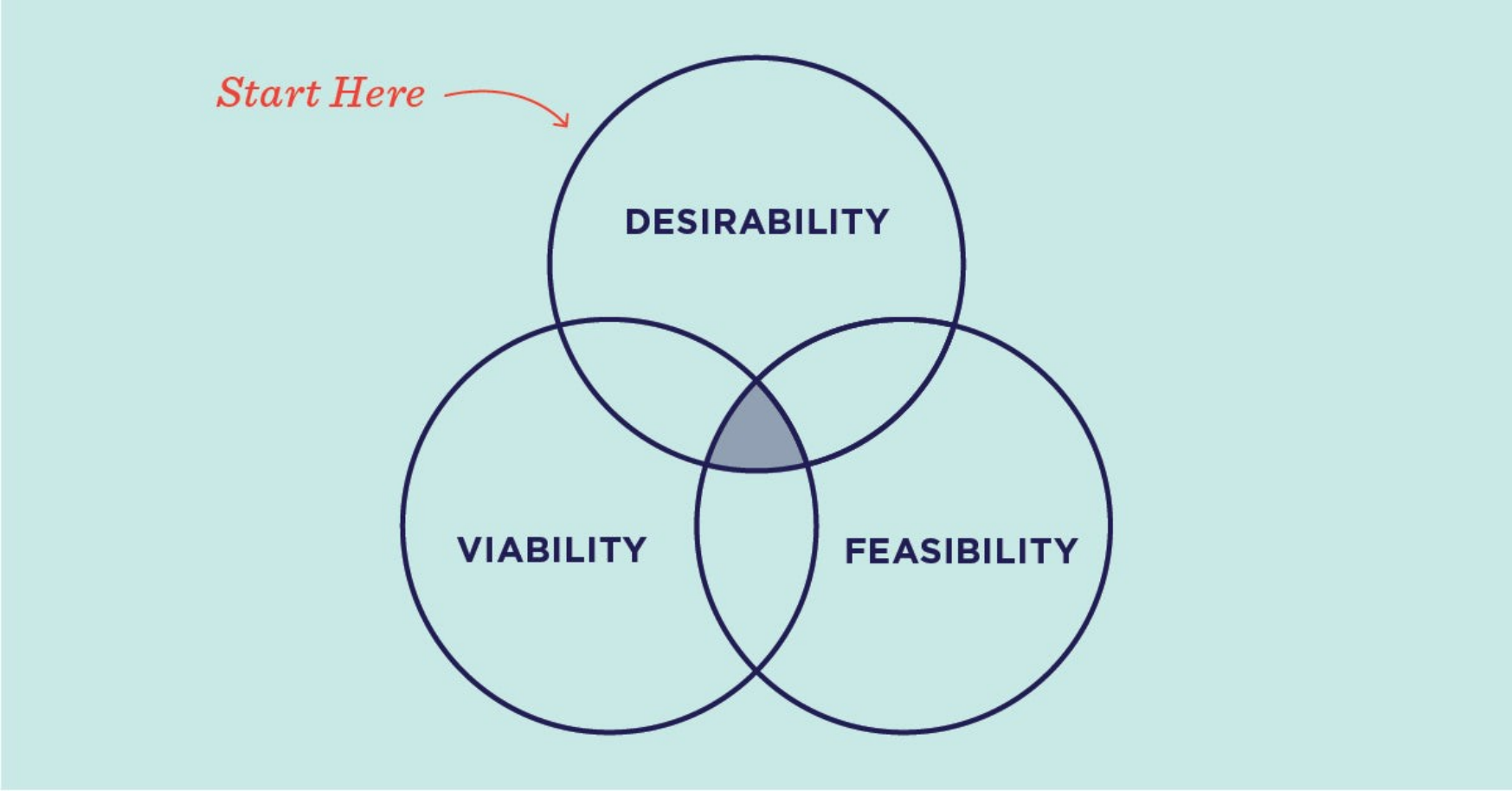
It enables managers to be adaptable, creative, effective

DESIGN THINKING DISTINCTIVE CHARACTERS

Mindset is everything:

- reflection during action
- re-contextualization of problems as information emerges
- ability to make ideas tangible through prototypes

How Does Design Thinking Work?



How Does Design Thinking Work?

- Desirability: what makes sense to people and for people
- Feasibility: what is technically possible within the foreseeable future
- Viability: what is likely to become part of a sustainable business model

MOTIVATION FOR DESIGN THINKING

ORGANIZATIONS ADOPT DESIGN THINKING,

A HUMAN-CENTERED PROCESS,

WHEN THEY WANT TO ANSWER ALL THE ACTOR

OF THE **CHANGE**

DESIGN THINKING:MORE A MINDSET THAN A METHOD

FIL ROUGE OF TODAY LESSON:

ORGANIZATIONS ALWAYS LOOK FOR A **MAGICAL WAY** TO

1. **CREATE NEW IDEAS/PRODUCTS WITH A LARGE REQUEST**
2. **OVERCOME BUSINESS,SOCIAL,TECHNOLOGICAL ISSUES**

PRODUCTS CREATION&PROBLEMS OVERCOME

A NEW WAY OF THINKING IS REQUIRED BECAUSE THE WORLD IS **CHANGING** WITH AN INCREASED AMOUNT OF **COMPLEXITY AND UNCERTAINTY**

DESIGN THINKING HAS BECOME THE MOST DISTINCTIVE WAY TO DO THIS

DIGITAL ERA

Design Thinking is attracting tremendous interest as **an extremely important tool**

for initiating digital transformation

DESIGN THINKING: THE LANGUAGE OF INNOVATION

IT SHOULD BE LEARNT BY ALL THOSE WHO ASPIRE TO BUILD THE FUTURE

IT MAKES UNDERSTANDABLE CHOICES BY INTEGRATION OF ALL THE POSSIBLE CONTRIBUTIONS TOWARDS THE SATISFACTION OF THE WISHES

FUNDAMENTAL CONCEPT

DESIGN THINKING PROVIDES A WAY OF THINKING BASED ON PEOPLE WISHES

POINT OF VIEW TO BE CHANGED

From "what is”✉ to “what could be“

Starting with "***we must understand***" and arriving at ***“we must imagine”***

DESIGN THINKING MINDSET IN THE VUCA ERA

Volatility, Uncertainty, Complexity, Ambiguity

COMPANIES LOOK FOR BRILLIANT MECHANISMS TO MEET 2 GOALS:

1-GENERATION OF WIDELY and STRONGLY LIKED PRODUCTS
2-SOLVING COMPLEX PROBLEMS

INNOVATION IS POSSIBLE VIA ***«PROJECTIZATION»***

THESE MECHANISMS CAN ONLY COME

- ***BY NEW IDEAS***
- ***AND NEW BUSINESS MODELS***

DESIGN THINKING

Design thinking is a tool that applies to improve project and design management

It was born ufficially in the 2000 in Stanford-California with focus on people by promoting:

integration of analysis and creativity

VALUE

VALUE IS IS NOT IN THE SOLUTIONS
BUT
IN THE IDENTIFICATION OF

THE CORRECT PROBLEM

DESIGN THINKING&PROBLEM DEFINITION

- According to design thinking**, if problem definition is** not performed well, it affects all the consequent path

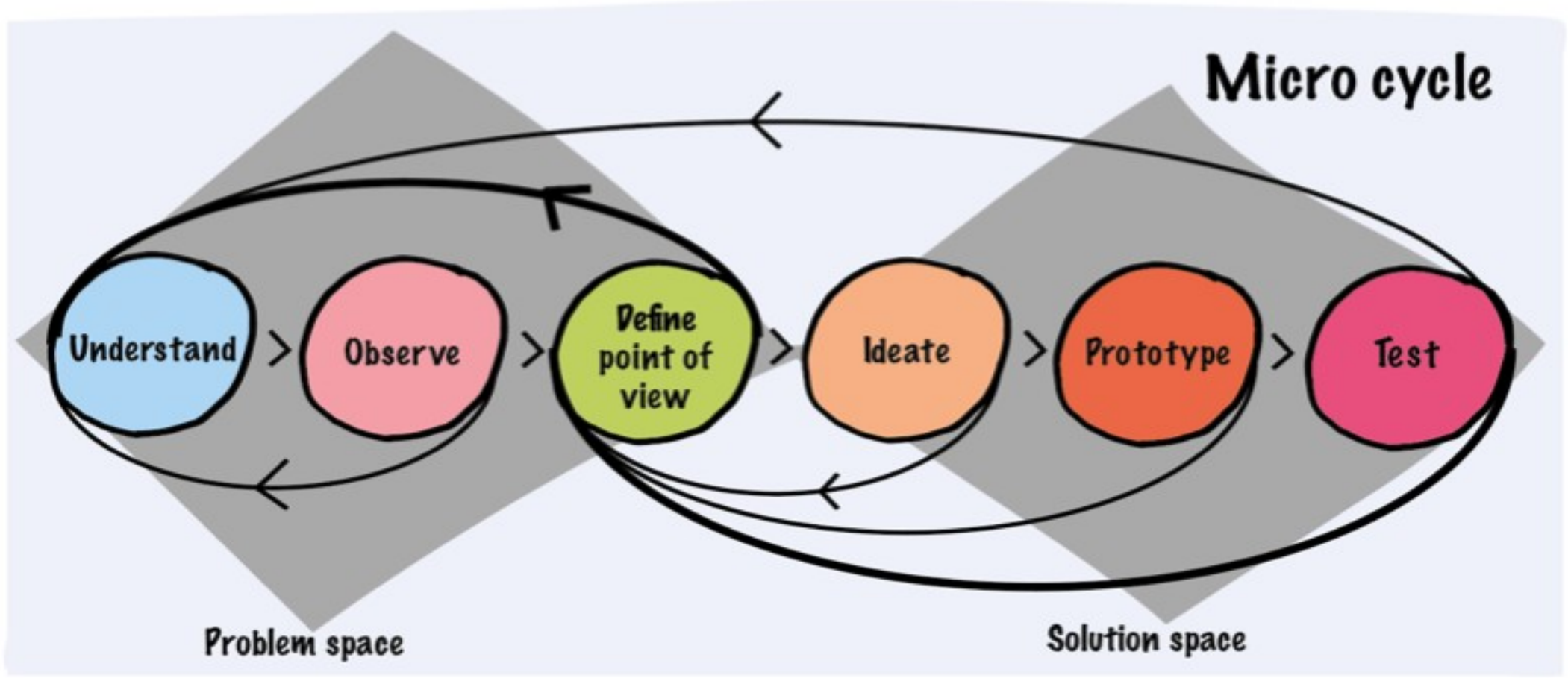
- A NEW MINDSET IS NEEDED IN THIS SENSE IN AN ORGANIZATION

4 MAIN FEATURES

- Hypothesys-driven process based on a solution through new ideas
- Grounded on testing alternative solutions
- Problem definition must be performed well to avoid affecting all the path
    - Human centered methodology helps organizations to create solutions around **their users**

A NEW MINDSET IS NEEDED IN THIS SENSE IN AN ORGANIZATION

DT: CREATE INNOVATION THROUGH 6 PHASES



DT: A DISTINCTIVE WAY TO CREATE INNOVATION THROUGH 6+1PHASES

1. UNDERSTAND✉DEFINITION of THE CHALLENGE
2. OBSERVE✉RESEARCH DATA (look for requirements)
3. POINT OF VIEW DEFINITION✉interpretation
4. IDEATION✉ (sistematicity)
5. PROTOTYPING✉ (tangibility)
6. TEST✉ (end and start of this process)

+1:REFLECT

1-UNDERSTAND:DEFINITION of THE CHALLENGE

- THE KEY SUCCESS FACTOR IN THE DEFINITION PHASE IS SPENDING TIME TO FRAME THE CHALLENGE AS A SPECIFIC,PURPOSE LED,ACHIEVABLE, CLEAR

STATEMENT

STRONG CONCRETIZATION SKILLS ARE REQUESTED (PROPER TECHNIQUES EXIST)

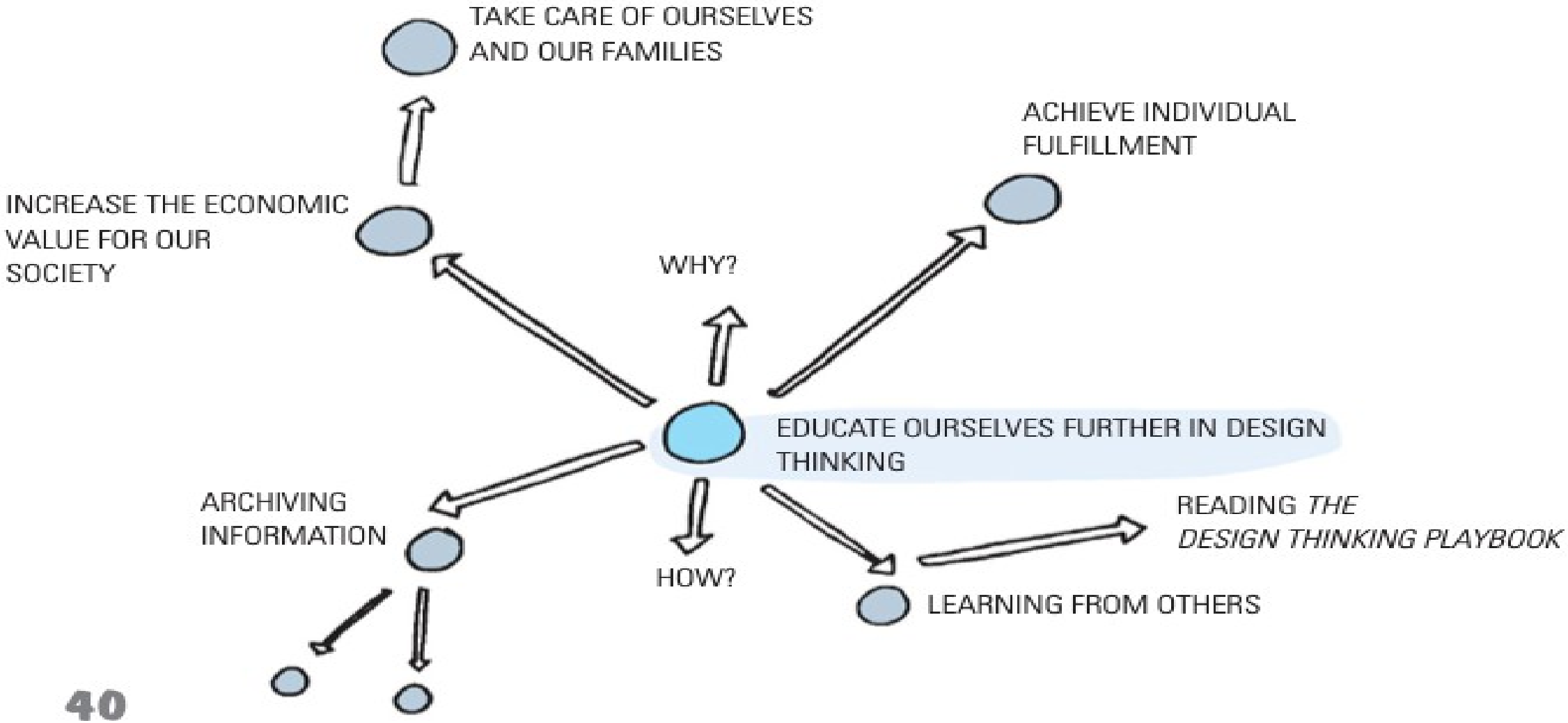
«If I had an hour to solve a problem, I would spend 55 minutes thinking about the problem and 5 minutes thinking about solutions»

WHO SAID THIS?

ALBERT EINSTEIN !

"***preparation has great value to problem solving***"

1A-UNDERSTAND:DEFINITION of THE CHALLENGE



1A-UNDERSTAND:DEFINITION of THE CHALLENGE

Along with problem statement it is important to understand the general context:

trough 6 questions:

1. **What are the features, type, size of the target group?**
2. **Why the user is looking for a solution?**
3. **What is the proposal of the user for the solution?**
4. **When and how long the result is necessary?**
5. **Where will the result be used? (environment, place,media, country)**
6. **How is the solution of the user implemented? (budget, capability,business model,go to market)**

2-OBSERVE: RESEARCH DATA (look for requirements)

Be experienced and understand users' needs well

It is important to document and visualize what you discover so you can share it with others later

3- POINT OF VIEW DEFINITION✉INTERPRETATION AND INSIGHTS

- to draw on everything that has been discovered,
- to interpret it
- to ponder it.

All group members must be encouraged to talk about their experience.

The goal is to define a common knowledge base

The best way is to tell lived stories, show images and people's reactions

4.IDEATION: CREATIVITY INCREASE (FOCAL POINT)

- NORMALLY THIS IS LIMITED TO BRAINSTORMING OR CREATING SKETCHES
- GOAL:TO DEVELOP AS MANY CONCEPTS AS POSSIBLE AND VISUALIZE THEM.
- THE PRIMARY GOAL IS TO INCREASE CREATIVITY STEP BY STEP BY ITERATION

4 A:STRUCTURING AND CHOOSING IDEAS

- Ideas need to be grouped and chosen systematically

- Problems and situations must be communicated

4 B:STRUCTURING AND CHOOSING IDEAS

- Maps must be created:

1. **Mental:** a graphical representation of thought with the aim to implement the visual memory and therefore the memorization of concepts

2. **Conceptual**: on a standard template to simplify approaches to solutions

3. **Systemic**: a defined method in software to build a classification scheme

4. **Giga Maps**: to allow the team to get a quick summary and a knowledge scenario

5- PROTOTYPING: TANGIBILITY

- Ideas must be tangible as soon as possible by testing them with potential users to receive important feedback to improve

LOVE IT, CHANGE IT or LET IT LOSE IT

6 TEST PRODUCT EVOLUTION

- Phase that comes after each prototype developed or after each draft sketch

- In addition to traditional tests, digital tests can now be performed

- From this stage we receive feedback for which we must learn from these ideas and develop them further until the idea pleases with the alternative of discarding or changing it.

+1: REFLECT

- Before starting a new cycle of the iterative process, it is very advisable to reflect on the direction taken
- The topics can be addressed in a feedback cycle

"I like it, I would like it"

TO TRANSFORM ORGANIZATIONS

- DESIGN:

1. SPACE
2. WORK ENVIRONMENT
3. A CREATIVE ATMOSPHERE, POSSIBLY WITH INTERDISCIPLINARY TEAMS
4. VISUALIZE IDEAS AND STORIES
5. MANAGE FACILITATION
6. IMPLEMENT STRATEGIC FORESIGHT:

GOAL: TO DRAW USEFUL INSIGHTS FOR STRATEGIC PLANNING, POLICY-MAKING AND PREPAREDNESS.

ANTICIPATING :

- **TRENDS**
- **RISKS**
- **EMERGING ISSUES**
- **THEIR POTENTIAL IMPLICATIONS**
- **THEIR POTENTIAL OPPORTUNITIES**

DESIGN THE FUTURE

MANY THINGS MUST BE UNDERSTOOD **AS SYSTEMS:**
interactions of components, each satisfying a function, in a larger unit and in its environment

- products
- services
- business models
- Processes
- our family
- the organization we work for

DESIGN THE FUTURE:
Design criteria for a digitized world

1. Accept that the customer of the future might be a robot
2. Design interactions for the coexistence between machines and human beings
3. Exploit the concept that human beings and robots are more efficient in team
4. Design all needed areas for human being and robot:data, knowledge, emotions
5. Focus on trust: trust increases when the interlocutor behaves as expected
6. Define a strategy based on the concept that robots don’t learn the moral

Just a last tip:”The Artful Thinking approach”

- **It encourages active looking and learning through the practice of short, simple thinking routines**.

- These routines help students to focus on specific aspects of an artwork and to organize their observations and ideas.

WORLD SEEN WITH NEW EYES

DEALING WITH ARTS MAKES SOMEONE SKILLED IN

- CREATIVITY
- OBSERVATION
- EMPATHY
- CRITICAL THINKING
- CREATION OF INNOVATIVE BUSINESS AND TECHNOLOGICAL SOLUTIONS

MAGIC STEP LOOKED FOR

COMPANIES LOOK FOR TO UNLOCK CREATIVITY AND INNOVATION:

the way is the application of

- ***Artful Thinking mindset***
- ***Design Thinking Methodology***

DIGITAL TRANSFORMATION: HOW?

1. TAKE CARE OF USERS' NEEDS
2. ACCEPT THAT NEW TECHNOLOGIES WILL GO ON BY BIG REVOLUTIONS
3. LEVERAGE ON NEW MARKET OPPORTUNITIES
4. OVERCOME THE «DIGITAL DIVIDE»
5. CREATE BUSINESS ECOSYSTEMS
6. DIGITAL TRANSFORMATION IS ALSO AN ORGANIZATION TRANITION REQUIRING AN AGILE AND INTERDISCIPLINARY COLLABORATION
7. ESTABLISH A NEW MINDSET IN YOUR ORGANIZATION TO FACE CHALLENGES

TIPS TO DESIGN THE FUTURE

1. DATA SCIENCE
2. CUSTOMER’S EXPERIENCE
3. ARTIFICIAL INTELLIGENCE
4. IDENTIFY A DIGITALIZATION CHAMPION
5. BRING INTO THE COMPANY PROPER CAPABILITIES
6. BRING **T** EMPLOYEES:UNDERSTANDING A TECHNOLOGY AND INNOVATORS

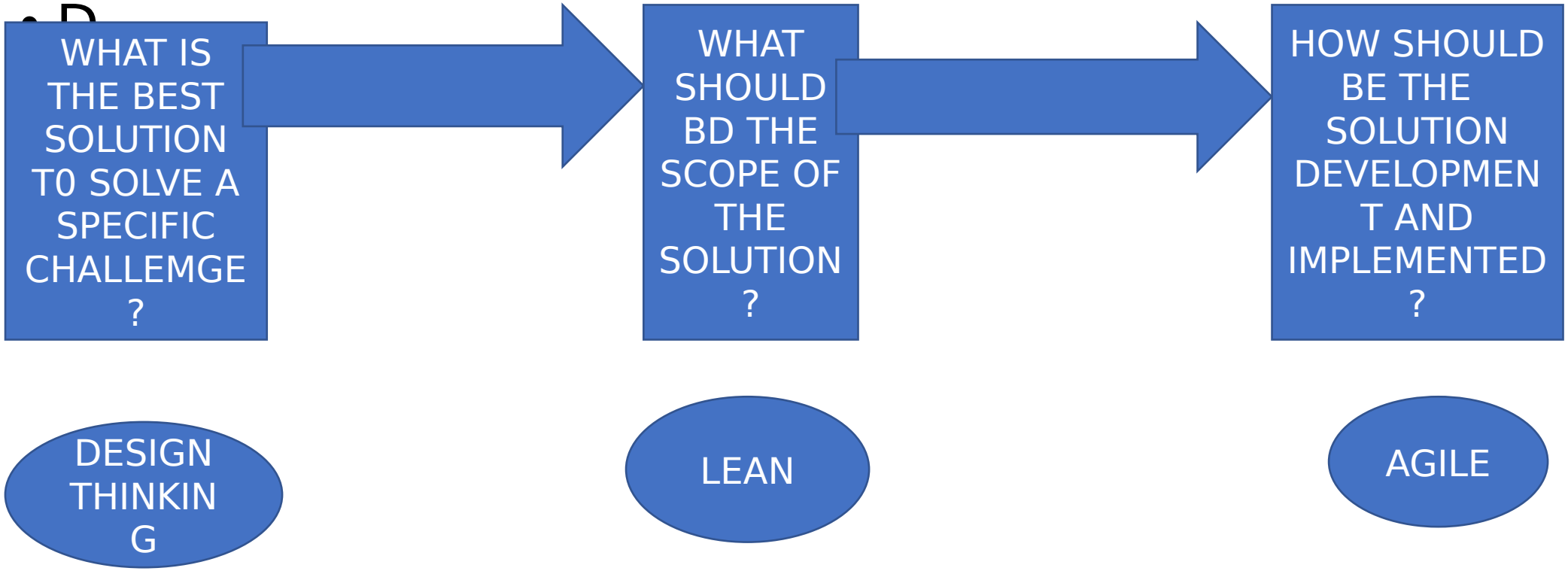
TRUE OR FALSE?

- **DESIGN THINKING IS A MINDSET**
- **DESIGN THINKING IS A METHODOLOGY ON WASTES**
- **PROBLEM DEFINITION IS BASIC IN DESIGN THINKING**
- **DESIGN THINKING USES VISUAL MANAGEMENT TOOLS**
- **ADOPTING DESIGN THINKING ENSURES 30 CUM LAUDE**
- **CREATIVITY IS FOSTERED BY DESIGN&ARTFUL THINKING**

DESIGN THINKING REVIEW

....WORKS AS MINDSET
....WORKS STARTING BY PROBLEM DEFINITION
....WORKS WITH A PROPER METHODOLOGY LIKE SCRUM
....WORKS AS ITS PHILOSOPHY SATISFIES CUSTOMERS

HOW TO APPLY DESIGN THINKING,LEAN,AGILE



PHYSICS THEORY

- EVERYTHING IN THE UNIVERSE HAS A BIAS TO PASS FROM A WELL ORDERED STATE T0 A DISORDERED ONE TO THE ENTROPY LAW
    - **THIS IS ALSO VALID FOR PROJECTS**
- TO PREVENT CHAOS A METHODOLOGY IS NEEDED

- PRODUCTS&SERVICES CAN BE DEVELOPED WITH EITHER A REVOLUTIONARY OR AN EVOLUTIONARY APPROACH

DESIGN THINKING,LEAN,AGILE

- THE NEW SOLUTION IS DEVELOPED IN A BIG UPFRONT DESIGN PHASE AND IS FULLY IMPLEMENTED AFTER COMPLETION

- IN THE EVOLUTIONARY APPROACH THE SOLUTION IS DESIGNED,DEVELOPED,IMPLEMENTED IN AN ITERATIVE WAY

ALTERNATIVE?

- NO: DES THINKING SHOULD BE SEEN AS A COMPLEMENTARY METHOD TO LEAN AND AGILE

- THESE METHODOLOGIES CAN BE APPLIED TOGETHER THROUGHOUT DEVELOPMENT LIFE CYCLE

APPLICATION TOGETHER THROUGHOUT DEVELOPMENT LIFe CYCLE

1. IDENTIFY THE BEST SOLUTION FOR A SPECIFIC CHALLENGE
2. DEFINE THE SCOPE OF THE SOLUTION: MINIMUM VIABLE PRODUCT
3. DEVELOP AND IMPLEMENT THE SOLUTION IN AN ITERATIVE MANNER

STATUS OF THE COURSE AFTER TODAY LESSON 6: INNOVATIVE PROJECTS:DESIGN THINKING

LESSONS 1,2,3,4,5,6

- INNOVATION
- METHODOLOGY
- REQUIREMENTS
- ITERATION
- LEAN START UP
- DESIGN THINKING

NEXT LESSON 7

VALUE DRIVEN DELIVERY

IMPORTANT LEARNT CONCEPTS IN 6th LESSON

1. INNOVATION
2. AGILITY
3. VALUE DRIVEN DELIVERY
4. DELIVERABLE
5. EMPIRICAL PROCESS CONTROL
6. PRODUCT OWNER
7. TEAM
8. SCRUM-MASTER
9. SPRINT
10. DONE
11. LEAN
12. WASTE
13. CREATIVITY
14. DESIGN THINKING

- DESIGN THINKING is becoming sensitive to problems and difficulty

- DESIGN THINKING is searching for solutions and formulating hypotheses

- DESIGN THINKING is testing ipotheses,modifying and retesting them

- DESIGN THINKING is finally communication

THANKS! NEXT 7th LESSON:
VALUE DRIVEN DELIVERY

- TIPS FOR THE EXAM:

POSSIBLE QUESTIONS:

-Explain the sentence:**"I like it, I would like it“**

-Outline the difference between method and mindset

-comment the 3 areas:**LEAN-AGILE-DESIGN THINKING**

NEXT

VALUE DRIVEN DELIVERY

Value is the benefit created by goods

1. **not only related to money**
2. **also customer satisfaction delivers value**

END OF THE LESSON

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