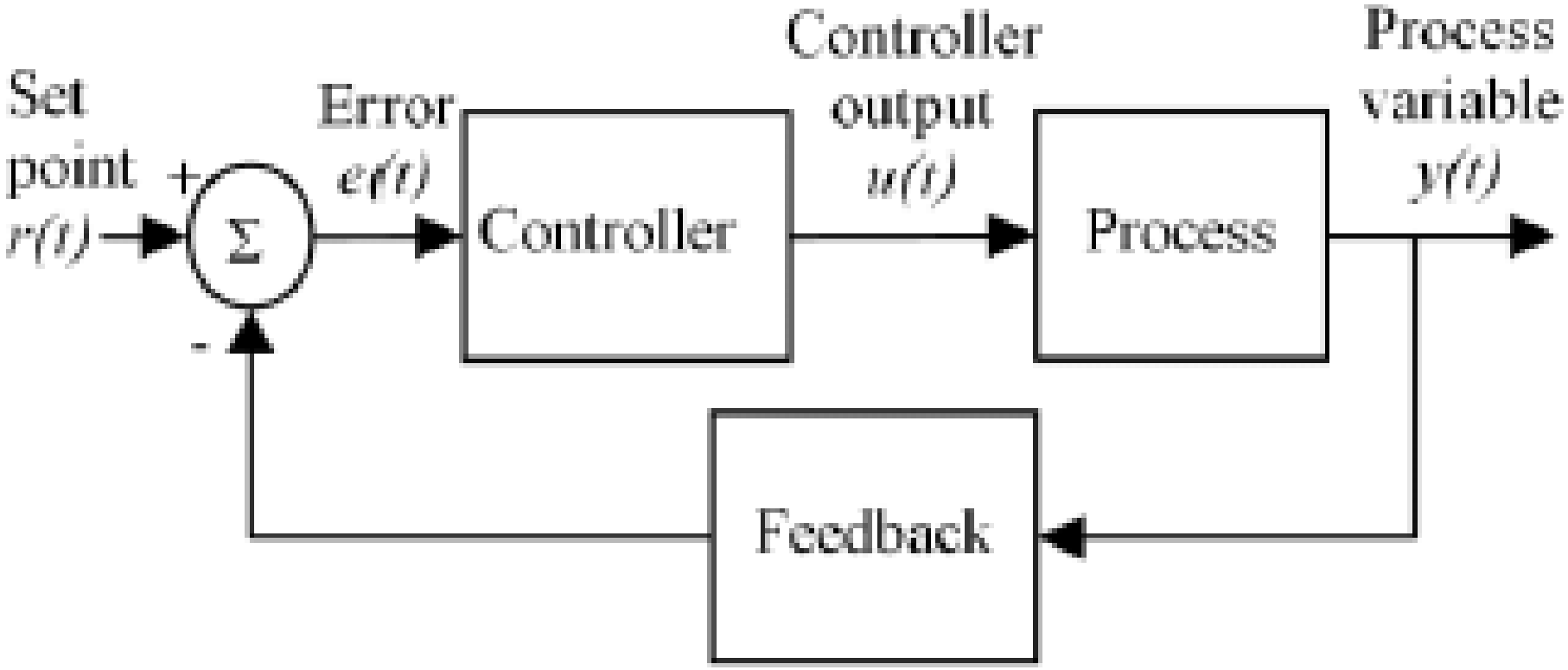
LOOPS AND CONTROLS

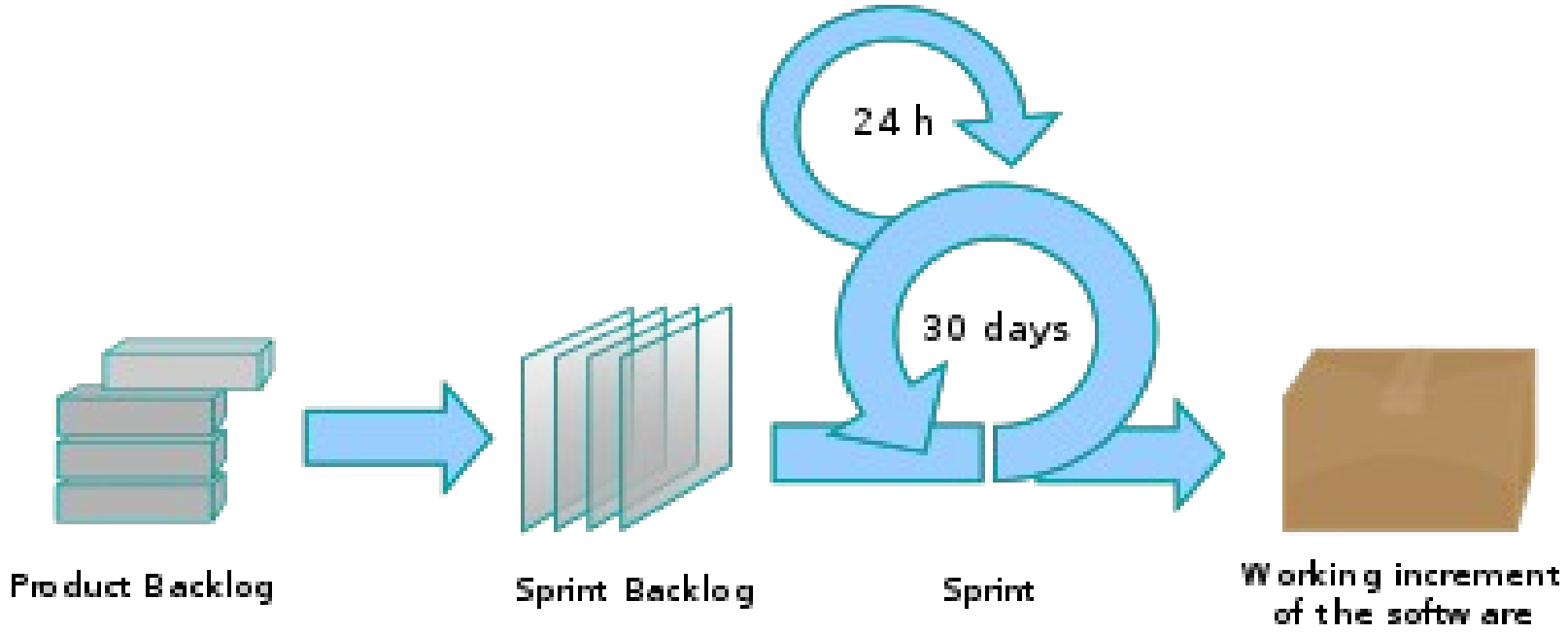


Automatic control is the application of control theory for processes regulation

A controller compares a measured value of a process with a desired set value

It processes the resulting error signal to change some input to the process, in such a way that the process stays at its set point despite disturbances.

ANALOGY WITH SCRUM



SCRUM exercise from last lesson

Place a check mark in the proper column for the team.the owner,the scrummaster

to indicate

ITEM	DEVELOPMENT TEAM	PRODUCT OWNER	SCRUMMASTER
Estimates			
Backlog priorities			
Agile coaching			
Work coordination			
Definition of «done»			
Process adherence			
Technical			

SCRUM questions from last lesson

1-As Scrummaster you assess that the competitive market has shifted and the product the team is developing is no longer viable

What should you do?

2-The definition of «done» is created with the input of everyone except the:

A-development team;B-product owner;C-scrummaster;D-process owner

3-Which of these is one of the planned opportunities for inspection& adaptation?

A-Velocity review meeting;B-Risk meeting;C-Daily scrum;D-

SCRUM (✉*EASY TO UNDERSTAND, HARD TO MASTER)*

SCRUM solved exercise from last lesson

Place a check mark in the proper column for the team.the owner,the scrummaster

to indicate

ITEM	DEVELOPMENT TEAM	PRODUCT OWNER	SCRUMMASTER
Estimates	X		
Backlog priorities		X	
Agile coaching			X
Work coordination	X		
Definition of «done»	X	X	X
Process adherence			X
Technical	X		

SCRUM (✉*EASY TO UNDERSTAND, HARD TO MASTER)*

SCRUM answers from last lesson

1-As Scrummaster you assess that the competitive market has shifted and the product the team is developing is no longer viable

What should you do?

2-The definition of «done» is created with the input of everyone except the:

A-development team;B-product owner;C-scrummaster;D-process owner

3-Which of these is one of the planned opportunities for inspection& adaptation?

A-Velocity review meeting;B-Risk meeting;C-Daily scrum;D-Retrospective meeting

Project Management for IT Projects: part 2

INNOVATIVE PROJECTS

LESSON 5-April 23-2025

LEAN

Mario Salano

April – May 2025

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
12. REVIEW
13. CONCLUSION

WE ARE IN THE DIGITAL TRANSFORMATION ERA

In light of digital transformation many firms try to increase the **agility** of their innovation processes.

AGILITY IS THE ABILITY TO MOVE AND TO THINK QUICKLY

LEAN

STRICTLY SPEAKING LEAN IS NOT AN AGILE METHODOLOGY AS IT BEGAN AS A MANUFACURING APPROACH

IT ORIGINATED FROM TOYOTA PRODUCTION SYSTEM,DEVELOPED TO IMPROVE HENRY FORD’S CARS MASS PRODUCTION SYSTEM

THEN LEAN WAS APPLIED TO SOFTWARE DEVELOPMENT AND ALSO ADAPTED TO OTHER KNOWLEDGE WORKS

DIGITAL TRANSFORMATION ERA

Firms particularly rely on the lean approach to reduce some of the deficits of established **innovation processes**

LEAN DEVELOPMENT

LEAN IN AN AGILE CONTEXT MEANS A SUBSET OF LEAN NAMED

LEAN PRODUCT DEVELOPMENT

Radical approach to innovative initiatives (new companies/projects)

It penetrates the fog of uncertainty and identifies a path towards a sustainable business, reducing drastically time and costs and therefore the probability of failure.

LEAN START UP METHOD

It proposes a continuous design-check process, with extensive use of the web, aimed at adapting the product step by step to the wishes of **customers** while keeping financial outlays under control.

LEAN WITHIN THE AGILE MINDSET

- Customer on the center
- Change of ideas as a consequence of feedbacks.
- Transforming the idea into a business model

BENEFITS

- more innovation,
- less expense
- less waste of time
- greater probability of success
- no vanity indicator, i.e. false progress signals often used to evaluate the success of an initiative

SOME DEFINITIONS BEFORE GOING ON

- **Business model**:describes the logic according to which an organization creates, distributes and collects value.It is the set of organizational and strategic solutions through which the company exists and is successful

- **Business case**:describes the project justification and includes costs, risks and timelines that serve to verify the ongoing feasibility of the project

- **Minimum viable product**: it has enough features to validate a product idea early in the product development cycle.

In software teams it helps receive user feedback as quickly as possible to improve

LEAN METHODOLOGY FOR PM

Development of an idea and its transformation into a business

The goal is a quick check of the potential of an idea on the market and the shortening development times through a waste reduction

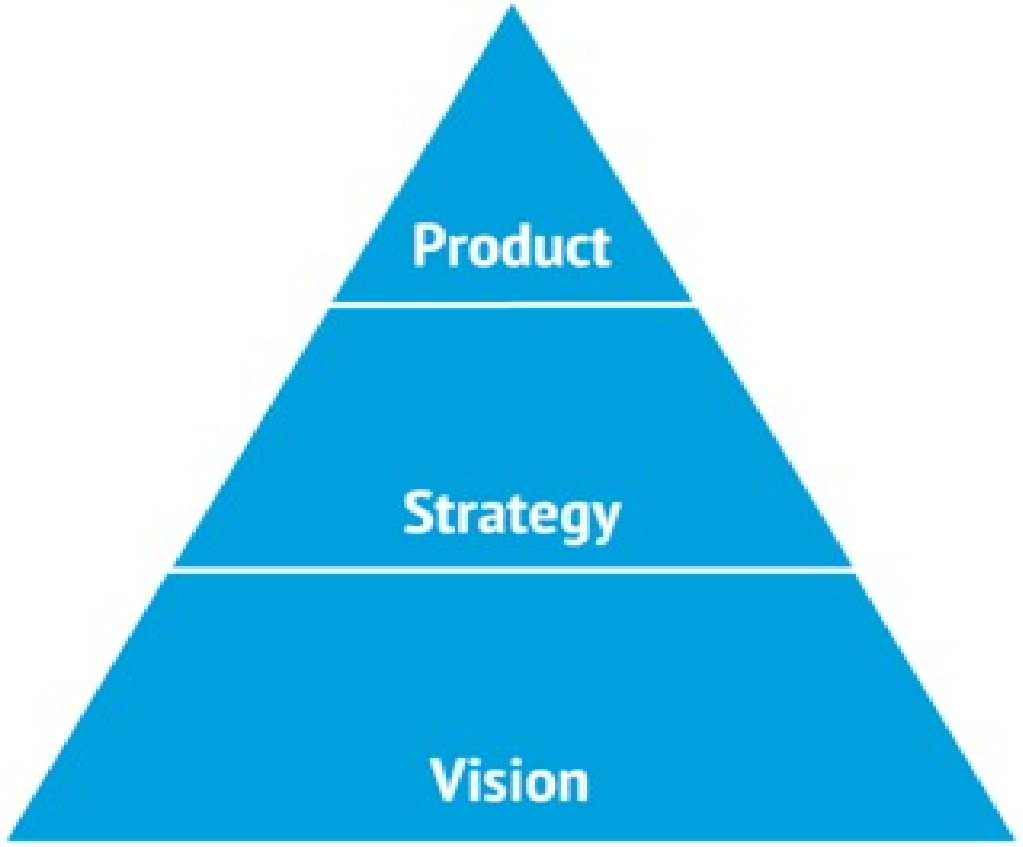
Minimum Viable Product, going to the next release only after an analysis of customers' feedbacks

LEAN METHODOLOGY FOR PROJECT MANAGEMENT

Eric Ries defined this methodology in his famous 2011 book “Lean Startup”

«The Lean Startup is a scientific approach to manage projects and startups and getting a desired product to customers’ hands faster»

VISION:DESTINATION IN MIND, CREATING A PROSPEROUS BUSINES
STRATEGY: BUSINESS MODEL,ROADMAP, COMPETITORS&CLIENTS
PRODUCT: THE FINAL RESULT



LEAN METHODOLOGY FOR PROJECT MANAGEMENT

The Lean Startup method teaches:

- *how to drive a startup*
- *how to steer*
- *when to turn*
- *when to persevere*
- *When to grow a business with maximum acceleration.*

IT IS A PRINCIPLED APPROACH TO NEW PRODUCT DEVELOPMENT

GOALS OF LEAN METHODOLOGY FOR PROJECT MANAGEMENT

- Quick check of the potential of an idea on the market
- Shorten its development cycles by reducing waste.

For this purpose, the Lean Start-Up plans to proceed with cyclical and successive experiments of initial product versions to

the **Minimum Viable Products**

moving to the next release only when customer feedback has been analyzed.

FAILURES OF NEW START Ups AND NEW PRODUCTS

- According to Forbes, globally 90% of start-ups fail

- The first reason is

"They produce products that nobody wants"

LEAN SOFTWARE DEVELOPMENT

- ADAPTATION OF LEAN MANUFACTURING TO SOFTWARE DEVELOPMENT DOMAIN

- IT IS BASED ON A SET OF PRINCIPLES AND PRACTICES FOR ACHIEVING QUALITY,SPEED, CUSTOMER ALIGNMENT

LEAN PRODUCT DEVELOPMENT

3 HIGH LEVEL PRINCIPLES

7 CORE CONCEPTS

LEAN PRODUCT DEVELOPMENT

3 HIGH LEVEL PRINCIPLES

1-USE OF VISUAL MANAGEMENT TOOLS

2-IDENTIFICATION OF CUSTOMER-DEFINED VALUE

3-BUILDING IN LEARNING AND CONTINUOUS IMPROVEMENT

1-USE OF VISUAL MANAGEMENT

A form of communication used **to give a**

snapshot of operations

to translate shop floor processes into easy-to-understand

visual overviews.

1-BENEFITS BY USING VISUAL MANAGEMENT TOOLS

- Share Information with Others.
- **Streamline Project Management**.
- Enforce the Standards.
- React to Irregularities When They Happen.
- Prevent Irregularities from Occurring.

2-IDENTIFICATION OF CUSTOMER-DEFINED VALUE

What a product is worth to a customer versus possible alternatives.

Worth: whether the customer feels he get benefits and services over what he paid.

benefits <-> cost

3-BUILDING IN LEARNING AND CONTINUOUS IMPROVEMENT

1. Learning. Do you read any blogs, follow people in your industry on social media, or experiment with different ways of solving problems?

2. Sharing. Once you've found a potential improvement, share it with team.

3. Implementing.

3nd LESSON (part 1):8 MAIN METHODOLOGIES

LEAN PRODUCT DEVELOPMENT (3)

7 CORE CONCEPTS

1. **WASTE ELIMINATION**
2. **TEAM EMPOWERMENT**
3. **FAST DELIVERY**
4. **WHOLE OPTIMIZATION**
5. **QUALITY IN BUILDING**
6. **DECISION DEFERRING**
7. **LEARNING AMPLIFICATION**

CORE CONCEPT 1-WASTE ELIMINATION

The absolute first question at the basis of lean start up method is:

“which efforts create value and which result in waste?”

IT DEFINES VALUE AS WHAT BENEFITS THE CUSTOMER WHILE ALL THE REST IS WASTE

WASTE in LEAN PRODUCT DEVELOPMENT

PRIMARY DRIVER FOR THE LEAN APPROCH IN SOFTWARE:

WASTE	DESCRIPTION	EXAMPLE
PARTIALLY DONE WORK	STARTED,NOT COMPLETE	WAITING FOR TESTING
EXTRA PROCESSES	EXTRA NOT ADDING VALUE	UNUSUED DOCUMENTATION
EXTRA FEATURES	NICE TO HAVE FEATURES	GOLD PLATING
TASK SWITCHING	MULTITASKING IN DIFFERENT PROJECTS	PEOPLE ASSIGNED TO MULTIPLE PROJECTS
WAITING	DELAYS WAITING FOR APPROVALS AND REVIEWS	WAITING FOR APPROVALS
MOTION	MOVING INFO FROM A GROUP TO	DISTRIBUITED TEAMS

LEAN PRODUCT DEVELOPMENT EXERCISE

1. Queuing for elevator
2. Saving documents in old format for compatibility
3. Creating notices in Spanish to comply with company standards even if nobody at the location speaks Spanish
4. Rebooting a computer after a program crash
5. Submitting stationery and letterhead orders for approval

CORE CONCEPT 2: TEAM EMPOWERMENT

- In an empowered team, each teammate has a voice in group decisions.
- An organization structured around empowered teams has a flat hierarchy and a high proportion of well-educated, highly trusted employees.

CORE CONCEPT 2: TEAM EMPOWERMENT

4 elements:

1. potency
2. meaningfulness
3. autonomy
4. impact

CORE CONCEPT 2: TEAM EMPOWERMENT

- Empowered teams are usually project-based and cross-discipline;
- they may utilize the skills of a project manager to help coordinate

- Rules are not imposed upon them from above, but:

-they are far more effective when they establish strict rules within the team regarding how decisions are made and communicated, and who is responsible for implementing them.

CORE CONCEPT 3: FAST DELIVERY

- The Lean way of delivering quickly

is not working longer hours

- Lean development is based on this concept:

Build a simple solution, put it in front of customers, enhance incrementally based on customer feedback.

CORE CONCEPT 4: WHOLE OPTIMIZATION

VALUE STREAM

Caring about the flow of value through the entire process from beginning to end

CORE CONCEPT 5: QUALITY IN BUILDING

- **Adoption of the Lean continuous improvement values**.
  - the engine powering the Lean quality management system is

Continuous Improvement

- **Proactive** Lean quality improvement means lower costs and higher quality from **the start.**

CORE CONCEPT 6: DECISION DEFERRING

- Another practice used by agile teams that comes from Lean.

- Deferring commitment means:

waiting until the last responsible moment to make a decision.

- Defer critical decisions.

CORE CONCEPT 7: LEARNING AMPLIFICATION

Learning is the essential unit of measure of progress made

Not necessary efforts to learn what customers want can be removed

LEARNING AMPLIFICATION

- **The question isn't "can we make this product"?**

but:

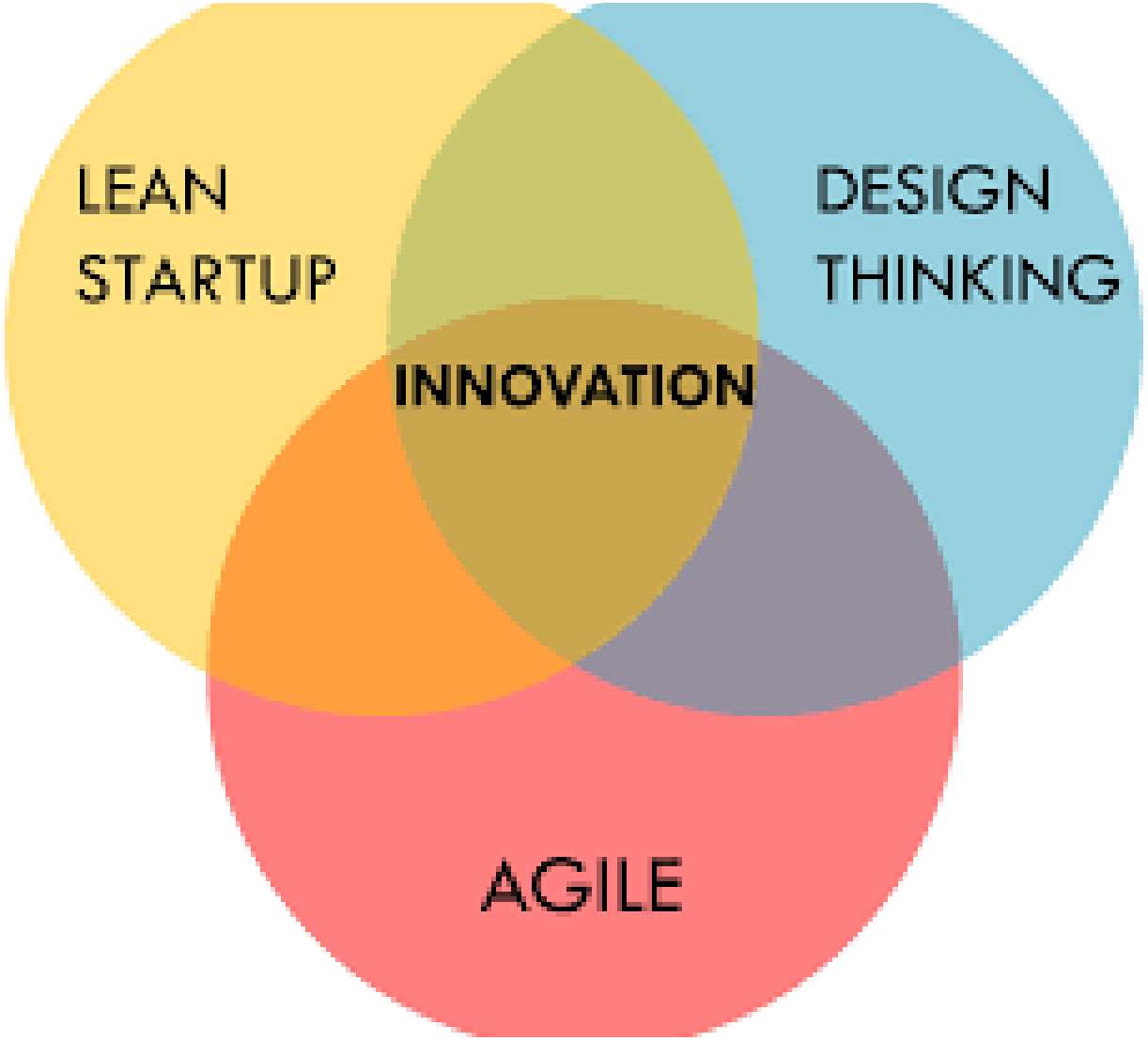
- **"should this product be created with a sustainable business?”**

A method is needed that breaks down the business plan into its components to subject each to an empirical test

DIGITAL TRANSFORMATION

LEAN->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 in the back end.



TRUE OR FALSE?

- **LEAN USES PRESCRIPTIVE PROCESS**
- **LEAN HAS RULES ABOUT WASTES**
- **LEAN MEANS WORKING LONGER HOURS**
- **SCRUM HAS MANY INSPECT CYCLES**
- **LEAN USES VISUAL MANAGEMENT TOOLS**
- **LEAN HAS ADAPT CYCLES**
- **IN LEAN EACH TEAMMATE HAS A VOICE IN GROUP**

LEAN REVIEW

LEAN WORKS AS ITS PHILOSOPHY EMPOWERS TEAMS

LEAN WORKS AS ITS PHILOSOPHY SATISFIES CUSTOMERS

LEAN WORKS AS ITS MANAGERIAL CULTURE MAKE WASTE PROHIBITED

IMPORTANT CONCEPTS IN THESE 5 LESSONS

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 PROCESS
12. WASTE

1. implementation of ideas of new products
2. methodology pushing finished product delivery
3. process combining value-creating and risk-reducing
4. result of shippable,objective-focused work
5. approach whereby the team learns from mistakes.
6. developer of product backlog items
7. groups of people working together for shared goals
8. guardian of scrum framework
9. short period for a scrum team to complete a work
10. shared completion of a product Increment,
11. process for doing products faster with less waste
12. anything that adds no real value to the project.

WASTE

ANY ACTION OR STEP IN A PROCESS THAT DOES NOT ADD VALUE TO THE CUSTOMER.

ANY PROCESS THAT THE CUSTOMER DOES NOT WANT TO PAY FOR.

STATUS OF THE COURSE:&REVIEW OF TODAY LESSON 5: AGILE METHODOLOGIES :LEAN

LESSONS 1,2,3,4

- INNOVATION
- METHODOLOGY
- REQUIREMENTS
- ITERATION
- VALUE DRIVEN
- SPECIFIC AGILE METHODOLOGIES
- SCRUM
- LEAN

NEXT LESSON 6

DESIGN THINKING

THANKS! NEXT 6th LESSON:DESIGN THINKING

- TIPS FOR THE EXAM:

POSSIBLE QUESTIONS:

WHAT IS WASTE IN THE LEAN ENVIRONMENT?