The Project Management for IT Projects: an introduction

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February May 2025

The ITCPM Course

Project Management is a wide domain of concepts, techniques, tools, used all over the world to define, program, develop project with different nature and targets.

This Course is aimed to offer the attendees an overview of that complex, but fascinating, matter.

The Course will be splitted in two parts: the first one (led by Paolo Filauro) will cover the so said *predictive project management*, while the second (led by Mario Salano) will introduce in details the *agile methodology.*

The Teacher of Part 1

Paolo Filauro,

Engineer

More than 20 years experience as Project Manager for large projects in the infrastructure domain

Will cover the introduction to the general topics of the Project Management profession

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The Teacher of Part 2

Mario Salano,

Engineer

22 years experience as Project Manager for projects in Power Electronics for Industrial Automation and Special Marine Vessels

He will cover the introduction to the general topics of the Project Management profession for innovative projects where software development represents a major area

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Predictive vs Agile

The Project Management methodologies can be defined in two, different but non antithetical ways: predictive and agile.

The **predictive** methodology focuses on planning and analyzing the projected future in-depth even to anticipate the risks. This methodology relies on an early phase analysis and a detailed breakup of features and tasks for the entire development process.

In **agile** methodology, adaptive project management caters to focusing on adapting quickly to changing scope and project reality. As with the predictive model, with this methodology you still plan, schedule, identify key milestones and dependencies. But this model provides way *more flexibility* in the path to the end goal, which accommodates *changing* requirements along the way.

Predictive methodology

The **Predictive methodology is one of the best methods for projects that have regular standards and no scope of change.** The predictive method doesn’t entertain flexibility in development and is ideal for projects that have been fully explored on the conceptual level and now “only” need to be implemented correctly to achieve the expected performances.

The predictive methodology is highly appropriate when:

- The specifications of the project are not to be changed
- The project has a clear, well defined target/product: an equipment, a building, an infrastructure, and the time schedule is fixed and compulsory
- The project team is large and remotely distributed
- The project development process is documented and shared with all stakeholders

Agile methodology

The **Agile methodology** is popular for projects where clients' demands and requirements change frequently.

The agile methodology is highly appropriate for very innovative projects and in particular with:

- Ever-evolving projects with an undetermined closing
- Organizational teams which are quite flexible and adaptable to change
- Lean and small project teams
- When the timeline is flexible
- Rapidly evolving industry

The Project Management

We will speak about:

- WHAT is the Project Management
- HOW it can help us
- WHY we should use it

The course (part 1)

We will develop the first part of the course, focused on Predictive methodology, in some steps:

- The Basic Concepts
- How to run a Project (from start to end)
- A real life experience

LET START !!

What is a Project (1)

The Guru of the Project Management, Russel D. Archibald, defines a project as:

“the systemic management of a complex, single and fixed-term company aimed at achieving a clear and predefined objective through a continuous process of differentiated planning and control and interdependent cost-time-quality constraints”

And the Project Management Institute, in a more simple way:

“Project Management is the application of knowledge, skills, tools and techniques to project activities to meet project requirements”

What is a project (2)

The basic characteristic of a project:

- It is an *enterprise* quite often a COMPLEX one, with two basic characteristics
  - It is a TECHNICAL enterprise: we must *build* something (a house, an equipment, a software product, ….)
  - It is an ECONOMIC enterprise: in general a Company launch a project not for charity, but to get a profit, after the costs that will be paid.

AND ….

What is a Project (3)

- It is *temporary (fixed terms):* it starts and finishes
- Its target is to *obtain* something *unique*, never got before (infrastructure 2 is always DIFFERENT than infrastructure 1!!)
- Its development is formed by *consecutive steps*, linked (in some way) each other

Business Life Cycle

A correct Business Life Cycle should be split in various steps with different involment of a PM

Step	PM involvement
Offer	Poor
Negotiation	Should be
Plannnig	Owner
Development	Owner

Why Project Management (1)

To Manage a Project is a cost.

The question is: why have I (the Company) to pay that cost ?

Because:

The PM activities are required to achieve the project target, with the minimum of resources, the minor possible costs, on time, with the highest quality AND with the Customer’satisfaction

Why Project Management (2)

And BECAUSE it answers the big, existential questions of a Project Manager:

- WHAT
- WHEN
- WITH WHOM and WITH WHAT
- HOW MUCH I will pay
- HOW MUCH I will earn

Is it enough ?

Course Agenda (Part 1)

1. Basic tools
2. Programming a Project
3. Controlling a project
4. Communicating
5. Exercises
6. A real life experience

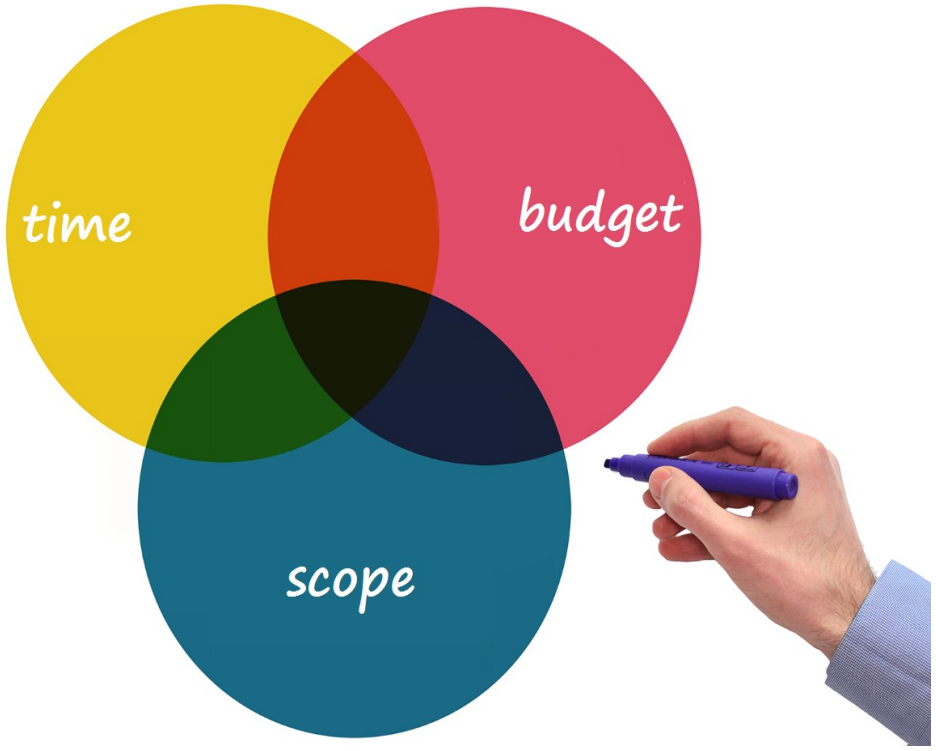
NEXT LESSON

Project Management for Innovative Products

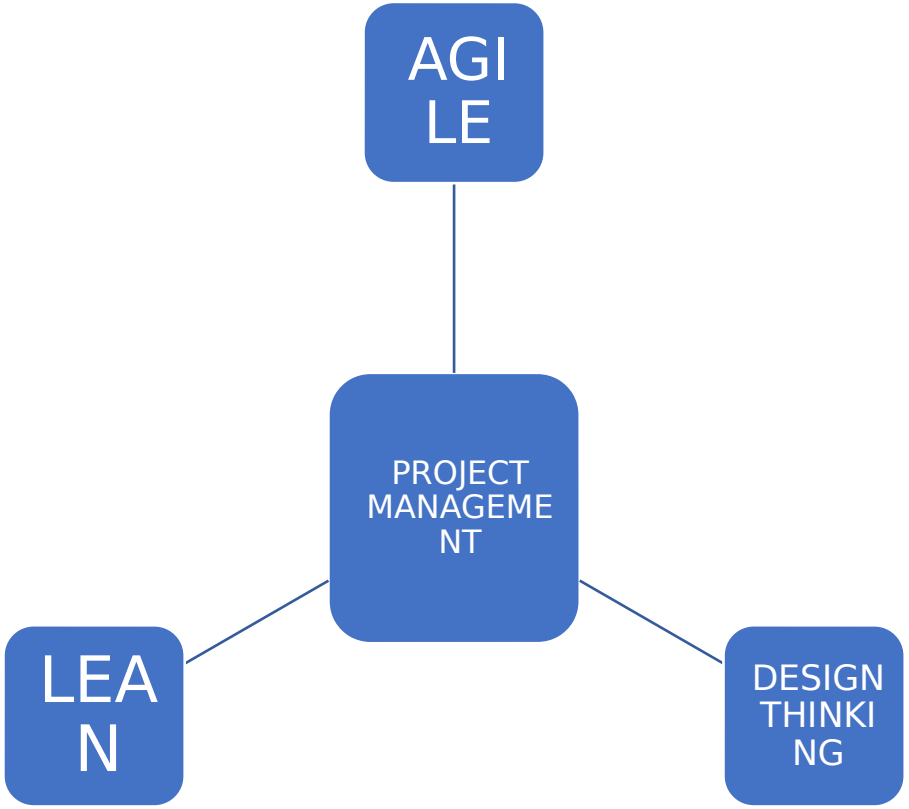
We will speak about:

- WHAT is Project Management for Innovative Products
- HOW it is properly adapted for to optimize efficiency
- WHY we should use it

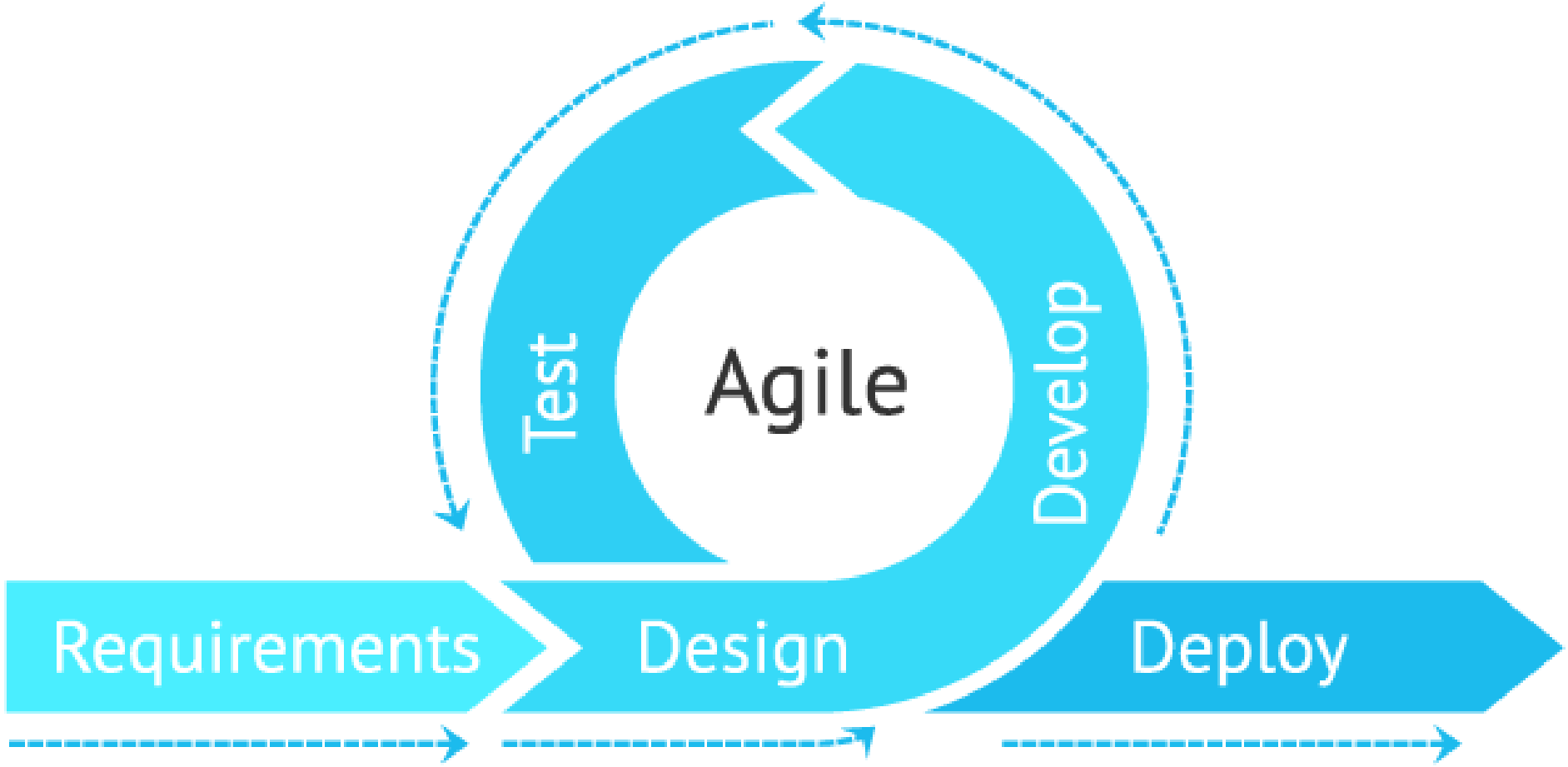
UNCHANGEABLE CONSTRAINTS



METHODOLOGIES

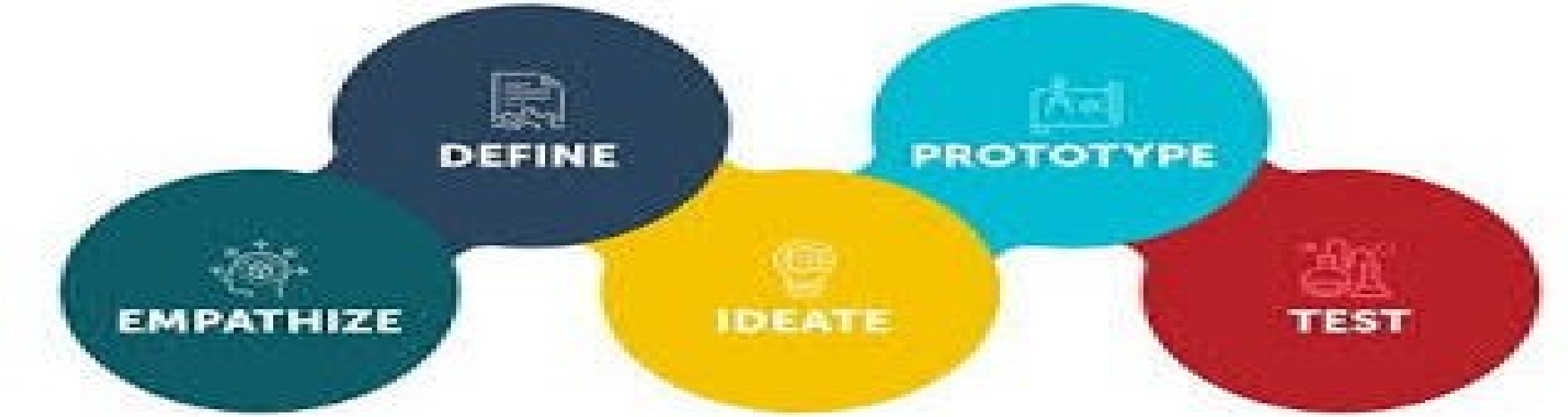


AGILE= adapting quickly to changing scope and project reality



LEAN:MAINLY REFERRED TO SOFTWARE DEVELOPMENT AS AN ADAPTATION OF LEAN MANUFACTURING PRINCIPLES AND PRACTICES TO THE SOFTWARE

DESIGN THINKING: a non-linear, iterative process to understand users, challenge assumptions, redefine problems and create innovative solutions to prototype and test.



INNOVATIVE PROJECTS: MAINLY IT ,NOT ONLY IT

Innovative projects need a proper approach today,in an environment disrupted by huge technology advances and clients looking for quick value

- analytics
- business intelligence,
- statistics
- cybersecurity
- infrastructure for software implementation: hardware,connections,data centers
- IT migrations to change a software platform and interfaces with other systems,
- Coding for many environments: internet, Office support, motion control…
- ***CREATION OF SOMETHING NEW WITHOUT SUPPORT BY EXPERIENCE***

MANAGING PROJECTS WITH LINKS TO NEW TECHNOLOGIES

IT FOCUSED TECHNOLOGIES

- ARTIFICIAL INTELLIGENCE
- BIG DATA
- INTERNET OF THINGS
- CLOUD COMPUTING
- WEREABLE DEVICES
- DIGITAL TWINS
- AUGMENTED&VIRTUAL REALITY
- ROBOTICS
- BLOCKCHAIN

NO IT FOCUSED TECHNOLOGIES

- 3D PRINTING
- ADVANCED MATERIALS
- BIOTECHNOLOGIES
- NEUROTECHNOLOGIES
- POWER MANAGEMENT
- SPACE TECHNOLOGIES

WHY DIFFERENT APPROACHES ARE NECESSARY

- BECAUSE INNOVATIVE PROJECTS HAVE NOT A TWIN THAT HAVE PROVED SUCCESSFUL IN THE PAST (cars, appliances, houses…)
- BECAUSE INNOVATIVE PROJECTS ARE **EXPLORATORY,** TERM REFERRED TO SOMETHING DONE TO DISCOVER MORE ABOUT SOMETHING (SERENDIPITY PHENOMENON OFTEN OCCURS…)
- BECAUSE INNOVATIVE PROJECTS ARE OFTEN FEATURED BY HIGH-UNCERTAINTY WORK WITH HIGH RATE OF CHANGE,COMPLEXITY,RISK WITH A NEED TO EXPLORE FEASIBILITY QUICKLY

The course (part 2)

We will develop the second part of the course, focused on Agile methodology, in some steps:

- Basic Concepts
- How to run a Project according to SCRUM,LEAN and DESIGN THINKING (the 3 most important methodologies)
- A real life experience

Course agenda (part 2)

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