Project Management

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TESTARE Research management workshop "Sharing good practices for EU project management", 18-19/11/2024

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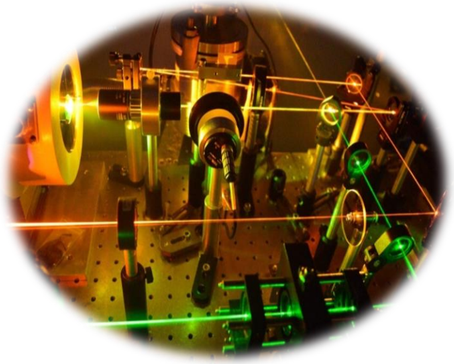
About Us

FORTH (https://www.forth.gr/) is the largest and most successful Research Institution in Greece (1300 personnel) incorporating seven Institutes.



FORTH – IESL

The **Institute of Electronic Structure and Laser** (**FORTH-IESL**) focuses its research on fundamental and applied issues related to materials science and technology and **laser interactions with matter**.

ULMNP

Ultrafast Laser Micro- and Nano-processing Laboratory of IESL, ULMNP, aim is the exploitation of ultrashort laser pulses for material processing, micro/nano structuring, synthesis and functionalization as well as diagnostics for a variety of applications, including biomimetic structures, microfluidics, flexible optoelectronics & tissue engineering.

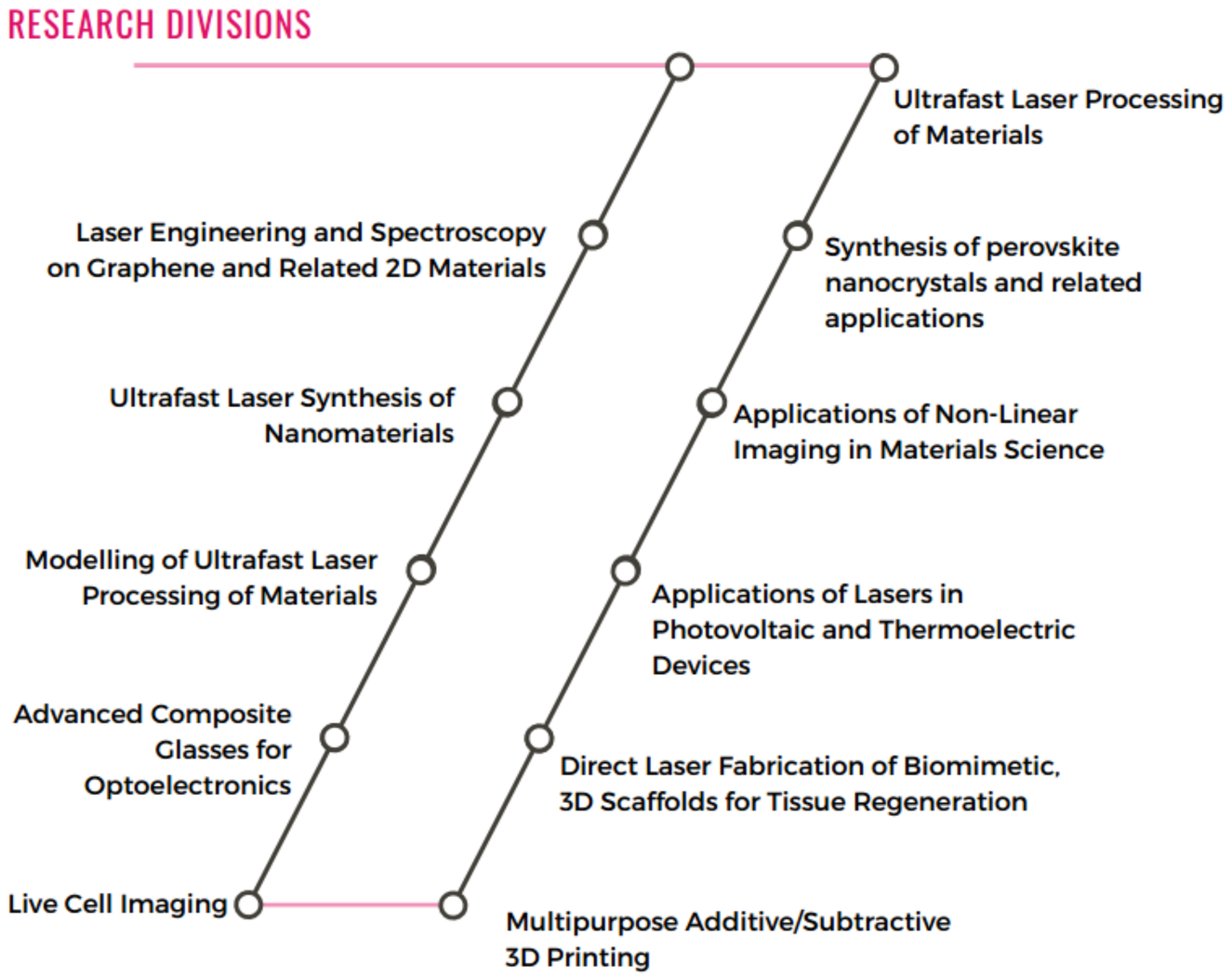
Information

About Us

ULMNP annually publishes approx. 30 publications in journals with high impact factor.

ULMNP gives emphasis on connecting to international networks and collaborations, thus, nowadays houses many important grants.

ULMNP has established collaborations with more than 30 research institutions and more than 20 industrial and public organizations in the applied research area. Currently, ULMNP is participation in 15 funded projects, coordinating 6 EU projects.



Definition

What Is Project Management & its benefits?

Project Management

Project management involves the planning and organization of an institute's resources to move a specific task or duty towards completion. Resources managed include personnel, finances, technology, and intellectual property. Research project management is important because it ensures that complex and resource-intensive research initiatives are completed successfully, efficiently, and ethically.

1. Efficient Resource Utilization: Effective management ensures that these resources are allocated and used optimally to avoid delays and budget overruns.

2. Clear Direction and Focus: Project management keeps the research on track by defining clear goals, timelines, and deliverables.

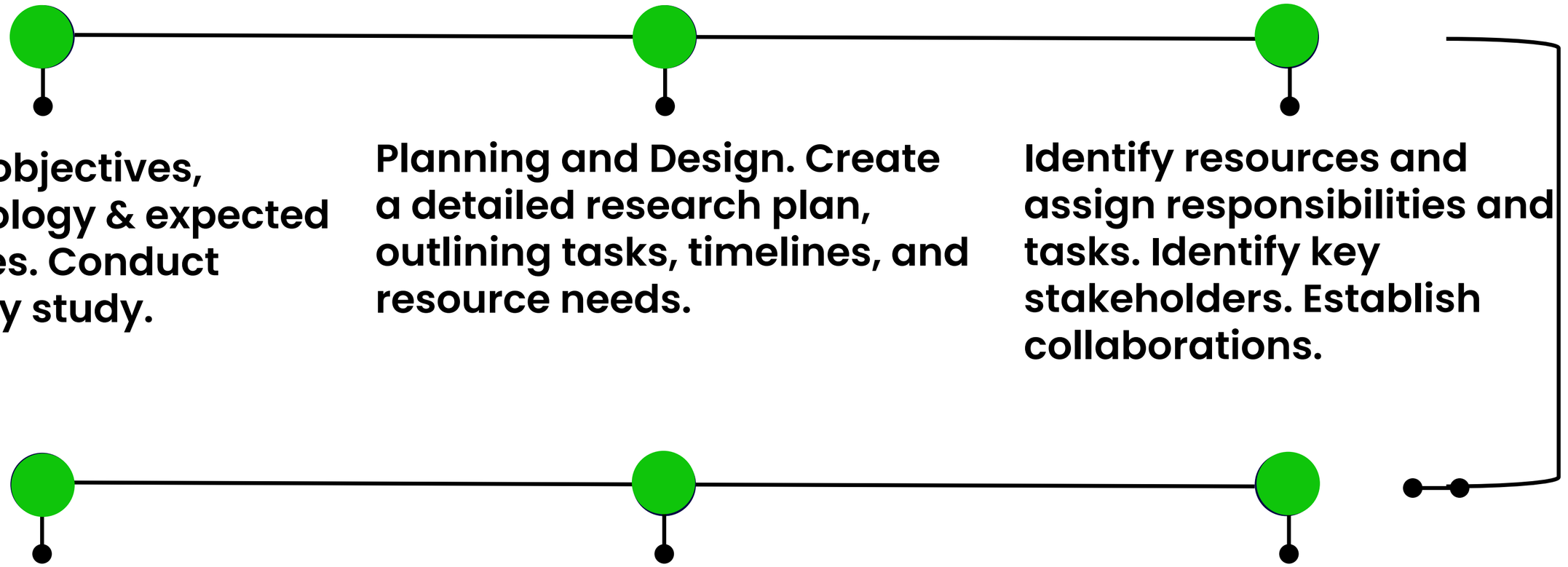
3. Quality Assurance: Project management establishes quality control processes, ensuring adherence to protocols, ethical guidelines, and best practices.

4. Stakeholder Alignment: Project management ensures transparent communication, alignment of expectations, and satisfaction of all parties.

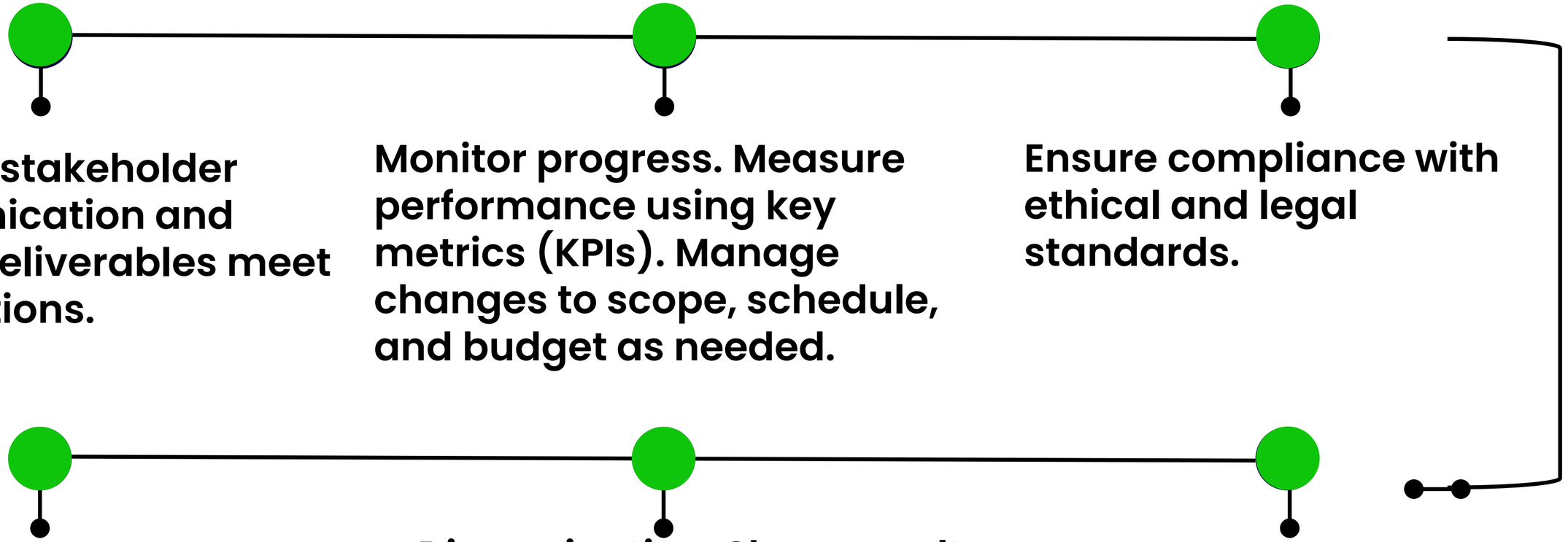
5. Risk Management: Project management identifies, evaluates, and mitigates risks, ensuring that issues are addressed proactively.

6. Impact Maximization: Well-managed research projects are more likely to produce meaningful outcomes, whether they are new knowledge, innovative solutions, or policy contributions, ensuring the research has real-world relevance.

Key Steps in Project management



Key Steps in Project management



Manage stakeholder communication and ensure deliverables meet expectations.

Monitor progress. Measure performance using key metrics (KPIs). Manage changes to scope, schedule, and budget as needed.

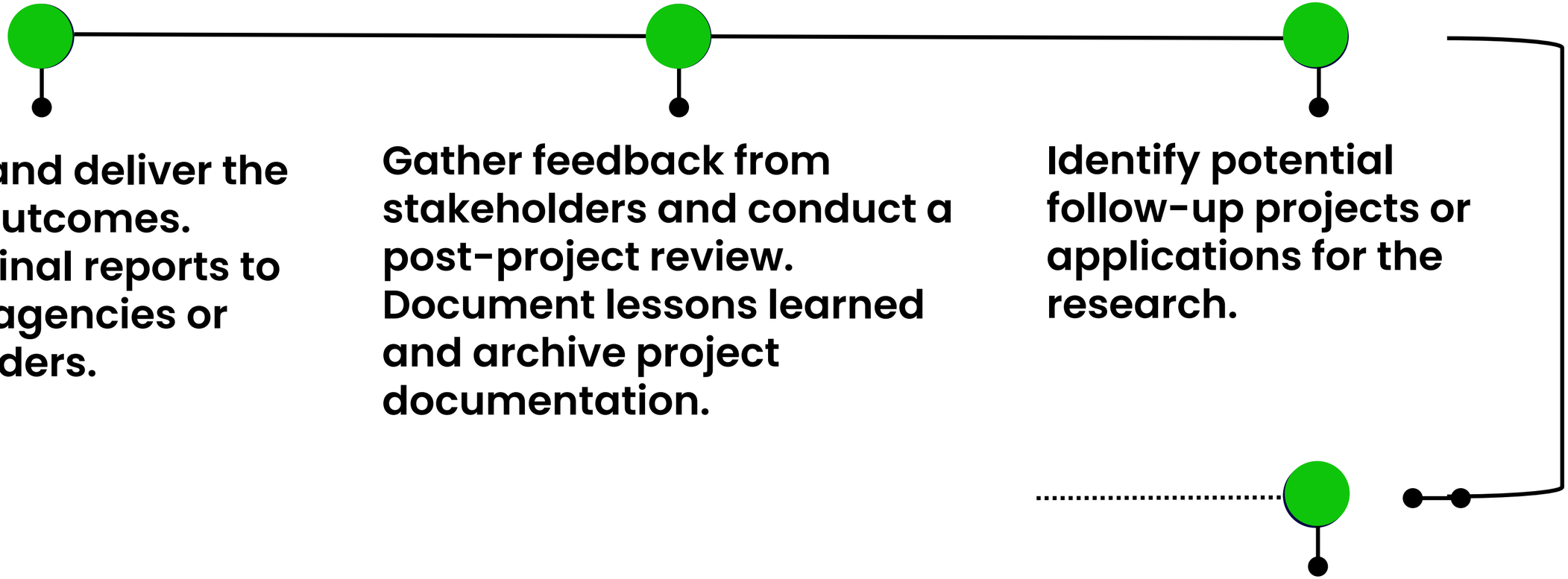
Ensure compliance with ethical and legal standards.

Exploitation/ valorization. Impact analysis.

Dissemination. Share results through publications, conferences, or public presentations. Ensure findings are accessible, adhering to open-access and funding requirements.

Analysis and Interpretation. Process and analyze data using appropriate tools and methodologies. Interpret findings. Validate results through peer reviews or expert consultation.

Key Steps in Project management



Finalize and deliver the project outcomes. Provide final reports to funding agencies or stakeholders.

Gather feedback from stakeholders and conduct a post-project review. Document lessons learned and archive project documentation.

Identify potential follow-up projects or applications for the research.

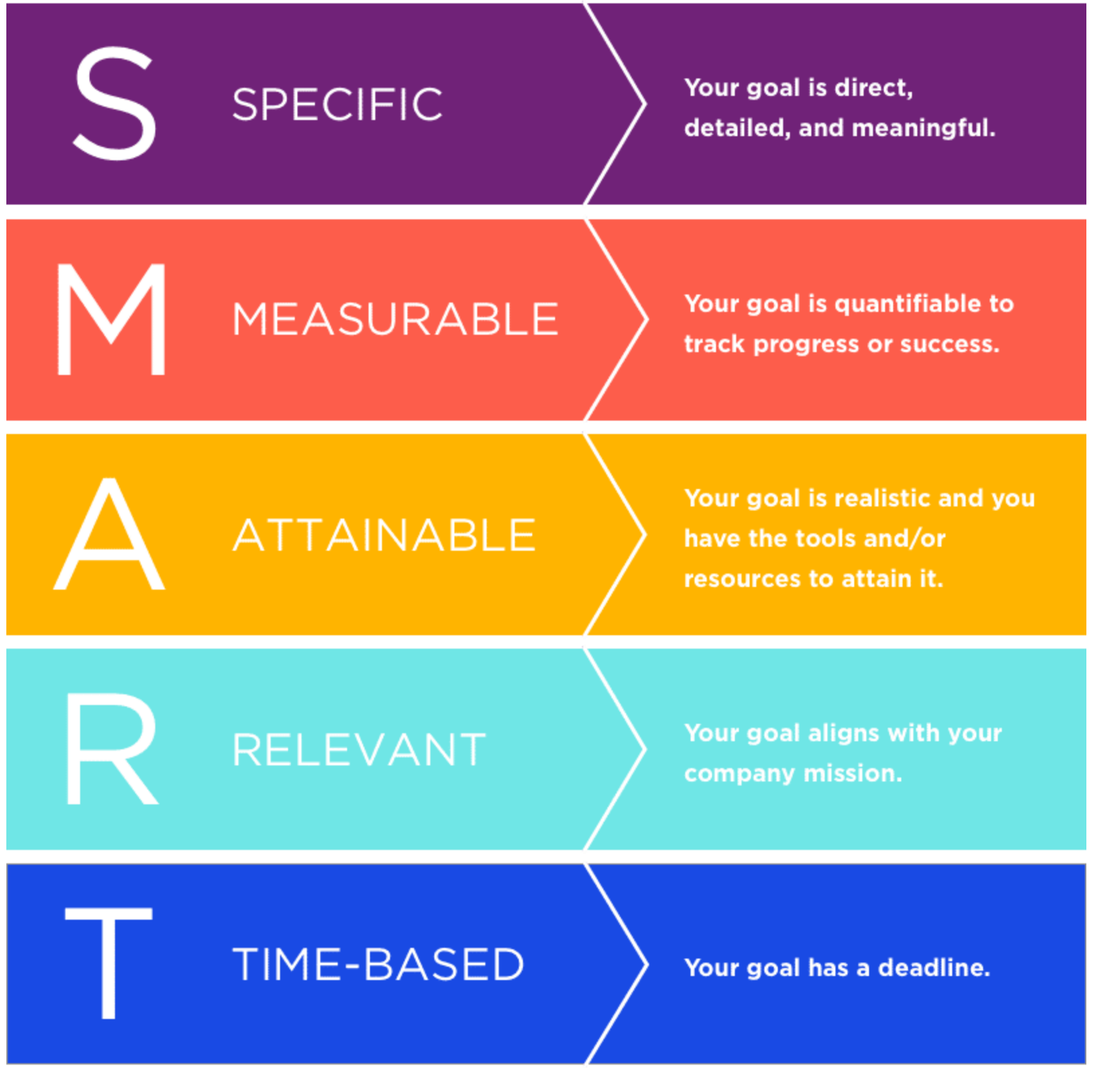
Archive data and ensure long-term accessibility.

Key Steps in Project management

Each step should be shared with colleagues and requires the following:

- **Documentation**
- **Progress Tracking**
- **KPIs and Metrics**
- **Tools, softwares etc.**
- **Feedback gathering**

Keep in mind SMART goal*



* *a SMART goal help focus your efforts and increase the chances of achieving your goal.*

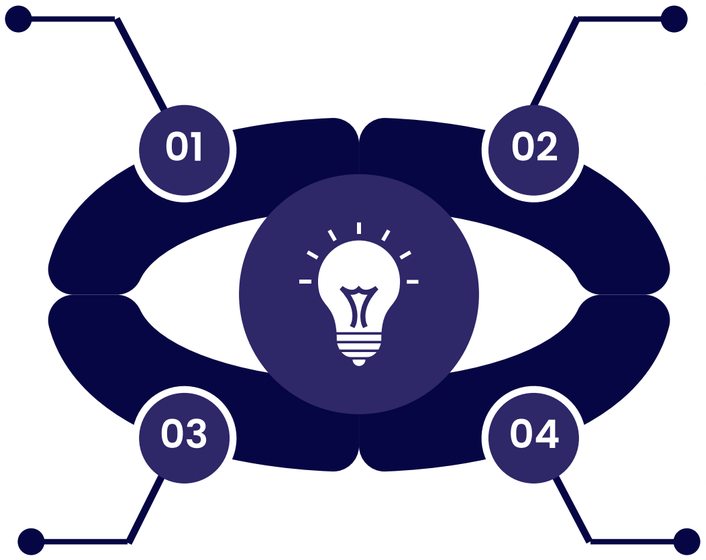
Types of Project Management

Waterfall Project Management

Description: A linear and sequential model where each phase (e.g., planning, execution, and analysis) is completed before moving to the next.
Key Features: Defined stages with clear deliverables. Best for projects with well-defined objectives and minimal expected changes.
Example in Research: A clinical trial with strict regulatory requirements, where each phase (e.g., protocol development, data collection, analysis) must be completed sequentially.

Agile Project Management

Description: A flexible and iterative model that emphasizes adaptability, collaboration, and incremental progress.
Key Features: Regular iterations (sprints). Continuous feedback and adjustments.
Example in Research: A multi-phase research project in AI, where initial findings influence the direction of subsequent experiments.



Lean Project Management

Description: Combines the structure of Waterfall with the flexibility of Agile, balancing fixed planning and adaptable execution.
Key Features: Initial detailed planning (Waterfall). Iterative and adaptive execution (Agile).
Example in Research: A Horizon Europe project where grant proposal stages are structured, but experiments or fieldwork allow iterative adjustments.

Kanban Project Management

Description: A visual workflow management system that uses boards to track tasks and optimize workflows.
Key Features: Continuous task flow. Focus on task prioritization and efficiency.
Example in Research: Managing a research team's tasks, such as literature review, data collection, and report writing, using a Kanban board to track progress and avoid bottlenecks.

How to choose the best one

1. Project Complexity
- Is the project straightforward with clearly defined steps?
- Are there multiple interconnected tasks or dependencies?

For simple projects, consider Waterfall. For complex projects with evolving objectives, consider Agile or Hybrid.

2. Flexibility Requirements
- Do you expect frequent changes or new findings to influence the project?
- Is adaptability critical for success?

For projects with high uncertainty, use Agile. If flexibility is needed but some aspects are fixed, consider Hybrid.

3. Stakeholder Requirements
- Are the project deliverables clearly defined by stakeholders?
- Do stakeholders expect regular updates and engagement?

For fixed deliverables, choose Waterfall. For active stakeholder collaboration, go with Agile or Kanban.

4.Timeline and Deadlines
- Are there strict deadlines for specific phases or deliverables?
- Can tasks be completed incrementally, or do they need to follow a strict sequence?

For strict deadlines, Waterfall works best. For iterative progress within deadlines, try Kanban or Agile.

5. Team Structure and Skills
- Is the team experienced with iterative or flexible workflows?
- Is there a need for a visual and collaborative approach to task management?

For teams comfortable with iterative work, use Agile or Kanban. For less experienced teams, a structured approach like Waterfall is better.

How to choose the best one

6. Budget and Resources
- Do you have limited resources that need to be optimized?
- Can you afford rework due to iterative processes?

For limited resources, choose Waterfall or Kanban. For more flexibility in resource allocation, use Agile.

7. Nature of Research
- Is the research exploratory or hypothesis-driven?
- Does the research require fixed milestones or adaptive exploration?

For exploratory research, Agile or Hybrid are ideal. For hypothesis-driven research, Waterfall is better suited.

Criteria	Waterfall	Agile	Hybrid	Kanban
Project Complexity	Low	High	High	Medium
Flexibility Needs	Low	High	Medium	Medium
Stakeholder Engagement	Low	High	Medium	Medium
Timeline Constraints	High	Medium	High	Medium
Team Adaptability	Low	High	Medium	Medium
Budget Constraints	Low	Medium	Medium	Low
Research Type	Low (Linear)	High	Medium	Medium

About APPROACH

APPROACH

Advanced **P**hotonic **PR**ocesses for novel s**O**lar energy h**A**rvesting te**CH**nologies

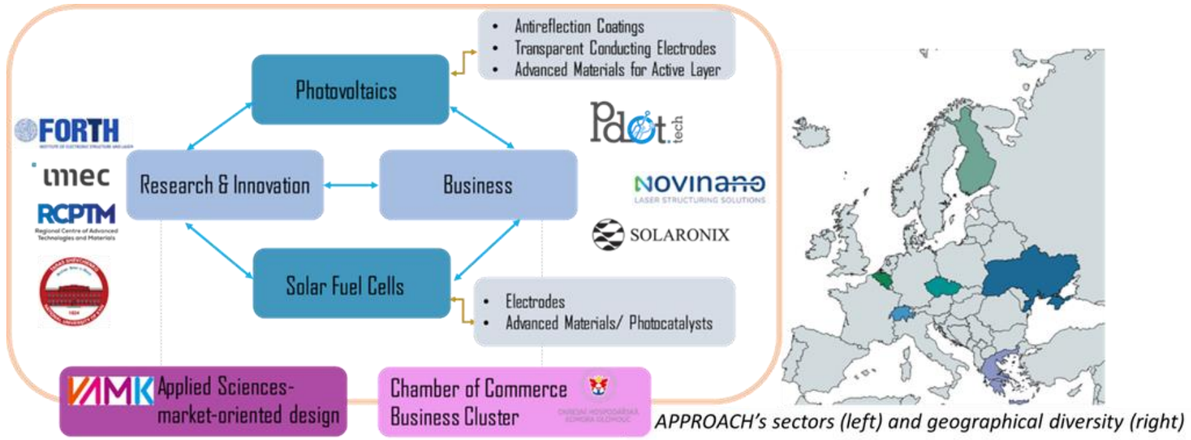
Training & Mobility

Talent Management & Circulation

Impactful collaboration

Reinforced innovation ecosystem

APPROACH supports **training** and **mobility** of research and innovation **talents** across sectors, developing best practices for intersectoral talent **circulation** at the benefit of the **widening** countries. It is aiming to develop a **reinforcing innovation ecosystem**, creating an impactful collaboration between academia and businesses.



APPROACH's sectors (left) and geographical diversity (right)

APPROACH enables the enhancement of talents' inventive thinking and creative knowledge in the development of **nanofabricated materials and methods for solar energy harvesting applications**. It contributes to the growth of diversity of backgrounds, talents and motives of job expectations while will allow scientific knowledge advances through interaction and exchange of views.

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Thank You

For Your Attention

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