

Project Management at the Heart of Civil and Defence Space

Because when projects
succeed, society benefits



Introduction

Space is a frontier where science, engineering and strategic leadership converge. Project management is the discipline that enables this collaboration to deliver real-world impact.

With the global space sector growing at nearly 10% annually and projected to reach £1.5 trillion by 2035, the scale and complexity of space missions is accelerating. As these become more multilateral, technically demanding and strategically significant, project professionals are vital to translating this ambition into delivery.

As founder and Lead of the APM International Space Sector Interest Network, I am proud to introduce this paper, which reflects discussions from an APM forum at the Royal Aeronautical Society. This discussion explored how project professionals deliver critical capabilities such as the European Space Agency's Vigil mission, which will provide early warnings of solar storms that threaten our infrastructure and safety, while innovations like space-based solar power offer transformative solutions to global energy challenges. Furthermore, NASA's Artemis mission demonstrates the need for a shared understanding of our differing approaches to project management, and

the presence of NISTA and UK Space Command underscored the need for investing in and embedding project management expertise within senior leadership, particularly at C-suite level.

As the space sector evolves, recognising project professionals as strategic leaders is essential to shaping a resilient, inclusive and globally coordinated future in space and on Earth.

Martina Blake

Lead, APM International Space Sector Interest Network



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Be part of the APM community



APM's International Space Sector Interest Network is open to anyone working in or curious about the international space sector. It brings people together to share good practice, exchange knowledge, and facilitate a diverse and inclusive international forum that collectively advances space project management excellence worldwide.

It provides regular opportunities for those working in or interested in the international space sector to connect with like-minded individuals through webinars and in-person events. Together, we will provide a vital platform for collaboration, forging a multilateral alliance among space agencies, governments, industry and academia.

[More information can be found here.](#)



Structured flexibility

The accelerating pace of change has made project professionals' ability to adapt one of their most valued attributes. Although the space sector is synonymous with innovation, that innovation is not always stable. Growth can be more volatile and there are more unknowns, but the opportunities are often bigger. As in other sectors, external factors are at play too.

In addition to cataloguing risks in the risk register, it's important to know the appetite for risk (sometimes referred to as risk posture) across an individual project, a wider portfolio (if applicable) and, potentially, the wider organisation (employer, client or both). Knowing the risk posture will streamline a project because requirements will be easier to identify and, often, fewer life cycle reviews are needed.

However, working flexibly should not be synonymous with working without structure or control.

Conditions of structured flexibility include:

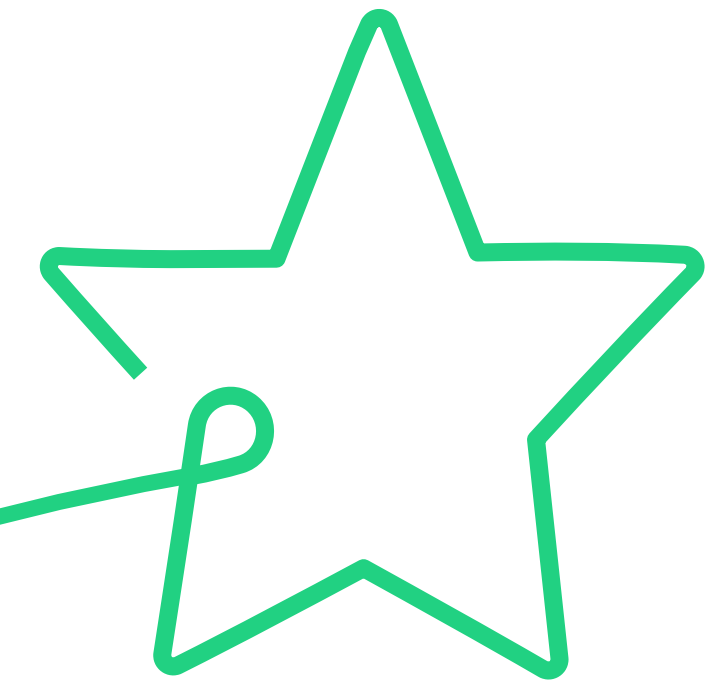
- Embracing mission goals and using an outcome-led approach
- Understanding stakeholders
- Using AI selectively and intelligently, not as a panacea
- Using rolling wave to plan short-term work in detail and longer-term work in outline form
- Holding pre-mortems as well as post-mortems, to ensure lessons learned from previous projects are applied at outset.

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You need to be structured as a project manager, but flexible. At the heart of everything you're doing is your outcome. What is that project supposed to deliver? That's your north star.



Jen Catena,
Director of Delivery,
Satellite Applications Catapult



Psychological safety

A psychologically safe environment is important in any workplace, but especially for project teams. It enables people to put forward ideas, share feedback, take risks and learn from mistakes without fear of repercussions. Low levels of psychological safety can negatively affect a project.

Psychological safety can be defined as “the belief that the work environment is safe for interpersonal risk-taking... feeling able to speak up with relevant ideas, questions or concerns. It is present when colleagues trust and respect each other and feel able – even obligated – to be candid¹.”

Creating frameworks that support psychological safety can be achieved by:

Building trust

- Demonstrate calm leadership. Unexpected situations are an everyday occurrence in project management, so remaining calm when things don't go to plan will build trust and confidence within the team.
- Strive to manage optimism bias and pessimism bias among colleagues. Encourage colleagues to understand (and accept) what can and can't be changed.
- Identify and deal with toxic cultural elements quickly. Set boundaries within your team about what is and isn't acceptable when it comes to sharing feedback and reacting to other people's comments. If these boundaries are repeatedly breached, you may need to consider removing a person from a project.

Removing ambiguity

- Misunderstandings and misinterpretations sow doubt that can undermine certainty and confidence. Use agreed, common language and terminology, especially on requirement wording.
- Map your stakeholders and make sure communication channels are in place for communication to flow to everyone (ideally in both directions).
- Consider using AI tools to automate data collection and reporting, and to aggregate data from multiple project sources. And actively encourage people to review the information you're sharing.

¹ Amy Edmondson, *The Fearless Organization*, 2019.



Leadership

Creating project leaders

In a changing and challenging world, the skills required for project professionals to lead projects effectively are changing accordingly. The future of projects – particularly in space – is only likely to become more complex and challenging in the future.

A 2025 poll of 1,000 project professionals by APM found that one-in-five (21%) identified leadership as one of the main barriers to their organisation's ability to deliver projects. Creating more project leaders is one way of removing such barriers.

'Project leader' is a mindset, not a job title. Many project and programme professionals already work in leadership roles, with many others taking on leadership responsibilities. Those who are at an earlier stage in their career should be nurtured and encouraged to become project leaders.

Kevin Gilligan, Chief Program Management Officer (Acting), NASA, recommended a graduated approach whereby project professionals can prove their skills and abilities on a smaller project before taking on bigger ones. He also advised having senior leaders in a project team meet with junior project managers at the outset of a project, to make sure they understand their goals and fully embrace ownership. The opportunity should also be taken to remind and reassure junior project managers that they have access to the knowledge and support of senior colleagues/leaders.

Encouraging project buy-in among senior leaders

Research by APM has found that most business leaders say they have a good understanding of project management principles and practice, but further questions revealed a more varied picture. What is agreed on is the importance of getting senior leaders to understand the value of project and programme management. Key to this is:

- **Tailoring your communication to your audience** – understand what they place value on, and whether they're most likely to be influenced by strategic thinking or real-world practical outcomes (or both).
- **Using common language** – does your senior leadership use the term 'project/programme management', or something else? What about other terminology? What feels established and everyday to some people may be completely alien to others.

Kevin Gilligan commented: "Certain organisations embrace project management. Certain others don't, but think they do; they do all the things you'd expect to see in project management but they use different language to describe it. A lot of it, I believe, is about discourse, conversation and understanding... and showing them that they *are* doing project management. They're just calling it something else.

"Most leaders understand the value but translating it into practical, tangible terms is about showing that project management can be flexible; it can be adapted to be as efficient as we need it to be."

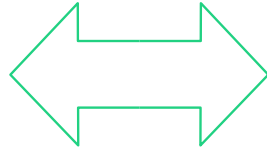


Case study: Space Solar

Space Solar is a British-based company delivering the commercial development of space-based solar power; the concept of harvesting solar energy in space and beaming it to earth continuously, safely and securely.

Space Solar’s mission is to develop this technology to deliver affordable, scalable clean energy technology that will help the UK and partner nations transition sustainably to net zero, delivering energy security while growing their economies.

Space Solar Co-Founder and Chief Technology Officer, David Homfray, described the organisation’s approach to project management as “applying the right amount of rigour at the right time”, which they deliver through the use of ‘soldiers’ and ‘artists’.

The Artist – agile and flexible	Learning	The Soldier – quality and quantity
Functions as a scout. Goes out and discovers new things. Finds urgent warnings.		Functions as a guard. Makes sure the project team is doing the right thing at the right time.
Agile, flexible and creative. Learns by breaking things.		Responsible for preliminary design review, detailed design review, assembly integration and testing, manufacturing and quality assurance.
Responsible for conceptual design and review, research and innovation.		



Explaining how this approach is implemented, David said: “It’s all about clear lines of responsibility. Our project managers are the leaders of the projects. They have technical leaders that support them, but the project manager rules each one of our projects.”

- **Visibility and transparency** – “We have a central RAIDO log [Risk, Assumptions, Issues, Dependencies, Opportunities]. We’re a commercial organisation, so the ‘O’ is really important. Any time we find something that might be able to add value for our external stakeholders, we want it to be recorded. We have a central RAIDO [log] across all projects, across the whole programme... Anyone on any project can look at how everything else is working.”
- **Ideas elevated quickly** – “When our scout – our ‘artist’ – comes up with a great idea, I don’t need them to write up things in a formal way. What I need them to do is provide things as instantaneously as possible. We use our engineering governance to translate that into definable requirements that our ‘soldiers’ can use. Then we have regular independency meetings – show and tells to make sure all our project teams, at all times, have the opportunity to see what the owners are doing.”
- **Timing of handover** – “Really, the idea between the artist and the soldier is that handover timing is absolutely critical. When do I say to my creative ‘that’s good enough. Give it to me to hand over to my soldier’? That time and that communication becomes absolutely critical for success. It ends up all being about communication.”

[Discover more about Space Solar on their website.](#)

About APM

The Association for Project Management (APM) is a professional membership organisation that sets the standards for the project profession and raises its profile. APM is the only chartered organisation representing the project profession in the world. As a registered charity, APM delivers learning and networking opportunities, qualifications, research, resources, events, and best practice guidance for the project community, helping the profession deliver better.

APM currently has over 42,000 members and more than 470 corporate partners based across 140 countries.

Further resources

- APM Podcast – [Inside the UK space race: Behind the scenes at Nammo Space](#)
- APM Podcast – [Launching a career in the space sector](#)
- Blog – [Making space for women by Martina Blake](#)
- [Collaboration in Space – APM speaks to Martina Blake, UK Government Advisor at the European Space Agency \(ESA\)](#)
- [HM Government National Risk Register 2025](#) (see page 137 for risks associated with severe space weather)
- [APM Corporate Partnership Programme](#) – Learn more about how APM is supporting organisations in the space and defence sector to grow their project capability and capacity





**We are the only chartered membership
organisation for the project profession**

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