Association for Project Management

Digital Transformation and the AI Imperative in Public and Private Sector Projects

Methods and Skills for Project Management

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Because when projects succeed, society benefits

Foreword

In today's rapidly evolving landscape, the integration of digital transformation and artificial intelligence (AI) has become a pivotal focus for both public and private sector projects. Recognising this imperative, Association for Project Management (APM) commissioned the research report titled *Digital Transformation and the AI Imperative in Public and Private Sector Projects: Methods and Skills for Project Management.* Our intention was to discover how these emerging technologies are reshaping project management methodologies and the competencies required of project professionals.

The process of producing this report has been rigorous and collaborative. It involved a comprehensive literature review, a cross-sectional survey and professional interviews, alongside the support of a steering group made up of professionals from both the public and private sectors, who contributed throughout the various stages of the report. This inclusive approach has ensured that the findings are robust and reflective of real-world challenges.

The team at the University of Southampton has delivered a piece of research that offers excellent insights into the intersection of digital innovation and project management. Its findings highlight the need for project professionals to not only adapt to technological advancements, but also proactively integrate them into their strategic planning and execution.

Key recommendations from the report emphasise the development of new skill sets, including digital literacy and AI proficiency, to navigate the complexities introduced by these technologies. Additionally, the report highlights the importance of creating a culture of continuous learning and adaptability within project teams to effectively manage the dynamic nature of digital transformation initiatives.

At APM, we are committed to supporting our members and the wider project management community in embracing these changes. This report serves as a foundational resource, guiding project professionals towards the competencies and methodologies that will define successful project delivery in the digital age.

I extend my gratitude to the authors for their work and to all contributors who provided their expertise and insights. Together, we are advancing the project profession to meet the challenges and opportunities presented by digital transformation and AI.

Prof. Adam Boddison OBE
Chief Executive Officer
Association for Project Management

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About the authors

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Dr Ranga Abeysooriya, Research Fellow in Digital Transformation (APROM), has over 10 years of experience in higher education, serving as a lecturer, researcher and consultant for various organisations. His expertise includes operations management, project management, operations research and industrial engineering. He also completed his PhD in Operational Research in 2017 at the University of Southampton. Ranga is recognised for his impactful research, collaborating with international partners and industry experts. His work focuses on digital and expert systems within the domains of operations and project management, implementing operations research and management science in industries such as healthcare, transportation, manufacturing and logistics.

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1. Executive summary

The acceleration of digital transformation initiatives across public and private sector projects has reached an inflection point with the rise of artificial intelligence (AI) tools. This technology has advanced at a remarkable speed, driven by radical innovations and the proliferation of generative AI platforms such as ChatGPT, Gemini, Claude and Copilot. These platforms have contributed to the increasing integration of AI into both public and private sector projects. As such, this research examines the impact of digital transformation and AI on the project management methodologies, skills and strategic approaches required for successful implementation.

A mixed-methods approach was adopted, incorporating a systematic literature review, cross-sectional survey and in-depth interviews with project professionals. The study captured perspectives on agile methodologies, data governance and the evolving role of strategic leadership, highlighting differences based on organisational size, sector and experience. The findings reveal that AI-driven digital transformation is shaping data-driven decision-making processes and accelerating the integration of digital tools, while underscoring the importance of strategic leadership, agility and capacity building.

Overall, this report offers insights into the complex interplay between digital transformation and project management, and offers critical recommendations for practice and policy.

1.1 Key insights

The research highlights how digital transformation and AI are influencing decision-making processes, data governance, agile project practices and the competencies required for effective project delivery:

Decision-making 61% of professionals report improved decision-making through AI-driven transformation, with higher success rates in the private sector (65%) compared to the public sector (57%). AI platforms are shifting from reactive to proactive decision support, enabling real-time analytics and predictive modelling.

Data governance Data quality dimensions (accuracy, consistency, completeness, timeliness) are critical for successful AI implementation. The "garbage in, garbage out" (GIGO) principle remains a significant concern.

Agility Over 63% of professionals rate agile methodologies as "very" or "extremely" important for digital transformation. There is a risk of superficial agile adoption when organisations implement agile methods without cultural change.

Digital tools 68% consider digital tools vital for project success, with stronger support in the private sector (72%) versus the public sector (65%). Traditional tools remain valuable but are increasingly complemented by modern software as a service (SaaS) platforms and AI solutions.

Strategic project leadership As a result of digital transformation, 49% of professionals report improved project leadership competencies, with higher effectiveness in local authorities (56%) than in central government (40%).

Digital competencies 82% state that digital transformation has improved their project teams' digital competencies. The private sector shows stronger agreement (86%) than the public sector (78%).

Responsible AI 71% of public sector respondents report an increased emphasis on social responsibility and sustainability. However, a gap remains between responsible AI policies and their practical implementation.

Project performance Following AI-driven digital transformation, 68% of respondents report improved on-time delivery, 38% reduced project management costs and 61% improved quality.

1.2 Key recommendations

The key recommendations focus on optimising data-driven decision-making, leveraging agile practices and digital tools to position strategic leadership within the AI landscape:

1. Establish integrated AI platforms for real-time monitoring and predictive analytics, while maintaining transparent oversight mechanisms that balance automated and human decision-making.
2. Implement data governance frameworks focusing on data quality dimensions, standardisation and validation protocols.
3. Adopt flexible agile methodologies tailored to organisational context, avoiding superficial implementation and fostering cultural change.
4. Invest in digital skills development programmes aligned with the proposed digital skills taxonomy.
5. Create balanced frameworks for responsible AI implementation that address environmental sustainability and social responsibility.
6. Implement performance measurement mechanisms that track the impact of digital transformation on projects.

1.3 Glossary of terms

Agile methodologies Iterative approaches to project management that focus on flexibility, continuous improvement and responsiveness to change.

AI-driven digital transformation The integration of digital technologies including AI, machine learning, data analytics, blockchain and automation into project management.

Artificial intelligence (AI) Systems and technologies that employ algorithms to learn from data, reason and make autonomous or semi-autonomous decisions in order to carry out tasks that would normally require human intelligence.

Automation The use of technology to perform tasks without human intervention.

Blockchain A distributed ledger technology that provides a secure and transparent way to record transactions.

Capacity building The process of developing and strengthening skills, abilities and resources within an organisation.

Cloud computing A technology that enables on-demand access to computing resources and data storage over the internet.

Data-driven decision-making A process where decisions are based on the analysis of data rather than solely on intuition.

Data governance The practice of managing data availability, usability, integrity and security. Effective data governance ensures that data is accurate, consistent, complete and timely.

Data literacy The ability to read, understand, create and communicate data as information.

Digital competencies The skills and knowledge required to effectively use digital technologies in projects.

Digital project management tools Software and platforms that support project planning, tracking, collaboration and reporting of projects.

Digital transformation The process by which digital technologies are employed to fundamentally change business processes, organisational structures and value delivery.

Garbage in, garbage out (GIGO) A concept that highlights the importance of input data quality. If poor-quality data is entered into a system, the outputs will be equally unreliable.

Machine learning A subset of AI that focuses on developing algorithms which allow computers to learn from and make decisions based on data.

Predictive modelling A statistical technique that uses historical data to forecast future outcomes.

Responsible AI The practice of deploying AI in a manner that is ethical, sustainable and socially responsible.

Software as a service (SaaS) A software distribution model in which applications are hosted by a service provider and made available to customers over the internet.

Strategic project leadership Leadership that guides project teams through complex change, balancing technological innovation with human-centred strategies to ensure effective digital transformation and project success.

2. Rationale and aim

2.1 AI-driven digital transformation

The integration of digital technologies into project management, including cloud computing, artificial intelligence (AI), machine learning, data analytics, blockchain and automation, has the potential to enhance the efficiency and quality of project delivery while opening new channels for stakeholder collaboration and communication (Bouncken et al., 2021; Nadkarni & Prügl, 2021). Digital transformation in project management impacts all aspects of projects, fundamentally altering how organisations operate and deliver value (Shen et al., 2024).

Despite these advances, there remains a notable gap in understanding the convergence of project management skills and methods in the evolving contexts of digital transformation (Gong et al., 2022; Iskoskov & Mitrofanova, 2024; Nerurkar & Das, 2017; Zhang et al., 2023). This is further accentuated by the challenges and opportunities faced by public and private sector organisations (Barodi & Lalaoui, 2025; Farrell, 2005). For example, public sector projects often contend with stringent regulatory frameworks, hierarchical structures and resource constraints, whereas private sector initiatives tend to benefit from greater organisational agility and innovative capacity (Mellouli et al., 2024; Sun & Medaglia, 2019).

This report develops a detailed analysis of digital transformation in project management, with a particular emphasis on the role of AI in driving this evolving process (Corbin et al., 2024; Dacre & Kockum, 2022a; El Khatib & Al Falasi, 2021).

2.2 Key objectives

The aim of this research is to examine the impact of digital transformation on the project management profession, with a specific focus on the methods and skills required for effective project delivery in the emerging AI economy. As such, the primary research question is:

> **How is digital transformation affecting the methods and skills necessary for project management professionals in both public and private sectors, and what changes need to be made to harness current and future digital technologies for project delivery in the emerging AI economy?**

In order to address this, in the following sections of the report we:

- analyse key trends and developments in digital transformation, including the adoption of AI-enhanced decision-making, agile methodologies and advanced digital tools
- examine the shifting role of strategic leadership and the balance with digital competencies in driving successful projects
- provide recommendations, and a digital skills taxonomy for professionals, organisations and policymakers
- conclude by focusing on implications for the profession, cross-sector policy, responsible AI and project performance metrics.

3. Methodology

This study employed a mixed-methods design, integrating quantitative and qualitative data collection and analysis across three distinct phases, including a systematic literature review, a cross-sectional survey and in-depth interviews, while adhering to the University of Southampton's research ethics policy.

3.1 Systematic literature review

The literature review was designed to map the current state of knowledge on digital transformation in project management, with particular emphasis on the evolving roles, responsibilities and competencies of project professionals. We included academic articles, industry reports and relevant case studies, on digital transformation and AI.

An initial search was conducted across several databases, including Scopus, Web of Science and IEEE Xplore. The search strategy was refined through pilot tests which employed a set of predetermined keywords and Boolean operators. Studies published in the last 10 years were considered, ensuring the inclusion of recent developments (Snyder, 2019). Following the removal of duplicates, an initial pool of 943 papers was screened based on title, abstract and keyword relevance. Detailed analysis of full texts led to the exclusion of studies that lacked sufficient relevance or depth, resulting in a final set of 92 papers.

3.2 Cross-sectional survey

A survey was developed to capture quantitative data regarding project professionals' experience with digital transformation, perceptions of its impact on project management methods and skills, and recommendations for improvements (Chih-Pei & Chang, 2017).

Prior to full-scale distribution, the survey was pilot tested with 17 experienced project management professionals and academics. Feedback was systematically gathered on clarity, relevance and the overall flow of the questionnaire. Adjustments were made based on participants' comments, rephrasing ambiguous items and removing redundant questions to enhance the survey's reliability and validity (Connelly, 2008). The final version of the survey was then disseminated online.

A total of 512 responses were obtained from project professionals working in both the public and private sectors. A non-probability sampling method was employed, leveraging professional networks, industry forums and social media platforms to reach a broad audience (Taherdoost, 2016). Data was collected anonymously to encourage honest and unbiased responses.

3.3 In-depth interviews

The qualitative phase involved conducting semi-structured interviews with 42 project professionals who had experience with digital transformation projects (Kvale, 2009). A purposive sampling strategy was employed to ensure that participants represented a diverse range of sectors and roles (Etikan et al., 2016). Prospective interviewees received detailed information regarding the study, and participation was contingent upon informed consent as per the approved ethical guidelines.

The interview protocol was designed to be flexible, allowing the researcher to probe deeper based on individual responses. Key topic areas included:

- professional background, current role and organisational context
- digital tools and technologies employed
- perceived changes in skills and project methodologies
- the influence of AI on project management.

Interviews were conducted either face-to-face or via video conferencing, each lasting around one hour. The interview transcripts were analysed using a combination of thematic analysis and sentiment analysis. Thematic analysis, following the guidelines of Braun and Clarke (2019), involved multiple rounds of coding the transcripts to identify key themes and patterns. Sentiment analysis was employed to gauge the overall tone and emotional valence of participants' responses regarding digital transformation (Cambria et al., 2017).

3.4 Limitations

While every effort was made to ensure accuracy, certain limitations should be acknowledged. The use of non-probability sampling for the survey may affect the generalisability of the findings (Babbie, 2020). However, the diversity of respondents across sectors and experience levels helps mitigate this concern. The reliance on self-reported data in both the survey and interviews introduces the possibility of response bias. In order to counter this, cross-validation of findings through triangulation was employed (Denzin, 2017).

4. Survey demographics

4.1 Respondents by sector

The study achieved an even distribution of respondents between public sector (49%) and private sector (51%) participants (Table 1).

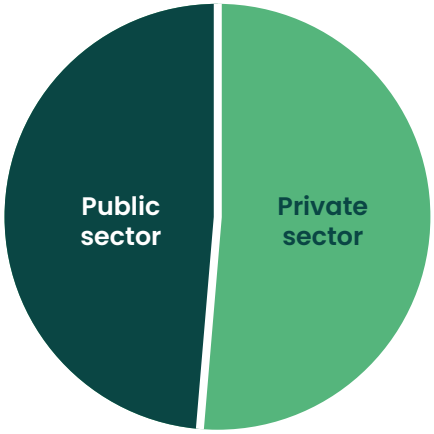


Table 1: Survey respondents by sector

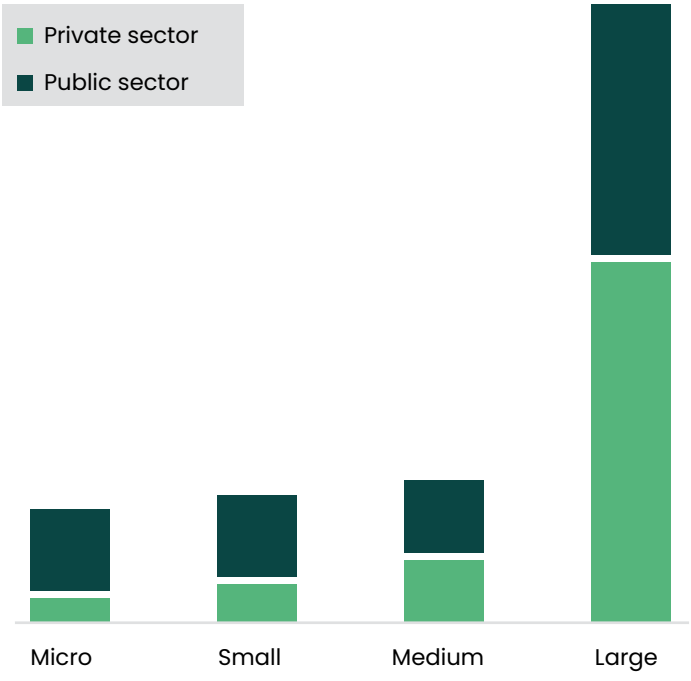
Category	Public sector (%)	Private sector (%)
Sector distribution	49	51

4.2 Organisation size

Analysis of organisational size shows that 63% of respondents work in large organisations, with over 250 employees. Public sector respondents are more likely to be in large organisations (75%) compared to those in the private sector (52%), reflecting the structure of UK public services such as NHS trusts and government departments. The private sector shows more size diversity, with 34% of respondents in organisations with up to 50 employees, compared to 13% in the public sector (Table 2).

Table 2: Survey respondents by organisation size

Organisation size	Public sector (%)	Private sector (%)
Micro (up to 10 employees)	5	17
Small (11 to 50 employees)	8	17
Medium (51 to 250 employees)	13	15
Large (over 250 employees)	75	52



4.3 Job roles

Project managers make up the largest group of respondents (29%), followed by managers (19%) and programme managers (10%). Sectoral analysis highlights key differences, with programme managers more common in the public sector (15%) than the private sector (5%). Technical roles are more prevalent in the private sector (6%) than the public sector (2%).

Other sectoral differences include a higher representation of academic or trainer roles in the public sector (6% versus 1%) and more professional services roles in the private sector (9% versus 5%). General management roles are also more frequent in the private sector (21% versus 18%). However, project manager distribution is similar across sectors (29% public, 28% private), reflecting comparable project delivery structures (Table 3).

Table 3: Professional roles across public and private sectors

Job role	Public sector (%)	Private sector (%)
Academic or trainer	6	1
Administrator	4	2
Analyst	5	5
Consultant	4	5
Manager (general)	18	21
Operations	2	4
Portfolio manager	2	3
Professional services	5	9
Programme manager	15	5
Project manager	29	28
Risk and planning	1	0
Technical lead or engineer	2	6
Other	7	11

4.4 Project-based experience

Analysis of respondents' project experience shows significant professional maturity, with 62% having five years or more of project-related work experience. The largest group comprises those with ten years or more of experience (34%), followed by those with two to less than five years (29%) and those with five to less than ten years (28%). Early-career professionals, with less than two years of experience, account for 9% of respondents.

Sectoral comparison reveals differences in experience distribution. The private sector has a higher proportion of highly experienced professionals, with 37% reporting over 10 years of experience, compared to 31% in the public sector. Other experience bands show minimal variation, with similar proportions of early-career professionals (less than five years: 40% public sector, 36% private sector). This profile highlights a professionally mature participant base with substantial project delivery expertise (Table 4).

Table 4: Project-related work experience by sector

Experience level	Public sector (%)	Private sector (%)
Less than 2 years	10	8
2 to less than 5 years	30	28
5 to less than 10 years	29	27
10 years or more	31	37

4.5 Education level

Educational attainment reveals a highly qualified respondent base, with 81% holding university degrees (Table 5). Bachelor's degrees represented the most common qualification (46%), followed by master's degrees (30%) and doctorates (5%). Certificate and diploma holders constituted 15% of respondents, while 4% reported "Other" or "Prefer not to say".

Public sector respondents have more advanced degrees, with 40% holding a master's or doctoral qualification (32% and 8% respectively) compared to 31% in the private sector (28% and 3% respectively). Bachelor's degree attainment is similar across sectors (46% in both), while the private sector has a higher proportion of certificate or diploma holders (18% versus 12%) (Table 5).

Table 5: Educational qualifications distribution across sectors

Qualification	Public sector (%)	Private sector (%)
Certificate / diploma	12	18
Bachelor's degree	46	46
Master's degree	32	28
Doctorate	8	3
Other / Prefer not to say	2	5

5. Key trends and developments in digital transformation project management

Key trends shaping AI-driven digital transformation in project management are structured around a number of themes stemming from our synthesis of the literature review, survey and interviews:

- integration of AI in data-driven decision-making processes
- underlying data governance principles to overcome the GIGO conundrum
- co-adoption of agile practices and digital transformation
- implications of embedding digital project management tools.

5.1 Data-driven decision-making

Research on decision-making highlights how evolving technological innovation is reshaping decision processes across the public and private sectors (AlJaloudi et al., 2024; Baxter et al., 2023; Duval & Elie-Dit-Cosaque, 2023). Central to this transformation is AI, which harnesses large-scale, real-time data analytics and predictive modelling to reveal patterns, trends and potential outcomes (Brookes et al., 2020). Unlike traditional digital tools that primarily support information sharing and workflow management, AI facilitates the dynamic analysis of complex datasets and real-time simulations, delivering actionable insights (Dacre & Kockum, 2022a; El Khatib & Al Falasi, 2021).

> "This is a step forward compared to older tools, where you had to ask specific questions to get the data you needed. With AI, it can learn from the data and notify you when something is amiss, which helps me make faster decisions."
>
> (Project manager, energy and utilities)

The shift from exclusively human-centric decision-making to AI-augmented processes highlights a key trend in emerging methods that reduce the effects of cognitive bias, accelerate decision cycles and improve the consistency of project decisions across organisational contexts (Alon-Barkat & Busuioc, 2023).

Our survey reveals that 61% of respondents report improved decision-making and project oversight due to AI-driven digital transformation, with 46% agreeing and 15% strongly agreeing. The private sector shows a slightly higher agreement at 65% compared to 57% in the public sector, suggesting that private organisations may be better positioned for faster and more effective decision-making.

In the public sector, AI applications are primarily tied to initiatives aimed at modernising service delivery and achieving policy objectives such as the United Nations Sustainable Development Goals (SDGs) (Anshari et al., 2025). The literature highlights AI's potential to transform public services by automating routine decisions and enhancing the analytical capacity of government agencies (Levantis & Sgora, 2024). However, the benefits of AI must be considered alongside the risks, which include the problems with evaluating decision quality and fairness because of opaque AI processes (Mellouli et al., 2024).

Decision-making approaches in public projects are often characterised by higher accountability requirements and legal scrutiny, which makes the deployment of AI-driven systems more complicated than in the private sector (Gualdi & Cordella, 2024). Private sector decision-making, in contrast, is more often driven by performance optimisation and operational efficiency (Nutt, 2006), allowing for a less constrained integration of AI solutions.

> "I do think AI has a lot of potential in helping decision-making processes. At the start of a programme, for example, you could input details about the project, the organisation, and the level of experience on the team. An AI system could then flag potential risks or highlight areas that need extra attention, which would help us set up the right controls from the start and boost our chances of reaching the project's goals."
>
> (Programme manager, technology/IT)

Table 6 integrates key insights from both the survey data and the literature regarding AI's impact on decision-making, organisational context and professional perceptions.

Table 6: Decision-making approaches and AI-driven digital transformation

Category	Key observations
AI-augmented decision processes	AI-enabled tools can analyse large datasets, identify trends and provide real-time evidence-based recommendations for improved decision-making.
Private vs. public sector adoption	Private sector organisations report a slightly higher level of agreement (65%) with improved decision-making through AI compared to public sector organisations (57%).
Demographic trends in AI adoption	More highly educated professionals and older respondents (45+) show stronger agreement with the benefits of AI decision-making, while younger professionals (18–24) display more neutral responses.
Scepticism about AI decision-making	There are concerns about relying on AI for critical decisions, particularly due to its inability to understand human complexity and behaviour.

5.2 Data governance and the "garbage in, garbage out" conundrum

The larger and more complex the datasets that underpin data-driven decision-making processes, the higher the risk of data quality issues that can significantly impact project outcomes (Brookes et al., 2020; Dacre & Kockum, 2022a).

> "As with any software tool, you have to be aware of GIGO. If PMs do not know what data to input and what the software does with it, it is very likely that garbage data is entered and therefore useless garbage outputs are achieved. There is a tendency for businesses to believe that digital transformation can fix everything and do not take into account the ability of their digital transformation users to actually input the right data at the right time to get useable effective outputs."
>
> (Project manager, technology/IT)

Project data typically depends on four key quality dimensions: accuracy, consistency, completeness and timeliness (Azeroual, 2024; Wang & Strong, 1996). Poor data quality can cascade through project phases, leading to inaccurate estimates, unreliable progress tracking and compromised decision-making (Haug et al., 2011).

A major challenge in data-driven decision-making is ensuring that data from different project workstreams and tools is well co-ordinated and integrated (Bag et al., 2021; Kockum & Dacre, 2021). Project teams often struggle with fragmented data systems, where information from various management tools such as kanban boards, resource management systems and stakeholder feedback platforms leads to reporting inconsistencies (Pemsel & Wiewiora, 2013; Scott & Gong, 2021). This issue is further complicated by data drift, where changes in project metrics and key performance indicators (KPIs) require continuous monitoring and adjustments to maintain accurate performance tracking (Ackerman et al., 2021; Mentsiev et al., 2023).

The Infrastructure and Projects Authority (IPA, 2024) argues that data should be recorded in standardised formats on futureproofed systems to ensure it is discoverable, accessible, interoperable and reusable, a view which is shared by our interview respondents.

> "One of the barriers to effective data use in project delivery is the lack of intentionality around data governance. Teams don't always think about how they manage their information as data. Without this intentional approach, digitising a system can end up replicating the same gaps and silos that existed in manual processes."
>
> (Analyst, central government)

A detailed sentiment analysis conducted across our data by systematically coding responses for the four key governance themes – accuracy, consistency, completeness and timeliness – reveals a range of critical insights (Table 7).

Table 7: Data governance sentiment analysis

Quality	Sentiment	Key observations	Examples
Accuracy	Generally positive with caution	Respondents stressed the need for accurate data, warning that even small errors can disrupt outcomes.	Interviewees noted that "we need to be really careful with our data; a tiny mistake now can throw everything off".
Consistency	Mixed	While digital tools are seen as capable of enforcing data consistency, several participants raised concerns about siloed data ecosystems that result in reporting inconsistencies.	Comments were made about how disparate project management tools can create fragmented data views, with one respondent mentioning that "information from multiple sources often does not align, leading to confusion".
Completeness	Mixed to negative	Incomplete data was frequently identified as a major risk, with many interviewees stressing that missing inputs can compromise planning, tracking and overall project outcomes.	Several responses highlighted issues, e.g. "delayed or incomplete data disrupts sprint planning and agile iterations", underscoring the need for robust processes to ensure completeness.
Timeliness	Predominantly positive	Timely data is widely regarded as essential for proactive decision-making. Respondents observed that real-time data supports dynamic adjustments in resource planning and maintenance.	Interview participants noted that "having data in real time is a game changer. It means we can catch issues early and make adjustments on the fly." AI tools were also credited with providing the up-to-date performance data that is crucial for predictive scheduling.

5.3 The co-adoption of agile practices and digital transformation

The flexible nature of agile project management is well suited to digital transformation projects, which are often characterised by high levels of uncertainty (Dong et al., 2022; Zhang et al., 2023). Breaking projects into smaller, manageable units enables teams to address these dynamic changes more efficiently, while also supporting continuous feedback loops and iterative improvements (Baxter et al., 2023; Dong et al., 2024). This synergy between digital tools and agile methodologies was noted in our interviews:

> "Agility and digitisation aim for similar outcomes. Both seek to make organisations more responsive, adaptable, and efficient. I strongly believe that digital transformations should be planned to help organisations become more agile. They require changes in processes, behaviours, and the way people work, so they can work very well together."
>
> (Programme manager, construction)

While 64% of survey respondents prioritise agile for its flexibility and efficiency, interview insights reveal a countervailing risk: poorly implemented frameworks can institutionalise rigidity. For instance, respondents criticised the adoption of agile "tools" when there were no parallel efforts to embed cultural adaptability, leading to performative rituals (e.g. stand-ups, retrospectives) that prioritise process adherence over outcomes. This suggests a critical paradox in that the very methodologies designed to mitigate bureaucracy may inadvertently reinforce it (Nerurkar & Das, 2017). Moreover, the tendency to treat agile as a checklist undermines its effectiveness by shifting the focus to compliance rather than continuous improvement (Dikert et al., 2016).

The insights from both interviews and surveys build on the relationship between agile and digital transformation (Table 8). Three central dimensions are highlighted: the balance between agile values and bureaucratic priorities, the integration of AI and digital tools, and the variations observed across sectors and roles.

Table 8: Relationships between agile and digital transformation

Attributes	Interview insights	Survey insights
Values vs. bureaucracy	• Some respondents noted that "just incorporating some agile tools" can actually increase bureaucracy without delivering real benefits. • An emphasis that agile is not just about process but also about fostering an agile mindset.	• Very few respondents rated agile as "not important" (around 2%). • 64% view agile methodologies as "moderately" to "extremely important.
AI and digital tools integration	• One technical lead stressed caution when using AI tools like ChatGPT, noting that curated tools (e.g. Marvin) are more reliable. • Some respondents suggested that AI could eventually support agile processes by automating workflows or even acting as a virtual scrum master.	• Sectors with a strong technology focus (e.g. technology/IT, media and entertainment) are likely to see enhanced benefits when integrating digital tools with agile methodologies.
Sector and role variations	• Project management approaches vary widely, from agile software projects to large-scale construction and infrastructure projects. • Some noted that, while IT projects may adopt agile methods, other sectors (such as construction) often use waterfall or hybrid approaches.	• The survey data differentiates between public and private sectors and specific industries, and most groups rate agile as "moderately" to "extremely important".

Agile organisations typically harness digital transformation well (Carroll et al., 2023), because agility allows the change required by digital transformation.

> "The benefits of digital tools or AI depend a lot on the organisation's maturity. Agile organisations are better positioned to make use of them, whereas others might just end up focusing on the past because their tools are geared towards analysing historical data instead of shaping the future."
>
> (Project manager, automotive)

Therefore, instead of treating AI as a static technology, leading organisations are integrating it into their agile sprints (Dam et al., 2019). This allows for continuous testing, evaluation and improvement of AI applications. Teams can assess performance, learn from real-world data and adjust parameters accordingly (Dong et al., 2022; Eggleton et al., 2021; Manh et al., 2024). This iterative approach helps organisations to manage the inherent uncertainties of AI technologies, such as data bias or evolving algorithms (Alon-Barkat & Busuioc, 2023; Mellouli et al., 2024).

Key observations from the survey on the importance of agile are presented in Table 9.

Table 9: Survey insights on the importance of agile

Category	Key observations
Overall rating distribution	2% rated agile as "not important", 7% as "slightly important," 27% as "moderately important", 44% as "very important" and 20% as "extremely important".
Sector (public vs. private)	40% of public sector respondents rated agile as "very important". 45% of private sector respondents rated agile as "very important".

5.4 Digital project management tools

The analysis of interview and survey data reveals different perspectives on how emerging digital tools shape project management practices and outcomes. For instance, traditional project management software, such as Microsoft Project and Excel, continues to be widely used in project delivery (Souza Valadares et al., 2024). However, its application is increasingly complemented by that of contemporary SaaS platforms such as Jira, monday.com and Asana.

> "When we use tools like Jira, we're essentially taking traditional project management methods and giving them a digital upgrade without changing the core of how we work. For me, it's a powerful, cloud-based alternative to old-school tools like physical scrum boards, and it's made remote collaboration much easier. With our 'work from anywhere' policy, platforms like this help us stay connected no matter where we are."
>
> (Project manager, technology/IT)

A summary of the key themes from the interviews and survey relating to the use of digital tools is presented in Table 10.

Table 10: Key issues with digital project management tools

Attributes	Interview insights	Survey insights
AI tools and their impact	Respondents reference AI-driven tools, such as those for filtering emails and reporting and summarising meeting notes, as mechanisms to reduce administrative burdens and improve decision-making. They stress that the effectiveness of these tools depends on users engaging critically with outputs and recognising technological limitations.	The overall positive ratings suggest considerable optimism regarding the transformative potential of AI tools in enhancing project management practices.
Efficiency, process streamlining, and role enhancement	Numerous respondents cite tools such as kanban boards, Asana, monday.com and Jira as catalysts for improved workflow management. These systems significantly reduce time spent on administrative tasks, allowing project managers to concentrate on strategic, value-adding activities, real-time data access and enhanced collaboration.	The positive survey evaluation confirms that respondents value digital tools for their capacity to reduce administrative burdens and facilitate more effective project execution.
People, skills, and organisational leadership	Respondents consistently assert that the success of digital tools depends on appropriate skills and effective organisational leadership. They emphasise that technology should complement rather than replace human judgement and highlight the necessity for training and robust change management.	The high importance ratings indicate that respondents expect digital tools to be supported by strong organisational backing and human capital. This supports the qualitative claim that proper leadership and training are essential for the effective use of these tools.

These findings highlight that, while digital tools are critical for streamlining processes and enhancing project performance, their effectiveness hinges on strategic integration and competent leadership.

> "I've always believed that projects are run by people, not by tools or data. Tools should be there to support people, not the other way around. It's how you use them that makes the difference."
>
> (Project manager, civil servant/central government)

Stemming from our review of the literature and synthesised empirical insights, strategic positioning can be examined through the following digital project management tools matrix (Figure 1).

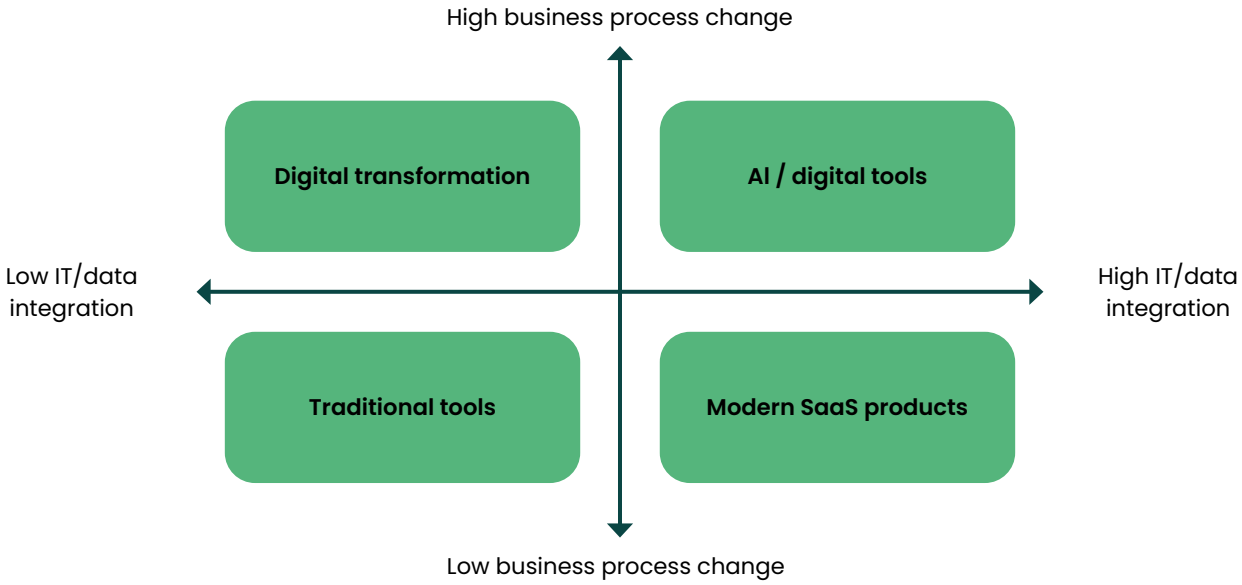


Figure 1: Digital project management tools matrix

At the "low IT/data integration, low business process change" quadrant, traditional tools demonstrate proven reliability and support established workflows (Biafore, 2011; Souza Valadares et al., 2024). Their limited integration scope constrains their potential for transforming core processes, yet the interview data suggests these tools remain valuable for organisations that require stable, well-understood project management practices.

> "In my role, I rely on tools like Microsoft 365, OneNote, MS Project, and a system called Project Register to keep track of risks, benefits, and updates. They're invaluable for managing the details, but they don't really change the nature of what I do. For example, Project Register makes it easy to report updates and send them directly to the relevant stakeholders."
>
> (Project manager, media and entertainment)

Modern SaaS products occupy the "high IT/data integration, low business process change" quadrant. Tools such as Jira, Monday.com and Asana (Weerasuriya et al., 2022) excel in providing real-time collaboration capabilities and workflow automation.

> "The move towards tools like Asana and monday.com lets project managers experiment and find what works for their projects. This is very different from the past, where companies would invest in monolithic systems like SAP and force everyone to use them, even if they weren't fit for purpose."
>
> (Project manager, technology/IT)

At the "low IT/data integration, high business process change" quadrant, digital transformation tools aim for organisation-wide evolution (Iskoskov & Mitrofanova, 2024). These tools offer a strong potential for process optimisation and stakeholder engagement, with 68.4% of survey respondents viewing them as crucial. Interview data highlights the need to align them with core business processes to maximise their benefits.

In the "high IT/data integration, high business process change" quadrant, AI and advanced digital tools drive project management innovation (Bento et al., 2022; Dacre & Kockum, 2022a; Krishna et al., 2024). They blend decision support with administrative automation, providing transformative advantages. Interviews indicate a growing organisational recognition of their value, especially for complex projects that demand sophisticated analysis and decision-making, but this value is only available with a high level of data integration.

> "The real opportunity with AI and digital tools is to rethink business processes. Too often, organisations treat email like a fast letter and fail to leverage the transformative potential of digital tools. The challenge is to move beyond simply optimising old processes and use these technologies to fundamentally improve ways of working."
>
> (Project manager, financial and professional services)

The value of AI and digital tools lies in forging deeper collaboration, streamlining decision-making, and freeing up time for higher-level thinking. The insights indicate that, rather than serving as isolated add-ons, these platforms thrive where active sponsorship, cohesive leadership and adaptable mindsets are prevalent. The key takeaway is that technology itself does not run projects – people do. Even the most advanced platforms are only as effective as the teams behind them. Effective deployment of AI and digital tools also requires alignment with the core business processes and a genuine commitment to change management (Table 11).

Table 11: Digital tools summary insights

Category	Key observations
Importance of digital tools	68% consider digital tools vital, with stronger support in the private sector (72%) than in the public sector (65%). Medium-sized organisations (74%) and early-career professionals (74%) lead, while support from mid-career professionals dips to 60%.
Sector-specific contexts	Construction (81%) and financial services (76%) show strong support. Health services (75%) outpace education (53%).
Automation and efficiency	Digital tools automate tasks, boosting problem-solving and productivity. AI tools improve workload management and task filtering.
Generational perspectives	Young professionals (18–24) favour digital tools (76%), and experienced professionals (64%) appreciate their strategic value.
People-centric approach	Success depends on people. Balance is crucial to avoid neglecting the human element.

6. The evolving role of strategic project leadership and the balance of digital competencies

6.1 Strategic project leadership dynamics

Strategic leadership is central to successfully navigating digital transformation and integrating AI within organisational settings (Dacre & Kockum, 2022b). Leadership plays a crucial role in overcoming resistance to change, fostering organisational readiness, and ensuring sustainable transformation outcomes (Frangos, 2022).

Our survey data highlights that 49% of respondents reported improvements in leadership competencies, although positivity was higher in local authorities (56%) than in central government organisations (40%). Central government responses exhibited higher neutrality (28%) and disagreement (24%), reflecting the challenges of implementing strategic leadership within rigid hierarchical structures (Farrell, 2005; Joyce, 2012; Singh et al., 2023). Traditional governance frameworks can hinder innovation and strategic decision-making, particularly when authority is overly centralised (Cannella et al., 2009).

Respondents frequently highlighted that although digital tools enhance visibility and collaboration, they do not inherently foster good project leadership:

> "When I started, it was all about the technical side of things. We focused on schedules, managing risks, and controlling changes. Those were the priorities. Now, there's a much stronger emphasis on leadership, engaging with stakeholders, and communicating effectively."
>
> (Senior project manager, construction)

Strategic leadership requires balancing operational efficiency with long-term innovation in order to navigate ambiguity and foster sustainable change (Vera & Crossan, 2004). One respondent emphasised that digital transformation requires cultural shifts rather than just technological development:

> "Getting digital transformation right isn't about the tech itself. It's about whether the team's culture and daily habits actually change. If that doesn't happen, even the most innovative tools aren't going to save you."
>
> (Operations, local authority)

Distributed leadership and hybrid models, which integrate human expertise and AI-driven insights, are increasingly seen as solutions for managing complexity in digital transformation projects (Gatziu Grivas & Imhof, 2023). Our findings suggest that leadership relies on frameworks capable of addressing regulatory challenges, fostering behavioural change, and integrating technological tools with human-centred approaches (Table 12). Therefore, traditional governance structures in public organisations may require re-evaluation to allow for greater flexibility and dynamic decision-making (Farrell, 2005).

Table 12: Leadership and digital transformation key insights

Category	Key observations
Regulatory complexity	Energy, central government and healthcare face leadership challenges due to regulatory constraints.
Balancing technical and human skills	Tools like AI help with collaboration but require leaders to drive cultural and behavioural change.
Behavioural change as a key driver	Embedding behavioural change is essential for successful digital transformation.
Decision-making and leadership hierarchies	Younger and mid-career leaders are better equipped to handle digital transformation demands.

Ultimately, strategic leadership's success in driving digital transformation depends on its ability to bridge technological innovation with organisational culture and people-focused strategies.

6.2 Evolving digital competencies and capacity building

Evolving digital competencies reflect how organisations develop and maintain digital capabilities within their project environments (Dacre et al., 2022; Mohamed et al., 2024). For instance, overall, 82% of respondents state that digital transformation has improved their project teams' digital competencies (66% agree, 16% strongly agree). This highlights the critical role of digital transformation in developing organisational digital capabilities (Table 13).

Table 13: Digital competencies and transformation

Category	Key observations
Overall	Strong positive perception of digital transformation's impact on digital competencies across organisations.
Public sector	15% of public sector respondents reported a neutral stance. Civil servants and local authorities showed a greater neutral response at 25%.
Private sector	Aerospace, defence and technology sectors report stronger agreement and focus on digital innovation.
Micro businesses (up to 10 employees)	This group reported the highest positive impact (88%), likely due to agility and quicker adaptation to digital changes.
Large businesses (over 250 employees)	Slightly lower positive responses (81%) with higher neutral responses, reflecting complexity-related delays.
Experience (5–10 years)	The most confident group in applying digital skills, showing the highest positive response rate (81%).

With regard to capacity-building and training requirements, digital transformation has broadly increased the demand for additional training within project teams, as 77% of respondents confirm (57% agreeing and 20% strongly agreeing). This consensus spans sectors, organisation sizes and experience levels, though some variations are noted (Table 14).

Table 14: Capacity-building dependencies

Category	Key observations
Organisation size	Larger organisations face more complex training challenges, with strong agreement highest among large businesses (24%) and lowest among small ones (9%).
Experience levels	Newer professionals (less than two years' experience) are most aware of training needs, with 26% strongly agreeing.
Age group differences	Mid-career professionals (aged 25 to 44) show a stronger recognition of training needs than younger respondents (aged 18 to 24).

Sector analysis reveals that the public sector shows a greater intensity in capacity-building requirements, with 22% strongly agreeing compared to 18% in the private sector. However, the private sector reports only marginally higher overall agreement (78% vs. 76%), indicating a similar level of awareness of training requirements. Industries facing major technological changes, such as financial and professional services (29% strong agreement) and private healthcare (21%), report higher training needs due to sector-specific digital challenges.

> "Data literacy is essential now, especially understanding what data means and ensuring its accuracy. While data can be powerful, misinterpreting it can be risky. Developing these digital skills doesn't just happen. It takes effort, which is why companies like mine focus on ongoing training."
>
> (Analyst, financial and professional services)

The key challenge for organisations lies not in promoting the need for capacity building, but in providing timely, sector-specific and scalable learning solutions to keep pace with AI-driven transformation (Dacre et al., 2021; Dacre et al., 2019).

> "It is no longer just about knowing how to use software like Microsoft Project. It is about adapting project management processes to work with tools intelligently. Tools can support planning, but the thinking behind the plan is still crucial."
>
> (Programme manager, technology/IT)

7. Recommendations

This report presents a number of key recommendations aimed at empowering project professionals to adapt to the evolving demands of AI and digital transformation. These cover strategies for optimising data-driven decision-making, leveraging agile practices and digital tools, and adopting a strategic leadership mindset within the AI-driven landscape. We also propose a taxonomy of digital skills to guide the continuing professional development (CPD) priorities for project teams.

7.1 Optimising data-driven decision-making

AI tools can integrate real-time project management metrics with predictive methods to continuously monitor progress, track resources and budgets, and automatically flag emerging risks and deviations. Project professionals should aim to adapt the decision-making process to suit the environment and the tool's capability. The key adaptations required for AI-enhanced decision-making are summarised in Table 15.

Table 15: Adapting to AI-enhanced decision-making in projects

Decision-making	Key recommendations
AI-augmented decision processes	Integrate AI tools to support decision-making, combining human expertise with AI insights to accelerate decision cycles and improve consistency.
Competency development for AI decision-making	Develop role-specific training programmes and mentorship schemes to build confidence among early-career professionals, capitalising on the experience of mid-career staff.
Limitations of AI decision-making	To address valid concerns about the limitations of AI, incorporate context-sensitive and transparent oversight mechanisms into projects. In regulated or safety-critical settings, this oversight will need to be much stronger.

Drawing on our research, it is recommended that professionals investigate the potential effects of adopting advanced AI systems that monitor critical metrics, manage resources and budgets, and automatically highlight deviations from project targets. Our report makes it clear that blending AI insights with human expertise remains essential to accelerate decision cycles while ensuring reliable outcomes. Furthermore, tailored approaches are essential, given the distinct challenges encountered in different sectors, varying organisational sizes and the risk profile of project decisions.

> "Digital tools and improved data have made projects more efficient by enabling evidence-based decisions. These free up project leaders to focus on what I see as their real job, which is leading and engaging with stakeholders and team members. Accurate data can make project management smarter, but only when used well. Poorly implemented data can cause just as many problems as they solve."
>
> (Programme manager, technology/IT)

With regard to underlying data governance strategies as part of the decision-making process, project professionals are advised to focus on the critical components of accuracy, consistency, completeness and timeliness:

- **Accuracy**: Employ AI-driven anomaly detection systems and real-time validation protocols to promptly identify and correct errors, minimising the risk of data inaccuracies that could disrupt project outcomes.
- **Consistency**: Consolidate project management systems and develop data standardisation measures to overcome siloed data ecosystems, ensuring integrated and consistent reporting across all sources.
- **Completeness**: Establish data capture processes with automated checks to ensure that all necessary data inputs are recorded, supporting effective planning, tracking and project processes.
- **Timeliness**: Leverage real-time data analytics to maintain up-to-date project information, enabling proactive adjustments in resource planning and responses to emerging project issues.

7.2 Leveraging agility and digital tools

Digital tools change the potential for communication, data management, business transactions and decision support, and so they also change the nature of some fundamental business processes. Digital tools, therefore, invite a rethinking of how projects are designed, managed and governed. With such high potential for organisational change, it is not surprising that our research finds that "agility" is a highly beneficial quality in a digital transformation programme. It is also notable in our study that "agile methodologies" are not the same as "agility" and can actually cause problems if they are not well adapted to the organisational context.

As part of the broader digital transformation strategy, project professionals are encouraged to leverage agility and agile approaches, and to consider the following guidance based on our empirical findings:

- **Value vs. bureaucracy**: Refine agile practices to eliminate excessive process overhead by fostering an agile mindset that prioritises adaptability, continuous learning and responsiveness to change.
- **AI and digital tools integration**: Adopt AI solutions with caution by selecting curated, reliable tools that support agile workflows. Use AI to automate routine tasks and to identify key project pain points and bottlenecks, ensuring that its implementation aligns with the organisation's digital maturity and sector-specific needs.
- **Sector and role variations:** Tailor the integration of agile methodologies and digital tools to reflect the unique requirements of different industries and roles. Develop flexible frameworks that can accommodate both agile and non-agile environments to address the distinct challenges encountered in the public versus the private sector, such as stringent regulatory oversight and lengthy procurement processes.

The recommendations for adopting digital tools are summarised in Table 16.

Table 16: Recommendations for adopting digital tools

Concepts	Key recommendations
AI tools and their impact	Align AI tools with core project management processes to avoid replicating existing inefficiencies. Reassess project workflows when introducing new tools to fully capture their potential benefits.
Integration, implementation and interoperability	Prioritise interoperability between new digital tools and existing project management systems. Develop integrated project platforms (e.g. unified project registers) to prevent fragmentation and ensure a seamless data flow across all tools.
Efficiency, process streamlining and role enhancement	Leverage agile SaaS platforms to streamline project workflows and reduce manual administrative tasks, so that project managers can focus on strategic value-adding activities.
People, skills and organisational leadership	Emphasise that digital tools are enablers designed to complement human expertise and project leadership, rather than replace them, and support this approach with strategic leadership initiatives.

Where digital tools are effectively combined with an agile approach, project professionals, organisations and policymakers are better equipped to guide and lead projects.

7.3 Positioning strategic leadership in the AI landscape

Strategic leadership is a critical component of digital transformation because it impacts every aspect of an organisation, including governance. Project governance is especially important in sectors with strict regulatory requirements, such as healthcare, energy and central government. Digital transformation can only enable more adaptive leadership and agile decision-making processes if strategic leadership and governance is a core part of the transformation. It is therefore essential to integrate technological innovation with human-centred strategies if organisations are to effectively optimise project governance structures alongside new digital tools.

Digital transformation requires project leadership to balance technical and human skills by promoting the use of digital tools as enablers while emphasising the significance of interpersonal skills and cultural change in project management. Moreover, it is critical to embed change management frameworks that prioritise both behavioural and cultural shifts within project teams, as sustainable digital transformation relies on adjustments in daily practices as much as on technological upgrades. Table 17 summarises the recommendations for project leadership in a digital ecosystem.

Table 17: Leadership recommendations in the digital ecosystem

Leadership	Key recommendations
Overall leadership competency	Develop leadership models that merge technological innovation with a human-centred approach.
Regulatory complexity	Highly regulated sectors must review their approach to governance in a digital transformation programme.
Balancing technical and human skills	Both digital and interpersonal skills are now critical for effective project managers.
Behavioural change as a key driver	Digital change requires effective change management to drive cultural and behavioural shifts.

7.4 Towards a digital skills taxonomy

By drawing on our analysis, findings and recommendations, we present a digital skills taxonomy that links to the core competencies required for effective project management in a digitally transformed, AI-enabled project environment. The taxonomy categorises skills from foundational digital literacy to strategic digital leadership, each representing a critical role in enhancing project delivery in complex organisational contexts (Table 18).

Table 18: Digital skills taxonomy for project professionals

Digital skills	Competencies	Project attributes	CPD
Digital and IT skills	Software proficiency; effective use of digital tools, cloud computing and mobile applications.	Enables the effective use of digital tools for planning, tracking and communication; fundamental to digital transformation.	Ongoing training on digital platforms and foundational IT literacy.
Data literacy and analytics	Ability to analyse and interpret data; effective application of data quality dimensions such as accuracy, consistency, completeness and timeliness; application of data governance principles.	Data literacy is fundamental to data-driven decision-making and predictive analytics; improves reporting accuracy.	Courses on data analytics and data management; practical training on real-time project dashboards.
AI integration and automation	Ability to make effective use of AI tools and predictive modelling.	Enhances decision-making by combining automated insights with human expertise; increases efficiency and project oversight.	Workshops on AI applications in project management; targeted training in specific AI tools.
Digital collaboration and communication	Proficiency in digital communication platforms; integration of digital collaboration tools into working practices.	Improves stakeholder engagement, team co-ordination and project delivery; essential for managing modern remote or hybrid project environments.	Training in digital communication skills and collaboration platforms.
Agility and adaptability	Proficiency in agile methodologies; ability to adjust project workflows quickly and apply iterative planning and responsive decision-making processes.	Enhances project responsiveness and continuous improvement; supports efficient handling of uncertainties in dynamic environments.	Agile methodology training sessions; project management workshops.
Strategic digital leadership	Ability to apply strategic thinking in digital transformation, lead in an agile and digital context and drive cultural change.	Empowers leaders to drive digital transformation initiatives; effectively manages organisational change and fosters a culture of continuous digital improvement.	Leadership development programmes focused on digital transformation; mentoring schemes focused on leading change.

The digital skills taxonomy serves not only as a tool for understanding the digital skills landscape but also as a guide for targeted training and capacity-building programmes (Dacre et al., 2019; Souza Valadares et al., 2024). Our survey found that digital and IT skills underpin the effective use of AI-enhanced platforms, with 68% of respondents considering digital skills vital. The use of new digital tools presents a clear need for targeted training workshops (Dacre & Kockum, 2022a; Dacre et al., 2020; El Khatib & Al Falasi, 2021).

Data literacy and analytics are equally important. In our survey, 61% of respondents reported enhanced decision-making through AI-driven transformation, but our interviews revealed that minor data inaccuracies can severely compromise project outcomes. This need for data literacy is also supported by previous academic research (Brookes et al., 2020; Kockum & Dacre, 2021; Wang & Strong, 1996). In the domain of AI integration and automation, 65% of private sector participants endorsed the benefits of AI tools for predictive modelling.

Digital collaboration and communication competencies can be further reinforced by agile methodologies (Baxter et al., 2023; Dong et al., 2022; Dong et al., 2024). In our survey, 63% of respondents rated agile practices as very or extremely important, emphasising the necessity for flexible planning and responsive decision-making to manage uncertainties in dynamic environments.

8. Implications

8.1 Implications for the project management profession

Digital transformation introduces implications that extend well beyond the integration of digital tools, since business processes and organisational governance also change. Project management professionals are compelled to reassess their professional characteristics and the boundaries of their roles. A hybrid approach that seamlessly blends technical and interpersonal acuity is emerging as a vital priority. This transformation is set to shape current and future career trajectories, with new roles emerging that bridge the gap between traditional project oversight and digital innovation. Digital competency is rapidly becoming an essential marker of credibility and strategic influence for the project profession in an increasingly data-rich environment.

The evolving landscape is also driving the reorganisation of organisational cultures and governance frameworks to better align with digital imperatives. The infusion of AI-driven solutions into project workflows increases the need for data governance and allows for greater agility. As more agile structures become prevalent, project managers will be expected to foster collaborative environments that encourage dynamic decision-making and proactive stakeholder engagement.

8.2 Implications for policy

In the public domain, it is particularly important that digital change does not only look to modernise legacy systems, but also includes strategic leadership and governance as part of the transformation. Ultimately, policymakers must develop bespoke strategies that address sector-specific needs while also encouraging cross-sector collaboration and knowledge sharing (Table 19).

Table 19: Cross-sector implications

Policy	Public sector	Private sector
Digital infrastructure	Invest in modernising legacy systems and developing secure and scalable platforms.	Incentivise the adoption of cloud-based solutions and integrated project management tools.
Data governance	Establish standardised data protocols and quality control mechanisms.	Develop flexible frameworks for data management and promote best practices in real-time analytics.
Capacity building	Fund CPD and digital literacy programmes for civil servants.	Support targeted training and upskilling initiatives to enhance digital competencies.
Interoperability and integration	Create mandates for interoperable systems across agencies to reduce siloed operations and enhance data sharing.	Encourage collaboration with technology providers to seamlessly integrate leading digital tools into workflows.
Innovation support	Provide grants and pilot programmes to explore emerging digital technologies in project management.	Foster an environment of innovation through partnerships with research institutions.
Cross-sector collaboration	Develop platforms for public-private dialogue to exchange insights and co-create effective policy solutions.	Engage in joint ventures and industry consortia to share expertise and drive collective digital transformation.

8.3 Implications for responsible AI

Responsible AI seeks to balance technological innovations with sustainability and social responsibility (Pappas et al., 2023). According to our survey data, only 29% of respondents agreed that digital transformation has improved environmental sustainability, and a similar proportion disagreed. Interviews suggest that this ambivalence is especially prominent in sectors such as construction and transportation, where uncertainties and limited measurable outcomes often leave stakeholders unsure about AI's tangible benefits. Respondents from these sectors highlighted the difficulty in capturing sustainability results, particularly in long-term projects, where environmental outcomes are delayed or indirect.

In contrast, sectors like energy and manufacturing reported more positive outcomes, with participants sharing examples of successful AI-driven sustainability measures. In the energy sector, respondents described how AI is used to optimise carbon reduction strategies through real-time monitoring, decision support systems and predictive analytics (Brookes et al., 2020). Specific tools, such as Power BI dashboards (Sawant et al., 2024), were frequently mentioned as instrumental in tracking sustainability goals and embedding environmental metrics into project delivery frameworks, particularly in the nuclear and broader energy industries.

> "Sustainability is a growing focus when considering AI tools. While data security and privacy have been primary concerns, we are now working to understand the environmental impact of digital tools. We're engaging with suppliers for more metrics and clarity on carbon footprints and tracking emissions from our services."
>
> (Analyst, energy and utilities)

In the public sector, 71% of respondents agreed or strongly agreed that digital transformation has increased the emphasis on social responsibility and environmental sustainability within their projects. This substantial level of agreement indicates that a significant majority recognise the potential of AI-driven initiatives to enhance sustainable practices and social responsibility outcomes in project delivery. A substantial portion of private sector respondents also selected neutral responses, suggesting room for improvement. Our interviews find that this neutrality may stem from a disconnect between policy ambitions and practical results. Many participants noted that, while companies may have high-level policies supporting responsible AI, these goals are not always effectively translated into actionable, measurable practices.

> "In our company, we have a policy around responsible AI, but the challenge is actually turning it into a practical measurable action."
>
> (Analyst, technology/IT)

8.4 Impact on project performance metrics

The link between digital transformation and AI is key to understanding the impact on project performance metrics (Dacre & Kockum, 2022a; Zhang et al., 2023), particularly within the iron triangle of time, cost and quality. For instance, according to our findings, time performance shows notable improvements, with 68% of respondents reporting better on-time delivery (54% agree, 14% strongly agree). AI-enabled tools enhance schedule management through real-time resource allocation and dependency mapping (Dacre & Kockum, 2022a). The private sector reports higher schedule benefits, at 75% compared to 61% in the public sector.

> "Digital tools haven't completely transformed my role, but they've made a real difference in how we deliver effective project management. They help us stay on top of the six key areas: time, cost, quality, scope, risk, and benefits."
>
> (Portfolio manager, local authority)

With regard to cost, Figure 2 shows 38% of respondents report reduced project management costs. In terms of quality, 61% of respondents report improved project outputs. The strong positive response regarding quality improvements suggests that AI tools are particularly effective at maintaining and enhancing quality standards (Holzmann & Lechiara, 2022). AI's capacity for streamlining administrative processes and mitigating human error in repetitive tasks (Parycek et al., 2024) has also been identified as a critical driver of consistency and precision, directly contributing to higher-quality deliverables.

> "Use of AI in a project management and controls environment could contribute to a step improvement in delivering high-quality outcomes on plan and to budget."
>
> (Risk and planning, project management consultants)

These implications indicate that, while AI-driven digital transformation positively impacts all three constraints, the benefits are not equal across time, quality and cost performance.

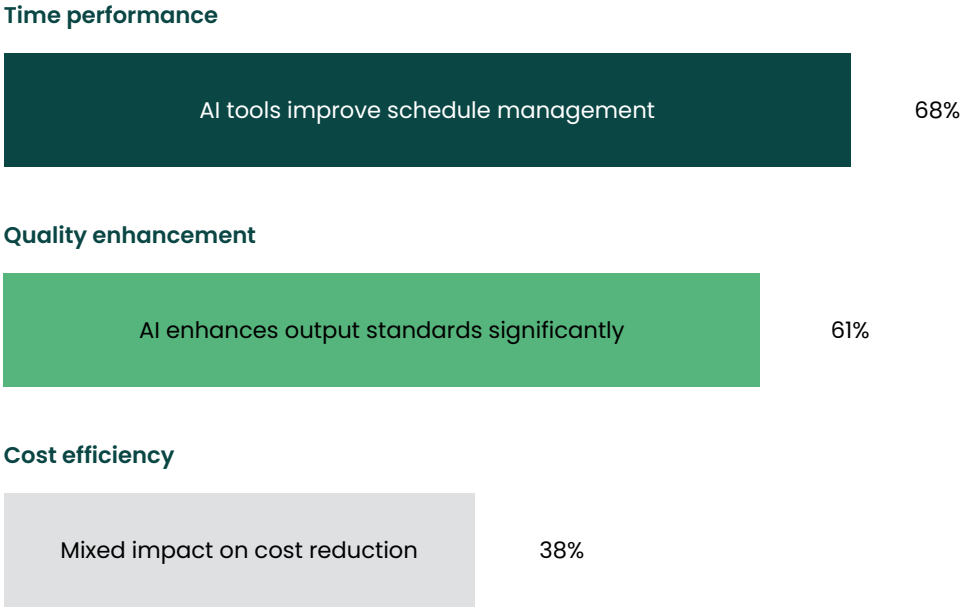


Figure 2: Digital project performance metrics

9. Summary

Our research project set out to examine the effects of digital transformation and AI on the methods and skills necessary for project management professionals. We identified that the importance of both digital skills and interpersonal skills has increased for project managers. This seemingly paradoxical finding stems from the deep changes that digital transformation can bring to the processes and governance of organisations and projects. Project managers must be able to make effective use of digital tools if they are to design, manage and track projects that operate in a digital environment. The emerging digital environment also requires strategic leadership, to shape the adoption of digital tools, practices and processes. Strategically leading this deep organisational change requires very effective communication and stakeholder engagement, which rely on exceptional interpersonal skills. We set out a digital skills taxonomy that outlines the key skills, the competencies that rely on them, and the training and development that will underpin this change.

Project managers have always required a blend of technical expertise and strong leadership abilities. While finding a digital project leader might seem like searching for a unicorn, we are confident that today's generation of project managers is up to the challenge.

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Committee member	Organisation	Committee member	Organisation
Elizabeth Axe	UK Parliament	Sheetal Hegde	Nationwide Building Society
Nicola Benjamin	ARUP	Graham Jennings	Office of Gas and Electricity Markets
Professor Steve Brown	University of Sussex	Nick Karamanis	AlphaPlus
Andrew Cleary	Department for Environment, Food & Rural Affairs	Mark Norris	Office for National Statistics
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