

Navigating AI in Project Management

A PMI Chapters Collaboration



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About Project Management Institute

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PMI Sweden Chapter is proud of our collective achievement and optimistic that this project will spark further international collaboration within the PMI network. We strive to continue nurturing professional connections and promoting the exchange of knowledge and experiences worldwide. Together, we can explore the full potential of AI in project management, paving the way for a more innovative and efficient future.

Thank you for your support and active participation. You have been an essential part of this journey.

Katarina Strömberg

PMI Sweden Chapter President



Foreword

Our goal with this report is to inspire PMI members and the project management community to explore the advantages of integrating AI into project management practices. By doing so, we aim to improve the quality and efficiency of project management efforts, thus providing valuable advantages in today's competitive landscape.

Similar to our previous report, *Artificial Intelligence and Project Management, A Global Chapter Led Survey 2024*, we have once again reached out to project managers and PMO officers actively involved in projects to share their valuable experiences and insights into using Artificial Intelligence in project management.

To get information about how the PMI and project management community are using AI Tools in project management, we have leveraged diverse channels such as newsletters, posts on Chapter websites, Chapter LinkedIn pages, our specialized AI in PM Studies platform, Chapter Engagement Managers, the European Leadership Group, and our exclusive LinkedIn networks to extend invitations for story submissions without bias. We opened for submissions on the 15th of January 2024 and closed on the 1st of March 2024. All contributions meeting our predefined criteria have been included in this report.

Enjoy reading!

Marly Nilsson, PMI Sweden

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Executive Summary

AI in project management began to gain attention as early as 2019, with an article in PMNet's 'Brain Power.' However, it was not until a couple of years later, with the pandemic accelerating digital disruption, that genuine interest in AI started to emerge. This was driven by the enormous foresight enabled by the increased volume of data available, often referred to as the new gold. Despite increased possibilities and interest, it wasn't until November 2022, with the launch of ChatGPT by OpenAI — representative of the broader advancements in AI—that AI became an accessible tool for individuals across various sectors. Since then, there has been little talk of anything else, and new smart AI applications are launched on a daily basis.

Individuals may be prepared to use AI and ChatGPT for personal use and benefits, but implementing AI in an organization is a significant undertaking. To provide inspiration and advice, we conducted a survey among project professionals worldwide to understand how they are using AI in project management, including the

benefits and drawbacks, such as security, legal, and ethical issues.

Additionally, we are providing hands-on experiences and processes on how to implement AI and incorporate AI into PM strategy, including inspiring stories from those who have successfully done so.

We are a team of passionate individuals dedicated to AI in project management. We hope that our enthusiasm is contagious and that real-life examples can inspire you. We believe this report will help you transform your project management role into the project leader of the future.

Marly Nilsson, PMI Sweden

Section One: Artificial Intelligence is Here to Stay

Success rates as a Factor driving AI Adoption

Why is this seismic shift happening, and why now? The answer boils down to raw economics and pure, unadulterated efficacy. According to the Standish Group, an astonishing **\$48 trillion** is pumped annually into software development projects, yet **only 35% cross the finish line**, waving the flag of success. This leaves behind a vast chasm of unrealized potential that AI promises to help narrow if we can only figure out how to navigate the ‘us’ and ‘them’ in this equation to create a harmonious ‘we.’

One reason we have found why project success rates are so poor is the low level of maturity of technologies available for managing them.

[HBR.org: How AI Will Transform Project Management](https://www.hbr.org/2023/01/how-ai-will-transform-project-management)

Given that merely 35% of software development projects are considered successful, there lies a significant opportunity for enhancement within the remaining 65%. Even minor adjustments and modest resource allocations can yield improved project outcomes. Failing to capitalize on these opportunities may allow individuals, other project managers, and rival companies to gain a competitive advantage.

Our survey on AI tools in project management provides insights into the time-saving benefits of utilizing such technology. It showcases examples of how the time saved can be redirected toward essential tasks such as Professional Development: 53%, Strategic Planning: 50%, and Innovation and Creativity: 48%. See Section Three for detailed results.

Productivity and AI Adoption: Evidence from Research

KPMG research found that companies that put their chips on AI are witnessing an average of **15% productivity improvement** in their projects. That is hundreds of millions, if not billions, of dollars saved every year for those bold enough to take the plunge.

According to analysis from Accenture and Frontier Economics, labor productivity in developed countries is projected to increase by up to 40% due to the influence of artificial intelligence (AI).

A study published in the Journal of Management Information Systems found that using AI in project management can increase project success rates by up to 50%. This promising finding highlights the potential impact of AI on enhancing project outcomes. A systematic [review](#) found that by leveraging AI, organizations can streamline

information, eliminate redundancy, and improve the robustness of project planning. As we continue integrating AI into project management practices, we can expect significant advancements in efficiency and effectiveness. PMI’s research, “[AI Innovators: Cracking the Code on Project Performance](#),” serves up an additional helping of stats, providing empirical evidence of three invaluable benefits that AI-human collaboration in project management brings to the table:

- **Timely Delivery** – Companies using AI report delivering a whopping 61% of their projects on time, compared to a lackluster 47% for those sticking to traditional methods.
- **Benefits Realization** – Firms utilizing AI-driven tools boast that 69% of their projects realized 95% or more benefits to their business. Compare this to 53% of companies that have not made the AI leap.
- **Higher ROI (Return on Investment)** – A commendable 64% of projects from AI-using organizations met or exceeded original ROI projections. This figure stumbles down to 52% for those sticking to older methods.

AI in PM: Insights from Project Managers Vs. C-Suite

These surveys were conducted during the same period but with different

target groups while the AI in PM Chapter-led survey targeted the project management global community, and the PMI Annual Global survey targeted Senior Leadership. Still, the outcome was very similar.

AI and PM 2024 Chapter led survey. 2,314 PMs	PMI Annual Global Survey 2023 342 Senior Leaders
76% PM professionals believe AI will transform the way of working.	82% of senior leaders believe that AI will have some impact on how projects are run in their organizations over the next five years. 91% of respondents believe that AI will have at least a moderate impact on the project management profession
35% are actively engaged in AI projects	Only about 20% of project managers report having extensive or good practical experience with AI tools and technologies.
65% of participants possess basic knowledge and experience in AI	49% have little to no experience with or understanding of AI in the context of project management.

More Information: [Artificial Intelligence and Project Management a Global Chapter led survey 2024](#), or [PMI Annual Global Survey 2023](#)

Market Growth Software & Services

The market size for AI in PM solutions is growing on average at 17% per year, and in Asia, it is even close to

24% per annum. In 2023, the market for applications and services was USD 2.5B. In 2030, it will have grown to USD 7.7 billion. Applications with the largest share were Intelligent scheduling, Real-time monitoring, Natural Language Processing (NLP) based communication, and collaborative project management. Top industries using AI in PM: Banking, Financial Services, and Insurance 21.9% followed by Government & Defense and IT & Telecom.

Among the prominent players are Atlassian, Adobe, Alice Technologies, Amazon Web Services, Google LLC, and IBM Corporation.

Some benefits driving the market growth of AI in PM solutions:

- **Automation and efficiency:** AI can automate routine tasks, freeing project managers and project management professionals to focus on more strategic tasks.
- **Data analysis and insights:** AI can analyze vast amounts of data, providing valuable insights and recommendations to project managers.
- **Intelligent assistance and decision support:** AI can provide real-time assistance

and decision support to project managers, improving the accuracy and speed of decision-making.

- **Predictive planning and resource management:** AI can predict outcomes and optimize resource allocation, improving the efficiency and effectiveness of project delivery.
- **Risk management and issue resolution:** AI can identify potential risks and issues, enabling project and risk managers to take proactive measures to mitigate them.
- **Collaboration and communication:** AI can enhance communication & collaboration among team members, improving the overall efficiency of project delivery.

Risks of Integrating AI into Project Management

AI has the potential to significantly transform project management, but like any powerful tool, it comes with its own set of risks. Cognizance of the risks inherent in integrating AI into project management is vital. This section highlights key vulnerabilities and strategies for mitigation.

Vulnerabilities	Description	Risks in Project Management
Bias and Fairness	AI algorithms can inherit biases present in historical data. If the training data contains discriminatory patterns, the AI system may perpetuate these biases.	In project management, this could lead to biased decision-making, unfair resource allocation, or discriminatory project prioritization.
Data Quality and Availability	AI relies on data. If project data is incomplete, inaccurate, or outdated, AI models may produce unreliable results.	Poor data quality can lead to flawed predictions, affecting project outcomes.
Over-Reliance on AI	While AI can enhance decision-making, overreliance on it can be risky. Human judgment, experience, and intuition remain crucial.	Blindly following AI recommendations without critical assessment could lead to suboptimal outcomes.
Ethical Dilemmas	AI decisions may conflict with ethical principles or organizational values	Ethical dilemmas could arise when AI suggests actions that compromise stakeholder well-being or violate privacy.
Security and Privacy	AI systems are vulnerable to attacks, data breaches, and privacy violations.	Compromised security could expose sensitive project information incl. proprietary and sensitive personal data or disrupt operations.
Job Displacement	As AI automates certain tasks, project management roles may evolve. Some manual tasks may be replaced by AI, impacting job roles.	Organizations need to manage this transition effectively.
Misinformation and Misinterpretation	AI outputs are not infallible. Misinterpretation or reliance on incorrect AI-generated insights can lead to poor decisions.	This risk could affect project planning, execution, and monitoring.
Resistance to Change	Introducing AI into project management requires organizational change. Resistance from team members or stakeholders can hinder adoption.	It is essential to implement effective change management strategies to facilitate the integration of AI, thereby addressing issues such as opacity, power centralization, over-reliance on AI, and increasing economic inequality.

Risk Mitigation

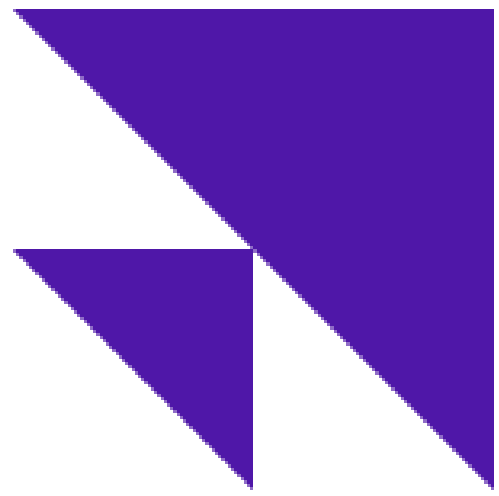
To mitigate these risks, organizations should:

- **Understand AI:** Educate project managers and stakeholders about AI capabilities, limitations, and potential risks.
- **Monitor and Audit:** Continuously monitor AI performance, assess biases, and audit decision-making processes.
- **Human-AI Collaboration:** Encourage collaboration between AI systems and human experts.

- **Ethical Guidelines:** Develop and adhere to ethical guidelines for AI use to ensure that AI respects our values and rules, and that humans remain in control of the technology.

Conclusion

We believe many project managers and companies will start their journey toward AI transformation by taking small steps. This approach will help them gain an edge over competitors and strengthen their position in the market. This report will both inspire and be of support on this journey.



Section Two: Thoughts about the Future of Project Management in the Age of Generative AI

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The landscape of project management is undergoing a radical transformation driven by generative AI and its implications for professionals, their companies, and society. Our approach to data has never been so linked to everyday tasks and its vast potential to assist and augment a significant part of our jobs. This implies a change in our profession, presenting both unprecedented challenges and immense opportunities for enhancing project success. Due to the rapid pace of these changes and their consequences, discussing trends presents a challenge, but here are some reflections.

Project managers' interdisciplinary approach will play a key role. Data has shifted from being a decision entry point to affecting all value streams in our company. From the first stage in the AI acquisition process where a project manager identifies AI with tool usage, we will see project managers being AI value creators, finding intersection points where AI can enhance our projects. We will become active members in our companies, helping in the development of models, advising on potential data risks, and helping build trust by aligning disciplines, departments, and roles. Tools with more guided user experiences will be great allies, bringing a greater impact.

High-speed continuous and applied learning will be a must. This implies overcoming traditional project management biases and being prepared to experiment, fail, and learn quickly with a just-in-time approach, a sort of applied learning mode that might require learning validation by peers. Communities will play an essential role. Sharing our learning as a collective effort will truly provide context to our profession. In this era, AI is elevating the importance of collaborative skills as never before. Overall, this human-centered dimension, a human-in-the-loop approach, will secure project managers a seat in AI-related decisions, across PMOs, teams, and projects.

I envisage a fascinating moment for the profession, with the rise of data-centric AI model challenges which more than ever emphasizes the need for a knowledge-based approach that could be the key to identifying misinformation and truth. All this ensures that the unique value project managers bring continues to play a pivotal role in the evolving landscape of our companies, projects, clients, and communities.

Claudia Alcelay

PMP®, PMI-ACP®, CSPO®

Section Three: Survey of AI Tools in Project Management: Highlights

Objective

The aim of the AI in PM Experience Showcase was to understand the discernment of various 'ways of working' that apply to Artificial Intelligence (AI) in Project management in the PM community and to gather specific examples to inspire AI adoption. While collection of case studies began in January 2024, the AI Tool survey was launched only in February 2024 following a realization that such a survey would add an additional dimension with respect to the following uses of AI in project management:

- Stand-alone AI-enabled tools to enhance individual performance in tasks such as summarizing meeting minutes, drafting communications and creating project documents.
- AI functionality built into existing project management solutions, thereby enhancing both creative (mind-mapping, brainstorming) and technical aspects (scheduling, automation of tasks, issue tracking, etc.)

Methodology

To achieve the objectives, the survey was designed to cover several domains.

- The profile of the respondents included demographic and professional details as well as self-

assessment of level of AI knowledge and experience, to provide a context to evaluate the responses.

- AI use in project management included reasons for incorporating AI, criteria for selecting specific tools/solutions, details of specific tools, including cost and duration of use, integration into workflows, and customization.
- Management of tool use included data quality assurance, governance & policies, communicating the value proposition of AI tools to stakeholders.
- Evaluation of AI tool use included Key Performance Indicators (KPIs) to measure effectiveness, benefits of AI use, time savings and utilization of time saved, and formal assessment of return on investment (ROI).
- Concerns, challenges & limitations
- Educational and training needs with respect to AI tools, including organizational support and self-learning options.
- Future Outlook included questions on the wish-list of features, best practices, and the role of AI in the future of project management in the organization/industry of the respondent.

The objective was that the breadth of the survey in combination with the more in-depth nature of the case

Section Three: Survey of AI Tools in Project Management: Highlights

studies would create a comprehensive resource of real-world AI project management experiences. It was expected that the insights of respondents would guide fellow members of the project management community on their AI journeys and inspire innovative approaches to harnessing the potential of AI.

The survey was piloted amongst 6 volunteers, who evaluated the time taken to complete the survey, the clarity of the questions, the relevance of the response options, and ease of completion.

Data Collection

The survey was publicized to a wide audience, as described in an earlier section of this report. Responses were collected online via a Google Form, from February 9th – March 1st, 2024.

Data Analysis

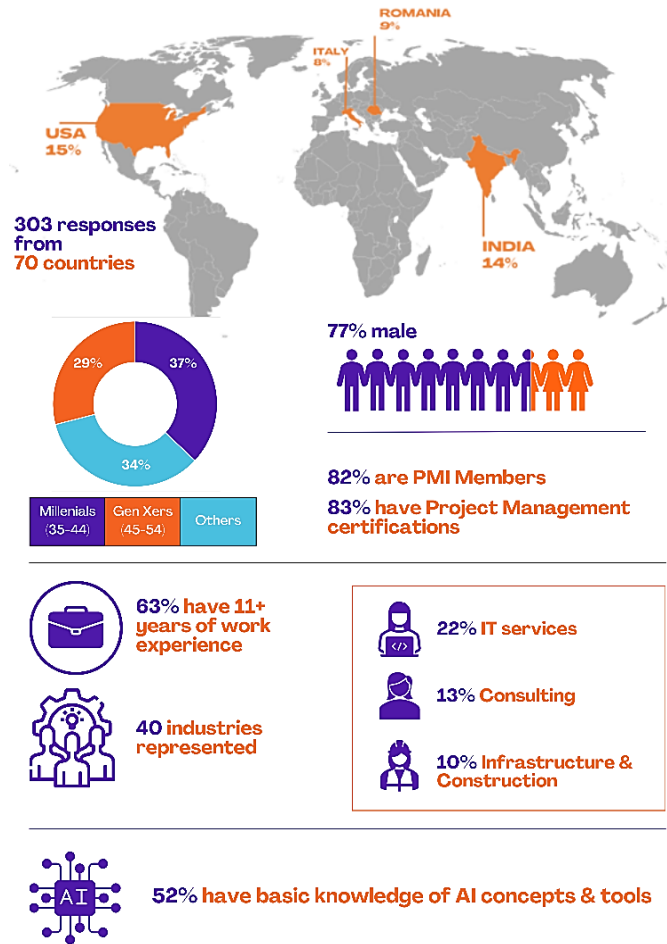
As the scope of the survey only included experiences of those currently using AI tools for project management, 19 of the 322 responses received were removed as the respondents indicated that they were not using AI tools for project management. Data were analyzed in Excel. Pre-provided responses are represented using percentages, while free text responses have been analyzed qualitatively to identify themes and extract valuable insights.

Percentages are rounded to the nearest tenth for ease of understanding.

Results

The respondent profile and key findings are presented below

Respondent Profile



Key Findings

Top 3 reasons for using AI tools

- 84% Efficiency & Time management
- 68% Decision support, problem solving & innovation
- 64% Project Management (Risk, Resource, Monitoring & Reporting)

Top 4 AI Tools & Solutions

- 59% ChatGPT 3.5
- 36% Microsoft Project Copilot
- 34% Jira
- 30% ChatGPT Plus

Top 3 benefits of AI tool use

- 58% Notably increased efficiency and productivity
- 48% Better decision-making
- 39% Improved collaboration and communication

56% are saving 5 hours/week

Top 3 uses of time saved

- 53% professional development
- 50% strategic planning
- 48% innovation & creativity

Top 3 concerns about AI use

- 72% Data privacy & security
- 56% Ethical considerations
- 51% Legal compliance & regulatory constraints

Top 3 best practices

- 64% Start small & scale gradually
- 54% Define clear objectives and set realistic expectations
- 53% Choose tools that fit your workflow

Conclusion

The profile of respondents resembles that of the previous survey conducted in 2023, with a mature and experienced group of professionals predominantly from the IT services, consulting, and infrastructure & construction industries, suggesting a keen interest in AI among professionals engaged in sectors that are increasingly reliant on technological advancements.

However, the predominance of the male gender amongst respondents may influence the collective attitudes and experiences reported regarding AI adoption, given the possibility of differing perspectives and interactions with technology across genders. The geographical diversity, with significant contributions from the United States, India, Romania, and Italy, indicates a global interest in AI applications within project management. The demographic's predominant PMI affiliation and high percentage of project management certifications underscore a commitment to upholding industry standards and to continuous learning, which could influence their openness to adopting AI innovations that align with these values.

Given that efficiency and time management (84%) was the predominant reason for incorporating AI, it is encouraging to see that notably

increased efficiency and productivity is the most commonly reported benefit, albeit by a lower percentage of respondents (58%). It is also encouraging that time savings of at least 5 hours/week were reported by the majority of the participants (56%); when combined with the other options, 86% reported varying degrees of time savings.

The finding that professional development (53%), strategic planning (50%), and innovation and creativity (48%) are the leading areas of time investment indicates an impetus toward cultivating leadership skills and potential. Organizations should encourage this approach, as fostering adaptable, forward-thinking leaders capable of steering projects to meet evolving challenges and achieving strategic objectives would greatly enhance project success.

The overwhelming concern about data privacy & security (72%) is also reassuring, given that the majority of respondents are using free stand-alone AI tools such as ChatGPT 3.5, without the benefit of organizational guardrails. While a significantly smaller number (56%) are concerned about ethical considerations such as bias and fairness, the position of this option as the second most commonly selected concern reflects at least a moderate degree of awareness of this vital issue.

Section Three: Survey of AI Tools in Project Management: Highlights

Respondents also advocate a measured approach towards AI adoption, with 64% recommending starting small and scaling gradually, followed by defining clear objectives and setting realistic expectations (54%) and choosing tools to fit workflows (53%) as the top three best practices. The finding that gaining executive sponsorship and stakeholder engagement is considered less critical (selected by the lowest number of respondents at 34%) could be interpreted in several ways.

Firstly, it might reflect pre-existing support, making further efforts to secure such sponsorship less urgent. Secondly, this could reflect challenges such as difficulty in communicating AI's value to leadership and organizational dynamics that act as barriers to obtaining executive support. Other findings from this survey also speak to this issue: 59% reported that their organizations did not have any policies governing AI Tool use; 53% did not receive any training from their organization (33% received basic orientation and only 12% received comprehensive training) and only 30% used company-provided resources for improving their skill with AI tools.

These findings suggest a lack of a unified and systematic strategy and instead, a disorganized and individual-centric approach to AI use in the

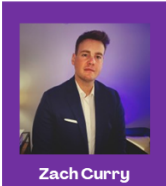
survey population. Coupled with results from the 2023 survey of low organizational maturity and AI investment, these contrasting possibilities highlight a crucial area for investigation: the discrepancy between individual enthusiasm for AI and the low priority placed on executive support in driving AI integration and training within organizations. This investigation could offer a deeper understanding of the landscape of organizational support for AI initiatives.

Future Directions

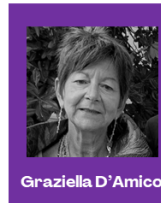
Understanding the perspectives of individuals actively using AI tools in project management has yielded valuable insights, yet future studies could benefit from broadening the diversity of respondents to mitigate potential biases. Firstly, expanding outreach beyond professional networks like LinkedIn and PMI communications may uncover nuanced understandings of AI's application across different sectors and geographical regions. A longer survey duration, with a larger window to recruit a more representative sample could attempt to address other biases such as the gender skew and over-representation of certain industries, thereby enhancing the generalizability and applicability of findings.

Viewpoints from Around the World: Experiences of survey respondents

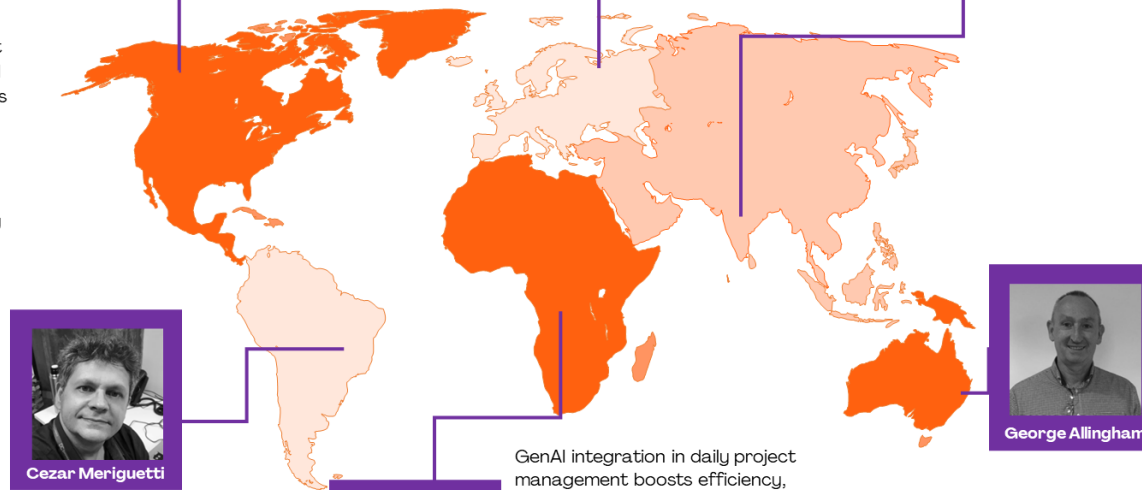
Embracing the power of generative AI in project management marks a new frontier, empowering us to elevate our work with unparalleled efficiency and creativity. Begin with small experiments, such as seeking insights on standards or refining presentations. As confidence grows, advance to more complex tasks like risk analysis and decision-making support. Whether starting with simple tasks or diving into more challenging endeavors, now is the time to embark on this transformative journey.



AI has helped identify risks that would have either been identified later or not at all until they were realized. Having AI to inform decisions such as deliverables that should be considered at risk because of workloads, resources, and timeline to then reprioritize tasks for members on the team, has increased business agility in addition to improving project outcomes.



My journey with AI began with curiosity and evolved into a profound appreciation for its transformative potential. From automating repetitive tasks to uncovering insights from vast datasets, AI has revolutionized how projects and organizations operate. Its ability to analyze complex patterns, predict outcomes, and enhance decision-making is unparalleled. Through AI, I've witnessed projects thrive, efficiency soar, and innovation flourish. Yet, the true beauty lies in its endless possibilities—AI continues to break boundaries, opening doors to new realms of discovery and progress. Embrace the journey of exploration, for within AI lies the power to shape a brighter, more dynamic future.



AI will be a valuable tool of the project manager, helping in the birth of the projects in the selection of a portfolio, suggesting an initial WBS based on the description and objectives of the project, generating scheduled activities, mapping risks, qualifying them and suggesting answers. Giving recommendations for the problems, indicating lessons learned from the company's knowledge base, and so on at every stage of the project.



GenAI integration in daily project management boosts efficiency, automates tasks, predicts bottlenecks, and utilizes diverse data sources for streamlined workflows. This empowers teams to focus on project strategy, fostering innovation and ensuring timely, budget-friendly, and quality project completion. GenAI enhances decision-making, propelling the team towards success in a dynamic environment



We use generative AI in project management, particularly for risk identification and control measures. Our platform, Smartsheet, now includes embedded AI for formulas and content generation. I'm part of the Early Adopter Program, giving early access to new AI features and input on their development. We also utilize PMI Infinity for accessing project management content, aiding research and work breakdown structures. Despite AI's benefits, human intervention and common sense remain irreplaceable.



Section Four: AI Augmentation in Project Management

How can AI augment the Project Manager?

The integration of AI into project management practices is about enhancing our capabilities, allowing us to transition from administrative work to a greater focus on strategic initiatives, building stronger team relations, and honing essential leadership qualities.

According to PMI's [*Pulse of the Profession® 2023, 14th Edition*](#), the following four critical power skills are essential for transforming organizations and delivering sustainable results:

1. Strategic thinking,
2. Problem-solving,
3. Collaborative leadership, and
4. Communication.

These are intrinsically human traits, yet they can be significantly augmented by AI.

AI's Role in Enhancing Project Management

AI in project management can automate routine and repetitive tasks. For example, AI-driven chatbots and software tools can efficiently perform routine activities such as drafting emails, compiling reports, taking meeting notes, and creating documents. This automation of administrative tasks allows for project

managers to invest more time in strategic thinking and problem-solving.

With teams more physically separated in the post-Covid world, there's an increased demand for efficient verbal and written communication. AI can play a crucial role here, acting as a writer and coach, offering a second opinion on your communication, ensuring you use the appropriate tone of voice and that your point is clearly conveyed. Moreover, automatic translation for messages, documents, and soon verbal communication, can help break down language barriers and thereby improve collaboration.

Moreover, applying AI to decision-making and risk management processes marks a shift towards more informed and data-driven project management. AI tools can analyze large volumes of data to identify patterns and predict outcomes, enhancing decision-making accuracy. This capability is invaluable in managing risks, optimizing schedules, and improving resource allocation. AI-driven analytics can proactively identify potential issues, allowing project managers to mitigate risks before they escalate.

The Evolving Role of the Project Manager

Despite advances in AI, it currently cannot replace the multifaceted role of project managers, which heavily

relies on effective human-to-human communication.

However, AI can assist with many routine tasks, allowing for greater focus on strategic thinking, problem-solving, collaborative leadership, and communication—skills AI enhances but cannot replicate.

This shift toward AI in project management underscores the value of project managers' leadership skills. Also, it aligns with PMI's critical power skills, marking a transition towards more strategy-oriented roles. Success in integrating AI into project management lies in identifying areas where it can offer significant benefits, such as automating administrative tasks or improving decision-making, empowering project managers to lead more effectively.

Project Manager Future Role

The role of project management has evolved rapidly over the last century, and the rate of change is now faster than ever. Hybrid project management methodologies are gaining traction, hybrid teams require new collaboration strategies, sustainability is a critical consideration, and AI has the potential to influence more or less all we do. As the rate of change increases, so does the gap between those who adapt and those who don't. A safe bet is that we must be lifelong learners.

For now, let's discuss the potential impact of AI.

The phrase "the future is already here, it's just not evenly distributed" is often heard. Consider agile, for instance: it started in software development over 20 years ago and has gradually spread to other sectors. To some, the software development sector has lived in the future for many years. AI adoption follows a similar pattern. Digitally mature businesses in sectors with lower regulatory requirements will adopt the technology earlier, and best practices will proliferate.

It's safe to assume that in the near term, currently available AI technologies will be used to speed up our current workflows, particularly by automating many administrative tasks. The time saved can be redirected to higher-level tasks, emphasizing strategic thinking, leadership, interpersonal skills, and AI. This shift means moving from managing to leading projects.

This evolution also implies a need to update our current skill set through learning and unlearning. Administrative skills, such as filling in a budget sheet, will likely become obsolete. In contrast, skills like adapting to change, understanding the AI paradigm, using AI tools, navigating AI-related ethical issues, and risk management will likely become more important. As a result of this shift, we need to emphasize

continuously learning new work methods and unlearning outdated ones.

Looking further ahead, we can expect new methodologies to be developed from the ground up, leveraging the power of AI. These could be drastically different from today.

The future is bright for project leaders, but to reap the benefits, we must learn new skills and adopt new methodologies to navigate the coming challenges and opportunities.

Categories of AI Tools for Individuals, Teams, and Organizations

AI software is diverse, from AI-enabled tools to elevating familiar software with new functions. By categorizing AI tools into four distinct groups, we can better understand their applications and how they can be integrated into various work situations.

Category 1 - AI-Enabled Tools:

These tools are designed with AI capabilities at their core and provide direct services to users. Examples include tools for generating text, images, and other types of content, often using natural language input. By leveraging AI, these tools could streamline creative processes and boost productivity.

Category 2 - AI in Existing Toolsets:

This involves integrating AI into well-known software, enhancing its existing capabilities. These tools become more powerful by adding AI functionalities, offering advanced data analysis, predictive insights, and automation features to streamline tasks and decision-making processes.

Category 3 - Off-the-Shelf AI Tools:

These are ready-to-use AI solutions that require little to no customization. They can, for example, analyze historical data to identify potential risks, such as budget overspends or schedule delays. Integrating AI can significantly boost efficiency, communication, and decision-making for project collaboration.

Category 4 - Customized AI Solutions:

Tailored to meet specific organizational needs, these solutions can address unique challenges within project management processes, enhancing decision-making, optimizing workflows, and mitigating risks.

Elements from the categories above can also be combined into hybrid AI solutions. Exploring these categories offers a starting point for navigating the landscape of AI software, helping us make more informed decisions about how AI can be integrated into our work.

Section Five: Implementing AI in Project Management: Strategy and Process

Navigating AI Risks: Crafting Policy and Strategy

In today's tech-driven landscape, integrating AI offers great promise for efficiency and innovation. However, unchecked AI use can pose risks, from data breaches to intellectual property loss. Establishing a robust AI policy and strategy is crucial. This proactive approach mitigates risks, ensuring compliance and safeguarding assets. A comprehensive AI strategy is equally vital. It aligns AI use with business goals, clarifies objectives, and guides decision-making. Together, these measures empower organizations to harness AI's potential while minimizing risks, fostering sustainable growth in the digital era.

How to Implement an AI Strategy?

Developing an AI strategy involves aligning AI initiatives with the company's overall goals, objectives, and long-term vision. It entails determining how AI can create value, enhance competitiveness, and address business challenges. This strategic planning phase helps organizations identify key focus areas, prioritize investments, and allocate resources effectively.

Depending on how the organization structures its initiatives, implementing AI in project management can be part

of both the organization's overall strategy and the strategy of the Project Management Office (PMO).

Overall Strategy

If the organization has a broader strategic initiative to incorporate AI technologies across various functions to improve efficiency, decision-making, and competitiveness, then implementing AI in project management would be part of this overarching strategy. In this case, the AI implementation aligns with the organization's broader goals and objectives with an even greater purpose that benefits both the organization and its wider community.

PMO Strategy

Alternatively, if the organization's PMO has specific goals and objectives related to enhancing project management processes, optimizing resource allocation, improving project outcomes, and increasing project success rates, then implementing AI in project management would be part of the PMO's strategy. The PMO might focus on leveraging AI tools and techniques to streamline project planning, scheduling, risk management, and performance tracking. In many cases, there is an overlap between the overall organizational strategy and the PMO strategy. For instance, if the organization aims to improve project delivery as part of its broader strategic goals, implementing AI in

project management would be a shared objective between the overall and the PMO strategies. Ultimately, the decision on whether AI implementation in project management falls under the overall strategy or the PMO strategy depends on how the organization prioritizes and aligns its goals, resources, and initiatives. It's essential for stakeholders to collaborate and ensure that AI initiatives are integrated seamlessly into the organization's strategic framework for maximum effectiveness and impact. Implementing AI in project management strategy, whether at the overall organizational level or within the PMO, involves careful planning, assessment, and execution.

Process - How to Implement AI in PM in an Organization.

There are many challenges with implementing AI in project management, and it is common for AI projects to fail. Learning from data is central to AI, which becomes a challenge as the temporal nature of a project and its unique results often lead to a lack of project-specific data. Instead, key decisions are often based on the experience and knowledge of the PM, which is hard to teach an AI model. While this currently limits the use of AI in project management, there are several areas with high AI potential.

The reasons for AI project failures vary and can be related to technical, organizational, and cultural challenges. There are several ways to improve project success rates, specifically related to identifying, prioritizing, and implementing AI projects. For example, a task-based approach is effectively used to identify AI use cases. Then, the weighted shortest job first approach is commonly used to prioritize what use case to build first. Finally, the CRISP-DM methodology makes sure that the implementation of the selected use case runs smoothly.

Before going into the different frameworks, it is vital for the success of the implementation of AI that it is a collaborative effort between the project and data teams. Project teams have the domain expertise needed to understand what AI solutions will have the greatest value to the end results. In contrast, the data teams will have the required technical expertise to know what is possible to achieve and what expectations are reasonable.

Identification

To identify areas of project management that have high AI potential (what we mean by high AI potential is outlined below), the work of a PM can effectively be divided into tasks. These tasks will vary depending on the context of the PM, but tasks should ideally cover everything done in

the day-to-day work of the PM. The list of tasks can also be extended and cross-referenced with other project team members to include the complete picture of the project.

Next, it is critical to identify what tasks have a basic AI potential. This can be done in multiple ways and is likely to be done in collaboration with the data team. In general, AI use cases can be divided into use cases suitable for Machine learning and use cases suitable for Generative AI. Machine Learning is highly effective at making predictions and classifications, while Generative AI is great at generating content, answering questions, and qualitative reasoning. Machine learning models require high-quality (and quantity) structured data (prices, user numbers, etc.), while Generative AI models can handle any amount of unstructured data (PDFs, PowerPoints, etc.). In general, a task is suitable for AI if:

- It has a lot of data related to it.
- Knowledge about the task is well documented and can be easily accessed by an AI model.
- Does not require a high degree of interpretability as to how conclusions have been made.
- The effect of an error is not critical to project success.

After excluding tasks that clearly lack AI potential, one can move on to

prioritize which tasks to implement first.

Prioritization

A common approach to prioritize product development in agile environments is the weighted shortest job first (wsjf) framework. The main idea behind the framework is to prioritize the task that has the highest wsfj score. The wsfj score is calculated as (adapted slightly from the original framework for this specific use case):

$$wsjf = \frac{Project\ Impact}{Task\ size}$$

The goal of using the framework is to prioritize the tasks that will have the greatest impact on business results while also considering that some jobs require way more resources than others. The original framework is not adapted specifically to AI, so to use it directly it needs to be adjusted slightly. To do this, we defined the project impact as:

$$Project\ impact = Financial\ impact + Time\ impact + Risk\ impact$$

Financial impact is a measure of how important the task is for the financial end result. This could be in terms of project costs or revenue potential. Time impact is a measure of how much time is currently spent by the project team on the task. Risk impact is a measure of how much risk (could include both financial and technical risk) is associated with the task. For

Task Name	Financial Impact	Time Impact	Risk Impact	Data Availability	Technical complexity	Data Required	Total Score
Update Budget	2	3	1	3	2	1	3.0
Identify Missing Orders	3	3	3	2	3	3	1.83
Create Lessons Learned Summary	1	2	2	2	2	2	1.75

example, tasks with uncertain outcomes due to lack of information could potentially be augmented by AI support and would thus have a high risk impact score. Task size is defined as:

$$\text{Task size} = \text{Technical complexity} + \text{Data requirements}$$

Technical complexity is a measure of how complex it would be to implement AI for the task. Tasks where off-the-shelf solutions are available would have low technical complexity, while tasks requiring bespoke solutions would have a high score in that domain. Data requirements is a measure of how much, what quality of the data is needed to build an AI solution for that specific task. Building bespoke machine learning solutions typically require very high amounts of well-structured data, while off-the-shelf solutions will generally require much less data. Finally, we also added a measure called data availability that measures how much data is currently

available in the company for the given task. Since high data availability is positive, the final score calculation becomes:

$$wsjf = \frac{\text{Project impact} + \text{Data availability}}{\text{Technical complexity} + \text{Data requirements}}$$

In practice, the project team and data team will go through each task identified in the previous step and grade each of the individual measures from this section on a scale from one to three. After that, a *wsjf* score can be calculated for each task, resulting in a ranking of tasks based on their project impact and task size. Below is an example of how a very simple ranking could look.

Implementation

Once all tasks have been listed and prioritized, the tasks with the highest priority can be implemented. To ensure that the implementation is successful, there are several steps that need to be taken. CRISP-DM is a structured approach to implementing

AI solutions and is a common approach used by development teams. It is composed of the following steps:

1. Create business and data understanding.
2. Prepare the data needed.
3. Decide on a suitable model and build it.
4. Evaluate model performance.
5. Deploy model in a suitable environment.
6. Monitor and maintain the model.

Most of these steps are best left to the development team, but there are parts that are critical to be involved in as a project manager. First, the PM needs to communicate clearly what the end goal of the implementation is. It is then up to the development team to translate this into actionable technical requirements.

Preparing the data is best done as a collaboration between the project team and the development team.

While the development team will handle the cleaning and preparation of the data, the project team has the domain knowledge to determine what data is relevant to include in the model. As an example, let's assume that you are building a ChatGPT - like application that can answer questions regarding your specific project. A data scientist will not be able to determine what information is useful

for such a use case, only the project team can provide that knowledge.

Finally, the model performance needs to be evaluated by the project team to determine if it fulfills the end goal. This is best done by determining clear success criteria for the AI solution based on financial value, business value, and technical value. While the development team can set technical success criteria, the project team needs to set the financial and business criteria. The development of AI solutions is an iterative process, where improvements are made based on input from the project team. Once all these steps are complete, the AI solution can be deployed and shipped to the entire project team.

In summary, successful AI implementation is achieved by identifying tasks or processes with high AI potential, prioritizing these tasks based on business impact and size of the project, and implementing AI solutions for these tasks by collaboration between the project team and the development team. Implementing truly value-creating AI is hard, and most often requires input from the whole organization. In the end, the best way forward is to start small, create awareness in the organization, and iterate quickly on new solutions.

Section Six: Learning and Resources about AI for Project Managers

How to Learn AI in PM - In Theory and in Practice

Embarking on the journey of learning AI opens up a world of transformative potential. Understanding its fundamentals is key to navigating today's technological landscape. When we surveyed the respondents of the AI in Project Management study, which received 2,314 responses, about how they learn AI, we obtained the following results from the regions: Africa, Asia, Europe, Latin America, North America, and Oceania. Showing the span of results, from the lowest to the highest.

Media	Lowest	Highest
Online Videos	81%	93%
Podcast and Webinars	80%	88%
Books	73%	82%
Open Source Documentations	44%	62%
Formal Education	40%	52%

Below are some additional suggestions described in detail on how to dive into the world of AI, cultivate essential skills, and innovative problem-solving.

Foundational Understanding: Begin by familiarizing yourself with the core concepts of AI, including machine learning, neural networks, and algorithms. This will help you communicate effectively with technical team members and stakeholders. The supply of online

courses is enormous, but until you have decided in which field you are to do a deep dive, we recommend taking the free online courses '[Elements of AI](#)' and '[Building AI](#)' created by Helsinki University and MinnaLearn. More than 1 million people have taken these courses that are available in 26 languages.

Practical hands-on training using AI assistants: In our survey on 'AI Tools in Project Management,' we asked participants about the AI tools they use and the benefits they derive from them. Looking specifically at AI assistants, 59.1% reported using ChatGPT 3.5, while 30.4% mentioned using ChatGPT Plus. Further, a large majority reported considerable time savings overall with AI tools, as discussed in the highlights. Getting the most out of collaborating with an AI assistant requires skills such as asking the right questions, analyzing, and verifying answers. Our advice is, if you haven't already started, to familiarize yourself with and learn how to use the features of this powerful application. Remember, practice makes perfect.

Attend Workshops: There are several workshops available in AI specifically tailored for project management professionals. These workshops aim to equip project managers with the knowledge and skills necessary to effectively lead AI projects. These workshops may be offered by training

providers, consulting firms, industry associations, or academic institutions.

Enroll in Online courses: Embarking on a journey to master AI is an exciting endeavor with endless possibilities. In today's rapidly evolving technological landscape, acquiring AI skills is not just advantageous but essential for personal and professional growth. Here's why enrolling in online AI courses is the perfect way to embark on this transformative journey:

Flexibility: Online AI courses provide flexibility in terms of scheduling and pacing. Learners can access course materials at their convenience, allowing them to balance their studies with other commitments such as work or personal obligations. This flexibility enables individuals to tailor their learning experience to fit their unique circumstances, ultimately enhancing their ability to grasp complex AI concepts.

Access to Expert Instruction: Many online AI courses are taught by industry experts and leading academics. Through these courses, learners gain access to high-quality instruction and insights from professionals with extensive experience in the field. This direct interaction with experts allows students to receive personalized feedback, guidance, and mentorship,

enhancing their understanding of AI principles and techniques.

Learn from Case studies: Learning from case studies is an invaluable approach to gaining practical insights, understanding real-world applications, and honing problem-solving skills across various fields. Learning from case studies offers a dynamic and interactive approach to acquiring knowledge, skills, and perspectives essential for success in various fields. By engaging with real-world scenarios, learners develop critical thinking, problem-solving, and decision-making abilities that are invaluable in both academic and professional contexts.

Learn from data scientists & engineers: Learning from data scientists and engineers can provide valuable insights into the practical application of data-driven technologies like AI and machine learning. Learning from data scientists and engineers offers a unique opportunity to gain practical expertise, industry knowledge, problem-solving skills, and ethical considerations essential for success in the dynamic field of data-driven technologies. By leveraging their experience and insights, you can accelerate your learning journey and prepare yourself for a rewarding career in data science and engineering.

Learn hands-on from projects: By actively seeking out opportunities to apply your theoretical knowledge in practical settings, you can gain valuable hands-on experience in AI and develop the skills and confidence needed to succeed in the field. Here are some examples on how:

1. Online Courses and Tutorials,
2. Kaggle Competitions,
3. Open-Source Projects,
4. Personal projects,
5. Internships and Apprenticeships,
6. Hackathons and Meetups,
7. Capstone Projects, and,
8. Mentorship and Peer Learning.

Embark on this journey with enthusiasm and curiosity, knowing that each step forward brings you closer to unlocking the transformative power of AI. Whether you're just starting out or already on your way, this roadmap will guide you towards

mastering AI and shaping a future of endless possibilities.

How PMI Support its members

The Project Management Institute has been at the forefront of exploring AI within project management. We have actively investigated how AI impacts projects and how it can improve efficiency, accuracy, and quality. We have several notable AI initiatives.

AI Resource Center


This serves as a [hub](#) for AI-driven project management, aiming to enhance productivity, project success, and organizational value using generative AI (GenAI). Project managers can access practical instructions on integrating GenAI into their work, learn data handling in GenAI, and utilize a GenAI canvas for project management.

Artificial Intelligence in Project Management

The Future of Project Management: The perfect blend of AI and human ingenuity

The AI Resource Center is your gateway to the future of AI-driven project management.

Boost productivity. Increase project success. Drive value for your organization with generative AI.



PMI Infinity

An AI-powered learning assistant for project managers, leveraging content from the PMI global community. PMI Infinity helps users expand their knowledge base, validate their understanding of complex subjects, and receive interactive responses. Accessible to all PMI members.

Navigating the Future of Project Management and AI Tools

This initiative explores how generative AI impacts various project management aspects such as time management, collaboration, decision-making, scope, risk, and stakeholder management. It also introduces project managers to various AI project management tools.

PMI x AI Journey

PMI aims to shape the future of AI in project management by merging human ingenuity with AI advancements. We seek input from AI experts and community members to understand how AI technology can enhance project success while retaining the human aspect of project management. Overall, PMI emphasizes active participation from project professionals in this transformation towards a new era of efficiency, insight, and growth facilitated by AI in project management.

Generative AI Overview for Project Managers

Dive deeper into AI with PMI's eLearning course on Generative AI for project managers. Understand AI applications, discover AI project manager tools, and learn best practices for project management in the context of AI.

Data Landscape of GenAI for Project Managers

Get deeper practical instruction on how to incorporate GenAI in your work, further explore how to work with data in GenAI, and get a GenAI canvas for project managers.

AI Webinars

PMI hosts a library of members-only project management webinars, including AI related topics. These webinars offer valuable insights and updates on AI's role in project management, providing members with opportunities to stay informed and engaged in this evolving field.

Section Seven: Case Study Reporting

Introduction

In today's rapidly evolving business landscape, the integration of artificial intelligence (AI) into project management has become a game-changer for many organizations, driving efficiency, enhancing decision-making, and fostering innovation. The below case studies delve into their respective journeys - as they navigate the challenges and opportunities presented by implementing AI-driven processes within their project management framework(s). We will explore these companies' initial goals, the problems they aimed to address with AI, the solutions employed, the results achieved, and the invaluable lessons learned throughout the projects' lifecycle.

Collection, Evaluation and Approval Process

In order to create the following insightful summaries from case studies on project management and artificial intelligence, a detailed template comprising specific questions to capture essential information was crafted. After that, this project was widely announced by inviting every expert to participate through diverse channels such as LinkedIn, local chapters, ProjectManagement.com, via Chapter Websites and Engagement Managers, starting from January 15th with a deadline of March 1st, 2024. Participants filled out the template, providing comprehensive insights into their case studies about the artificial intelligence projects that they were involved in.

After this, a dedicated team evaluated these submissions, selecting the most informative and relevant case studies. The selected participants summarized the case studies to include the most relevant insights in this report. In addition, participants were contacted to communicate if their case study was selected to be included in the report.

Furthermore, these case studies submissions were supplemented with additional information when deemed necessary, such as the number of people involved, roles, objectives, and visual aids like photos and flowcharts depicting the solution. Upon receiving the approved Consent Statements (CS) back from participants, an agreement outlining collaboration terms was sent out. Once the agreement was returned, then the summaries were finally included as part of the overall report. This process ensures a rich compilation of project management and AI case studies, fostering knowledge sharing and innovation within the community.

Twelve case studies were selected to be included in this report following the process outlined above.

Case Study Categorization

The complexities of incorporating AI into project management practices has made it essential to understand the diverse categorization of AI applications within this domain - ranging from AI-enabled tools tailored for individuals to sophisticated, customized AI solutions designed for specific organizational needs, and the innovative hybrids that combine the best of both worlds. As previously discussed in Section 4, the AI tool categories are:

1. AI-Enabled Tools for Individuals and Teams
2. AI-Enabled Tools sets/Team
3. Off-the-Shelf AI Tools
4. Customized AI solutions
5. Hybrid

Each of the categories will be further elaborated below, and the twelve case studies presented within the respective category in which they reside.

This following section of the report reflects the views of the Case Study contributors and not necessarily those of the PMI Chapters, Project Team nor Authors. This section is intended for inspiration and information purposes only and should not be considered professional advice.

Category 1: AI-Enabled Tools for Individuals and Teams

This category encapsulates AI tools and platforms specifically designed to augment the capabilities of individual project managers and team members. Examples include ChatGPT, PMI Infinity, and PMOtto, which leverage AI to streamline communication, enhance decision-making, and automate routine tasks, thereby boosting productivity and efficiency.

Piedmont University, Walker College of Business COP



COMPANY	Piedmont University, Walker College of Business
CONTACT	Sandra Maughon
REGION	North America
INDUSTRY	Higher Education
COMPANY SIZE	Less than 300 faculty and staff; undergraduate population 1200; graduate population ~800
TEAM	Community of practice with students
BUDGET	\$0 - \$100,000
TIMELINE	Few weeks to implement. Iterative process as lessons learned are incorporated into lessons.

The Goal

- The goal is to prepare students to be ethical leaders and to prepare them to use this technology in the workplace.
- Teach project management fundamentals, not software application, so platforms were chosen that students would likely encounter in their daily lives.

Problem Description

In early 2023, it became apparent that students were using generative AI whether it was condoned by the university or not. Early reaction amongst both the faculty and administration was about crisis management and how to prevent students from cheating. However, forward thinking faculty also realized very quickly that students would be expected to utilize this type of technology when entering the workforce, and then it became apparent that it was our responsibility to consider ways to leverage it rather than abolish it.

Overview of Solution

- In the Fall of 2023, we created a faculty Community of Practice (COP) focused on integrating AI into the classroom.
- In this case study, the professor began integrating generative AI as a part of the curriculum in a Project Management Fundamentals class.
- AI was introduced into course materials both for presentations and assignments.
- Students developed their own prompts. Part of the lesson was to get them to think about the right questions to ask. And that is an important lesson whether you are asking AI or a human customer or project sponsor.
- Students generated their own data for this AI implementation. Beginning with a simple project objective statement (what, when, how much), the conversation with AI progressively built the scope statement, team plan, WBS, and risks. Students quickly learned that they had to include more and more of the previously created information to get good output from generative AI.

Development Approach

- Off-the-shelf tools: including readily accessible, free software, namely ChatGPT 3.5 and Bing.
- Information from generative AI was taken by individual students who used critical thinking and applied analysis to determine salient points generated.

Results

- The quality of the student work is greatly improved because they are able to use generative AI as the expertise they would normally have on a project team when developing artifacts such as scope statements, WBS, and risks.
- Because the students are struggling less with creating the details, they are understanding the concepts better. Two measures of success could be the number of times they made revisions to an assignment and their performance on the exam.

Section Seven: Case Study Reporting

- From an organizational perspective, these contributions back to the COP, and the COP's contributions to the overall faculty body will realize long-term benefits as the university becomes known as an institution that embraces change and is committed to preparing students for the future.

Risks

- For classroom projects, the risks were rather low, particularly for gender or legal issues.
- There was a risk that students would consider the class implementation as a sign that it was OK to use it in any class.
- Ethically, it was made it clear that they were to include the AI conversation with their submissions so that they understood it was not their own unique work. Professors had had students submitting clearly generated AI work as their own, and students are called out on this immediately.

Training

- Though the institution itself is not overtly integrating generative AI, several of the faculty members are experimenting with it for both course content development as well as for assignments.
- The COP is working to help faculty embrace and move forward with generative AI.

Lessons Learned

- The Professor was surprised during the first semester that by the mid-point many students abandoned using generative AI. They found that it was too cumbersome to provide it all of the information or that it was more efficient to think of their own ideas rather than critique generated ideas. I also had students in other classes submitting AI-generated work after it had been clearly indicated it was not acceptable. It was surprising how poorly some students used generative AI.
- Everyone is still learning, but the major lesson is that it is the duty as educators to ensure students are using AI ethically and correctly.
- All higher education institutions need to be considering ways to fully integrate generative AI into the classroom. Just as calculators were abhorred when first introduced before being accepted, so too generative AI is seen as a deterrent to learning rather than another tool for progressive learning. There are concerns that as calculators have had a serious impact on the ability of most to do simple math "in our heads," generative AI will have a similar effect on the ability to construct simple sentences in the future.

Managing comprehensive testing initiative with AI

Org	Software module	log	cases	started	progress	Passed	Failed	Passed	to do	progress	re-test	done	issues critical	issues high	issues med	issues low
ROW	Employee Central	URL	221	0	0	221	0	100	0	0	0	147	0	0	0	0
	Payroll	URL	82	0	0	82	0	100	0	0	1	11	0	0	1	0
	Recruitment	URL	30	0	0	30	0	100	0	0	0	8	0	0	0	0
	Onboarding	URL	17	0	0	17	0	100	0	0	0	20	0	0	0	0
	Benefits	URL	34	0	0	34	0	100	0	0	5	36	0	0	5	0
WRPS	Employee Central	URL	173	0	0	173	0	100	0	0	0	85	0	0	0	0
	Payroll	URL	45	2	0	42	1	93	0	0	2	11	0	0	2	0
	Recruitment	URL	45	0	0	45	0	100	0	0	0	9	0	0	0	0
	Onboarding	URL	32	0	0	32	0	100	0	0	0	14	0	0	0	0
	Benefits	URL	39	0	0	39	0	100	0	0	0	9	0	0	0	0
WFS	URL	171	41	0	128	2	75	8	0	2	124	0	0	6	4	



COMPANY	Region of Waterloo
CONTACT	Sam Stevenson, PMP®
REGION	North America
INDUSTRY	Municipal Government
COMPANY SIZE	3500
TEAM	10 people: Overall Project Manager, Vendor Project Manager, Testing Lead (Sam Stevenson), Subject Matter Experts
BUDGET	Undisclosed
TIMELINE	1 month to build the tool

Goal:

- The primary objectives behind incorporating AI into this process were to streamline data analysis, minimize manual effort, and free up more time for value-added tasks. Additionally, by providing real-time project statistics on the dashboard, the aim was to enhance communication of progress and support informed decision-making throughout the testing project's lifecycle.

Problem description:

- In this scenario, project manager Sam Stevenson was faced with the challenge of overseeing a comprehensive testing initiative comprising over 800 test cases within a limited timeframe. To efficiently monitor progress and facilitate communication, a strategy was devised involving a team of over 30 testers and the implementation of a dashboard for reporting testing progress at the test case level.
- The chosen approach involved utilizing linked spreadsheets where testers could input their progress on individual testing steps. To automate the process of updating the dashboard with real-time information, artificial intelligence (AI) technology was employed. Specifically, ChatGPT was utilized to develop a formula that dynamically interpreted the status of each testing step and aggregated them to display the overall status of each test case. These statuses were then displayed on the dashboard.

Solution:

- Sam opted for a particular approach: utilizing ChatGPT in Microsoft Edge, which is now called Copilot. After Sam entered in Copilot a description of the desired functionality for a formula, Copilot generated the formula accordingly. This collaborative process enabled Sam to leverage AI assistance to create the formula for the dashboard without requiring an expert or having coding skills. Sam slightly adjusted the formula to suit the spreadsheet software, and the final formula is below.
- =IF(COUNTIFS({Referenced sheet - test case ID column}, "TEST CASE ID", {Referenced sheet - test case status column}, "Failed") > 0, "Failed", IF(COUNTIFS({Referenced sheet - test case ID column}, "TEST CASE ID", {Referenced sheet - test case status column}, "In progress") > 0, "In progress", IF(COUNTIFS({Referenced sheet - test case ID column}, "TEST CASE ID", {Referenced sheet - test case status column}, "Not started") = COUNTIF({Referenced sheet - test case ID column}, "TEST CASE ID"), "Not started", IF(COUNTIFS({Referenced sheet - test case ID column}, "TEST CASE ID", {Referenced sheet - test case status column}, "Passed") = COUNTIF({Referenced sheet - test case ID column}, "TEST CASE ID"), "Passed", "In progress"))))

Development: Combination

- Sam had previously observed an online tutorial illustrating the utilization of ChatGPT for formula creation. Subsequently, encountering the Copilot tool within Microsoft Edge, he promptly recalled the demonstrated process and asked Copilot to create the needed formula.
- This adept application of acquired knowledge exemplifies Sam's proactive approach to integrating innovative technologies into his workflow, thereby fostering efficiency and productivity within his project endeavors. This application of AI was also in line with his organization's direction to suitably leverage AI.

Results:

- Sam assessed the efficacy of the AI-generated formula by testing its functionality with fake and real data and confirming it worked. Additionally, he reflected on the manual effort that would have been required for analyzing and reporting on the testing progress, contrasting it with the time saved through automated reporting. Overall, much time was saved.

Section Seven: Case Study Reporting

- The provision of timely and automated testing status updates played a crucial role in averting project schedule delays during testing phases. This was attributed to Sam's newfound capacity to allocate his time towards supporting other critical areas of testing on the project's critical chain.

Risks: N/A

Training: N/A

Lessons Learned:

- Sam gained insight into the potential of AI in creating formulas capable of facilitating complex dashboard functionalities.
- He acknowledged that project managers should contemplate leveraging AI for spreadsheet formulas, especially when intricate reporting is essential.

Lessons Learned : Data turned into actionable insights



COMPANY	Undisclosed
CONTACT	Pascal Brunet
REGION	North America
INDUSTRY	Automation
COMPANY SIZE	5,000 - 10,000
TEAM	1 - the reporter
BUDGET	\$0 - \$100,000
TIMELINE	3 months

The Goal

- The primary goal was to leverage a lot of project Lessons Learned data to turn into actions to help improve the business and the project outcomes.

Problem Description

Over the years, lessons learned meetings are held after every project is completed. Lessons are documented, but never acted upon.

Overview of Solution

- Use of Generative AI (ChatGPT) to write some code to consolidate all the individual Excel files with the projects LL, then use of ChatGPT to import and generate a list of action items.
- My implementation, while still a proof of concept, was able to consolidate the individual Lessons Learned files into a master file that was imported in ChatGPT to produce a set of ten recommendations.

Development Approach

- ChatGPT was selected due to its reputation for seamlessly generating code and processing vast amounts of data with ease. Its off-the-shelf availability made it an appealing choice for the task at hand.
- The decision to utilize ChatGPT stemmed from a desire to explore practical applications of generative AI, aiming to move beyond mere theoretical discussions and abstract notions.

Results

The key metric was the successful generation of a list of ten action items that could be used to improve processes and improve project performance.

Risks

Main risk was with regards to company and customer confidentiality - not knowing where the data was going and who would actually have access to it, I had to sanitize the data.

Training

No training. The project died at the proof-of-concept phase, even though it was successful.

Lessons Learned

- The process of importing data into ChatGPT proved more challenging than anticipated.
- Considerable time needed to be invested in refining the data and guiding the generative AI to extract the desired insights.

Section Seven: Case Study Reporting

- Unfortunately, the organization did not fully benefit from this endeavor as the reporter's company is very hesitant to use AI.
- However, upon reviewing the action items generated by the AI, several findings aligned with initiatives already implemented, validating the AI's recommendations.
- Reflecting on the experience, advice to others is not to shy away from embracing change.

AI Project Management Assistant



COMPANY	PMOexperts.online
CONTACT	Gianmarco Sirei
REGION	Europe
INDUSTRY	Project Management
TEAM	9 members. Product Owner, Project Manager, Executive Sponsor, Scrum Master, Project Sponsor, Project Team Member, Business Analyst, Expert Judgement, Tester, UX Designer, Developer, User.
BUDGET	\$0 - \$100,000
TIMELINE	This case study is based on a typical organization that would benefit from implementing the AI Project Management assistant

The Goal

Enhance project management efficiency. The PM AI assistant, analyses and summarizes chat conversations to aid decision-making and improve project communication.

Problem Description

The primary challenge was managing and extracting actionable insights from extensive project discussions efficiently.

Overview of Solution

- AI implementation is closely aligned with business strategy to enhance project management efficiency and streamline decision-making processes.
- The AI solution, a PM AI assistant, is integrated into our web platform. It analyzes chat content, identifying key ideas, decisions, and questions, thereby aiding in project discussion and management.
- For the AI implementation, I utilized a range of data types, primarily focusing on chat and communication data from project discussions. This included text data from messages, meeting notes, and decision logs. Additionally, we incorporated project-specific data such as project timelines, goals, and stakeholder information. This variety of data sources was critical in training the AI to accurately analyze and summarize project discussions, ensuring it could provide relevant and actionable insights.
- The PM AI assistant designed with ChatGPT is developed specifically for summarizing chat conversations and transforming them into actionable items, this can greatly enhance project management efficiency. By analyzing the chat content, the PM AI assistant can identify the main ideas, important decisions, and questions raised during the discussion.
- A collaborative approach ensured that the AI tool we developed was aligned with the real-world requirements of our users and stakeholders, making it more effective and user-friendly in our project management context.
- The key stakeholders, including project managers, team members, and clients, had specific expectations and concerns regarding the AI implementation. They expected the AI tool to streamline project management processes, enhance decision-making, and improve overall project efficiency. However, there were concerns about the ease of use, accuracy of the AI analysis.
- The AI tool was designed to be highly scalable, ensuring it could handle increasing data volumes and complexity. I considered factors like data processing speed, storage capabilities, and the ability to integrate new features and updates without disrupting existing functionalities.

Development Approach

- My AI tool was developed as a mix of in-house and off-the-shelf solutions.
- I leveraged ChatGPT advanced capabilities for the core AI functionalities, benefiting from its robust, scalable, and efficient data processing features. In-house development was focused on customizing and integrating this technology into our existing platform to meet specific project management needs. This hybrid approach allowed to combine the reliability and

sophistication of ChatGPT AI technology with tailored features developed internally. This decision was influenced by the need for a specialized tool that provided both high-quality AI capabilities and specific functionalities aligned with our unique project management requirements.

- The partnership with ChatGPT was a crucial factor in the successful implementation of AI solution, providing a blend of external expertise and tailored development.
- The integration was done in phases to minimize disruption. I started with a pilot phase, where the AI tool was tested in controlled environments. The scalability of the implemented AI solution was a primary consideration during its development.

Results

- The AI integration has streamlined workflows, improved communication, and contributed to more successful project outcomes, reflecting a clear enhancement in both our operational efficiency and project delivery.

Risks

- Legally, I had to navigate data privacy laws and ensure compliance with regulations like GDPR. Regularly updating the data protection policies in line with current laws such as GDPR
- Regular audits and updates were conducted to keep abreast of any changes in regulatory standards. This proactive approach helped to mitigate legal risks and maintain the trust of our users and stakeholders.
- Transparency with our users about how their data was being advised, providing them with control over their information. At the end of the meeting the data are erased.

Training

The stakeholders expected the tool to streamline the PM processes. To address these, I conducted training sessions and provided comprehensive support to ensure ease of adoption. I involved stakeholders in the testing phase to fine-tune the AI tool's accuracy and integration, ensuring it complemented rather than disrupted existing processes.

By actively involving stakeholders and addressing their concerns, the AI tool met their expectations and added value to their project management experience. The training focused on understanding the AI tool's functionality, how to interpret its outputs, and integrating its use into daily project management tasks. Additionally, I

offered AI-related skill development courses to enhance our team's understanding of AI concepts and its application in project management.

Lessons Learned

- Integrating the AI tool seamlessly into the existing systems posed technical challenges, necessitating adjustments in our IT infrastructure and workflows.
- Conducting regular knowledge-sharing sessions, including workshops and seminars, where team members could learn about the AI tool, its benefits, and how to effectively integrate it into their work processes. These sessions also served as forums for employees to share their experiences, challenges, and best practices.
- The AI implementation taught me several valuable lessons.
 - First, the importance of user engagement and training cannot be overstated. Effective change management and thorough training are crucial for the successful adoption of new technologies like AI. I learned that early involvement and buy-in from end-users lead to smoother integration and better utilization of the tool.
 - Second, I realized the significance of iterative testing and feedback. Continuous refinement based on real-world usage and feedback was key to ensuring the AI tool met actual project management needs.
 - Third, flexibility and adaptability are essential in AI implementation. Being open to adjustments and improvements as I learned more about the tool's capabilities and limitations helped us make the most of the technology.
 - Lastly, the value of clear communication and documentation in facilitating a transparent and inclusive AI integration process. Keeping all stakeholders informed and involved was crucial for the project's success.
- For companies considering a similar AI implementation, my advice is to prioritize thorough planning and stakeholder engagement.
 - Start by clearly defining the objectives and expected outcomes of the AI implementation. Engage with all potential users early in the process to understand their needs and address any concerns. This ensures the solution is tailored to actual business requirements.
- Invest in training and change management. The success of AI integration heavily depends on how well the team understands and adapts to the new tool. Provide ample training and support to facilitate a smooth transition.
- Be prepared for iterative development and continuous improvement. AI solutions often require adjustments post-deployment based on real-world use. Embrace this as an ongoing process.
- Lastly, don't underestimate the importance of data quality. Ensure that the data used to train and operate the AI system is accurate, diverse, and relevant. Good data is the foundation of an effective AI solution.

Category 2: AI-Enabled Tools Sets/Team

Here, the focus shifts to AI functionalities embedded within existing project management and collaboration tools such as Trello, Jira, and Miro. These AI enhancements range from intelligent task prioritization to AI-driven mind mapping, facilitating more efficient project tracking, collaboration, and ideation processes within teams.

Boost Information Technology Company's Project Performance



COMPANY	Undisclosed
CONTACT	Navdeep Malik
REGION	North America
INDUSTRY	Information Technology
COMPANY SIZE	100,000
TEAM	27 members. Program Manager, Project Managers, Data Scientists, AI/ML Engineers, Subject Matter Experts, IT Infrastructure Specialists, Change Management professionals, Legal and Compliance officers.
BUDGET	USD 1,100,00 - 5,000,000
TIMELINE	18 months

The Goal

The primary goal behind implementing Artificial Intelligence (AI) in the company's project management processes was to significantly enhance efficiency, accuracy, and decision-making across the telecommunications company's vast project portfolio, valued at \$150 million annually.

Problem Description

Faced with challenges such as resource allocation inefficiencies, risk management inaccuracies, communication barriers across global teams, and the lengthy duration of project planning, the objective was to leverage AI to streamline these processes.

Overview of Solution

By integrating AI tools like ChatGPT for improved communication and knowledge management, and Microsoft Project Management Copilot for automated project planning and execution, the company aimed to optimize resource utilization, proactively identify and mitigate project risks, improve dependency mapping, and accelerate project plan creation. This strategic integration of AI was designed to ensure that projects were delivered on time, within budget, and with enhanced quality, ultimately maintaining their competitive edge in the fast-paced telecommunications industry.

The AI solution implemented in the company project management framework consisted of two primary components, ChatGPT and Microsoft Project Management Copilot.

ChatGPT was deployed as an advanced AI interface for querying the company's extensive project management database, facilitating real-time insights, historical data retrieval, and enhancing communication across global teams. It was tailored to understand the telecommunications industry's nuances and the company's specific project management methodologies, making knowledge sharing more efficient and accessible.

Microsoft Project Management Copilot, integrated with the existing company project management software, leveraged AI to automate project plan creation, resource allocation, and dependency mapping. It utilized machine learning algorithms to analyze historical project data stored in SharePoint and Clarity, enabling it to recommend optimal project timelines, identify the best resource matches, and anticipate potential bottlenecks. This AI-driven approach significantly streamlined project planning and execution processes, allowing for more accurate, data-informed decisions and strategies, thereby enhancing overall project management efficiency and effectiveness.

Development Approach

- The Program Managers and project managers established a detailed plan incorporating the implementation areas, strategy, milestones, strategy and engaged all the required stakeholders for a collaborated action plan.
- The company integrated AI across the project management operations. They deployed ChatGPT to enhance communication efficiency, providing instant access to project data and fostering real-time collaboration across their global teams.

Section Seven: Case Study Reporting

- For resource optimization, they implemented an AI system that analyzed project requirements and workforce competencies, leading to smarter, data-driven resource allocation.
- Risk management was revolutionized by an AI tool that employed predictive analytics to flag potential project risks well before they could impact project timelines or costs, shifting their approach from reactive to proactive.
- Dependency mapping was automated with AI, significantly improving project planning accuracy by identifying critical inter-task relationships.
- Finally, AI-enhanced tools expedited the creation of comprehensive project plans by learning from historical data, which streamlined project initiation and execution.

Timeline

- The AI implementation project, from initial planning to full deployment, spanned approximately 18 months.
- The first three months were dedicated to thorough planning and identifying the specific AI tools that would best address the company project management challenges. This phase included evaluating various AI solutions, securing necessary approvals, and developing an implementation roadmap.
- Following the planning phase, they spent the next six months in the development and integration phase. This involved customizing the AI tools, namely ChatGPT and Microsoft Project Management Copilot, to fit the company's unique project management processes and data systems. They also ensured these tools could seamlessly interact with their existing project data stored in Microsoft SharePoint and managed through Clarity.
- The final nine months focused on a phased deployment, starting with pilot testing in select project teams to gather feedback and make necessary adjustments. After successful pilot testing, they proceeded with a company-wide rollout, which included training sessions for project managers and team members to maximize the benefits of the new AI-enhanced project management tools.

Results

- Evident efficiency gains by achieving a 20% reduction in project completion times, enabling faster delivery of services to market, and improving their competitive stance.

Section Seven: Case Study Reporting

- 25% improvement in adhering to budgets due to more accurate resource allocation and risk management. This directly translated into cost savings and enhanced profitability in their projects.
- A proactive risk identification and mitigation capabilities of the AI tools led to a 40% decrease in project delays, further contributing to operational efficiencies and cost savings.
- The AI-driven optimization of resource allocation resulted in a 30% increase in workforce productivity, as team members were deployed on tasks that matched their skills and project needs more closely.

Risks

Risks identified were related to data privacy concerns, potential biases in decision-making, and the need for compliance with industry regulations.

Training

A comprehensive training program that included a mix of workshops, e-learning modules, and hands-on sessions was developed. The training was designed to cover both the technical aspects of the AI tools and the practical application within the company project management processes.

Additionally, to foster an AI-centric culture and enhance AI literacy across the organization, they implemented broader AI-related training and skill development initiatives. These included seminars on AI ethics, data protection, and the implications of AI on project management. They also offered specialized courses for their IT staff on AI system maintenance and development, ensuring they were equipped with the skills needed to support and evolve the AI solutions in line with the organizational needs.

Lessons Learned

- The importance of aligning AI initiatives with clear business objectives; technology for technology's sake is insufficient without strategic integration.
- The company recognized the critical role of stakeholder engagement and change management. Effective communication and training were essential in mitigating resistance and fostering a positive organizational culture towards AI adoption.
- High value in starting with pilot projects before a full-scale rollout. These smaller, controlled implementations allowed them to identify potential issues early and adjust their strategies accordingly.

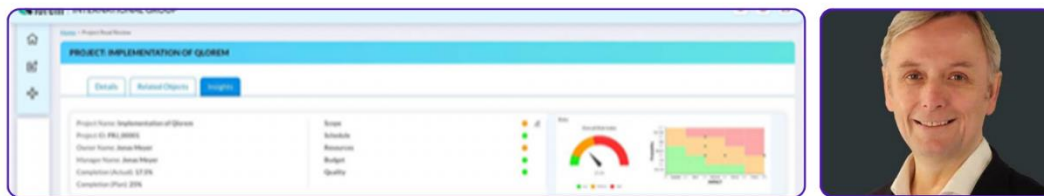
Section Seven: Case Study Reporting

- Additionally, the significance of data quality and governance was highlighted. Clean, well-organized data is crucial for training effective AI models, necessitating robust data management practices.
- Continuous learning and adaptation are key. AI technology and business needs evolve, so ongoing evaluation and adjustment of AI applications are necessary to maximize benefits and sustain relevance.

Category 3: Off-the-Shelf AI Tools

This category encompasses pre-built software applications designed for general or broad-range tasks within project management. Platforms like Microsoft's project management and collaborative work management platform exemplify how off-the-shelf solutions can serve diverse project management needs with AI-powered features, offering a balance between customization and general applicability.

Project Management Platform - AI Digital twin SaaS solution



COMPANY	Undisclosed
CONTACT	Sigurd Fristad
REGION	Europe
INDUSTRY	Financial Services
TEAM	Project Manager, Solution Architect, Business Analyst, Data Engineer, Data Scientist, Integration and Security Architect, Project Management process and policy SME
BUDGET	\$101,000 - \$500,000
TIMELINE	3 months

The Goal

- Renew larger parts of our IT landscape to ensure that our Customer First strategy can be successfully implemented.
- Replacement of our existing project management tools, 12 of them, as they fall short of meeting our expectations, and is not meeting our Customer First strategy.

Problem Description

- Our organization is encountering obstacles in project planning and execution, primarily stemming from the inadequacy of twelve different

tools currently employed. These tools fall short of meeting our expectations, as they neither facilitate two-way communication with management nor provide comprehensive features beyond basic documentation for portfolio planning. As a result, our ability to effectively collaborate with management and utilize advanced portfolio planning functionalities is compromised, impeding our project management efficiency and overall performance.

- Only implementing a new tool will not help because the whole way of work has too many barriers that slow down projects and further to enable AI in the right way
- We need to enable continuous learning and be willing to invest in solutions early in the lifecycle.

Overview of Solution

- We bought a standard solution as part of the implementation because we wanted to benefit from a product that was used in many different industries but is able to be configured to our requirements and is at the start of the lifecycle that we can support to improve on. The reason behind this is that we needed someone who can help us to see opportunities and listen to our needs. One of the main reasons was that a good usage of AI requires reviewing all processes and the way of work to enable the benefits.
- We built a small team in collaboration with Qlorem that was allowed to experiment during the First Value Project with Solutions to understand the strength, the weakness of the solution and the required data to make it even stronger. The team was end-to-end responsible for the evaluation and implementation during this phase.
- We hired data engineers and data scientists to increase the capability also to develop own use cases and support the teams to get a new perspective what possible is. Parallel, we have increased our capacity for IT and Data security that we are ensuring high standards for our customers and people.
- In the Second phase, we increased the team with adoption facilitators that were key stakeholders and part of each transformation initiative to be ambassadors for Qlorem in each project. This approach allowed us to further innovate the platform together with Qlorem and ensure the maximum value for each initiative.

Project Timeline

We entered with Qlorem in a 3-month First Value project to evaluate the value that a new AI driven Project Intelligence platform can deliver. After this first phase we decided to continue and onboarded our transformation project portfolio on the platform and started to implement further data extracted to enhance the Dynamic Digital Twin of our Organization including our Process and IT Landscape.

Results

- As part of the end-to-end mandate we defined KPI targets, like project success rate, but also we wanted to know how the new platform and AI-driven Project management use cases are used.
- Through using an AI driven Project Management platform with different use cases, we were able to reach a quite high ROI. The main reason for it was we could utilize it directly in our IT renewal project that helped us to significantly increase the success rate. Parallel, we also got positive feedback from our people that the work as a project manager has changed from often a report and data analyst to a solution-oriented Project Manager.
- AI driven Project Management enabled us to implement our new Strategy and renew our legacy IT landscape much better and with a higher success rate. Earlier we often had challenges between Business and IT, risks and issues were not communicated which delayed projects, but with our project intelligence platform, many risks are identified inclusive of pre-defined root cause analysis and potential mitigating actions. Through this we see a much earlier and better discussion between the business and IT stakeholders.

Risks

- The biggest challenges to implementing AI is the data quality to enable the AI solutions, and second is the adoption of the processes. The data is the fuel for AI, and you need quite a good amount of data to realize the benefits of AI. Otherwise the results, identified risks and opportunities will be weak, not helping your employees to deliver better results and increase customer satisfaction.
- Secondly, the adoption of the processes and implementation of the solutions require that the right people are early involved in the process, and support it. It is important to listen to get the buy-in in your organization.

- To ensure that our Customer First strategy can be successfully implemented, we need to renew larger parts of our IT landscape. But based on the experience, we are not successful in running IT projects and often are not able to get the expected benefits realized.
- Also, Project Managers and IT raised the concern that only a new tool will not help because the whole way of work has too many barriers that slow down projects and further to enable AI in the right way, we need to enable continuous learning and be willing to invest in solutions early in the lifecycle. But people are often resisting when new changes are introduced, especially when the solution is not 100 percent defined. We were aware if we did not change we would experience a pushback.

Training

The people participating in the project had workshops. We defined who should participate in the team and decided what project vision and responsibility (in context to our overall vision) the team should have. After the briefing workshops started, we began to discuss it and develop together the end-to-end mandate to implement AI-driven Project Management.

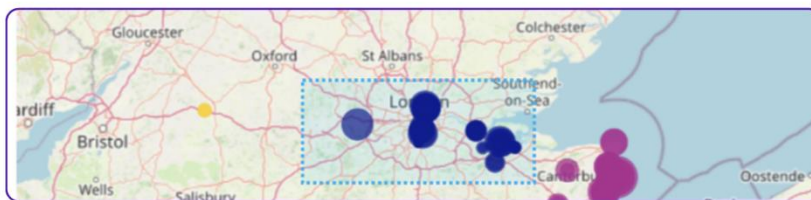
Lessons Learned

- During the first phase, we saw that the data quality in many of our systems were not ready for AI, or the way we use our systems is quite immature for AI. To build a strong foundation it is important to ensure discipline with the data quality.
- That AI implementation generates some business value. It is important to ensure high data quality early, select the right and flexible technology, and promote talents. Build this foundation and incrementally build your AI capabilities and solution on-top together with your people to be able to work and learn together to ensure the benefits.
- Advice for others: Be open to early-stage solutions and see this supplier as an innovation partner to help you collaboratively to enable AI in your business. These companies are more customer-oriented and understand your challenges as the big players.

Category 4: Customized AI solutions

Tailored to address specific challenges within an organization, customized AI solutions represent the pinnacle of bespoke AI integration in project management. From fraud detection systems and virtual assistants to predictive maintenance models, these solutions are engineered to tackle unique organizational problems, offering a high degree of specificity and effectiveness.

Electronic Vehicles - Utilization of Charging Stations



COMPANY	Undisclosed
CONTACT	Denitsa Gavrilova
REGION	Europe
INDUSTRY	Automotive
COMPANY SIZE	150
TEAM	6 members. Product Manager, Project Manager, Solutions Architect, Data Analyst, Data Scientist, and MLOp
BUDGET	\$101,000 - \$500,000
TIMELINE	5 months

The Goal

The project involved developing three machine learning models and an orchestration tool with a focus on improving service delivery, reducing operational costs, and enhancing the user experience through the company's backend platform, web portal, and mobile app.

Problem Description

The primary problem identified in this project was the uneven utilization of charging stations, leading to some being overused while others remained underused. The

implementation of AI sought to address this by predicting station occupancy, enabling better allocation of customers to charging stations, and identifying potential maintenance issues before they become problematic.

Overview of Solution

The solution described in the case study revolves around the development and implementation of three machine learning (ML) models, coupled with an orchestration tool, to enhance the efficiency and utilization of electric vehicle (EV) charging stations. This AI-driven approach aimed to address the problem of uneven utilization of charging stations, which saw some stations being overused while others were underused.

- Three ML models were trained and deployed, and an orchestration tool was developed to address specific aspects of the charging station utilization and maintenance.
- The output of the models was used as an input for several features developed in the back end and the mobile application used by the customers.
- In this case, the results of the developed models are related to the introduction of different pricing incentives, the display of the occupancy schedule in the mobile app, and the real-time monitoring of the utilization in the backend platform, as well as the timely alerting of potential problems with the stations so that the operator can take the necessary measures, or such are triggered and executed automatically depending on the type of problem.
- The AI solution was seamlessly integrated into the company's backend platform, web portal, and mobile app, enhancing the service offering to clients. This integration allowed businesses to leverage extensive out-of-the-box features for managing public, private, fleet, and residential charging stations more effectively.
- Additionally, the solution offered options for integration with various systems (e.g., ERP, CRM, Billing, Accounting), enabling comprehensive management and maintenance capabilities, as well as the generation of insightful reports and analytics.

Project Timeline

The project was developed in 5 months in the following phases:

- There was an initial phase of 1.5 months for building POCs for the 3 models to prove reliable results and increased business value.
- The second phase was for the development of the models - the demand prediction model took 1.5 months to test its robustness. For the other 2 models - anomaly detection and predictive maintenance – took 2 months for final development.

Results

- Percentage increase in utilization of charge points on a daily basis.
- Absolute number reduction of technical team visiting on site the charging stations, number of complaints logged in the system from end users for non-operating or poorly operating charge points, and number of charge points that are identified as ineffective (not used at the expected rate) that need to be replaced or closed.

Risks

The main unexpected challenge was the finding that for 2 of the models the needed data was not available. This caused the entire project to be delayed 2 months to collect the data. This is why, in order to mitigate this risk, a PoC phase was scheduled first, before kicking off the real model development.

Training

The company developed multiple trainings for the employees and customers as they had to explain to them the logic behind the models and the newly introduced features so they could take maximum advantage of them.

Lessons Learned

- Accurate planning and setting delivery dates could be done only when some models are trained, and the output of the models are available. Only then, data scientists could say whether the data is sufficient, and they could proceed with finalizing the models for production. Therefore, POCs are advisable to be done before the actual development.
- Deploying models should be carefully planned to take into consideration the maturity of the available architecture and the requirements for specific AI architecture and orchestration of the processes.
- Do a very careful initial analysis to identify those use cases that are worth developing AI models for.

Beyond the Stethoscope: How AI is Reshaping the Hospital Operations



COMPANY	Undisclosed
CONTACT	Dr. Deepa Bhide MBBS, DCH, PMP
REGION	Asia
INDUSTRY	Hospitals and Healthcare
TEAM	The core group consisted of about 6 people and the extended team had around 15, including stakeholders such as clinical staff, hospital admin, IT staff, etc.
BUDGET	\$0 - \$100,000
TIMELINE	1-Year Total •Phase 1: Conception to pilot – 4 months •Phase 2: Departmental rollout – 8 months

The Goal

- Data-driven insights and decision-making. We looked at a tool or application that could analyze this data to identify trends, predict potential problems, and inform better clinical and operational decisions. This would help stay up to date with the latest research and suggest evidence-based recommendations to healthcare professionals.
- Implementing AI for administrative automation - We were looking for technology-based support to improve patient experience and workflow at the front-office stage.

Managing competitive landscape and innovation as the hospital faced increasing competition for patients and resources. Implementing innovative technologies like AI could enhance the capabilities, attract new patients, and stay ahead of the curve.

Problem Description

There were a number of challenges that the hospital was facing that prompted the AI implementation, including:

- Improving patient outcomes/experience to minimize diagnostic and therapeutic errors and delayed diagnoses. We were looking for a tool to analyze medical images and data more accurately, potentially leading to earlier and more accurate diagnoses.
- Long wait times and inefficient workflows were a concern that negatively impacted patient experience. We searched for a tool that could help streamline processes, reduce wait times, and provide personalized care plans, improving patient satisfaction.
- Rising costs and resource constraints. Shortage of healthcare professionals, particularly in specialized fields. We looked at technology to assist healthcare specialists, increasing their capacity and improving access to care, automating tasks, improving resource allocation, and potentially reducing unnecessary tests, leading to cost savings

Overview of solution

- We implemented AI-powered applications in two places.
- The AI-enabled Chatbot is our virtual administrative assistant for improving the patient experience at the front office.
- Automating repetitive tasks like administrative tasks, data entry, and appointment scheduling, freeing up valuable time for front office staff to focus on patient experience.
- Helping patients schedule appointments, answering basic questions, and providing additional information improves engagement and access to healthcare resources.
- Help modules for training and help support for the users.
- The AI-enabled Radiology Application
- The AI tool was an AI-powered platform, with basic features as it was a pilot, designed to automate and optimize various aspects of the radiology workflow for the pilot. The application leverages machine learning algorithms (basic) to analyze medical images, generate reports, and assist radiologists in diagnosis and decision-making. Features of the tool were as follows:
- Automated image pre-processing to reduce manual tasks like image formatting and standardization, saving radiologists' time.

- Computer-aided diagnosis (CAD) that provided insights and suggestions to radiologists during image interpretation, potentially improving accuracy and reducing diagnostic errors.
- Report generation automated routine reporting tasks, freeing up radiologists' time for complex cases. The relative weightage algorithm helped assign weights to the AI-generated images vs manual reporting.
- Data analysis and insights to identify trends and patterns in radiology data to improve workflow efficiency and resource allocation.
- Help modules for training and help support for the users.

Development Approach: in-house/custom

Results

- We were able to address most of our challenges such as below by implementing AI-based solutions at two strategic places in the hospital.
- The AI-enabled Chatbot
 - Rising costs and resource constraints – We installed a chatbot at the front office that took care of the initial inquiries by patients and minimized the load on the front office staff. We brought down the need for front office staff from 4 FTEs to 2 FTEs, which was a significant gain.
 - Long wait times and inefficient workflows were taken care of by the Chatbot, which helped bring down the wait times by >30%. That provided a positive patient experience.
- The AI-enabled Radiology application
 - Improving patient outcomes/experience to minimize diagnostic and therapeutic errors and data-driven insights and decision-making by extracting meaningful insights – due to the radiology AI solution, we were able to cross-verify the diagnosis and ensure there were minimal diagnostic differences and errors. For example, we could cross-verify about 5% of the diagnosis, which otherwise would have been missed just by manual work. The manual and AI enablement helped mitigate these errors. The data loaded in the system assisted us in making appropriate data-driven comparisons and objective decision-making. The benefits were modest given the pilot nature of the module.
 - Managing competitive landscape and innovation – our hospital is the first one in the area to have this AI enablement and it has helped increase the footfall in the hospital and revenues by >20% to date.

Risks

- Data breaches, unauthorized access, or misuse of sensitive patient information.
- Workflow disruption and resistance to change.
- Over-reliance on AI tools.
- Integration issues with existing hospital systems, data quality problems, or unexpected technical glitches.
- Algorithmic bias leading to discriminatory or inaccurate diagnoses or treatment recommendations.
- Lack of understanding of how AI models reach their conclusions, hindering trust and acceptance by the users especially the clinical staff and patients.
- Uncertainty around who is responsible for decisions (clinical and operational) made with the aid of AI, leading to potential legal and ethical complications.

Training

- Conducted surveys to understand employees' concerns, expectations, and preferred learning styles.
- Pre-training was done to build general awareness about AI and its potential benefits for our hospital and specific clinical scenarios.
- Created tailored content with targeted modules addressing different roles and needs (e.g., clinicians, administrators, technicians). Used an interactive format such as simulations, case studies, hands-on exercises, and role-playing to keep participants engaged.
- Explained the AI tool's functionalities, limitations, and decision-making processes in clear and understandable language.
- Focused on workflow integration to demonstrate how the tool integrates with existing workflows, highlighting its impact on daily tasks.
- Emphasized the importance of data privacy and security measures in place for the AI tool.
- Planned a blended learning: Combine online modules with in-person workshops or group discussions for flexibility and deeper learning.
- Post-training support through a help desk and manuals especially for the clinical and administrative staff.
- Created a feedback mechanism encouraging employee feedback on the tool and training effectiveness to improve continuously.
- Involved a champion who was our advocate for the AI solution

Lessons Learned

- Be patient-centric at all times at all stages. That's the first and the foremost lessons learned for our team.
- Begin with a pilot project focused on a specific problem area before implementing AI on a larger scale. Dissect your problem statement well and get to the details.
- Clearly define the specific problems the AI tool aims to address and the desired outcomes from the implementation.
- Conduct a comprehensive assessment of the needs, existing infrastructure, and data landscape before selecting an AI solution.
- Involve relevant stakeholders throughout the planning and implementation process for better-informed decision-making and improved buy-in.
- Invest in data quality, accessibility, and governance, crucial for reliable and unbiased AI models.
- Focus on data security and privacy by implementing robust security measures and adhering to data privacy regulations to protect patient information.
- Integrate existing systems to ensure compatibility and seamless integration of the AI tool with existing hospital systems for efficient workflows.
- Provide comprehensive training and ongoing support for staff on using the AI tool effectively and addressing any challenges.
- Use change management strategy to address concerns, manage resistance, and facilitate smoother adoption of the new technology.
- Most importantly, maintaining transparent communication with all stakeholders throughout the process, addressing concerns proactively, and keeping everyone informed about progress and potential impacts.
- Be cognizant of biases and fairness practices, explain and be transparent with users, and stipulate clear roles and responsibilities for AI development, deployment, and use to ensure ethical and responsible implementation.
- Healthcare can have many changes and so prepare to adapt your approach and goals as the technology evolves and new challenges arise along with continuous learning and improvement.
- Patient care is an integrated process. Value collaboration within your departments.

Category 5: Hybrid

A testament to the versatility of AI in project management, hybrid solutions merge elements from the aforementioned categories to create a tailored approach that leverages both off-the-shelf efficiency and the targeted precision of customized AI solutions. This innovative amalgamation ensures organizations can harness AI's full potential, catering to both broad-based and specific project management needs.

AI Predictor



COMPANY	This case study is based on a typical organization that would benefit from implementing the AI Predictor.
CONTACT	Antonio Nieto-Rodriguez, CEO Projects & Company
REGION	Global
INDUSTRY	Food Industry
COMPANY SIZE	More than \$5 billion in annual sale - between 100 and 200 projects
TEAM	Head of Portfolio Management / PMO + Project Managers to input the data of their projects
BUDGET	1 billion USD project portfolio
TIMELINE	Couple of weeks to a few months

The Goal

By introducing a data-driven, predictive approach, enable the organization to focus on the projects with the highest potential for success and strategic value.

Problem Description

The central challenge addressed by the AI Predictor revolves around the historically high failure rate of projects. This trend often leads to wasted resources, lost time, and missed opportunities for companies.

In the current business landscape, marked by rapid technological changes and intense market competition, traditional project selection and prioritization methods are increasingly proving insufficient to meet the demands and complexities of the environment.

The AI tool was applied to 20 key projects, ranging from those in the nascent stage of planning to multi-year, multimillion-dollar initiatives, covering a broad spectrum of budgets, from less than \$250,000 to over \$250 million and durations from 6 months to more than two years. The implementation methodologies varied, including Waterfall, Agile, and hybrid. The objective was to leverage AI Predictor's capabilities to determine the probability of success for each project based on various factors, including the estimated duration, original budget, implementation method, and project status.

Overview of Solution

- The AI Predictor standard solution implementation offers customers the opportunity to leverage a versatile product utilized across multiple industries.
- Tailored to individual requirements, this solution empowers customers to actively contribute to its refinement during the initial stages of its lifecycle.
- The AI Predictor offers a sophisticated solution that employs machine learning algorithms to analyze historical data and identify patterns indicative of a project's potential success or failure. This predictive insight allows organizations to make informed decisions, prioritizing projects that align with their strategic goals and are more likely to succeed.
- The tool provides valuable insights into potential risks, enabling proactive mitigation strategies and better resource allocation.
- AI Predictor stands out for its sophisticated yet user-friendly approach to enhancing project outcomes. It works to yield the following solutions: input data, processing and analysis, output and decision-making, significant cost reductions, elevated success rates and profit margins, and long-term value and ROI enhancements.

Development Approach

Implementing AI in an organization requires a comprehensive review and optimization of processes and workflows to maximize the benefits of AI integration.

Considering the advanced nature of the AI Predictor, it likely involves a combination of in-house and off-the-shelf development. In-house expertise is essential for

tailoring the solution to specific organizational needs, ensuring seamless integration with existing systems, and maintaining the flexibility to adapt to evolving business requirements. Simultaneously, leveraging off-the-shelf AI and machine learning frameworks can accelerate the development process, reduce costs, and benefit from the robust capabilities of already proven technologies.

Project Timeline

- AI Predictor stands out for its sophisticated yet user-friendly approach to enhancing project outcomes. Here's how it works:
- **Input Data (1-2 weeks):** Users interact with the AI Predictor through a detailed questionnaire, inputting data that becomes the foundation for the analysis. This extensive dataset ensures a nuanced understanding of each project's unique attributes and success factors.
- **Processing and Analysis (1 week):** At its core, AI Predictor harnesses advanced machine learning algorithms, meticulously analyzing the input data to assess the potential success of each project. This process is refined continuously, enhancing its predictive precision with each new project added.
- **Output and Decision-Making (1-2 weeks):** The outcome is a prioritized list of projects, each evaluated with an individual success score. This empowers decision-makers to strategically select projects with the highest likelihood of success, optimizing resource allocation and strategic focus.

Results

- The tool's predictions showcased an impressive range of success probabilities, with figures such as 96.84% for a 1–2 year project with a budget of \$10–50 million and a striking 99.52% for a project under \$250,000 slated for completion within 1-2 years.
- A demonstrated reduction in project failures, with a notable shift from a high percentage of projects traditionally failing to meet their objectives to the majority successfully achieving their goals. This shift not only represents a direct increase in ROI but also boosts the overall strategic effectiveness of the organization.
- **Strategic Alignment and Value Creation:** By prioritizing projects with the highest potential for strategic value, companies can better allocate their resources, focus on high-impact initiatives, and avoid investing in projects that are likely to fail or yield minimal benefits.

- **Cost Reduction and Efficiency:** Through the precise prediction of project outcomes, we've been able to channel our investments into ventures with higher success odds. This targeted approach has led to a significant reduction in wasted expenditures on unsuccessful projects, thereby enhancing our cost-effectiveness and operational efficiency.
- **Data-Driven Decision-Making:** The adoption of AI Predictor empowered decision-makers with invaluable data-backed insights. Armed with this knowledge, leaders could make more informed choices about which projects to pursue, minimizing inherent risks associated with project selection and prioritization. This shift towards data-driven decision-making fostered a more resilient and adaptable project management environment, ensuring actions were grounded in robust analysis.
- **Risk Management and Mitigation:** By foreseeing potential challenges and accurately evaluating the likelihood of project success, proactive implementation of risk mitigation strategies became possible. Whether adjusting project scopes or reallocating resources, the ability to anticipate and address obstacles ensured smoother project execution and higher success rates overall.
- **Long-term Organizational Impact:** Beyond immediate gains, the impact of AI Predictor extended into the long term. It facilitated continuous learning from past projects, enhancing future project planning, execution, and evaluation processes. This iterative approach not only improved project management maturity and capabilities but also reinforced a culture of innovation and excellence within the organization.
- **In conclusion,** the integration of AI Predictor into the project management framework proved transformative. It not only enabled the organization to mitigate risks, enhance efficiency, and drive strategic value but also laid the foundation for sustained growth and success in the years to come..

Risks

In considering the risks associated with the use of an AI predictor tool, several potential issues come to mind:

1. **Data Privacy:** The use of AI Predictor often requires handling sensitive company data.
2. **Dependence on Data Quality:** AI tools are as good as the data they are trained on. Poor data quality can lead to inaccurate predictions, which in turn could lead to poor decision-making.

3. Regulatory Compliance: Depending on the industry and location, there may be regulations governing the use of AI. Non-compliance with these regulations could result in legal issues.
4. Integration with Existing Systems: Integrating AI tools with current IT infrastructure can be challenging and costly, and if not done correctly, can disrupt business operations.

Training

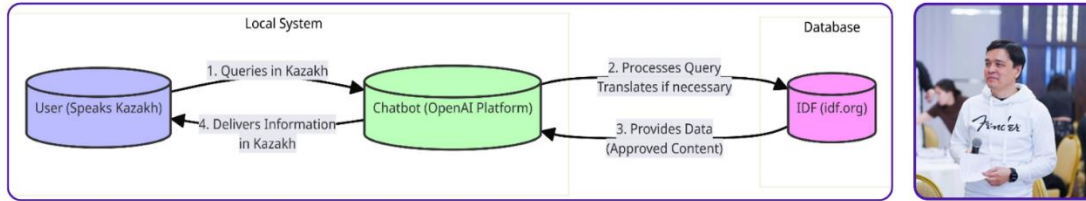
The use of an AI predictor tool is intuitive, with minimal training required. The key is ensuring the input of quality data and using the AI's output as a guide to inform decision-making rather than as an infallible solution. It's about enhancing human judgment with AI insights, not replacing it.

Lessons Learned

After the exercise, the team identified two advantages of implementing AI Predictor in their daily transformation and project practices:

- Knowledge Base Creation: Utilizing AI Predictor at a consistent project phase, such as Charter approval, can contribute to developing an internal knowledge base. This would facilitate comparative analysis between AI-generated predictions and actual project outcomes, establishing credibility and enhancing stakeholder confidence in AI tools. Over time, with increased trust in AI capabilities, the need for such reconciliation may diminish.
- Stakeholder Assessment Enhancement: Employing AI Predictor during the pre-approval stages of the project charter can provide insights into areas where critical stakeholder alignment may be lacking. This serves as an additional method for conducting thorough stakeholder assessments.

Diabetes Bot



COMPANY	IOWA PARTNERS LLP
CONTACT	Ernar Makishev
REGION	Asia
INDUSTRY	Education
COMPANY SIZE	5 Staff
TEAM	3 people, PM, software engineer and SME.
BUDGET	\$0 - \$100,000
TIMELINE	1 Month

The Goal

To create a chatbot aimed at serving individuals with diabetes who are diagnosed or yet to receive a diagnosis and who exclusively communicate in Kazakh, focusing on those with limited access to information.

Problem Description

Currently, there are about 400k people with diabetes in Kazakhstan. Some researchers think this number is twice the size. People are not aware of their condition and symptoms. The purpose of this project was to raise awareness on diabetes and its consequences among Kazakhstani, especially with Kazakh speaking population, since there literally no materials. Therefore, the team created an AI bot to answer questions in Kazakh language.

Overview of Solution

The AI tool implemented in this project is an AI bot powered by the OpenAI API, integrated with WordPress using a freemium plugin. This setup allows the bot to interact with users on the website, providing information and answering questions in real-time. The use of OpenAI's advanced language models ensures the bot can

understand and respond accurately in Kazakh, making it highly effective for the target audience. The WordPress integration facilitates easy access and user interaction, while the freemium model of the plugin offers a cost-effective solution for the organization. This combination of OpenAI's AI capabilities with WordPress's user-friendly platform makes the AI bot an efficient tool for raising diabetes awareness.

This solution made health information more accessible to the Kazakh-speaking population, overcoming language barriers. The AI bot's ability to provide instant, accurate information about diabetes helped in educating the public and raising awareness about the disease's symptoms and management.

Development Approach

The AI tool selection was guided by the need for language-specific capabilities, particularly for the Kazakh-speaking audience. The choice of OpenAI API integrated with WordPress indicates a preference for advanced language processing abilities and ease of web integration. Factors such as accuracy, user-friendliness, and scalability have been critical in this selection.

The use of a plugin from <https://aipower.org/> for WordPress integration suggests a mix of off-the-shelf solutions and customization. This approach balances cost-effectiveness with the need for a tailored solution that specifically addresses the unique requirements of diabetes awareness in Kazakhstan.

Results

The key performance metrics included: user engagement statistics such as website traffic, interaction rates with the AI bot, and user feedback or satisfaction scores.

Some improvements of awareness on diabetes in Kazakhstan will have financial benefits via improving the health of people with diabetes. Early detection of symptoms will reduce the number of working hours. However, this project will not bring financial benefits for the acting organization. The AI implementation will have a positive impact on the organization's operations by enhancing its role in public health education. It will improve outreach and effectiveness in disseminating crucial health information, thus contributing to better health outcomes and heightened organizational visibility in public.

Risks

Risks identified centered around the accuracy of information provided, user privacy, and the tool's ease of use. Addressing these concerns involved rigorous testing for accuracy, ensuring compliance with data protection laws, and creating

a user-friendly interface. Continuous engagement with stakeholders to gather feedback and make iterative improvements have been a crucial strategy to meet their expectations and alleviate concerns.

Training

For training employees to use the AI solution, the organization is planning to conduct training sessions specifically for doctors. This approach indicates a targeted strategy to equip healthcare professionals with the necessary skills and knowledge to effectively use the AI tool in their practice. Additionally, ongoing AI-related training or skill development could be considered to enhance overall technological proficiency within the organization.

Lessons Learned

- Be ready for surprises with less common languages.
- A significant challenge faced during AI implementation was the discovery of mistakes and flaws in the language model, primarily due to the lack of training materials in Kazakh in the database. This issue highlighted the importance of having a robust and diverse language dataset for AI effectiveness, especially in less commonly digitized languages.
- The problem was also lack of legislation and regulations as well as established guidelines of diabetes from Ministry of Health.
- For companies considering a similar AI implementation, the key advice would be to thoroughly assess the availability and quality of language data sets, anticipate the need for significant customization, and be prepared for ongoing adjustments based on user feedback and testing.

AI Software Implementation



COMPANY	Undisclosed
CONTACT	Undisclosed
REGION	North America
INDUSTRY	Technology
COMPANY SIZE	200,000+
BUDGET	\$101,000 - \$500,000
TIMELINE	18 Months

The Goal

- The primary goal behind implementing AI in the software solution was to enhance customer experience and streamline internal processes. By leveraging AI, the team aimed to automate repetitive tasks, personalized recommendations, and improve decision-making capabilities across various business functions.
- The AI implementation was closely aligned with the company's overall business strategy, which prioritizes innovation, efficiency, and customer-centricity. By integrating AI into processes, the aim was to stay competitive, improve operational effectiveness, and deliver superior value to customers.

Overview of Solution

The AI solution was a mix of off-the-shelf and customized solutions.

- The team implemented a machine learning-based recommendation system that analyzes user behavior and preferences to deliver tailored product suggestions. Natural language processing (NLP) algorithms were also employed to automate customer support inquiries, resulting in faster response times and increased customer satisfaction.
- The AI solution was integrated into existing systems through API integrations, data migration, and user training programs. Cross-functional teams

collaborated closely to ensure seamless integration and minimal disruption to ongoing operations.

- Through the implementation of AI-driven chatbots and recommendation systems, automated customer support and personalized product offerings, addressing the challenges of scalability and personalization effectively.
- Development (In-house, Off-the-shelf, combination)

Results

- Key performance metrics used to measure the success of the AI implementation included customer satisfaction scores, response times, efficiency gains, and business impact indicators such as revenue growth and cost savings.
- Return on Investment - The AI implementation resulted in significant financial and operational benefits, including improved productivity, reduced operational costs, increased revenue through personalized recommendations, and enhanced customer loyalty and retention.
- Business Impacts - The AI implementation positively impacted various business processes, including customer service, marketing, sales, and product development, leading to improved competitiveness, agility, and innovation capabilities.

Risks

Risks were identified related to data privacy and bias in AI algorithms. To mitigate these risks, the team implemented robust data governance frameworks, conducted regular audits, and ensured diversity in training data to minimize bias.

Training

Employees were trained to use and interact with the AI solution through hands-on workshops, online tutorials, and on-the-job training programs. Continuous learning initiatives and skill development opportunities were provided to foster AI literacy and proficiency.

Lessons Learned

- Valuable lessons learned from the AI implementation included the importance of cross-functional collaboration, stakeholder engagement, agile project management, and proactive risk management in ensuring successful AI adoption.
- Advice for others - Companies considering a similar AI implementation are advised to prioritize clear business objectives, stakeholder alignment, robust data governance practices, concerns regarding data privacy, algorithmic

transparency, and employee training were addressed through open communication, training programs, and compliance measures.

Industrial-grade Verification and Validation of Evolving Systems

COMPANY	Philips
CONTACT	Mark van Helvoort
REGION	Europe
INDUSTRY	Healthcare
COMPANY SIZE	70,700 (2022)
TEAM	185 members. Use Case (application), owners (user requirements & validation), Service providers (methods), Tool/Solution developers (tools), Researchers.
BUDGET	USD 24,000,000
TIMELINE	Planning 13 months, Execution 39 months



The Goal

The use of AI and complex, evolving systems (ES), i.e. systems that rapidly change, either due to fast iteration cycles in development or due to their capability to self-adapt and learn, is growing significantly in automation, computation, and novel digital services. IVVES developed approaches for robust and comprehensive, industrial-grade V&V of “embedded AI”, i.e. machine-learning for control of complex, mission-critical evolving systems and services covering the major industrial domains in Europe.

The [IVVES project](#) was funded under the ITEA3-program, project number 18022.

Problem Description

The IVVES-project brought Philips together with other application owners from transportation, finance, healthcare, industrial automation, and cybersecurity, with tool developers and with AI researchers:

- Since its invention in 1973 MRI has been faced with the challenge that it is an inherently slow method of creating images of the human body. Before 2019, Philips identified that reducing reconstruction times and obtaining better image quality in image reconstruction in Magnetic Resonance Imaging was necessary and that AI could be key piece of the solution. In addition, the threat of adverse images in image recognition was a challenge in a highly regulated environment for a critical application.

Solution

The IVVES-project (Industrial-grade Verification and Validation of Evolving Systems) involved the systematic development of robust, comprehensive V&V for embedded AI, targeting three major outcomes:

- Validation techniques for ML;
- Validation techniques for complex ES
- Data-driven engineering.

By replacing conventional image reconstruction based on time-consuming FFT, machine learning models have been created which transform the digitized electrical signals into pictures. These pictures can further be enhanced through noise reduction or image resolution. In hindsight the implementation of verification and validation was straightforward because they chose to freeze all models before the start of verification. From a legal perspective therefore the market introduction could be addressed as for products without AI.

The IVVES project embraced the CRISP-DM blueprint for data mining (published in scientific literature in 2000, image courtesy Sogeti):

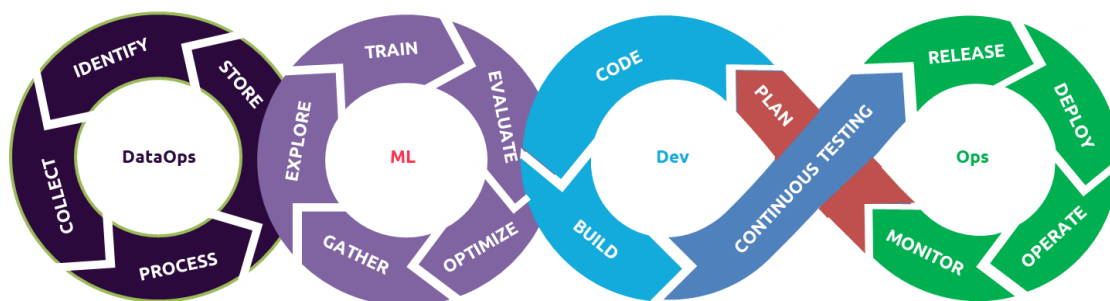


Figure: MLOps model (MLOps = DataOps + ML + DevOps; this specific representation from courtesy of Sogeti)

This MLOps model is a combination of DataOps, ML and DevOps. At Philips, the DevOps process was already in place. The ML team took care of data and model

development, and only frozen models were transferred to the DevOps part of the process, this enabled the use of existing processes for release.

An [experimentation platform](#) was also developed to demonstrate the applicability and usefulness of these tools and techniques. Overall, this will lead to higher-quality products, reduced time-to-market, and lower maintenance costs for providers of mission-critical systems and services.

Results

- Delivery of faster personal health examination solutions for consumers and professional health solutions for healthcare providers and their patients in the hospital and the home.

Risks

- The most challenging risk was COVID outbreak making it impossible to meet face-to-face. Only in the last few months of the project the team was able to meet each other.
- The availability of the data which could be shared with collaboration partners was also a risk.

Training

- For the healthcare application the AI-implementation the user interaction did not change, so training was not necessary as the result was the same. It simply was faster and created better images.

Lessons Learned

- The most important lesson learned was that data is centric to everything when using AI.
- The second lesson is that “freezing” ML models makes AI acceptable for regulated environments.
- The third lesson is that federated learning and continuous evolution in a regulated environment are still to be studied and cannot yet be applied in a regulated environment.
- The fourth lesson is that synthetic data can overcome scarcity of confidentiality of high-quality data, but that it is not trivial to create this data.

Bolster Quality Control process using AI technology



COMPANY	Undisclosed
CONTACT	Senior Project Manager: Gustavo Paz, PMP® AI Consultant/Developer: Joseph William
REGION	Europe
INDUSTRY	Intralogistic automation integrators (USD)
TEAM	Subject matter experts in QC, software engineers, mechanical engineers, AI experts (CV + ML) and project manager/scrum master
BUDGET	USD 101.000 - 500.000
TIMELINE	12 months, see details under development below

Goal

- Enhance the accuracy and efficiency of our defect detection processes, enabling us to identify and address issues more precisely and in a timelier manner.
- Reduce the overall cost of quality by minimizing the occurrence of defects and associated rework or product recalls.
- Mitigate the risks associated with human staffing at the manufacturing line, such as human error and variability in performance.
- Greater consistency and reliability in our operations while simultaneously optimizing resource utilization, through automatization.
- Enhancing product quality, and ensuring the long-term sustainability and competitiveness of our operations.

Problem description

The existing QC process is recognized as insufficiently scalable to meet the evolving production requirements effectively.

Several challenges within our quality control process:

- Pressing need for enhanced accuracy and efficiency, as well as the complexity associated with detecting subtle defects in our manufacturing components.
- Our existing quality control process heavily relied on human observation, with personnel typically trained specifically for each project.
- Each piece of equipment required assessment across 24 distinct quality check items, often at a rapid pace of up to 200 equipment per hour, this underscored the necessity for a more robust and scalable solution capable of delivering consistent and

Section Seven: Case Study Reporting

reliable results while streamlining our quality control procedures to meet the demands of our manufacturing environment.

Solution

- We deployed a machine learning-powered tool leveraging computer vision technology to conduct in-depth analysis and inspection of components for defects and anomalies.

Development: Combination

- We sourced off-the-shelf technology and customized it to develop a portable equipment solution for quality control. Over 12 months, our AI implementation journey progressed through planning, research, development, and integration into our quality control framework.
- During the initial phase, we created a prototype targeting 24 quality check items, validating 13 of them. Integration into our current processes was smooth, with comprehensive on-site testing validating practicality and effectiveness.
- Moving into the second phase, we aim to expand quality control coverage. Our diverse team reflects inclusivity, commitments and partnering with external AI providers accelerated development and deployment, enabling us to address challenges effectively.
- In summary, our journey involved customizing technology, testing prototypes, and smoothly integrating AI into our operations. We're now focused on broadening quality control coverage and leveraging diversity within our team. Collaborating with external partners has been instrumental in our success, allowing us to navigate challenges and deliver impactful outcomes efficiently.

Results

The AI implementation led to significant operational efficiencies and cost savings, achieving a positive return on investment within the first year. It improved product quality, reduced defects, and enhanced manufacturing efficiency, focusing on:

- Labor Efficiency: Targeting a 54% reduction in the QC team. Additional potential savings identified by optimizing QC workflows.
- Quality Assurance: Maintaining a 99% detection rate for QC item faults to ensure high-quality products.
- Speed of QC: Aiming for a 90% reduction in overall QC time, with expected QC time below 1 second, enhancing throughput.
- Safety Enhancement: Resource reduction improves workplace safety by reducing congestion for the QC team.
- Enhanced Product Quality: Striving to minimize operational disruptions and improve overall product quality, preventing issues like clashes and collapses.

Risks

- Upon identifying potential risks like network breaches, we promptly enacted stringent measures to mitigate such vulnerabilities. These precautions included offline systems, to fortify our network security and minimize the likelihood of breaches.
- Additionally, we proactively addressed concerns surrounding privacy implications associated with the AI implementation, through careful planning and adherence to privacy protocols.
- By adopting offline solutions and adhering to privacy best practices, we bolstered the resilience of our systems against potential threats while simultaneously safeguarding the privacy and confidentiality of sensitive data. As a result, we were able to successfully navigate the complexities of AI implementation without compromising on security or privacy standards, thereby instilling confidence in our stakeholders and in our organization's commitment to maintaining the integrity and security of our operations.

Training

- In the concluding phase, we will execute a technology exchange strategy aimed at equipping various stakeholders with the necessary skills to effectively operate, maintain, and advance the AI solution. This strategy will encompass hands-on workshops and online resources designed to provide comprehensive training and support. Through these initiatives, the stakeholders will gain practical experience and knowledge in utilizing the AI solution, empowering them to address operational challenges, perform routine maintenance tasks, and explore opportunities for innovation and enhancement. The goal is to foster a collaborative and informed ecosystem where stakeholders can actively engage with the AI solution, driving continuous improvement and maximizing its long-term value and impact.

Lessons Learned

- During our AI implementation's second phase, insights emphasized data quality, stakeholder engagement, and maintenance. Combining ML with CV for quality control presents organizational and technical hurdles, especially in non-Agile operational environments. Hybrid approaches and coaching techniques enhanced stakeholder engagement.
- Managing client expectations amid excitement over cutting-edge tech requires balancing enthusiasm with realism. Transparency, collaboration, and adaptability ensure overcoming obstacles and delivering impactful results.
- Organizations planning AI implementations must prioritize stakeholder engagement and workforce development to understand technology benefits and drawbacks. Starting with a proof of concept in targeted use cases garners attention and senior management buy-in. Cultivating a culture of continuous learning is vital for successful AI integration.

Section Seven: Case Study Reporting

- Investing in tailored training programs empowers employees to embrace new technologies. Clear communication channels and feedback opportunities align project objectives with stakeholder expectations, fostering commitment. Prioritizing stakeholder engagement and workforce up-skilling lays a solid foundation for successful AI implementation and sustainability.

Closing remarks

Closing Remarks

In conclusion, the evidence presented strongly indicates that artificial intelligence is not merely a passing trend but an indispensable tool shaping the future of project management. As demonstrated through various lenses including insights from research companies, user surveys and real-world case studies, not to forget all project manager representatives around the world, all agree that AI can positively increase labor productivity and project success. The evolving landscape of project management will witness significant shifts in the roles and responsibilities of project managers, as AI takes on routine tasks, offers predictive insights, and enhances decision-making capabilities. Rather than replacing human intuition and expertise, AI serves as a powerful ally, augmenting project management capabilities and enabling professionals to focus on high-level strategic initiatives.

Implementing AI into project management strategies requires a thoughtful approach, encompassing considerations such as data quality, integration with existing systems, and cultural readiness within the organization. It's not merely a matter of adopting new technology but rather a strategic transformation that aligns AI capabilities with organizational objectives and fosters

a culture of innovation and adaptability.

The results from the user survey underscore the growing acceptance and enthusiasm for AI among project management practitioners. Respondents acknowledge the potential of AI, among other factors, with 58% noting its ability to notably increase efficiency and productivity, 48% recognizing its capacity to improve decision-making, and 39% acknowledging its potential to enhance collaboration and communication. Furthermore, case studies provide tangible evidence of AI's efficacy in driving efficiencies, mitigating risks, and delivering tangible value across diverse industries and project contexts.

As we navigate the AI-powered future of project management, it's imperative to approach this transformation with a blend of technological prowess, human ingenuity, and organizational agility. Embracing AI is not merely a choice but a necessity for organizations seeking to thrive in an increasingly complex and competitive landscape. In essence, the journey toward AI-enabled project management represents an opportunity for innovation, collaboration, and continuous improvement. By harnessing the transformative power of AI, organizations can unlock new possibilities, drive sustainable growth,

Closing Remarks

and deliver unprecedented value to stakeholders.

In closing, let us remember that the true essence of AI in project management lies not in its technological prowess alone but in its ability to empower individuals, catalyze innovation, and redefine the future of work. As we embark on this journey, let us embrace the possibilities, chart new horizons, and collectively shape a future where AI and human intelligence converge to achieve remarkable outcomes.

Marly Nilsson, PMI Sweden

Appendices

A. List of Abbreviations

AI	Artificial Intelligence
COP	Community of Practice
CS	Consent Statement
GenAI	Generative Artificial Intelligence
HBR	Harvard Business Review
KPI	Key Performance Indicator
NLP	Natural Language Processing
PMI	Project Management Institute
PM	Project Manager
PMP	Project Management Professional
PMO	Project Management Office
ROI	Return on Investment
SaaS	Software as a Service

B. Additional examples to learn AI in practice - Complement to Section Six

Online Courses and Tutorials: Many online platforms offer interactive courses and tutorials that include hands-on exercises and projects. These courses often provide datasets, coding environments, and guided instructions to help you apply theoretical concepts in practice. Examples include Coursera, Udacity, and edX.

Kaggle Competitions: Kaggle hosts data science competitions where participants can compete to solve real-world problems using machine learning and AI techniques. Participating in Kaggle competitions allows you to work with real datasets, compete against others, and learn from community solutions and discussions.

Open-Source Projects: Contribute to open-source AI projects on platforms like GitHub. By collaborating with others on real-world projects, you can gain practical

experience in AI development, version control, code review, and best practices. Look for beginner-friendly projects or issues labeled "good first issue" to get started.

Personal Projects: Start your own AI projects to explore topics that interest you. Choose a problem to solve, gather data, and apply AI techniques to develop models and solutions. Personal projects allow you to work at your own pace, experiment with different approaches, and showcase your skills to potential employers.

Internships and Apprenticeships: Seek internships or apprenticeships at companies or research institutions working in AI. Internship programs often provide opportunities to work on real projects under the guidance of experienced mentors, gaining valuable practical experience and industry insights.

Hackathons and Meetups: Participate in AI hackathons, coding challenges, or local meetups to collaborate with others and work on time-constrained projects. These events provide opportunities to network with professionals, learn from peers, and gain hands-on experience in a collaborative environment.

Capstone Projects: Many educational programs, such as bootcamps and university courses, include capstone projects where students work on real-world AI projects from start to finish. Capstone projects allow you to apply your theoretical knowledge in a practical setting and showcase your skills to potential employers.

Mentorship and Peer Learning: Seek mentorship from experienced professionals or engage in peer learning communities where you can ask questions, share insights, and collaborate on projects. Learning from others' experiences and feedback can accelerate your learning and help you gain practical insights into AI.

C. Case Study Template and Survey Questionnaire

The case study template can be downloaded [here](#).

A request for the complete survey questionnaire can be submitted [here](#).

D. Contributor contact details

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Madina Baizhanova	Author	https://www.linkedin.com/in/mbaizhanova/
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