



# NAVIGATING THE AI LANDSCAPE

ESSENTIAL INSIGHTS  
FOR PROJECT MANAGERS

MAY 2024

*Backed by data gathered from  
2,314 Project Managers worldwide!*



# TABLE OF CONTENTS

Topic	Page
Introduction: Objectives with the Presentation Deck, and How to Use it	3 - 6
Key Milestones in the AI Project Management Initiative	6 - 8
The Enduring Impact of Artificial Intelligence	9 - 13
Key Insights from AI Tools in Project Management Survey	14 - 18
Enhancing Project Management with AI	19 - 21
Strategic and Operational Integration of AI in Project Management	22 - 27
Comprehensive Learning Resource for AI in Project Management	28 - 30
Insights from Global Survey: Hypothesis and Findings	31 - 52
Exploring AI Solutions: Categories and Case Studies	53 - 91
Future Horizons: Evolving Project Management in the AI Era	92 - 97
Gratitude and Acknowledgement: Celebrating Support for Our Initiative	98 - 99



# Our Objective

*Empowering Project Managers with a comprehensive AI transformation guide. This strategic toolkit enhances project management capabilities through AI insights and methodologies.*

***Marly Nilsson, Project Lead and Author, AI in PM Project, PMI Sweden***



**Marly Nilsson**  
Program  
Director  
& Lead Project  
Manager and  
author  
'AI in Project  
Management'  
Reports



**Katarina  
Strömberg**  
Chapter  
President  
& Sponsor, 'AI  
in Project  
Management'  
project

## Empowering Project Managers: - A Dynamic Presentation Deck for AI Transformation

The PMI Sweden Chapter is proud to finalize the AI in PM project by delivering a presentation deck designed to empower project managers on their transformative journey with AI in project management. This deck, a robust support system, draws insights from two key sources: the comprehensive global reports 'AI in Project Management', derived from a survey encompassing 2,314 respondents, and 'Navigating AI in Project Management'.

With nine distinct sections, the deck offers flexibility, enabling speakers to tailor the content to the specific focus of their presentation. It is ideally complemented by interactive sessions or workshops, fostering engagement and enhancing learning outcomes. As we embrace the possibilities of AI integration, let us remember that the true power lies not just in the technology itself, but in how we harness it to drive positive change and innovation in project management.



# Embrace the Future of Project Management with AI

## ***Catalyze Your Vision:***

Every journey begins with that pivotal first step — dare to take it.

## ***The New Standard:***

The data is in; AI's transformative power is irrefutable.

## ***Lead the Change:***

Stay ahead, innovate, and thrive — there's no room for complacency.

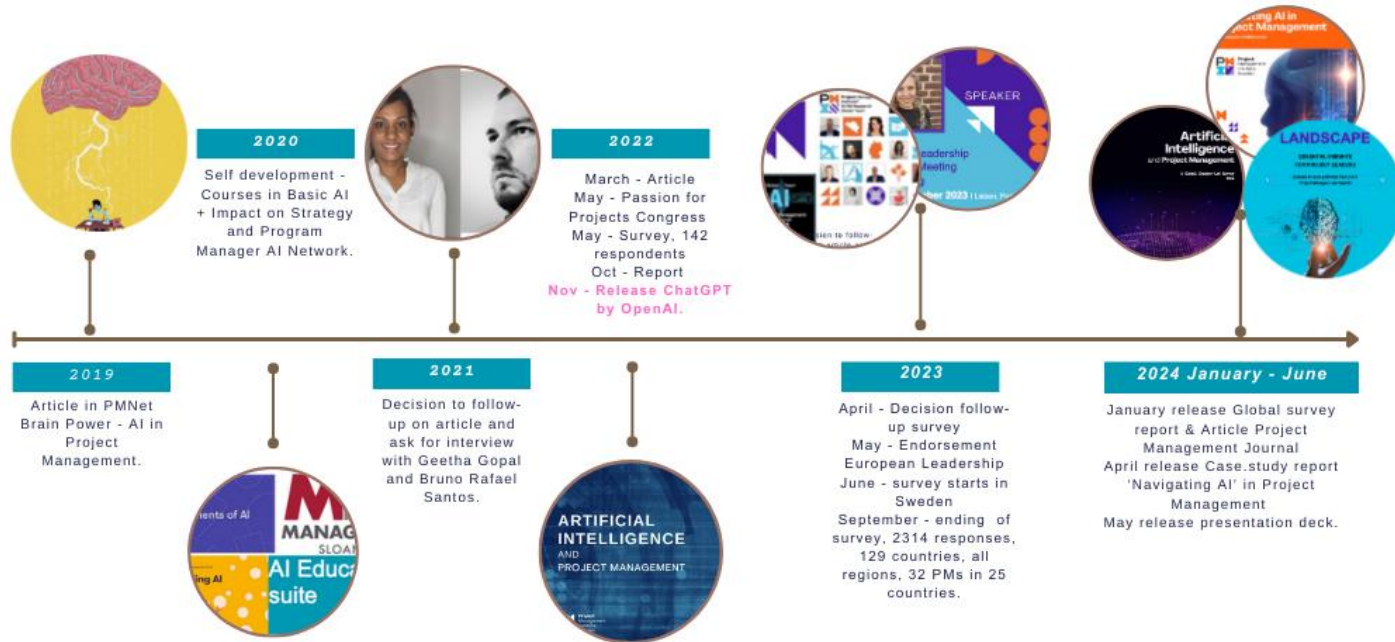
## ***Incremental Progress, Monumental Outcomes:***

Each small step in AI adoption can lead to significant breakthroughs.

**Start Your AI Success Journey Today!**



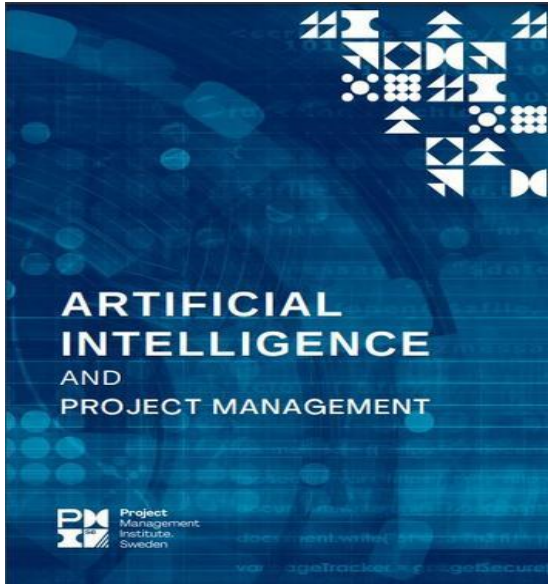
# Key Milestones in the AI Project Management Initiative



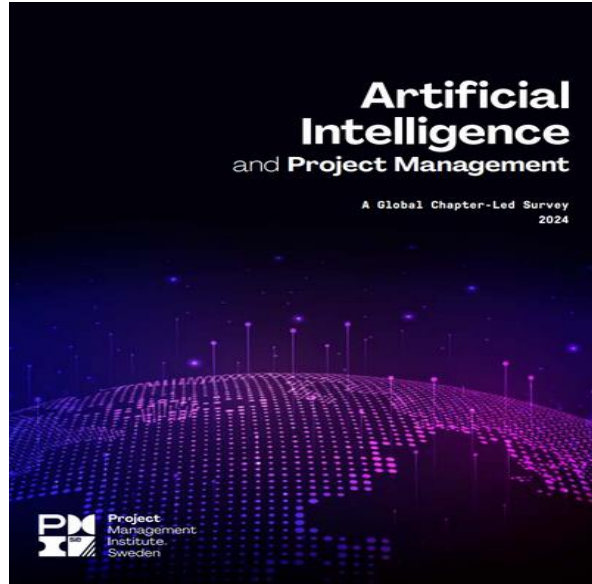


# AI and PM Survey Project

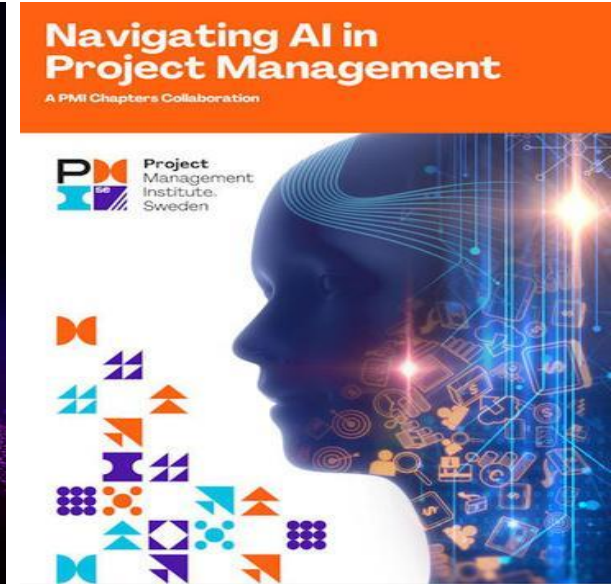
Explore, download, and deepen your knowledge with these available project deliverables — your gateway to mastering AI in project management



[Artificial Intelligence and Project Management 2022](#)



[Artificial Intelligence and Project Management – A Global Chapter-led Survey 2024](#)



[Navigating AI in Project Management – A PMI Chapters Collaboration 2024](#)

# PROJECT SUCCESS METRICS

## 'AI in Project Management Global Chapter-led Project'



### INCREASED AWARENESS

BOOSTED GLOBAL RECOGNITION AND UNDERSTANDING OF AI'S ROLE IN PROJECT MANAGEMENT.



### RESEARCH REPORTS PUBLISHED

DELIVERED COMPREHENSIVE INSIGHTS THROUGH 3X PIVOTAL PUBLICATIONS ON AI INTEGRATION IN PROJECT MANAGEMENT.



### GLOBAL COLLABORATION

FOSTERED A GLOBAL NETWORK OF KNOWLEDGE-SHARING AND EXPERTISE THROUGH CROSS-CHAPTER COLLABORATION.  
27 PMI CHAPTERS FROM 25 COUNTRIES.



### ARTICLES & WEBINARS

EXPANDED THE REACH OF AI IN PM THROUGH THOUGHT LEADERSHIP ARTICLES AND ENGAGING WEBINARS.



### LINKEDIN COMMUNITY

CREATED A DYNAMIC PLATFORM FOR CONTINUOUS LEARNING AND DISCUSSION AMONG AI IN PM ENTHUSIASTS.



### EDUCATIONAL ADVANCEMENT AND RESEARCH INFLUENCE

INSPIRED RESEARCH EFFORTS, ENRICHING ACADEMIC LITERATURE, AND INTEGRATED INTO MBA PROGRAMS, ENHANCING EDUCATIONAL FRAMEWORKS.



### THOUGHT LEADERSHIP

ARTICLE AND PODCAST WITH PM JOURNAL OUTLINING FUTURE RESEARCH TOPICS AND GUIDELINES FOR AI STUDIES IN PROJECT MANAGEMENT. BOTH "AI IN PM" REPORTS ARE AVAILABLE ON AI SWEDEN'S 'MY AI PORTAL'





# The Enduring Impact of Artificial Intelligence



# AI: Catalyst for Project Success & Market Growth

---



Image by Freepik

- Huge potential: Increasing project success by using AI in Project Management
- Market size AI in Project Management Software & Services expected to triple by 2030
- Research Institutes: AI boosts productivity, and ensures project success
- AI will impact the Project Manager role and transform the Ways of Working

# Benefits driving the market growth of AI in Project Management

---



Image by raw pixel.com on Freepic

- Enhanced Efficiency with AI Integration - Automation Benefits
- Data Analysis Empowerment
- Intelligent Assistance & Decision Support
- Optimized Planning & Resource Management
- Proactive risk Management
- Enhanced Collaboration and Communication

# Possible Risks & Implications Integrating AI into PM

Risk	Possible AI Risk Implications
AI algorithms may inherit biases from historical data.	This can lead to biased decision-making, unfair resource allocation, and discriminatory project prioritization in project management.
AI's reliance on data quality.	If project data is incomplete, inaccurate, or outdated, then it can lead to unreliable AI results, flawed predictions, decisions, and hinder project outcomes.
Over-reliance on AI in decision-making.	Can lead to suboptimal outcomes if AI recommendations are followed blindly.
Ethical concerns arise when AI suggests actions that harm stakeholders or violate privacy	This may conflict with ethical principles or organizational values and potential challenges in project management decision-making
AI systems vulnerable to attacks, data breaches, and privacy violations	Inadequate security measures may risk exposing sensitive project information, disrupting operations, and posing significant threats to project management
Evolution of project management roles due to AI automation	Some manual tasks may be replaced by AI, impacting job roles.
Resistance to AI adoption	Resistance from stakeholders may hinder adoption due to concerns about opacity, centralization, AI reliance, and economic inequality.



# AI Risk Mitigation in Project Management

Risk	Proposed AI Risk Mitigation
Biased AI algorithms	Regular auditing and monitoring of AI models for biases
AI's reliance on data quality	Implement robust data governance
Over-reliance on AI in decision making	Maintain human oversight
Ethical dilemmas	Develop and adhere to an ethics framework
Security vulnerabilities	Implement robust cybersecurity measures
Evolution of project management roles	Provide skills development for new roles
Resistance to AI adoption	Provide change leadership



# Key Insights from AI Tools in Project Management Survey







# AI TOOLS IN PROJECT MANAGEMENT Survey

## OBJECTIVE

To explore AI's applications in project management and gather specific examples to promote its adoption. This involves examining both standalone AI tools and AI features integrated into existing project management solutions.

## METHODOLOGY

The survey aimed to cover

1. Respondent profiles
2. AI usage in project management
3. Tool management, including data quality assurance, governance, and policies
4. Evaluation of tool usage, such as KPIs
5. Concerns, challenges, and limitations
6. Future outlook

## DATA COLLECTION

The survey was publicized in the PMI Community, on Social Media, and on LinkedIn. The 300+ responses were collected online using Google Forms from February 9th to March 1st, 2024.

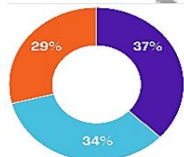
## DATA ANALYSIS

Data were analyzed in Excel. Pre-provided responses were represented using percentages, while free-text responses were analyzed qualitatively to identify themes and extract valuable insights. Percentages were rounded to the nearest tenth for ease of understanding.

## Respondent Profile



303 responses from 70 countries



77% male



82% are PMI Members

83% have Project Management certifications



63% have 11+ years of work experience



40 industries represented



22% IT services



13% Consulting



10% Infrastructure & Construction



52% have basic knowledge of AI concepts & tools

## 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

Source: Navigating AI in PM Report: Co-authors: Lavanya Vijayaraghavan, Madina Baizhanova



### **Zach Curry, N America**

AI has helped identify risks that would have either been identified later or not at all until they were realized.



### **Cezar Meriguetti, Latin America**

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 objectives of the project generating schedule activities, mapping risks, qualifying them and suggesting answers. Giving recommendations for the problems and suggesting answers, indicating lessons learned from the company's knowledge base, and so on at every stage of the project.



### **Graziella D'Amico, Europe**

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.



### **George Allingham, Australia**

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.



### **Anteneh Desalegne, Africa**

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





# Enhancing Project Management with AI



# Examples of How AI Can Augment the Project Manager

Successful AI integration in project management involves automating tasks and enhancing decision-making, ultimately augmenting the project manager's capabilities and empowering better leadership.

- Automate routine tasks
- Support as virtual project assistants
- Act as a writer and coach
- Automatic translation for messages, documents
- AI-driven analytics



# Project Manager Future Role

The integration of AI is already underway, revolutionizing Project Manager roles by automating tasks and liberating valuable time for more strategic endeavors.

- Shift focus to strategic, long-term project goals
- Enhanced leadership & interpersonal skills required
- Understanding of AI technology and application skills
- Team coaching: guide, mentor, and lead teams to project success
- Portfolio management and resource allocation
- Continuous learning and unlearning



# Strategic and Operational Integration of AI in Project Management



## Crafting AI Policy & Strategy Step by Step Approach



*Today's tech relies on AI for efficiency and innovation, but risks like data breaches and IP loss are significant. A strong AI policy and strategy are crucial for ensuring compliance and protecting assets to drive sustainable growth.*

1. Assess Potential: Evaluate benefits and risks of AI integration
2. Develop robust AI policy to mitigate data breaches, IP loss.
3. Create comprehensive AI strategy aligning with organizational objectives
4. Ensure compliance: Align AI initiatives with regulations, industry standards.
5. Enforce robust data protection policies and intellectual property protocols to safeguard assets from potential threats.
6. Utilize AI strategy to steer decision-making processes and optimize AI integration for maximum benefits.
7. Incorporate bias mitigation to ensure fair AI use in decision-making.

## Benefits of Integrating AI into *Overall* Strategy



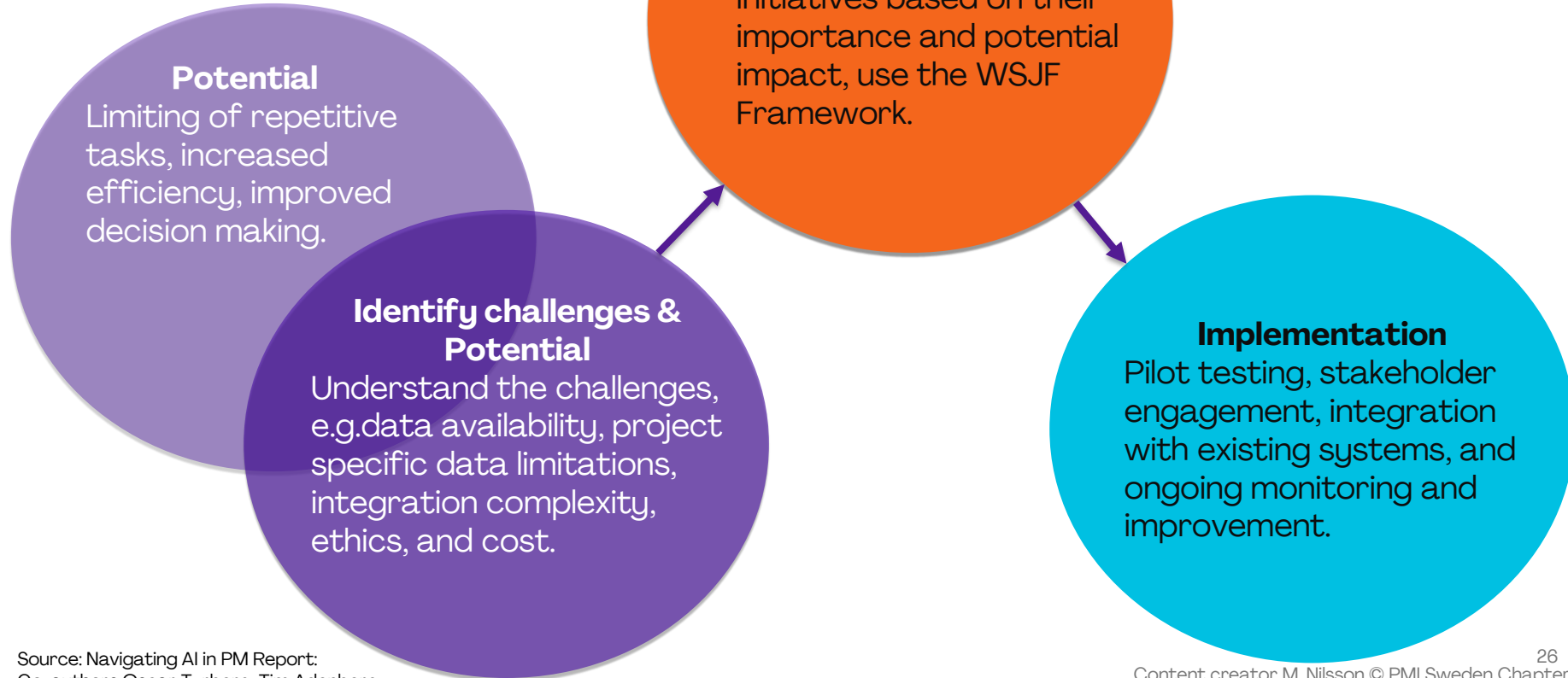
- Boost Operational Efficiency
- Enhance strategic decision-making
- Drive comprehensive AI strategy
- Integrate AI's advanced analytical methodologies for success
- Alignment: Integrate AI to align project management with strategic objectives.
- Purpose: Leverage AI to benefit the organization, stakeholders, and wider community

# Benefits of Integrating AI into overall PMO Strategy



- Streamlined PMO Operations
- Focused Resource Management
- Targeted Outcomes Optimization
- Strategic Focus
- Project-Centric Collaboration
- Execution Precision

# AI Integration in Project Management: A Guide to Success





# Success factors

## COLLABORATION APPROACH

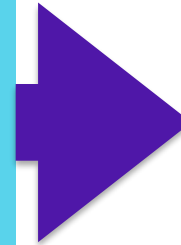
- Unify project and data teams for effective leveraging of domain expertise and technical capabilities.

## ITERATIVE REFINEMENT

- Continuously improve AI solutions through iterative cycles
- Incorporating feedback and
- Adapting to evolving project needs.

## START SMALL STRATEGY

- Begin with manageable AI initiatives
- Rapidly iterate to demonstrate value, and
- Ensure long-term success by building organizational awareness.



## CONCLUSION

- Prioritize proactive planning and strategic alignment for successful AI integration in project management.
- Stress ongoing refinement and adaptation to sustain success in AI-driven project management initiatives.



# Comprehensive Learning Resource for AI in Project Management





# LEARNING PATHWAYS

## Accelerate Your AI Mastery

### Practical Experience

Gain invaluable hands-on expertise through active involvement in AI-enhanced projects.

### Case Study Analysis

Deepen your understanding by examining real-life applications and outcomes in extensive case studies.

### Professional Insights

Learn from seasoned professionals and industry leaders who share their strategies and experiences with AI in PM.

### Tool Exploration

Experiment with cutting-edge AI tools and platforms that are redefining project management efficiencies.

### Educational Events

Participate in interactive workshops, webinars, and events dedicated to AI advancements in project management.

### Structured Learning

Advance your skills with specialized online courses, including AI-focused sessions on LinkedIn Learning and other platforms.

### Peer Networking

Join AI in PM LinkedIn groups and forums to exchange knowledge and best practices with peers.

### Mentorship Opportunities

Seek mentorship from AI experts in project management for personalized guidance and growth.

### Industry Certifications

Pursue recognized certifications in AI for project management to validate your expertise and commitment to the field.

### Research Publications

Stay updated with the latest findings by reading scholarly articles and industry reports on AI's impact in PM.



# PMI and Artificial Intelligence



[Explore Artificial Intelligence in Project Management](#)



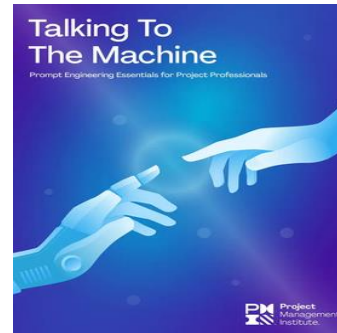
[Generative AI Overview for Project Managers](#)



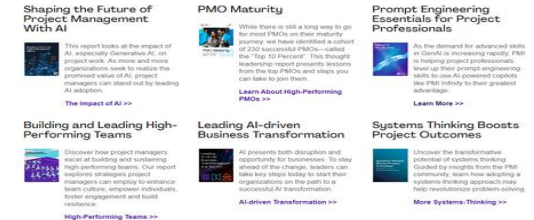
[Data Landscape of Gen AI for Project Managers](#)



[PMI Infinity - AI-powered assistant for project professionals.](#)



[Talking to the Machine - Prompt Engineering Essentials for Project Professionals](#)



[Featured Insights from PMI's Thought Leadership](#)

# Insights from Global Survey: Hypotheses and Findings





# AI IN PROJECT MANAGEMENT Global Survey

## OBJECTIVE

The mission with this survey is for the PMI Chapters around the world to find out where the members are on the AI technology adoption life cycle and in this way build a strategy on the best way to support the members on their AI transformation journey.

## METHODOLOGY

Survey designed to cover following domains:  
Demographic & Geographic Information of the audience

- AI Maturity: familiarity with AI tools & techniques
- AI Deployment: How integrating to organizations
- Experience in AI Projects
- Case studies; opportunity to share hands-on experience.

## DATA COLLECTION

The survey ran from June 1st to September 30th, 2023, targeting PMI members and professionals in project management roles. It was conducted online, reached PMI members and the project management community through newsletters, webinars, and social media, including LinkedIn, resulted in 2300+ respondents

## DATA ANALYSIS

We utilized Excel for statistical analysis, focusing on percentages for data interpretation. Graphs were created using Excel and Power BI. We employed a 10-point scale for evaluation, considering ratings of 7 or higher as high and 4 or lower as low. Chart data is approximate and rounded, allowing for minor deviations.





# Hypotheses

*Before conducting the follow-up on the AI in Project Management survey, we formulated several hypotheses. These guided our data collection, survey design, and analysis, ensuring objectivity and clarity in communicating our research goals and findings. The following section details our hypotheses, the analysis of the findings, and expert conclusions.*



# Hypothesis 1.

**AI adoption is still in an early phase, but it's picking up!**

*By comparing 2022 and 2023 results, AI in Project Management surveys in Sweden, we hope to gauge ChatGPT's impact on AI maturity, recognizing AI adoption's early but growing phase.*

- **Increasing AI Awareness and Impact:**

Surveys show a rise in AI impact awareness in project management, with high impact recognition increasing from 40% in 2022 to 66% in 2023, and fewer respondents reporting no AI knowledge (26% in 2022 to 16% in 2023)

- **Shift in Key Skills Importance:**

There's a notable shift in the importance attributed to key skills. An innovative mindset is now crucial, as routine tasks are delegated to AI, allowing professionals to focus on creativity and complex problem-solving. Additionally, the emphasis on AI ethics underscores the need for responsible integration, impacting stakeholders positively.

- **Lagging Organizational AI Implementation:**

Organizational implementation of AI has stagnated, with fewer projects in production/deployment in 2023, reflecting global trends of low AI maturity and insufficient training and recruitment efforts.

**Hypothesis is supported but to a limited extent!**

# Hypothesis 1.

## Comments on findings from AI Experts

**Conny Svensson, Director AI Adoption  
AI Sweden**

**Britta Duve Hansen, Senior Project  
Manager in Tech, Mobile Heights**

**Fredrik Hofflander, CTO, Eghed**

- **AI Adoption and Usage:**

The focus has shifted from why AI is important to how and where to use it. Tools like ChatGPT enhance task quality and efficiency, and project managers are expected to use generative AI tools to avoid underperformance.

- **Skills and Ethical Considerations:**

An innovative mindset is essential, as AI takes over routine tasks, allowing professionals to focus on creativity and complex problem-solving. AI ethics are critical for responsible integration, benefiting customers, partners, and employees.

- **Organizational Maturity and Challenges:**

Despite growing awareness, AI implementation lags due to the need for strategic changes in leadership, culture, and skill development. Addressing legal and ethical concerns and focusing on data-driven insights are crucial for aligning AI with project goals and improving efficiency.

## Hypothesis 2.

*Market research analysis will unveil regional differences in AI adoption stages, exploring governmental initiatives, legislation, and educational endeavors fostering AI utilization.*

### ● **Global Determination in AI Adoption:**

- Well-defined AI strategies and increased investments in AI education and research are evident.
- Rising adoption of AI in public services reflects a global trend towards embracing AI.

### ● **Disparity in AI Maturity Across**

- Despite global acknowledgment of AI's importance, organizations across regions lag in adoption.
- Latin America shows a more balanced AI maturity rating.
- Regional variations exist in efforts towards training and implementing AI projects.

### ● **Urgent Action Needed:**

- Organizations worldwide must accelerate AI initiatives.
- Address gap between recognition and action.
- Invest in talent, training, and project acceleration.

**Supported!**

## Hypothesis 3.

*Assumption: AI-lagging organizations may struggle to attract talent in the digital economy amidst AI's early but increasing adoption.*

## Conclusion: Complex Relationship Between Project Managers and AI Adoption

- **Profile of Respondents:** Majority are trained project managers under PMI framework, seeing themselves as change agents.
- **Uncertainty about Employee Loyalty:** Highlighted by significant 'Maybe' responses in considering alternatives to proposing new projects.
- **Trust in Leadership and Innovation:** Interact in driving project proposals, needing further examination.

**Least supported: Survey reveals a nuanced landscape regarding project managers' attitudes toward AI adoption and loyalty to employers. Organizations must remain vigilant and prioritize factors deemed crucial in the AI era.**

## Hypothesis 4.

*The project management community recognizes specific AI skills as crucial for maintaining a competitive edge, with the analysis revealing the skills deemed necessary and methods for acquiring them.*

Source: AI in Project Management Report 2024  
Hypothesis formulation: Lead author Marly Nilsson  
Analysis: Co-author Lavanya Vijayaraghavan

## Strong Support for Investigating New Technologies

- **Recognition of Importance:** Survey responses from all regions acknowledge the need to investigate and leverage new technologies, especially AI.
- **PMI Background:** Project managers with PMI background, driven by the principle of continual development, naturally incorporate AI into their learning mix.
- **Widespread Recognition:** High support across all regions highlights the widespread acknowledgment of the significance of embracing new technologies, including AI, in project management.

**Supported: All regions scored very high in support of this hypothesis.**

# Global Market Research Findings



## **The Global State of Artificial Intelligence**

- Gen AI revolutionizes industries by 2023, 80% orgs to adopt by 2026.
- Businesses adapt, prioritize workforce re-skilling.
- Global collaboration crucial for cybersecurity, environment.
- Shared responsibility from orgs to govts and society.

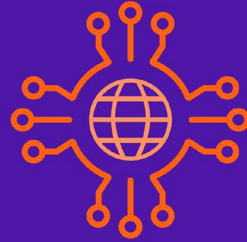
## **Countries leading AI adoption in Project Management Globally**

- Countries leading AI adoption in project management have diverse strengths, making comparisons complex and context-dependent.
- Our survey received responses from 129 countries, illustrating widespread global interest in AI beyond traditionally cited leaders.

# Global Results

AI IN PROJECT MANAGEMENT

## Key Findings Global Report



### PARTICIPANTS



**84%** of participants are members of PMI Global and/or PMI Local chapters



**74%** are PMP certified.

**83%** of participants hold Bachelor or Master of Science degree.



More than **62%** are equally distributed in 35-44 and 45-54 age ranges.

**71%** of respondents are males.



**48** industries represented. However, **IT Services** stand out as the most prevalent.



### TOP 3

#### AREAS MOST IMPACTED BY AI

Data Collection and Reporting



Performance Monitoring



Project Time Management & Scheduling





# Africa Market Research Findings



## AI maturity in the African Region

- Top nations Mauritius, Kenya, Egypt, and Nigeria recognize AI's potential, crafting strategies to address the digital skills gap.
- Initiatives include the African Union Artificial Intelligence Continental Strategy and Nigeria's National Digital Economy Policy.
- Bodies established like Egypt's National Council for AI and Nigeria's National Centre for AI & Robotics.

## AI Leadership Across Regions

- Quartz article (June 2022) identifies South Africa, Kenya, Egypt, and Nigeria as AI leaders in Africa's key regions.
- Despite leadership, many African nations encounter challenges like limited statistical capacity, infrastructure, and governance, these challenges hinder AI development across the continent.

# Artificial Intelligence in Africa

AI IN PROJECT MANAGEMENT

## Key Findings Africa



### PARTICIPANTS



**82%** of participants are members of PMI global and/or PMI local chapters



**70%** are PMP® certified.

**86%** of participants hold Bachelor or Master of Science degree.



### Millennials

Majority of respondents are from the 35-44 age group.

**38%**

**4 in 5**

of respondents are males.



**32**

industries represented.

**IT Services** and **Construction** stand out as the most prevalent.



### TOP 3 AREAS MOST IMPACTED BY AI

Data Collection and Reporting



Performance Monitoring



Project Time Management & Scheduling



# Asia Market Research Findings



## AI Maturity in the Region

- Asia's AI growth fueled by education and initiatives. Primary schools in China, Singapore, Kazakhstan integrate AI.
- National programs like Digital India and "AI for Everyone" boost AI literacy. Qatar's QCRI Centre for AI enhances digital skills.
- China leads with 29,853 AI patents.
- AI applied from traffic regulation in China to disaster management in Japan.
- Ethical concerns rise, but regulations lag in Asia.

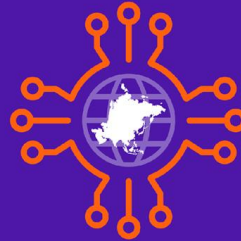
## AI Leadership in Asia: Opportunities & Challenges

- Asia is emerging as global AI leader. Singapore ranks 2nd in Oxford Insights Government AI Readiness Index 2022. Republic of Korea, Japan also in top 10.
- Four Asian nations among top 10 in Wiley's Digital Skills Gap Index (DGSi) 2021.
- AI adoption varies across Asia, some regions excel, others in early stages.

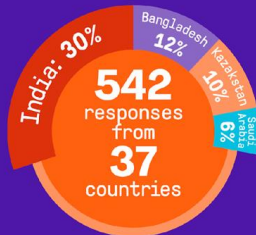
# Artificial Intelligence in Asia

AI IN PROJECT MANAGEMENT

## Key Findings Asia



### PARTICIPANTS



**79%** of participants are members of PMI global and/or PMI local chapters



**74%** are PMP® certified.

**81%** of participants hold Bachelor or Master of Science degree.



### Gen-Xers

Majority of respondents **45%** in 35-44 year old age group.

**83%**

of respondents are males.



**40**

industries represented. **IT Services** most common at 25%.



### TOP 3

#### AREAS MOST IMPACTED BY AI

Data Collection and Reporting



Performance Monitoring



Knowledge Management



# Europe Market Research Findings



## **Advancing AI in Europe: Opportunities & Challenges**

- Europe sees surge in AI adoption.
- Utilizes diverse linguistic, cultural landscape, strong talent pool, thriving sectors.
- Reports from McKinsey and Microsoft highlight AI's potential to revolutionize various industries in Europe.
- Majority of European companies in planning or early pilot phases. Only 28% selectively adopted AI.
- Survey shows significant room for growth in AI applications.

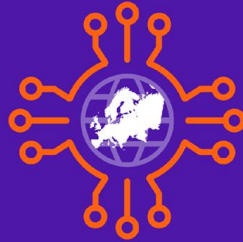
## **Leading AI Adoption in Europe: Private & Public Sectors**

- Denmark, Portugal, Finland, Luxembourg, & the Netherlands lead AI implementation in European private sector (Eurostat).
- Large enterprises use AI more extensively than small and medium-sized enterprises.
- Western Europe ranks second globally in 2022 Government AI Readiness Index.
- UK, Finland, and France lead the region, AI Readiness Index
- Close scores within regions indicate regional collaboration on AI readiness.

# Artificial Intelligence in Europe

AI IN PROJECT MANAGEMENT

## Key Findings Europe



### PARTICIPANTS



**83%** of participants are members of PMI global and/or PMI local chapters.

**71%** are PMP® certified.

**81%** of participants hold Bachelor or Master or Science degree.

### Gen-Xers

Majority of respondents

**32%** in 45-54 year old age group.

**2 in 3** of respondents are males.



**45** industries represented. However, **IT Services** stand out as the most prevalent.



### TOP 3

#### AREAS MOST IMPACTED BY AI

Data Collection and Reporting



Performance Monitoring



Knowledge Management



# Latin America Market Research Findings



## Advancing AI in South America: Progress & Challenges

- South America that have developed or are developing national AI strategies have made significant strides in strategizing for and experimenting with AI in the public sector
- Nearly 50% of countries lack known complete or forthcoming strategies, highlights regional divide in AI maturity.

## AI Leadership in Latin America: Trends & Insights

- Chile leads in artificial intelligence (AI) in South America according to the first edition of ILIA (Indice Latinoamericano de Inteligência Artificial) published in 2023.
- Chile, Brazil, Colombia, Uruguay, and Argentina consistently rank high in ILIA and Government AI Readiness Index 2022.
- ILIA highlights the region's lag in technological skills related to AI compared to the global average.

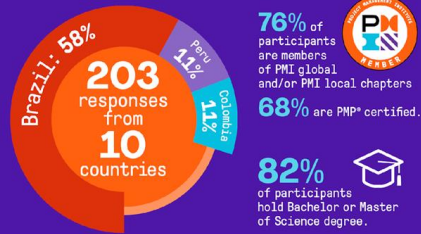
# Artificial Intelligence in Latin America

AI IN PROJECT MANAGEMENT

## Key Findings Latin America



### PARTICIPANTS



**76%** of participants are members of PMI global and/or PMI local chapters



**68%** are PMP® certified.

**82%** of participants hold Bachelor or Master of Science degree.



### Gen-Xers

Majority of the respondents are from the 45-54 age group.

**8 in 10** of respondents are males.



**33** industries represented. However, **IT Services** stand out as the most prevalent



### TOP 3

#### AREAS MOST IMPACTED BY AI

Data Collection and Reporting



Performance Monitoring



Risk Management





# North America Market Research Findings



## AI Revolution in North America: Trends & Impact

- North America leads in AI, capturing 56% of global market share (2023 – 2027, Technavio). Region hosts over 60% of global AI research papers.
- AI increasingly integrated into project management, optimizing workflows and outcomes. Adoption of AI tools drives efficiency and success in project management practices.

## Dominance of North America in the Global AI Market

- North America, led by the United States, dominates global AI market (Fortune Business Insights).
- IBM and Microsoft Corp. drive innovation for evolving user needs.
- Canada shows strong growth potential, prioritizing AI research, talent, and government support. Studies support these findings, with significant responses from US and Canada.

# Artificial Intelligence in North America

AI IN PROJECT MANAGEMENT

## Key Findings North America



### PARTICIPANTS



92% of participants are members of PMI global and/or PMI local chapters



81% are PMP® certified.

84% of participants hold Bachelor or Master of Science degree.



Majority of the respondents are males. 61% of respondents are males.

34% are from the 45-54 age group.



44 industries represented. However, IT Services stand out as the most prevalent



### TOP 3

#### AREAS MOST IMPACTED BY AI

Data Collection and Reporting



Performance Monitoring



Project Time Management & Scheduling



# Oceania Market Research Findings



## AI maturity in Oceania

- Australia leads Oceania in AI maturity, with 22% of research globally ranked.
- Education initiatives like the Next Generation Graduates Program support upskilling.
- AI integration in Australian businesses yields revenue benefits & time savings.
- Challenges include reliance on global providers and lack of sovereign computing solutions.
- Efforts like the AI Ethics Framework promote ethical AI use.

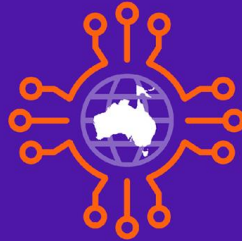
## Leading AI Adoption in Oceania

- Australia ranks 8th globally on Governmental AI Readiness Index 2022. Previously 33rd on Digital Skills Gap Index.
- New Zealand follows closely, ranking 28th on AI Readiness Index and 30th on DGSI.

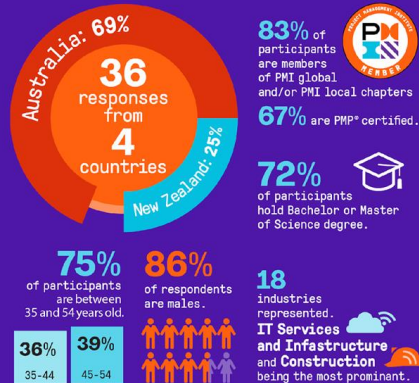
# Artificial Intelligence in Oceania

AI IN PROJECT MANAGEMENT

## Key Findings Oceania



### PARTICIPANTS



### TOP 3 AREAS MOST IMPACTED BY AI

Data  
Collection  
and Reporting



Performance  
Monitoring



Knowledge  
Management





# Exploring AI Solutions: Categories and Case Studies

*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.*

***This following section of the presentation deck contains 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.***





# AI Solution Categories - Descriptions

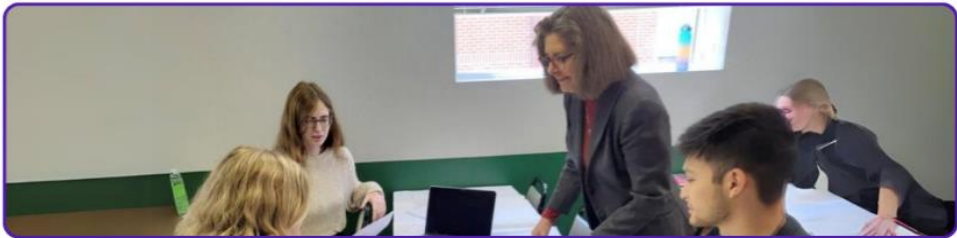
Category	1. AI-Enabled Tools for Individuals and Teams	2. AI-Enabled Tools Sets/Team	3. Off-the-Shelf AI Tools	4. Customized AI solutions	5. Hybrid Solution
<b>Description</b>	This category includes AI tools like ChatGPT, PMI Infinity, and PMOtto that help project managers and teams enhance communication, make better decisions, and automate tasks to improve productivity and efficiency.	This category emphasizes AI enhancements in tools like Trello, Jira, and Miro, which provide intelligent task prioritization and AI-driven mind mapping to improve project tracking, collaboration, and ideation.	Platforms like Microsoft's project management, along with other collaborative tools, demonstrate how off-the-shelf solutions with AI features balance customization and broad usability	Customized AI solutions in project management tackle specific organizational challenges with precision, from fraud detection to predictive maintenance, offering tailored effectiveness	Hybrid AI solutions merge off-the-shelf efficiency with customized precision, offering organizations a versatile approach that caters to both broad-based and specific project management needs.

**Source:** Navigating AI in PM Report: Co-authors Olalla García Pérez, Temisan Sagay, William Balch, Daniel Karlsson, Lead author: Marly Nilsson

**Case Study Design and Questions:** Lead author Marly Nilsson, Lavanya Vijayaraghavan

**Legal Matters:** Lead author Marly Nilsson

# Piedmont University, Walker College of Business COP



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



## 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

- Fall 2023: Created faculty Community of Practice (COP) for AI integration in classrooms
- Case study: Professor integrates generative AI into Project Management Fundamentals class
- AI used in presentations and assignments, encouraging students to ask the right questions
- Students develop prompts, generating their own data for AI implementation
- Process involves building scope statement, team plan, WBS, and risks with AI
- Students learn to include more information for better AI output

## 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

- Student work quality improves with generative AI for artifact development (scope, WBS, risks)
- Less struggle with details enhances concept understanding
- Success measures: assignment revisions, exam performance
- Organizational benefits: COP contributions foster university reputation for change readiness and student preparation

## RISKS

- Low risks in classroom projects, especially regarding gender and legal issues
- Risk of students assuming AI use is acceptable in all classes addressed
- Ethical guidelines emphasized: AI use disclosed in submissions
- Instances of students passing AI-generated work as their own addressed promptly

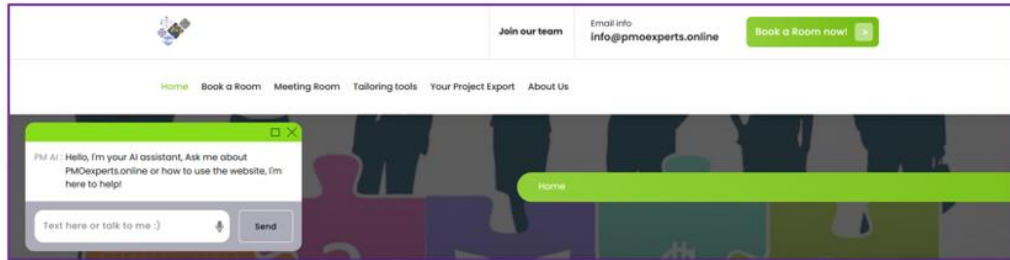
## TRAINING

- 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

- Mid-semester surprise: Many students stopped using generative AI due to complexity or preferring own ideas
- Instances of students submitting AI-generated work despite clear guidelines against it
- Some students struggled with generative AI usage
- Educators' responsibility to ensure ethical and correct AI use emphasized
- Higher education urged to fully integrate generative AI despite initial resistance, akin to calculators' acceptance
- Concerns raised about potential impact of AI on basic skills like sentence construction

# AI Project Management Assistant, PMOexperts.online



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



## GOAL

Enhance Project Management efficiency.

What the PM AI assistant does:

- Analyzes and summarizes chat conversations to aid decision-making and improve project communication.
- Assists and respond to the questions and use of the website with focus on PM best practices using predefined model.
- Prepares templates from the project inputs inserted by the users.
- Designs and publishes dedicated tools to facilitate PM experience.

## PROBLEM DESCRIPTION

The primary challenge was managing and extracting actionable insights from extensive project discussions efficiently. Create a proper AI model that acts in the boundaries of project management best practices. Facilitate the interaction of the AI assistant making it available in every part of the website.

## OVERVIEW OF SOLUTION

Our PM AI assistant, integrated into our web platform, analyses chat content to identify key ideas, decisions, and questions, aiding project management. Designed with Chatgpt4 omni, the PM AI assistant focuses on summarizing discussions into actionable items, improving project management efficiency. The AI tool is scalable, designed to handle growing data volumes and complexity efficiently. Prompts and tools have been designed with the help of AI giving the possibility to PM to obtain easy results to utilize during projects.

## DEVELOPMENT APPROACH

I leveraged Chatgpt advanced capabilities for the core AI functionalities. 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 integration was done in phases to minimize disruption. I started with a pilot phase, where the AI tool was tested in controlled environments.



## 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 used, providing them with control over their information. At the end of the meeting the data was erased.

## TRAINING

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. 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

Conducting regular knowledge-sharing sessions, such as workshops and seminars, was crucial. The critical importance of user engagement and training for successful adoption. Clear communication and documentation are vital for a transparent and inclusive integration process. For companies considering AI implementation, prioritize thorough planning, stakeholder engagement, and invest in training and change management. Emphasize the importance of high-quality data for training and operating the AI system, as this is crucial for an effective AI solution.

# Managing Comprehensive Testing Initiative with AI

Org	Software module	testing log	cases	started	progress	Passed	Failed	re-passed	to do	progress	re-test	done	issues critical	issues high	issues med	issues low
ROW	Employee Central	<a href="#">URL</a>	221	0	0	221	0	100	0	0	0	147	0	0	0	0
	Payroll	<a href="#">URL</a>	82	0	0	82	0	100	0	0	1	11	0	0	1	0
	Recruitment	<a href="#">URL</a>	30	0	0	30	0	100	0	0	0	8	0	0	0	0
	Onboarding	<a href="#">URL</a>	17	0	0	17	0	100	0	0	0	20	0	0	0	0
	Benefits	<a href="#">URL</a>	34	0	0	34	0	100	0	0	5	36	0	0	5	0
WRPS	Employee Central	<a href="#">URL</a>	173	0	0	173	0	100	0	0	0	85	0	0	0	0
	Payroll	<a href="#">URL</a>	45	2	0	42	1	93	0	0	2	11	0	0	2	0
	Recruitment	<a href="#">URL</a>	45	0	0	45	0	100	0	0	0	9	0	0	0	0
	Onboarding	<a href="#">URL</a>	32	0	0	32	0	100	0	0	0	14	0	0	0	0
	Benefits	<a href="#">URL</a>	39	0	0	39	0	100	0	0	0	9	0	0	0	0
	WFS	<a href="#">URL</a>	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

- Streamline data analysis and reporting
- Minimize manual effort in processing information
- Allocate more time for value-added tasks
- Display real-time project statistics on dashboard
- Improve communication of project progress
- Facilitate informed decision-making throughout project lifecycle

## PROBLEM DESCRIPTION

- Project manager faces challenge of overseeing 800+ test cases within limited time frame.
- Need to efficiently monitor progress and facilitate communication among 30+ testers.
- Lack of automated system to update testing progress in real-time.
- Difficulty in aggregating individual testing step statuses to display overall test case status.
- Requirement for a solution to streamline testing process and provide comprehensive reporting.

## OVERVIEW OF SOLUTION

- Project manager utilizes Copilot in Microsoft Edge (formerly known as ChatGPT) and Smartsheet
- Project manager inputs desired functionality description into Copilot.
- Copilot generates formula for Smartsheet based on the description.
- Collaborative process allows project manager to leverage AI assistance without coding expertise.
- Formula created for Smartsheet dashboard without the need for an expert.

## DEVELOPMENT APPROACH

- Demonstrating proactive integration of innovative technologies, the project manager promptly utilized Copilot to request the formula.
- This action illustrated the project manager's commitment to enhancing efficiency and productivity within project endeavors.
- The approach aligned with the organization's direction to effectively leverage AI.



## RESULTS

- Project manager assessed AI-generated formula, confirming functionality with fake and real data and reflecting on manual effort versus time saved through automated reporting. Significant time saved overall.
- Timely, automated testing status updates crucial in averting project schedule delays and freeing project manager's capacity for supporting critical areas of testing on the project's critical chain.

## RISKS

N/A

## TRAINING

N/A

## LESSONS LEARNED

- Validating AI-generated formula functionality with fake and real data ensures reliability.
- Automated reporting saves significant time compared to manual efforts.
- Timely, automated testing updates are crucial for preventing project schedule delays.
- Freed capacity allows for better support of critical testing areas on the project's critical chain.

# Lessons Learned: Data turned into actionable insights



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





## GOAL

Leverage project Lessons Learned data to improve business and 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

- Utilized Generative AI (ChatGPT) to consolidate individual Excel files containing project Lessons Learned (LL).
- Leveraged ChatGPT to import and generate a list of action items.
- Proof of concept implementation successfully consolidated LL files into a master file.
- Master file imported into ChatGPT, resulting in ten actionable recommendations.

## DEVELOPMENT APPROACH

- Selected ChatGPT for its coding capabilities and data processing ease.
- Utilized ChatGPT due to its reputation and off-the-shelf availability.
- Decision driven by the desire to explore practical applications of generative AI.
- Aimed to transition from theory to tangible implementation.



## 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, it was extremely important to sanitize the data to protect company confidentiality.

## TRAINING

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

## LESSONS LEARNED

- Importing data into ChatGPT presented unexpected challenges.
- Significant time invested in refining data and guiding generative AI.
- Organization's reluctance to use AI limited benefits from the endeavor.
- Action items generated by AI aligned with existing initiatives, validating recommendations.
- Advice: Embrace change and avoid shying away from new technologies.

# Boost Information Technology Company's Project Performance



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



## GOAL

Primary goal of AI implementation in project management:

- Enhance efficiency, accuracy, and decision-making.
- Impact vast project portfolio valued at \$150 million annually.

## PROBLEM DESCRIPTION

Challenges:

- Resource allocation inefficiencies.
- Risk management inaccuracies.
- Communication barriers across global teams.
- Lengthy project planning duration.

Objective:

- Utilize AI to streamline these processes.

## OVERVIEW OF SOLUTION

Strategic AI Integration:

AI Integration Goals:

- Enhance resource management and risk mitigation.
- Utilize ChatGPT for communication and knowledge sharing.
- Integrate Microsoft Project Management Copilot for automation.

Components:

- ChatGPT: Real-time insights and tailored knowledge sharing.
- Microsoft Project Management Copilot: Automated planning and execution, improving decision-making.

## DEVELOPMENT APPROACH

Detailed Planning:

- Program and project managers established a comprehensive plan.
- Engaged stakeholders for collaboration.

AI Integration in Project Management:

- Deployed ChatGPT for efficient communication and collaboration.
- Implemented AI for resource optimization and smarter allocation.
- Revolutionized risk management with predictive analytics.
- Automated dependency mapping for improved planning accuracy.
- AI-enhanced tools expedited project plan creation using historical data.



## RESULTS

### Efficiency Gains:

- Achieved 20% reduction in project completion times.
- Improved adherence to budgets by 25%.
- Proactive risk identification decreased project delays by 40%.
- Optimized resource allocation increased workforce productivity by 30%.

## RISKS

- Data privacy concerns.
- Potential biases in decision-making.
- Compliance with industry regulations.

## TRAINING

### Training Program:

- Covered technical and practical AI aspects.
- Included workshops, e-learning, and hands-on sessions.

### AI Culture Enhancement:

- Provided broader AI-related training and skill development.
- Seminars on AI ethics, data protection, and implications on project management.
- Specialized courses for IT staff on AI system maintenance and developments.

## LESSONS LEARNED

- Alignment with Business Goals: Essential for AI success.
- Stakeholder Engagement: Crucial for adoption.
- Pilot Projects: Identify issues early, adjust strategies.
- Data Quality: Key for effective AI implementation.
- Continuous Learning: Adaptation essential for relevance.

# 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



## 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

- Organization hindered by inadequate tools for project planning and execution.
- Current tools lack two-way communication and advanced portfolio planning features.
- Ineffective collaboration with management compromises project management efficiency.
- Mere tool implementation insufficient; systemic barriers impede progress.
- Continuous learning and early investment needed to overcome obstacles and leverage AI effectively.

## OVERVIEW OF SOLUTION

- Adopted a customizable standard solution at the start of its lifecycle.
- Formed experimental team with Qlorem during First Value Project.
- Evaluated solution strengths, weaknesses, and data requirements.
- Hired data experts to enhance capability and develop use cases.
- Increased IT and Data security capacity.
- Expanded team in Second phase with adoption facilitators.
- Collaborated with Qlorem to innovate platform for maximum value.

## DEVELOPMENT APPROACH

- Collaborated on 3-month First Value project to evaluate AI-driven Project Intelligence platform.
- Onboarded transformation project portfolio onto platform post-first phase.
- Enhanced Organization's Dynamic Digital Twin with additional data extraction, including processes and IT landscape.
- Scale platform to more areas.



## RESULTS

- Defined KPI targets, including project success rate.
- Utilized AI-driven Project Management platform, achieving high ROI.
- Direct application in IT renewal project boosted success rate.
- Positive feedback: Project managers now solution-oriented.
- Enabled new Strategy and IT landscape renewal with higher success rate.
- Improved communication between Business and IT stakeholders, earlier risk identification through project intelligence platform.

## RISKS

- Data quality risks impacting AI benefits and insights.
- Process adoption challenges threaten solution implementation.
- Past project failures hinder IT landscape renewal.
- Systemic barriers impede AI integration.
- Resistance to change risks pushback against necessary adaptations.

## TRAINING

- Conducted workshops for project participants.
- Defined team composition, project vision, and responsibilities.
- Initiated discussions and collaborative development of end-to-end mandate for AI-driven Project Management implementation.
- Enable Organizational Self-Learning.

## LESSONS LEARNED

- Data quality readiness vital for AI success.
- Emphasize disciplined data quality approach.
- AI implementation brings business value.
- Prioritize high data quality, flexible technology, talent promotion.
- Incremental AI capability building advised.
- Advice: Embrace early-stage solutions, view suppliers as innovation partners.



# Beyond the Stethoscope: How AI is Reshaping the Hospital Operations



<b>COMPANY</b>	Undisclosed
<b>CONTACT</b>	Dr. Deepa Bhide MBBS, DCH, PMP
<b>REGION</b>	Asia
<b>INDUSTRY</b>	Hospitals and Healthcare
<b>TEAM</b>	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.
<b>BUDGET</b>	\$0 - \$100,000
<b>TIMELINE</b>	1-Year Total •Phase 1: Conception to pilot – 4 months •Phase 2: Departmental rollout – 8 months



## GOAL

- A smarter, quicker and efficient way to manage day to day work in a hospital setting.
- Data-driven decision-making:
- Support clinical and operational decisions with evidence-based recommendations.
- Utilize analytics tools for trend identification, problem prediction, and informed decision-making in diagnosis and treatment of patients.
- Administrative automation with AI:
- Improve patient experience and streamline front-office workflows.
- Managing competition/innovation:
- Implement AI and innovative tech to enhance capabilities, attract patients, and maintain competitiveness.

## PROBLEM DESCRIPTION

- Challenges prompting AI implementation;
- Improve patient outcomes/experience:
- Analyze medical images/data for early, accurate diagnoses and initiate treatment
- Address long wait times and inefficient workflows:
- Streamline processes, reduce wait times, and offer personalized care plans.
- Mitigate rising costs and resource constraints:
- Assist healthcare specialists, increase capacity, improve access to care, automate tasks, optimize resource allocation, and reduce unnecessary tests for cost savings.

## OVERVIEW OF SOLUTION

- Chatbot: Virtual assistant streamlining front office tasks, enhancing patient engagement and patient experience including patient education.
- Radiology App: Automates workflow, improves accuracy, provides data insights for a few radiology modalities.
- Help modules for user support and education.

## DEVELOPMENT APPROACH

In-house/customized approach with in-house IT team



## RESULTS

### Chatbot:

Addressed rising costs and resource constraints:

- Reduced front office staff from 4 FTEs to 2 FTEs.
- Decreased wait times by >30%, improving patient experience.

### Radiology Application:

Improved patient outcomes:

- Minimized diagnostic errors and discrepancies by cross-verifying diagnoses.
- Enhanced data-driven decision-making.
- Improved decision-support to the radiologists

Enhanced competitive edge:

- Increased hospital footfall and revenues by >20%.

## RISKS

- Data breaches, unauthorized access, or misuse of patient information.
- Lack of transparency in AI model conclusions, hindering trust.
- Over-reliance on AI tools.
- Integration issues with existing systems, data quality problems, or technical glitches.
- Algorithmic bias affecting diagnosis or treatment recommendations.
- Uncertainty in responsibility for AI-assisted decisions, raising legal and ethical concerns.
- Workflow disruption and resistance to change.

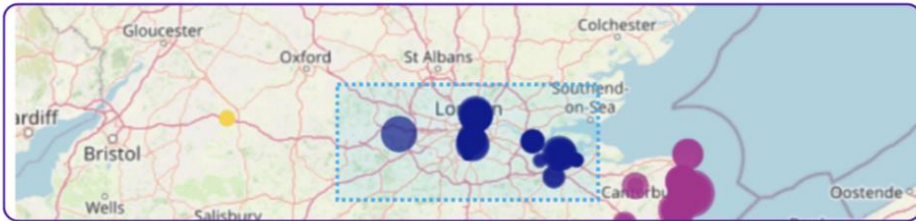
## TRAINING

- Conducted surveys to gauge concerns, expectations, and learning styles.
- Pre-training for general AI awareness and benefits.
- Tailored content with interactive formats for engagement.
- Explained tool functionalities, limitations, and decision-making.
- Demonstrated workflow integration and daily impact.
- Emphasized data privacy and security measures.
- Provided post-training support and feedback mechanisms.
- Assigned a champion advocate for the AI solution.

## LESSONS LEARNED

- Prioritize patient-centricity at all stages.
- Start with a focused pilot project for detailed problem-solving.
- Define AI tool's specific problems and desired outcomes clearly.
- Assess needs, infrastructure, and data landscape comprehensively.
- Involve stakeholders for informed decision-making and buy-in.
- Ensure data quality, accessibility, and governance.
- Integrate AI tool seamlessly with existing systems.
- Provide comprehensive training and ongoing support for staff.

# Electronic Vehicles - Utilization of Charging Stations



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



## GOAL

- Enhance service delivery, reduce operational costs, and improve user experience through the development and implementation of three machine learning models and an orchestration tool across the company's backend platform, web portal, and mobile app.
- Goal: Improve allocation of customers to charging stations and identify maintenance issues proactively.

## PROBLEM DESCRIPTION

- Uneven utilization of charging stations identified as primary problem.
- Some stations overused, while others underused.
- AI implementation aimed to predict station occupancy.

## OVERVIEW OF SOLUTION

- Developed ML models and an orchestration tool to optimize EV charging station utilization.
- Addressed uneven station usage with real-time monitoring and alerts.
- Seamlessly integrated AI solution into company platforms and app.
- Enhanced service offering and enabled comprehensive management.

## DEVELOPMENT APPROACH

- Project developed in 5 months, structured into phases.
- Initial phase (1.5 months) focused on building POCs for the 3 models to demonstrate reliability and business value.
- Second phase dedicated to model development:
- Demand prediction model: 1.5 months for testing robustness.
- Anomaly detection and predictive maintenance models: 2 months for final development.



## RESULTS

- Percentage increase in daily charge point utilization.
- Absolute reduction in technical team site visits.
- Decrease in complaints logged by end users for non-operating or poorly operating charge points.
- Reduction in ineffective charge points needing replacement or closure.

## RISKS

- Risk of project delay due to unavailable data for 2 models.
- Lack of data necessitating a 2-month delay for data collection.
- Mitigation strategy: Scheduling PoC phase before real model development to address data availability risks.

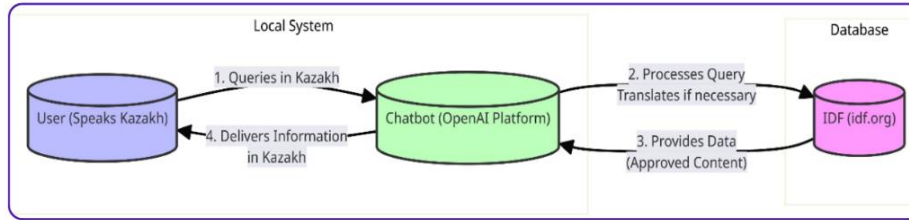
## TRAINING

- Developed multiple trainings for employees and customers.
- Training aimed at explaining logic behind models and new features.
- Goal: Enable employees and customers to maximize benefits of the models and features.

## LESSONS LEARNED

- Accurate planning relies on trained models and their outputs.
- POCs advisable before actual development for data sufficiency.
- Deployment planning should consider architecture maturity.
- Conduct careful analysis to identify worthwhile AI model development use cases.

# Diabetes Bot



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



## 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

- High diabetes prevalence in Kazakhstan, estimated at 400k people, potentially higher.
- Lack of awareness about diabetes symptoms and conditions among the population.
- Project goal: Raise awareness on diabetes and its consequences, especially among Kazakh-speaking population.
- Lack of materials in Kazakh language prompted creation of AI bot to answer questions.

## OVERVIEW OF SOLUTION

- AI bot powered by OpenAI API integrated with WordPress plugin.
- Provides real-time information and answers in Kazakh language.
- OpenAI's advanced language models ensure accuracy.
- WordPress integration offers easy access.
- Cost-effective solution with freemium plugin.
- Overcomes language barriers, raises diabetes awareness effectively.

## DEVELOPMENT APPROACH

- AI tool selected for language-specific needs, focusing on Kazakh-speaking audience.
- Chose OpenAI API integrated with WordPress for advanced language processing and web integration.
- Considerations include accuracy, user-friendliness, and scalability.
- Plugin from <https://aipower.org/> used for WordPress integration, balancing cost-effectiveness and customization.
- Addresses unique requirements of diabetes awareness in Kazakhstan.





## RESULTS

- Key metrics: User engagement, website traffic, AI bot interaction, user feedback/satisfaction scores.
- Improved diabetes awareness in Kazakhstan may lead to financial benefits through health improvements and reduced working hours.
- Project enhances organization's role in public health education.
- Improves outreach, contributes to better health outcomes, and boosts organizational visibility.

## RISKS

### Risks Identified:

- Accuracy of information provided.
- User privacy concerns.
- Tool's ease of use.

### Mitigation Strategies:

- Rigorous testing for accuracy.
- Compliance with data protection laws.
- Creation of user-friendly interface.
- Continuous stakeholder engagement for feedback and iterative improvements.

## TRAINING

- Conduct training sessions specifically for doctors.
- Targeted strategy to equip healthcare professionals with skills to use AI tool effectively.
- Consider ongoing AI-related training or skill development to enhance overall technological proficiency within the organization.

## LESSONS LEARNED

- Prepare for surprises with less common languages.
- Challenges in AI implementation due to lack of training materials in Kazakh.
- Importance of robust language datasets for AI effectiveness.
- Lack of legislation and guidelines for diabetes management.

### Key advice:

- Assess language dataset availability and quality.
- Anticipate need for customization.
- Be prepared for ongoing adjustments based on feedback and testing.

# Bolster Quality Control process using AI technology



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

- 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 items per hour; this underscored the necessity for a more robust and scalable solution capable of delivering consistent and reliable results while streamlining our quality control procedures.

## OVERVIEW OF SOLUTION

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

## DEVELOPMENT APPROACH

- 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 expanded the quality control coverage and levels of accuracy in the detection of quality issues in two different use cases.



## RESULTS

The AI implementation led to significant operational efficiencies and cost savings. It improved product quality, reduced defects, and enhanced manufacturing efficiency, focusing on:

- Labor Efficiency: Targeting a 54% reduction in the QC team.
- Quality Assurance: Maintaining an avg 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, enabling scalable throughput.
- Safety Enhancement: Resource reduction improves workplace safety by reducing congestion for the QC team.
- Enhanced Product Quality: Striving to minimize operational disruptions preventing issues like clashes and collapses.

## RISKS

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 relevant stakeholders with the necessary skills to effectively operate, maintain, and advance the AI solution (i.e. Know why). 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.

## LESSONS LEARNED

- 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 (hype), requires balancing enthusiasm with realism. Transparency, collaboration, and adaptability are key.
- 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.

# AI Predictor



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



## 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 and avoid the launch of projects that are doomed to be failed
- Objective: Utilize AI Predictor to assess 20 strategic projects and develop a prioritized ranked list to enhance senior leader's decision-making.

## PROBLEM DESCRIPTION

- Problem: Historically high project failure rates lead to billions of wasted resources and missed opportunities.
- Challenge: Traditional project selection methods are obsolete and manual; failing to equip leaders and organizations with the right approach to navigate through the Project Economy.

## OVERVIEW OF SOLUTION

- Machine learning algorithm built based on the Project Canvas and 94 criteria.
- The Machine learning algorithm has been trained with more than 500 projects.
- Level of confidence of 80%
- Enables informed decision-making and risk mitigation.
- Solutions include data analysis and success rate improvements.

## DEVELOPMENT APPROACH

- Standard solution adaptable across industries.
- User-friendly approach
- Data collected per project through a simple form
- AI Predictor assesses the project probability of success (expressed in %)



## RESULTS

- AI Predictor demonstrated impressive success probabilities.
- Reduced project failures, boosting ROI and efficiency.
- Strategic Alignment: Prioritized high-value projects for optimal resource use.
- Cost Reduction: Precise prediction lowered wasted expenditures.
- Data-Driven Decision-Making: Empowered leaders with insights, minimizing risks.
- Risk Management: Proactive strategies ensured smoother execution.
- Long-term Impact: Facilitated continuous learning for future improvements.

## RISKS

- Data Privacy: AI Predictor usage involves sensitive company data.
- Data Quality Dependency: Poor data quality leads to inaccurate predictions.
- Regulatory Compliance: Non-compliance with AI regulations may lead to legal issues.
- System Integration: Challenging and costly integration may disrupt 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

- Knowledge Base Creation: Consistent AI Predictor use at Charter approval phase builds internal knowledge base, enhancing stakeholder confidence.
- Stakeholder Assessment: AI Predictor in pre-approval stages identifies areas lacking critical stakeholder alignment, improving assessments.

# 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







## GOAL

The goal is to develop robust Verification and Validation (V&V) approaches for "embedded AI" in complex, evolving systems, ensuring reliability and comprehensiveness across major industrial domains in Europe.

## PROBLEM DESCRIPTION

- In 2019 Philips demonstrated a strong increase in the reconstruction speed of MRI images through application of AI.
- Reliability, adverse aspects and regulatory acceptance were identified as key challenges to overcome, before a product could be commercially launched.

## OVERVIEW OF SOLUTION

- IVVES developed robust V&V for embedded AI, focusing on ML validation, complex system validation, and data-driven engineering.
- Implemented ML models for MRI image reconstruction, improving speed and quality.
- Simplified market introduction by freezing models before verification.
- Adopted CRISP-DM for data mining, incorporating MLOps combining DataOps, ML, and DevOps at Philips.

## DEVELOPMENT APPROACH

- Creation of an experimentation platform
- Application and demonstration of tools and techniques
- Aim for higher-quality products
- Decrease time-to-market
- Reduce maintenance costs
- Focus on 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.

## TRAINING

For the healthcare application the AI-implementation the user interaction did not change, so training of hospital staff 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.



# Top 5 Lessons Learned

## From the Case Study Contributions

### Ethical and responsible AI Usage

Educators and organizations must ensure that students and employees use AI ethically and correctly. This includes understanding its limitations, potential biases, and adhering to guidelines and standards for its usage.

### Effective Change Management & Training

Successful adoption of AI requires effective change management strategies and thorough training for users. Early involvement and buy-in from end-users lead to smoother integration and better utilization of the technology.

### Iterative Testing & Feedback

Continuous refinement based on real-world usage and feedback is crucial for ensuring that AI tools meet actual needs. Flexibility and adaptability in the implementation process are key to maximizing the benefits of AI technology.

### Data Quality & Governance

Clean, well-organized data is essential for training effective AI models. Companies must prioritize data quality, accessibility, governance, and data protection and security to ensure reliable and unbiased AI applications.

### Stakeholder Engagement & Collaboration

Engaging relevant stakeholders throughout the planning and implementation process is vital for informed decision-making, buy-in, and successful AI integration. Cultivating a culture of collaboration and continuous learning further enhances the adoption and sustainability of AI initiatives.



# Future Horizons: Evolving Project Management in the AI Era





# The rise of Generative AI

*Presents both challenges and opportunities for project managers, necessitating adaptability, collaboration, and continuous learning but also emphasizing their pivotal role in integrating AI into their project, programs and companies.*





# Transforming Project Management with AI

## Key Trends Generative AI

### Unprecedented challenges & opportunities

Project management is undergoing a radical transformation fueled by Generative AI and its vast potential to assist and augment a significant part of our jobs.

### Shift in data utilization

Data now affects all project aspects, requiring managers to be integrally involved in AI processes from selection to execution.

### Continuous, rapid learning

The AI-driven project landscape demands quick, continuous learning and adaptation, supported by peer validation and community engagement.

### Human-centered collaboration

AI emphasizes the importance of collaborative skills ensuring project managers have a seat in AI-related decision across PMOs, teams and projects.

### Knowledge-based approach

Data-centric AI models underscores the need for a knowledge-based approach to identify mis information and truth, reinforcing the unique value project managers bring to the evolving landscape

# Further Perspectives from AI Specialists

Embarking on a forward-looking journey, this section features insights from our AI visionaries discussing three key topics:

1. What specific challenges and opportunities do you see for the use of AI in project management in the coming years, how can AI be used to improve project management processes and outcomes?
2. What are the key ethical considerations in using AI in project management? How can we ensure that AI is applied in an ethical way and does not lead to unwanted consequences in projects?
3. Considering that cultural and political aspects potentially affect how projects are managed in different regions/countries, do AI Experts expect future GenAI to customize the AI-generated results of the prompts based on the region/country, if so, what problems or impediments could be associated with this?

Our specialists illuminate the path forward, offering expert perspectives on the evolving dynamics of artificial intelligence. Explore their responses to navigate the frontiers of AI's future.



## Ricardo Viana Vargas

Ricardo is an experienced leader in global operations, project management, crisis management and artificial intelligence. He is former chairman of PMI (Project Management Institute), and has been director of Project Management at United Nations. He has written numerous books and delivered more than 250 keynotes on global conferences, many on AI and its impact. He holds a Ph.D. in Civil Engineering.

**Question 1 - Answer:** *In my view, AI's journey into project management is a tale of transformative potential. AI's power to refine decision-making is a paradigm shift in what the project manager's role should be. Regarding challenges, I see that the main roadblock of AI is the extremely diverse nature of projects. Some of the insights and support cannot be tailored to the different circumstances.*

**Question 2 - Answer:** *Using AI in project management the right way is really about being responsible and thinking ahead. It's key that AI is clear in how it makes decisions, is always fair, and keeps people's private information safe. AI makes us better at what we do, and using AI ethically means not just following rules but also makes us the best of ourselves.*

**Question 3 - Answer:** *I believe AI will become more than a tool – it has the potential to become a partner in understanding projects under different cultures. However, developing AI systems that respect and work well with different cultures is challenging. It's about making sure AI really gets the variety and depth, avoid bias and, at the same time, improve feedback using provided localized data and information.*





## Antonio Nieto-Rodriguez

Antonio Nieto-Rodriguez is the author of the [Harvard Business Review Project Management Handbook](#), and the featured HBR article [The Project Economy Has Arrived](#). He is the creator of concepts such as the Project Economy. His global impact on modern management has been recognized by Thinkers50. Antonio is co-founder of the [Brightline Initiative](#), [Projects&Company](#), and the [Strategy Implementation Institute](#).

**Question 1 - Answer:** AI presents the most significant paradigm shift in project management since its inception. Challenges like data integrity and adoption curve exist, yet the opportunities are boundless, as described in our HBR article: How AI will disrupt Project Management. AI will automate routine project tasks, enhance risk management, and provide data-driven insights, elevating project efficiency and effectiveness, driving better outcomes, and propelling the Project Economy forward.

**Question 2 - Answer:** Ethical considerations in AI for project management are pivotal, encompassing bias prevention, data privacy, and decision transparency. For instance, AI in task allocation could inadvertently favor certain demographics. Ensuring ethical use requires robust governance, stakeholder education, and continuous oversight, mitigating unwanted biases and fostering responsible project execution.

**Question 3 - Answer:** Cultural and political nuances significantly influence project management across regions. AI experts anticipate GenAI to tailor AI-generated outputs to regional contexts. However, this could face hurdles like stereotyping or misinterpretation of localized practices. For instance, a task prioritization AI tool might misinterpret urgency cues differently between laid-back and high-urgency cultures, possibly leading to project delays or misalignments. Hence, project managers should actively engage in shaping AI tools to understand better and adapt to regional nuances.



# Gratitude and Acknowledgement: Celebrating Support for Our Initiative

In conclusion, our fervent hope is that this presentation deck has served as a beacon of enlightenment and inspiration, igniting numerous fruitful discussions and propelling us forward on the transformative journey toward integrating AI into project management.

We extend our heartfelt gratitude to the Chapters whose invaluable feedback enriched our materials, as well as our esteemed partners whose generous sharing of knowledge and experience has greatly contributed to our collective understanding.

We also extend our appreciation to the entire project management community for their engagement, insights, and perspectives on AI adoption, both present and future. Together, we stride confidently into a future where AI enhances our capabilities and reshapes the landscape of project management.

Thank you.

***Marly Nilsson***

Program Director PMI Sweden Chapter

***Katarina Strömberg***

President PMI Sweden Chapter

# Heartfelt Thanks: To All PMI Chapters and Partners

*We extend our profound gratitude to all the Chapters and partners whose unwavering support has been pivotal in the success of our initiative.*

*Our sincere aspiration is that our collective endeavor will serve as inspiration for the global PM community embarking on their AI transformation journey, ensuring the enduring significance of the project manager's role in shaping future organizations.*

