



# 2021 ANNUAL SURVEY

Understanding project performance and the future of AI in Project Management

# INTRODUCTION

## I About Greyfly.ai

Greyfly.ai has experience in successfully delivering full life-cycle, benefits led, multi-million pound transformation projects. We are Crown Commercial suppliers and preferred suppliers to the BBC for programme management. Our underlying drive is to apply AI in Project Management to improve delivery, tackle the real project delivery problem and make cost savings for our clients.

## I Authors



### **Lloyd Skinner**

*Chief Executive Officer, Greyfly.ai*

Lloyd is a project professional with 25 plus years of experience working in multiple sectors and projects in both support and delivery roles. For over 3 years, he has been investigating the use of AI in project management and developing Greyfly.



### **Marcia Williams**

*Chief Product Officer, Greyfly.ai*

Marcia is a Certified Information Systems Auditor (CISA) with over 20 years of experience. Marcia's career began at the Audit Commission where she dealt with public sector clients and then moved on to the Big 4, where she spent 15 years in total at PwC, KPMG and Deloitte.

## I Introduction

To fully understand the alarming figures about project performance, this research was conducted through an online survey with 25 companies across multiple industries. It builds on our 2019 survey and reveals how projects have been performing, the top challenges facing project managers and perceptions about implementing AI in project management. Furthermore it explores the barriers constraining companies from exploiting AI and the benefits of implementing AI could provide to project management.

 **In the UK, roughly £128 million is wasted for every £1 billion invested in projects due to the weak project performance (PMI).**

We would like to thank the project professionals, practitioners and experts who have provided input to produce this report. All the information is anonymous and will be protected by Greyfly.

# EXECUTIVE SUMMARY

Over the last 2 years, there have been significant changes in project performance within UK companies. Due to COVID restrictions, companies have experienced extreme difficulties in managing projects when there has been a sudden shortage of resources, talent, supplies or disrupted business processes. This has caused project failure rates to surge.

Although AI is seen as a significant solution receiving interest, companies still hesitate to leverage AI to improve project performance. It appears this is because of the lack of practical benefits demonstrated by AI and concern whether systems and data are sufficiently mature to exploit AI. However, there is now considerable interest in adopting AI in the next 3 years.

-  **Project failure rate has doubled (up to 40%) compared to 2019**  
Delivering projects has been more challenging during the pandemic. 40% of projects have been delayed, over budget or could not deliver expected benefits.
-  **The majority of companies reported low project management maturity**  
Although there is an increase in the number of companies at higher maturity, project management maturity has not been improved compared to 2019.
-  **The lower project maturity leads to lower project success**  
Project success rate of companies at level 1 and 2 maturity is only half of the rate accomplished by high mature ones.
-  **9 in 10 companies believe AI will transform project management**  
The future for AI in project management is bright! Over 56% of companies confirmed they have plans to exploit AI in managing projects in the next 3 years.
  - Different sectors are experiencing the worst failure rate**  
There is a change in sectors with the worst project performance. In 2019, Construction was the worst performing sector, however, in 2021 Telecoms & Media reported the worst project performance.
  - Companies running a large portfolio of mega projects experience a high failure rate**  
Delivering multi million budgeted projects with a long duration increases project failure.
  - Delivering projects using Agile has a lower failure rate**  
Companies using Agile reported the lowest failure rate of 25% compared to 38% of Waterfall.
  - Scope creep, weak governance and limited resources continues as the top 3 causes of failure**  
Weak governance and limited resources causes project failure across all sectors. Whereas scope creep causes project failure within the Digital Technologies and Utilities sectors.
  - Project Management Offices improve project maturity & capabilities**  
Companies with a developed PMO exploiting best practices and aligning with corporate strategies have higher project success rates.
  - 68% of companies do not leverage AI in managing projects**  
Companies remain concerned about the value added by AI implementation and the compatibility with their current systems leading to low levels of AI adoption.
  - Recognising the benefits experience of other organisations is the main driver for AI adoption**  
Minimising risks by waiting for AI to mature can be extremely costly to late adopters. Cost may become a huge barrier for late adopters to catch up.



# Project Failure & Its Causes

# PROJECT FAILURE

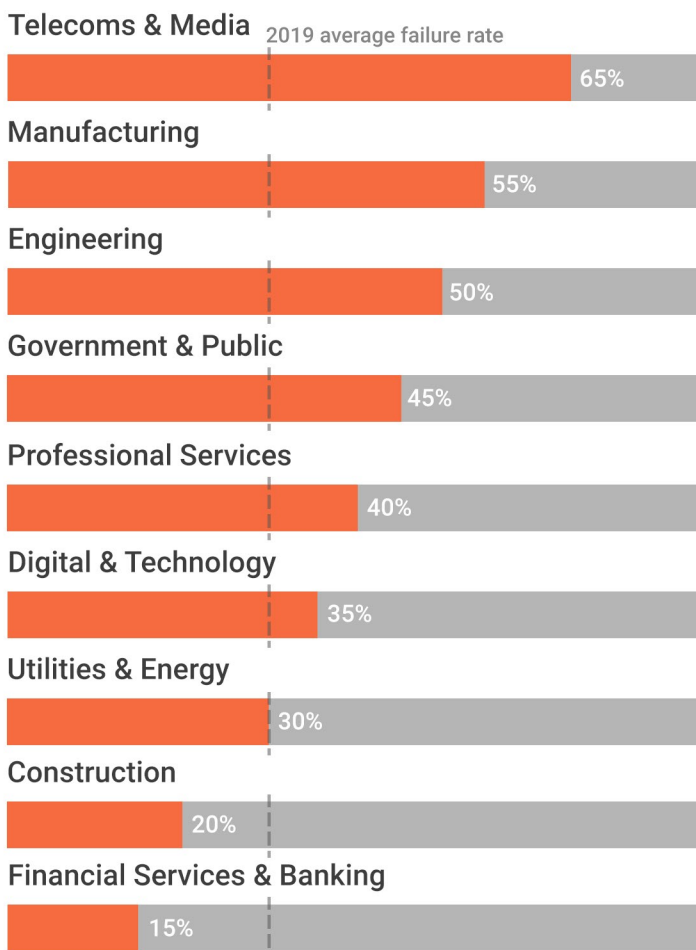
## I General Takeup

Across all sectors and company sizes, it is reported that on average 36% of projects failed in the last 2 years. Compared to 2019 when the failure rate was less than 20%, participants revealed the failure rate has nearly doubled. This may be no surprise given the devastating impact of the global pandemic across sectors. 2021 Pulse of the Profession report by PMI stated that 35% of projects have failed or experienced scope creeps while 12% of them deemed to failure at the start. In fact, 4 of out 10 respondees reported that over 40% of projects failed, whilst further 28% said the failure rate was from 20% to 40% and 32% stated their failure rate was up to 20%.



● % of projects failed in the last 2 years

## I Project Failure by Sectors



Across all sectors the average failure rate is 40% compared to last years which was 30%. Project failure by sector has significantly changed compared to last year. Telecoms and Media is now the sector with the highest failure rate (over 60%) following by Manufacturing and Engineering (58%). McKinsey (2020) confirms that manufacturing is a sector that has been severely impacted by the pandemic. Construction and Financial Services has improved compared to 2019 whilst Government & Public organisations have also declined with a failure rate at 45%. Digital & Technology and Utilities & Energy are still reporting a failure rate of c30%.

 **40% of projects failed in 2020. Telecoms & Media experienced the highest failure rate.**

## I Failure Rate by Volume & Duration

Similar to last year the majority of respondees reported they run >100 projects annually, which is the category with the highest project failure rate. In fact generally the more projects you run the higher the failure rate. Respondees reported the common duration of their projects was 6 months to 1 year (c48%) whereas 26% reported average project duration of 1-3 years. However, consistent with last years' results, it was also reported the longer the project duration, the more likely a project is to fail. Indeed projects lasting more than 3 years reported a failure rate of 58%.

# PROJECT FAILURE

## I Failure Rate by Budget and Method

Excluding smaller projects all project sizes are prone to failure. 36% of respondents confirmed projects of any size risk failure. 32% said medium sized projects with a budget of £100k to £1m are prone to fail whilst 28% of Big projects above £1m also reported a high risk of failure. Only small projects (4%) appear to be less likely to fail. This result differs from last year when the majority stated that Big projects were most likely to fail. Waterfall (46%) and Hybrid (33%) remain the most popular project delivery methods. However, companies using Agile reported the lowest failure rate of 25% compared to >35% across other methods. Interestingly companies who adopt various methods have the highest failure rate of 42%.

### Failure Rate by Method

Various Methods



Waterfall



Hybrid

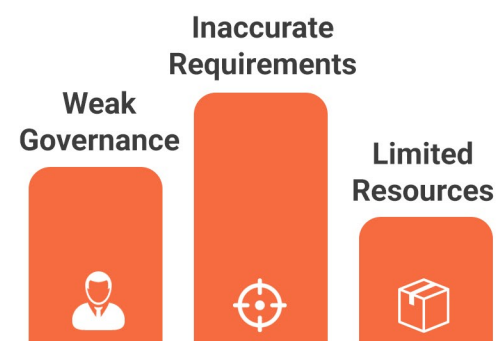


Agile



## I Causes of Project Failure

Consistent with last year results, the top 3 causes of project failure are poor scope management, weak governance and limited resources. Underestimating scope has always been one of the major problems in project management. PMI 2020 reported 39% of UK projects have experienced scope creep while the most common failure causes reported by 40% of participants were poor requirements gathering and changes in organizational priorities. This could inflate project cost up to 4 times the original budget (Gurlen).

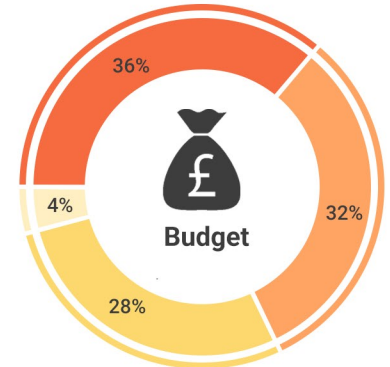


**Top 3 Causes of Project Failure**

Governance is a critical part in delivering projects but more than often skills and performances are not evaluated appropriately. The governance team that lacks competency and focus of their role will inevitably lead to project failure. 94% of respondents in research conducted by Melbourne Business School confirmed there is no measurement applied to the governance team members and another 60% believed the governance team were responsible for project failure.

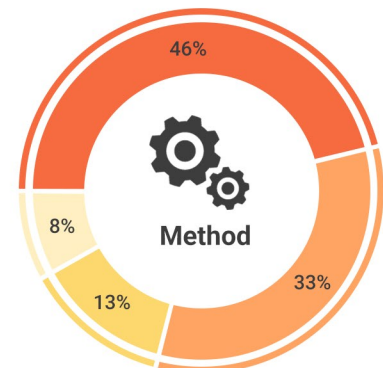
Limited resources and an inappropriate team is often the result of unrealistic expectations, overstressing resources over multiple projects or simply spending resources on the wrong projects. Project managers are usually over optimistic about what they can achieve and when to either seek approval or maximize resource utilization.

The size of projects are most prone to failure



- All project sizes
- £100k - £1m
- Over £1m
- Less than £100k

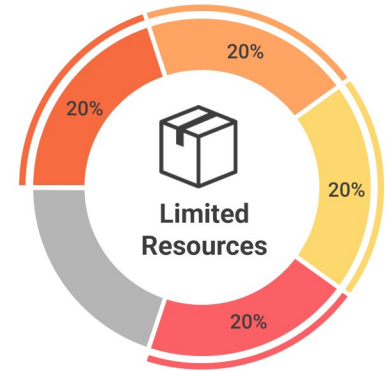
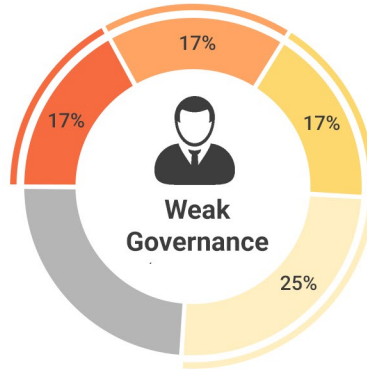
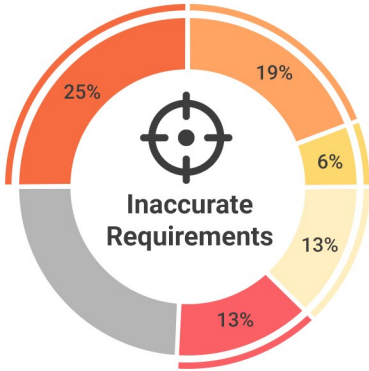
The most popular project management method



- Waterfall
- Hybrid
- Various Methods
- Agile

# PROJECT FAILURE

## I Top Failure Causes by Sectors



- Digital & Technology
- Construction
- Professional Services
- Utilities & Energy
- Government & Public
- Other Sectors

Digital & Technology and Utilities & Energy experience significant project failure due to inaccurate requirements. PMI 2020 reports 33% of projects within IT companies experienced scope creep. For such a fast-moving and unpredictable sector like IT, constant changes in scope and requirements are often inevitable and easily lead to project delays.

Weak governance occurs within Government & Public projects more often than in other sectors. A study conducted by Cambridge University revealed leadership related problems as the main theme emerging in most large public project failure (Thompson). Relying on methodologies is often used as the excuse for neglecting the projects by the government team that often causes project failure (McManus and Wood-Harper). Limited resource appears to happen across all sectors.



# PROJECT MANAGEMENT MATURITY

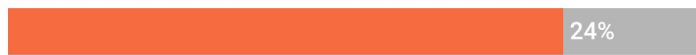


## I Maturity Levels

### Level 5 - Continually Optimising Process



### Level 4 - Managed & Monitored Process



### Level 3 - Organisational Standards & Institutionalised



### Level 2 - Structured Process & Standards

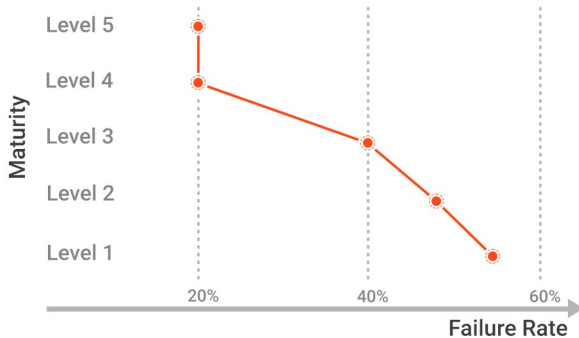


### Level 1 - Initial Process



Over half of respondents confirmed low level maturity. Compared to last year, UK organisations' maturity level appears broadly the same with most respondents (28%) confirming their company maturity is at level 2 which means there are structured processes in place but these are not optimised nor used across the organisation. Maturity level 3 (24%) and 4 (24%) come in the second place which indicates project management processes are developed and widely used but still in need of constantly optimising. While 16% of responses confirm level 5 of project maturity.

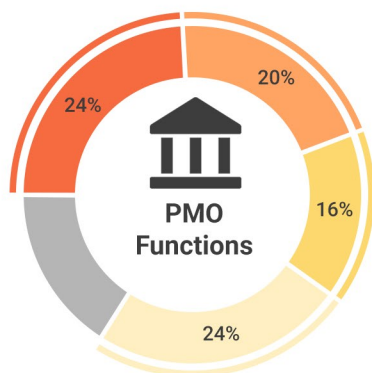
The lower project maturity is, the higher project failure is, conversely the higher the maturity the lower the project failure rate. Companies' maturity at level 1 and 2 have a failure rate of 55% and 48% respectively. If at level 3 maturity project failure drops at 40%, whilst at level 4 and 5 maturity failure is at 20%. These



findings are supported by other research from PMI which also revealed project success rate of companies at level 1 and 2 maturity is only half of the rate accomplished by high mature ones.

**Most companies are at low maturity. Lower project maturity leads to lower project success.**

## I Project Management Offices (PMOs)



The establishment of Project Management Offices is a reliable indicator of how mature project process is. Most PMOs have been established for more than 5 years, although 20% of them have been around for 1-3 years. Also, depending on the company size, 20% of companies do not have a PMO. As most PMOs have been developed for a period of time, their main functions are developing consistent and best working practices (Centre of excellence) and supporting strategic planning that aligns portfolio to corporate strategies.

- Strategic Planning
- Centre of Excellence
- Delivery Supporting
- All of the above





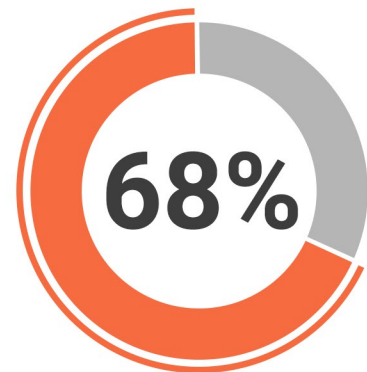
# **Implementation of AI in Project Management**

# AI IN PROJECT MANAGEMENT



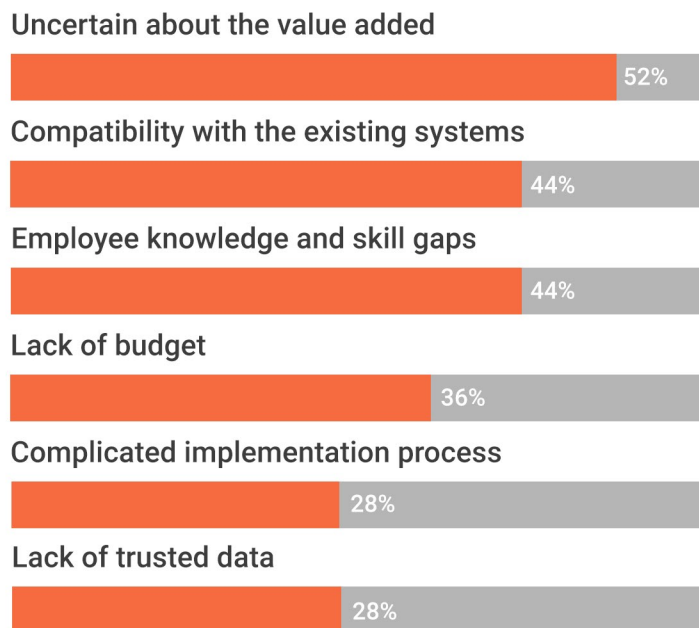
## I AI Adoption

68% of respondents confirmed they do not utilise AI in delivering projects while only 20% say they do. AI has been providing significant benefits in other fields, such as manufacturing where AI reduced supply chain forecasting errors by 50% and costs by up to 40% (Forbes). Indeed this result is further reinforced by PwC reporting only 20% of executives planned to roll out AI in 2019. However the application of AI in Project Management still appears at an early stage for most companies.



● Not utilising AI in managing projects

## I Barriers to AI in PM Adoption



Overall, it appears companies have not yet implemented a strategic planned approach to implement AI in Project Management. Compared to last year results, it is interesting to see that organisational culture no longer is seen as a barrier to adoption.

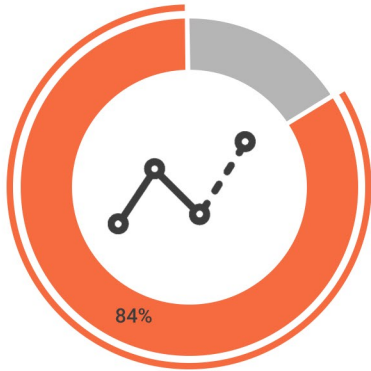
However, uncertainty about added value (52%) is now the major challenge to AI adoption – this may well be because there is little evidence of its practical benefits. Businesses are also concerned about the compatibility of AI with the existing system (44%) as well as the shortage of required expertise (44%).

Harvard Business Review reports these 2 obstacles as usually derailing AI initiatives. It is no surprise that limited budget is also a top barrier whilst the shortage of trusted data barrier relates to the level of project maturity.

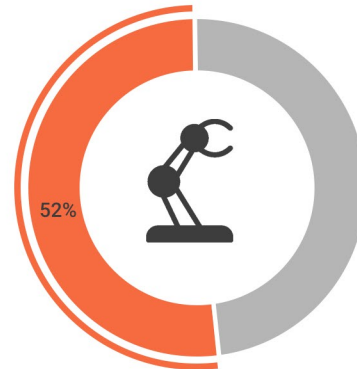
68% of respondents confirmed they do not utilise AI in delivering projects while the uncertainty about the added value is now the major challenge to AI adoption.



## I AI in Project Management Benefits

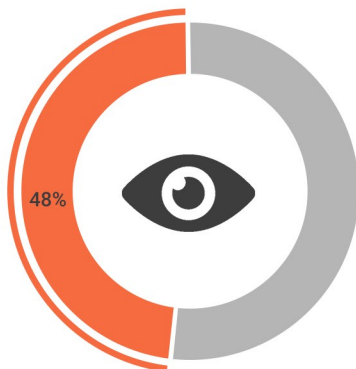


**Gain insight & foresight  
for decision making**

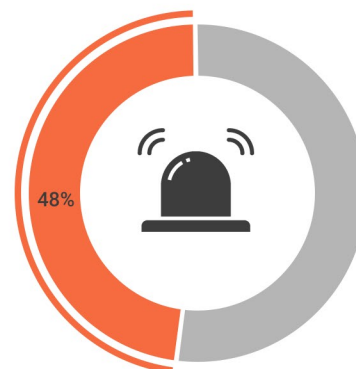


**Automate repetitive  
tedious tasks**

Early AI adopters reported having 15% more projects completed on time compared to those AI laggards (PMI). Obtaining Insight and Foresight is seen as the number 1 reason for implementing AI in PM (84%). Companies continue to see the benefit of AI's ability to analyse the past and present data to reveal future project performance. Automating repetitive tasks (52%) to increase productivity and reduce cost, allows companies to achieve consistent results and scale processes. Some Accenture clients have experienced up to 70% of time saving and three times ROI from AI implementation. McKinsey estimate that over 60% of data processes such as collecting, transferring, analysing data etc. can be automated with the minimum-to-none error and enable stakeholders to capture the project performance almost instantly.



**Predict outcomes &  
generate recommendations**



**Alert Risks**

Furthermore, the ability to diagnose potential risks and generate recommendations based on the predicted outcomes (48%) is also among the popular benefits that companies are seeking. AI can learn from past failure to reapply and identify any similar patterns emerging that needs to be mitigated as well as projecting all the possible scenarios from which they will recommend the most optimal solutions.



## I Drivers to Implement AI in Project Management



Recognising the benefits brought by AI in PM (42%) is the main driver to implement AI in PM. AI has been studied and applied for decades, however, its potential to transform project management was recently acknowledged as large investment in traditional methods no longer delivers the expected success. 81% of project professional participated in PMI AI Innovators survey claimed their organisations were being impacted by AI with those who have adopted AI early reporting 69% of their projects realised 95% of more of their business benefits versus 53% from AI laggards.

Indeed, 21% of companies recognise their need to deliver projects more efficiently with fewer overruns. Delayed projects cost is devastating. PMI reported UK companies have wasted an average of £130 million for every £1 billion spent on projects due to weak project performance.



**Late AI adopters are likely to lose the majority of market share and will never be able to catch up.**

Recognising the benefits delivered by AI in other organisations (17%) also drives companies to implement AI because late AI adaptation may be expensive as they fall behind their competitors. AI in project management cannot be implemented overnight so by the time late adopters finish, early adopters may already have taken the majority of marketshare and operate at a much lower cost which others will never catch up (Harvard Business Review).

# AI IN PROJECT MANAGEMENT



## AI in Project Management Use Cases

### Project Risk Modelling, Mitigation & Management



### Real Time Predictive Analytics



### Automating Administrative Project Managers Tasks



### Project Data Analytics



### Project Performance



### Automated Report Generation



### Project Execution Discovery & Modelling



### Project Mitigation & Recovery Plans



### Project Manager Selection



The top 3 uses of AI in project management is project risk modelling & mitigation (64%), real-time predictive analytics (40%) and automating administrative tasks (40%). Risk identification and mitigation at an early project stage has a significant impact on performance and project success (Rodríguez-Rivero et al). More than often, risks are subjectively underestimated because of either the need for getting approval, data errors or being too optimistic toward their project. AI can rapidly provide bias-free risk identification and mitigation plans.

AI can constantly analyse and watch the moving parts of projects that can't be seen by a human (Forbes) and provide real-time predictive analytics that present where a project is heading to enable corrective measures to be put in place. Automating tedious tasks saves project managers half of their time from admin tasks (Forbes) so they can focus on delivering project benefits.



# AI IN PROJECT MANAGEMENT



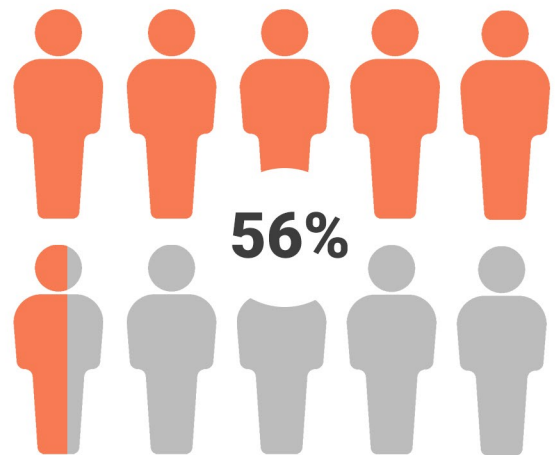
## I Future of AI in Project Management




88% of respondents believe AI will (56%) or may (32%) change the role of project management in the next 3 years. This is a significant increase compared to last year (63%). This is reinforced by PMI research that revealed nearly 70% of companies expect high/moderate future impacts from the implementation of machine learning. Furthermore, more than 50% of PM professional and IT specialists that participated in a PwC report believed AI will assist the role of a project manager in the next five years.

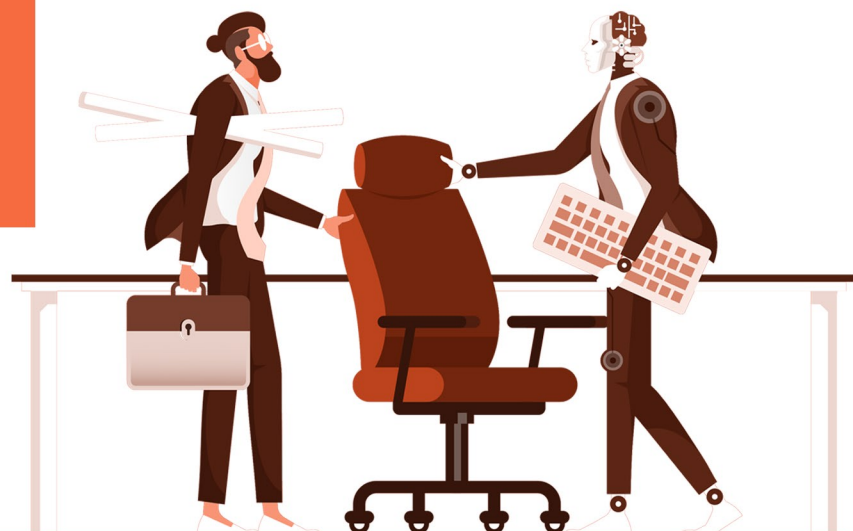
### Role of Project Management Changing as a Result of Computer Automation

Over 56% of respondents confirm they have or had plans to exploit AI in project management in the next 3 years. Indeed support for AI in PM has more than doubled compared to last year's results. Separately PwC reported over 65% of respondents have either a plan in the next 3 - 6 months or already started it. Meanwhile, Pulse of Profession research from PMI reported 37% of respondents are considering adopting AI as a high priority. AI adoption is happening everywhere as companies want to quickly capitalise on AI benefits.




### Likelihood to Implement AI in Project Management


 9 in 10 companies believe AI will transform Project Management while over 50% already have a plan or are implementing AI in PM.



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