

Midocean university



Project Management College

Master of project management

Artificial Intelligence and its effects On
Project Management (CHATPGT) in Riyadh region

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Acknowledgement

Artificial Intelligence (AI) is having a significant impact on project management.

While challenges and ethical considerations must be considered, the benefits of using AI in project management are clear.

As AI technologies continue to evolve, we can expect to see even more innovative applications of AI in project management in the future.

It is important for project managers and organizations to stay up-to-date with the latest developments in AI and to carefully consider the potential benefits and risks of implementing AI solutions in their projects.

Section One

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Thanks and appreciation

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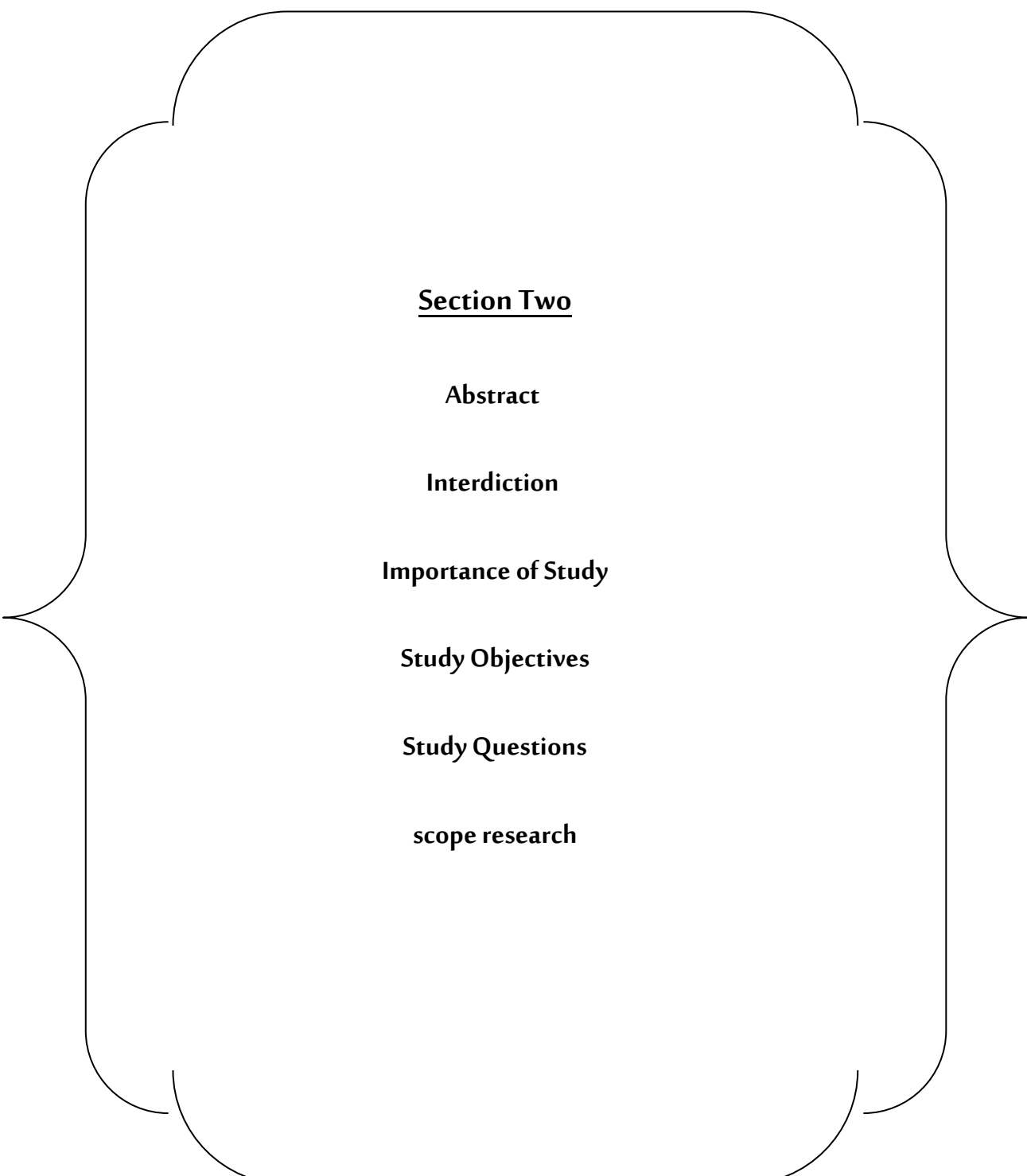
“Thank you for being my mentor, supporting my research, and allowing me to grow as a researcher by your research suggestions and your valid comments. “

Let’s not forget our appreciation to our Families. They are a gift worth more than anything we can imagine.

We wouldn’t be here today without their help. Thanks for supporting us.

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Section Two

Abstract

Interdiction

Importance of Study

Study Objectives

Study Questions

scope research

1. Abstract

AI can help project managers to automate repetitive tasks, such as scheduling and budgeting, freeing up time for more strategic work.

AI can also help project managers to identify potential risks and opportunities earlier in the project lifecycle.

Analyzing large amounts of data also helps project managers make more informed decisions.

In addition, AI can help project managers to improve communication and collaboration among team members.

However, there are challenges and ethical considerations that must be taken into account when using AI in project management.

It is important for project managers and organizations to stay up-to-date with the latest AI developments and carefully consider the potential benefits and risks of implementing AI solutions in their projects.

As well as to answer the following questions: What is the project management? What is Artificial Intelligence? What are the benefits of Artificial Intelligence in project management? How effective is Artificial Intelligence in

Project management? What are the best ways to use Artificial Intelligence? How can we use the benefit of CHATGPT?

2. Interdiction

Project management is a complex and multi-faceted discipline that requires a combination of technical skills, leadership, and communication. In today's fast-paced and increasingly digital world, project managers need access to the right tools and resources to help them successfully manage projects.

Artificial Intelligence (AI) and Machine Learning have many business applications, and their effects can now be seen in project management.

In this research, we discuss the results that we have obtained to understand better the impact of AI on projects and how it will reshape the future of project management with the right AI inputs.

Used techniques for simulating reality as it has behaviours and features that emulate human

We will also provide an overview of project management according to the PMI Project Manager Index 2020.

Other industries that have the potential to implement AI include healthcare, transportation, and finance, and we will demonstrate that 8 out of 10 project operations prescribed in the PMBOK (6th edition) can be significantly impacted by AI adoption.

One of our conclusions is that activities that require personal, relationship and human interaction will be least affected by AI.

We have also identified four significant developments of AI: integration and completeness; chatbot assistants; machine learning-based project management; and autonomous project management.

AI does not appear to be able to achieve management; however, AI, projects, and the manager will remain connected. Therefore the project manager needs to take the necessary steps to gain the right skill sets to manage.

AI is now a major contributor and one of the most

used techniques for simulating existence as it has behaviours and features that mimic human capabilities, most notably its ability to learn, infer, respond quickly and respond to demand.

3. Importance of Study

Artificial Intelligence and Machine Learning are no longer mere subjects of science fiction but have become a reality in every field.

Think of all the things that didn't exist just a few years ago: the ease of handling big data, real-time machine translation, chatbots that can conduct personal conversations with customers on a large scale, and even the famous deep-faking technology used on roads to blur video clips.

In addition, deep learning and natural language processing (NLP) and its applications, which are one of the most important trends dominating the technology sector in the near future, are heavily relied upon by major technology companies in developing their services, such as Google, which relies on them to develop a range of services, from

search engines to YouTube and Gmail platforms, maps services, and even voice assistants that recognize languages and provide immediate translations.

- What are the most important applications of Artificial Intelligence?
- What is the effectiveness of the CHATGPT can do?

4. Study Objectives

The research objectives are to enable others to understand Artificial Intelligence, the correct definition of Artificial Intelligence, how to use it and interact with it in project management, and the types of Artificial Intelligence and the best use in project management.

5. Study Questions

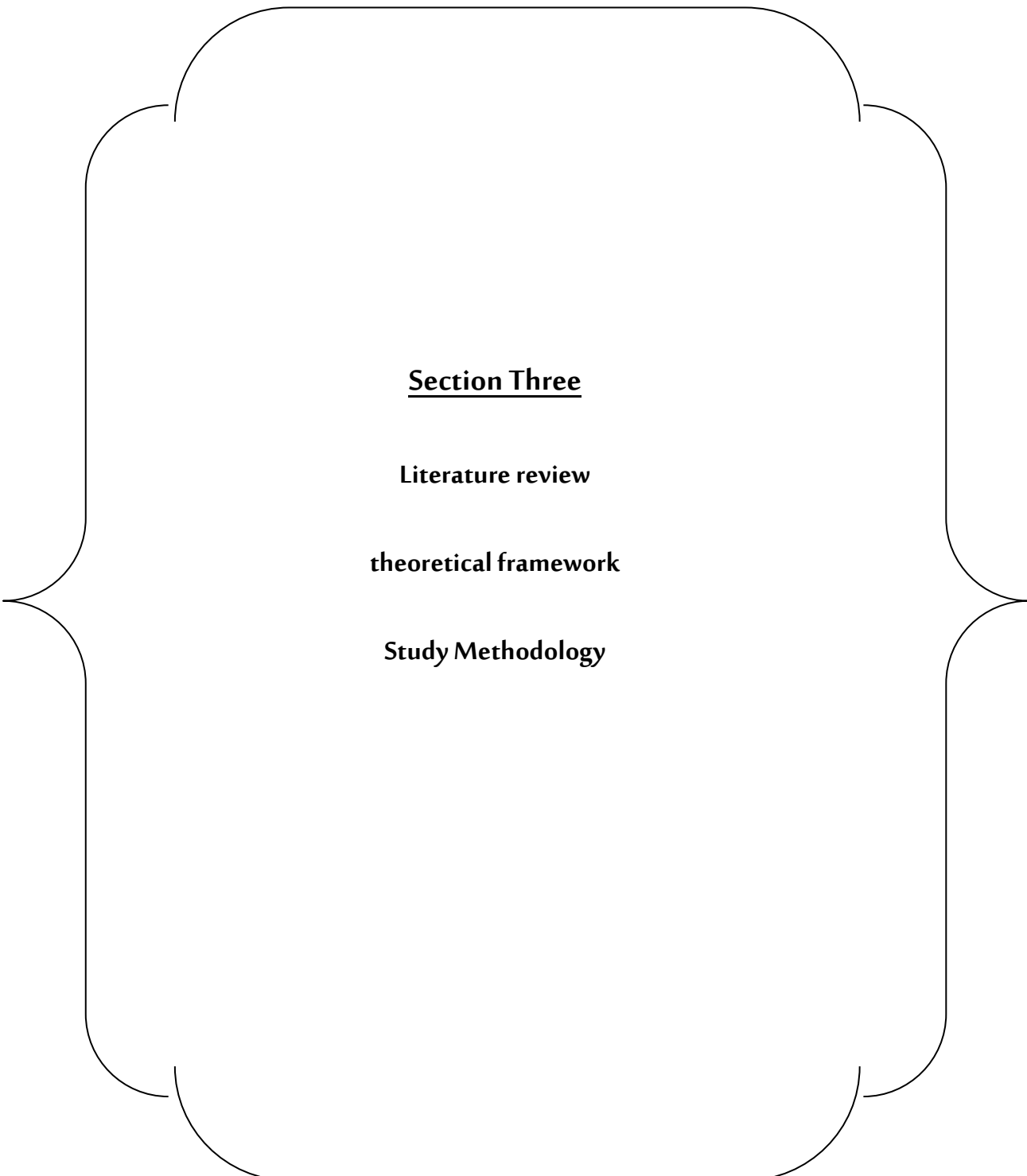
- What is project management?
- What is Artificial Intelligence?
- What are the types of Artificial Intelligence?
- What are the benefits of Artificial Intelligence on project management?
- What is the effectiveness of Artificial Intelligence on project management?

6. scope research

This research explores the scope of artificial intelligence systems in project management by analysing empirical data gathered via surveys.

Specifically, the study seeks to identify the awareness and usage of AI systems and determine potential use cases for their incorporation into the project management lifecycle.

It is important to note that the research will be limited to a theoretical review of the subject matter.



Section Three

Literature review

theoretical framework

Study Methodology

7. literature review

7.1 First Study

According to Bakens (2010), "Project management is not easy regarding the complexity, uncertainties and a large number of activities involved, even in a single project environment."

For this reason, many organizations established project management offices (PMOs) to ensure a steady flow of work within the organizations and have better coordination and control of projects.

Project management offices impact the strategic, tactical, and operational levels.

For instance, PMOs are responsible for strategic policies and processes as well as other perspectives, such as the efficiency of knowledge management and the effectiveness of project management within a certain organization.

The roles of project management offices are used for sharing knowledge among the undertaken projects and

Keep the quality of products and services consistent over time.

Let alone AI, the initial core of data collection and processing, has its own drawbacks that can affect the use of AI in PMIS.

The use of PMIS in project management may face multiple difficulties and problems that can be avoided through proper understanding and finding solutions to better the practice of PMIS.

Organizations spend millions of dollars to perfect the design of PMIS, yet systems continue to fail.

These designs are attributed to how PMIS designers view organizations, their employees and the function of PMIS within the organization.

This may be due to lack of systems or the improper understanding of what the organization needs before the system design.

Underestimating the complexity of the business systems and not recognizing it in the PMIS design

leads to problems in the successful implementation, which can also be a result of a lack of consistency or existing manual systems.

The successful adoption of technologies in companies depends on technology characteristics, Project and organizational characteristics, user and social characteristics, and task characteristics.

However, these factors are much neglected by organizations, especially among small companies (McLean, Stacie, & DeLone, 2014).

After the design of the PMIS, other leading causes of failure would be improper training on the system and unsuitable implementation.

The PMIS does not meet certain key factors of its users, such as the inability to get the processing done in a particular manner or the lack of a user-friendly system.

The organization may have weak human resource management that cannot acquire specialized personnel.

or specialized equipment or resources to implement the new PMIS.

The acceptance and approval of the technology of PMIS in a company depend on the organizational culture.

Without a correlation between the culture of an organization and the cultural expectations embedded within the PMIS, a costly implementation failure is likely to happen.

A study compared the implementation of PMIS in different Arab countries- Northern Africa and the Gulf Countries.

The study revealed that age, gender and education levels contribute to the success of PMIS in the two regions.

It showed differences in organizational cultures that impact PMIS adoption in both regions.

7.2 second Study

Another research carried out by Tarafdar et al. (2019) and published in the MIT Sloan management review examines the effect of Enterprise Cognitive Computing (ECC) which is based on embedding algorithms into applications to improve business operations.

An example of this would be the operation of an ECC call centre which enables the business to have an operating call centre 24 hours a day around the year.

It also allows 90% of customer complaints or inquiries to be addressed on the first phone call while transferring complex situations to employees, with less than half of the customers realizing that they are interacting with a machine.

The same study has also concluded that enhanced business operation makes more accurate information available for decisions to be made, improving the decision-making all in all.

Taking the previous reasons for the failed application of PMIS into account, these pitfalls could be avoided, and the actual benefits of AI application to PMIS could be taken advantage of.

Through Integrating AI into Project management, the data collection process could highly improve both the quality and the quantity of the data provided to the project manager once he is faced with a decision.

The previous statement holds in multiple sectors, such as cost analysis and budgeting, assigning tasks, analyzing and mitigating risk and schedule.

7.3 third study

Increasingly projects are based on economic activity, which makes these projects more sustainable, serving as building blocks for a more sustainable economy and society.

Accordingly, a growing debate amongst practitioners is concentrating on the issue of sustainable projects.

Starting to consider the "usage" of investment of the project yonder the end of project activities.

As part of the drive towards sustainable projects, PM has created several new methodologies, tools, and techniques that foreground focus sustainability (e.g., the GPM P5 Standard for Sustainability in Project Management; or Project Management Global Sustainability Community of Practice).

Theoretically, the prominence of project managers is not limited to their practical roles as facilitators of sustainable, technical solutions, such as the sustainable projects described above. However, it refers to the wider institutional role of professions in achieving radical change.

Delivering sustainability is important as this may require challenging supposition and practices which are greatly institutionalized to create and institutionalize new organizational models and working patterns.

For instance, an alteration in institutional routine relates to the duration's shift in the Project's lifecycle.

The delivery of ultimate service is the normal project end; instead, the objectives of the PM process are

This fundamental change links to the concept of sustainability that consequently arises in the need to:

1. Contribute to the optimization of the merchandise case of the investment initialized by the Project;
2. Control the project complexity and project dynamics;
3. Constantly adjusts the project frontiers.

In other words, sustainable economic and societal growth built through projects is not solely a technical matter but requires institutional change (Scott, 2008: p. 219).

Sustainability has mainly been researched in correlation to the area of organizational management and strategy, where the concept is related to organizational performance and benefits when integrated into core processes (Gareis et al., 2013).

Profession, including how it impacts the most regular standards of project management.

The Project Management Institute (PMI) emphasizes that management is driven by organizational strategies and that projects are a means to deliver the organizational strategy effectively (PMI, 2013).

Therefore, the adjustment between an organization and its projects becomes important to ensure effective results.

This requires project management procedures to be influenced by sustainable practices, as Silvius et al. (2012), Gareis et al. (2013), and Kivilä et al. (2017) argued that the current factual research implies that sustainability should be integrated into existing project management approaches rather than as separate systems, hence, reducing back-and-forth linking the aspects of sustainability.

Similarly, Silvius et al. (2012) studied how to incorporate sustainability within frequently used project methodologies.

Given this, the authors tell how sustainability as a concept impacts and changes the project management

Presently the study reviews the literature on various issues on the sustainability facets of project management, which has been presented.

Based on the literature, many research scopes have been obtained for the buildings, the models, tools, methods, and techniques to integrate and scale project management and sustainability.

Silvius & Schipper (2010) said that it is generally perceived that sustainability in project governance concerns integrating economic, environmental, and social aspects in management or projects and that Project sustained should be viewed on the level of the project outcome and its effect.

Silvius & Schipper (2010) coined the precision of sustainable project management out of combining the triple-P elements from sustainability and its life cycle outlook: Sustainable project management can be project-conformed change in policies from self-driving cars to facial emotion recognition, data is at the core of all AI projects.

controlled assets or organizations regarding the project's economic, social, and environmental effects, its outcome, and its impact for now and future generations.

Many AI solutions on the market have worked for different businesses. Still, it is important to understand that your use case is unique and therefore requires a solution tailored to your business

's needs.

Various solutions may benefit your business, from energy demand forecasting to automated data extraction.

Therefore, it is vital to discuss possible solutions with AI experts to ensure access to both the important business information from your side and the technical knowledge of the experts, resulting in more accurate planning.

P.S. We know how challenging or even costly it can be to dedicate time and resources to the initial problem and solution identification stage.

Artificial Intelligence systems can recognise patterns and make decisions thanks to statistical models; For this to happen, data is required for the system to learn the correct patterns.

However, when creating effective AI solutions, the challenge is not simply the availability of data but rather the availability of large amounts of varied and high-quality data.

Poor quality data prolongs projects and leads to more costly results, such as Machine Learning models not working properly and not delivering the desired results.

Therefore, it is important that the data for your AI solution is not only of high quality but also relevant to the problem you are facing.

The IPMA defines the competence areas for project managers in terms of people (interactions with oneself and other people), practice (related to the

8. theoretical framework

8.1 Project Management

The definition and understanding of a project manager's role have changed over the years since Gaddi introduced this concept.

Research shows that project managers look at their tasks and assignments differently.

However, the knowledge areas of project management have been described by international project management associations, such as the Project Management Institute (PMI) and the International Project Management Association (IPMA).

These are non-profit associations and certification bodies for the field of project management.

The IPMA is an association of national project management associations and maintains its Individual Competence Baseline (ICB), now available in its fourth edition.

management of projects, programs and portfolios) and perspective (the context within which a project is run).

The PMI serves around 2.9 million project management specialists who are located all over the world (PMI, n.d.).

PMI volunteers with diverse experience have developed and maintained maintained up-to-date, globally recognized Project, program, and portfolio management standards.

The PMI has maintained its Guide to the Project Management Body of

Knowledge (PMBOK) since 1996, and its most recent version (sixth edition) was published in 2017.

The PMBOK is a professional guide that offers guidelines for the practice of project management.

8.2 PROJECTS

A project is a temporary endeavour undertaken to create a unique product, service, or result.

The PMBOK Guide describes 49 processes that are categorized by 10 knowledge areas. The 49 processes are divided logically into five project management process groups that aim to achieve defined objectives: (i) initiating, (ii) planning, (iii) executing, (iv) monitoring and controlling and (v) closing.

The 10 knowledge areas are (i) integration, (ii) scope, (iii) schedule, (iv) cost, (v) quality, (vi) resources, (vii) communications, (viii) risk, (ix) procurement and (x) stakeholders. Each knowledge area is defined by its knowledge requirements.

For example, the knowledge area "integration" is supported by; developing a project charter, project management plan, project work, knowledge, monitoring, change control, and project closing.

The temporary nature of projects indicates a definite beginning and end.

Temporary does not necessarily mean a project has a short duration.

A project's end is reached when the objectives have been achieved, when the Project is terminated because its objectives will not or cannot be met, or when the need for the Project no longer exists.

The decision to terminate a project requires approval and authorization by an appropriate authority.

Project management is the application of knowledge, skills, tools, and techniques to project activities to meet project requirements.

Project circumstances will influence how each project management process is implemented and how the project constraints are prioritized.

Project management is accomplished through the appropriate application and integration of the Project management processes identified for the Project.

Managing a project includes but is not limited to:

- 1- Identifying project requirements
- 2- Addressing the various needs, concerns, and expectations of stakeholders.
- 3- Establishing and maintaining active communication with stakeholders.
- 4- Managing resources; and
- 5- Balancing the competing project constraints, which include but are not limited to:

- Scope,
- Schedule
- Cost,
- Quality
- Resources, and

8.3 THE PROJECT LIFE CYCLE

A project life cycle is the series of phases a project passes through from start to completion.

A project phase is a collection of logically related project activities that culminate in the completion of one or more deliverables.

The phases can be sequential, iterative, or overlapping.

The names, number, and duration of the project phases are determined by the management and control needs of the organization (s) involved in the Project, the nature of the Project itself, and its area of application.

Structure (see Figure 1-2):

- 1- Starting the Project,
- 2- Organizing and preparing,
- 3- Carrying out the work, and
- 4- Closing the pro

- Risk.

Review, phase gate, control gate, or other similar terms).

The project charter and business documents are

reexamined at the control point based on the current environment.

At that time, the Project's performance is compared to the project management plan to determine if the Project should be changed, terminated, or continue as planned.

The project life cycle can be influenced by the unique aspects of the organization, industry, development method, or technology employed.

While every Project has a start and end, the specific deliverables and work vary widely depending on the Project.

- The life cycle provides the basic framework for managing the Project, regardless of the specific work involved.

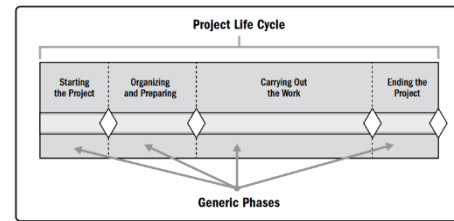


Figure 1-2. Generic Depiction of a Project Life Cycle

A generic life cycle structure typically displays the following characteristics:

- 1- Cost and staffing levels are low at the start, increase as the work is carried out, and drop rapidly as the Project draws close.
- 2- Risk is greatest at the start of the Project, as illustrated by Figure 1-3. These factors decrease over the project's life cycle as decisions are reached and deliverables are accepted.
- 3- The ability of stakeholders to influence the final

8.4 Artificial Intelligence

AI Evolution

AI initially started as a pure sub-branch of computer science that aims at making computers and machines intelligent. In contrast, Intelligence is restricted in the

- Though projects vary in size and the amount of complexity they contain, a typical project can be mapped to the following project life cycle

characteristics of the Project's product without significantly impacting cost and schedule, which is highest

at the start of the Project and decreases as the Project progresses toward completion.

Figure 1-3 illustrates the cost of making changes and correcting errors typically increases substantially as the Project approaches completion.

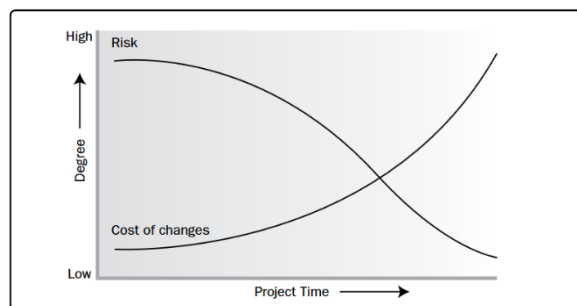


Figure 1-3. Impact of Variables Over Time

short term to mean reasoning, knowledge representation, planning, learning, natural language processing, vision and perception. (BELHARET, 2020)

In the long-term , the ambition is to achieve AGI (Artificial General Intelligence), or Strong AI as it is sometimes referred to, where the idea of Intelligence involves a much more complex problematization of an amalgamation of various scientific disciplines such as mathematics, psychology, engineering etc.

For this research , we disregard AGI as the “singularity” (which is a precondition for AGI) is not anywhere near the horizon based on the detail. (AI Project Life Cycle: Important Stages and Details, 2021)

Stage I – Project planning and data collection

This is an initial stage, although very important and crucial as it explores the reasons why you decided to implement artificial intelligence solutions in your

The consensus amongst the global AI community.
(BELHARET, 2020)

8.4.1 Artificial intelligence effect on 4 phases of the life cycle

AI project cycle and stages Generally, the AI project consists of three main stages:

Stage I – Project planning and data collection

Stage II – Design and training of the Machine Learning (ML) model

Stage III- Deployment and maintenance

However, the specificity of an AI project is that it does not stop at the implementation stage but rather follows a cyclical process. (AI Project Life Cycle: Important Stages and Details, 2021)

Now that we understand the AI project cycle's importance and nature, let's dive into each stage in more detail. (AI Project Life Cycle: Important Stages and Details, 2021)

operations, as well as anticipating if the solution can be tangible and profitable.

When it comes to AI solutions, we are its main promoters. (AI Project Life Cycle: Important Stages and Details, 2021)

However, we always emphasize the importance of implementing AI only when there is a real need.

The main driver of your AI project should be a real problem or an objective. (AI Project Life Cycle: Important Stages and Details, 2021)

This is very important, as not all cases require the implementation of AI to achieve desired results.

Correctly labelled data is vital to the success of your AI project. (AI Project Life Cycle: Important Stages and Details, 2021)

Stage II – Design and training of the Machine Learning (ML) model Choosing the right ML model depends on several factors, such as the type of

You should think, analyze and evaluate if your problem can be solved with simpler solutions (like simple automation) or if it really requires more complex resources like Artificial Intelligence. (AI Project Life Cycle: Important Stages and Details, 2021)

However, if based on AI expert consultation, your assessment, user feedback, and real case studies, your team decides to start the AI journey, this means that you have identified the problem/objective and are ready to move on to the next step. (AI Project Life Cycle: Important Stages and Details, 2021)

For every problem, there is a solution that you identified your problem. You can focus on the solution. (AI Project Life Cycle: Important Stages and Details, 2021)

The process can be done manually and also with the help of special software. This can be time-consuming and tiring, but it is very important.

challenge your business is facing, the type of result you want to achieve, the size of your data, etc.

Some of the types of ML models are:

Binary classification model – As the name implies, ML models for binary classification problems predict a binary outcome. (AI Project Life Cycle: Important Stages and Details, 2021)

8.5 PMI-PMBOK Process Map

Figure 2.3 depicts the current 'process map' of how projects are currently managed as prescribed by PMI, with the aim of simply refreshing the core ideas.

One of the most significant advantages of using such technology is minimising errors, especially in software development projects, where you can find a variety of defects detected at any stage, an essential measure of the project quality. (Impact of Artificial Intelligence in Project Management, n.d.)

Interested readers are invited to study the PMBOK v6 for their detailed analysis.(BELHARET2020)

Section 3.3 discusses the impacts of AI adoption on the PMBOK processes, where the relevant ones are

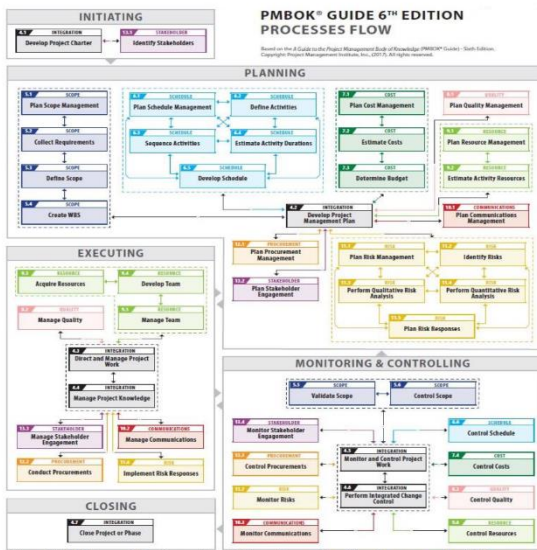


Figure 2.3: PMI Process Map (Source: Ricardo Viana Vargas: <https://ricardo-vargas.com/pmbok6-processes-flow/>)

8.5.2 Impact of AI on Project Management of the Above Industries

Artificial Intelligence is a complex field consisting of numerous nuances, but at the same time, when used correctly, the technology can definitely increase productivity and reduce errors drastically.

One of the most significant advantages of using such technology to minimize errors, especially in software,

8.5.1 Business Insights:

AI enables project management to provide more insights into possible outcomes, which will enhance the quality of decision-making. (Lahmann, 2019)

By finding relationships and trends in data, the system will remove unnecessary information leaving management to focus on the most important information. (Lahmann, 2019)

1. In the finance industry, organizations are at varying stages of incorporating it into their long-term organizational strategies. (Lahmann, 2019)

As companies prepare to improve their processes and working environments, it is imperative that they

Recommendations are a very important and useful aspect of AI Machine learning algorithms are capable of giving recommendations on prioritizing projects based on data from previous projects.

(Lahmann, 2019)

is to revisit their fundamental goals, strengths, and weaknesses. (Lahmann, 2019)

So, companies are suggested to take the help of consultants in this field who can navigate business strategy. (Lahmann, 2019)

McKinsey's Quantum Black is an example of such a firm.

Project planning could be made more robust by enabling auto-scheduling by means of programmed logic and rules. (Lahmann, 2019)

For example, based on the (2019) PwC report, progress and task status can be tracked automatically and alert the project manager in exception-based scenarios. (Lahmann, 2019)

The rise of virtual assistants will help project managers stay up to date on industry trends and help them recruit experts to bring even more value to projects. (Lahmann, 2019)

8.5.3 Risk Management:

AI may not replace human judgment in the foreseeable future, but it is highly needed to support humans. (Lahmann, 2019)

1. In the healthcare industry, for example, the execution phase of projects is quite unique.

There are more layers of stakeholders who need to sign off on every step of the process. (Lahmann, 2019)

Project management in the healthcare industry involves a lot of people who could be taking care of one particular patient, which makes it clear that human-to-human communication is indispensable.

- To cite an example, a doctor relieving his duty should communicate the exact elimination of 80% of present manual project management tasks by 2030. (Lahmann, 2019)

- Condition of a patient to the incoming doctor, which, if not done properly, might lead to a potentially negative outcome. (Lahmann, 2019)

This is an area where AI cannot come in and replace the humans involved. (Lahmann, 2019)

- Projects cannot go overtime or over budget in an industry where patients' lives are at stake. (Lahmann, 2019)

Machine-learning-based project management, which is a relatively new technology, can be used to make project plans to be adapted and re-baselined in near-real-time based on historical team performance and project progress.

2. In the transportation industry, the competitive threats revolve around company size and innovative capabilities. (Lahmann, 2019)

Gartner anticipates that AI will

3. Unlike traditional project management tools, AI can predict future issues more accurately based on previous data, thereby minimizing risk. (Lahmann, 2019)

This includes risks related to people, vendors, entities etc., on the Project. (Lahmann, 2019)

Cost assumptions and time constraints can be examined by combining current project data with historical data to run multiple scenarios and generate, assess and rank viable outcomes.

(Lahmann, 2019)

8.5.4 Risks & Limitations of AI in Project Management

Technologies are increasingly improving productivity, profitability and business results, but their also certain arrivers and limitations to be taken care of.

(Russell 2017) have discussed the key dimensions of AI risks (Lahmann, How can we prevent project management from falling into the AI dark, 2020)

8.6 AI AND PROJECT MANAGER

8.6.1 Introduction

Thanks to AI, PMs can devote more time to strategic and tactical thinking and judgment since repetitive tasks and routines can be automated. (BELHARET2020)

This would mean that a PM will focus on more value-added activities.(BELHARET2020)

As AI becomes more effective, project managers will rely on the decisions of the machines that:

- Will advise future trends,
- Automate time scheduling,
- Respond to requests coming from superiors and staff.

Such frameworks integrate with common collaboration tools such as Slack, as well as project management

Project managers spend more than half of their time on administrative tasks such as dealing with check-ins and managing updates.(BELHARET2020)

The following include ways AI adds value to the role of a Project Manager:

- AI frees up time for project managers to focus on strategic-level goals and planning.
- AI may appear to be a threat to job security, but it may instead increase the value that project management professionals can bring to the table
- AI helps companies achieve long-term objectives successfully by further solidifying the significance of roles by adding value to them.

AI bots can step up and handle these less intensive tasks for the project manager, with current systems cutting time spent on busy work in half.

software such as JIRA, to make it more effective when it comes to problem-solving. Studies have shown that

This is a big time-saver, enabling project managers to:

- Concentrate more on the dynamic processes behind their strategic management.(BELHARET2020)
- To focus more time on their employees, which can help them empower their employees and find further efficiencies.(BELHARET2020)
- Such managers will concentrate more on what matters to them with the time saved

using AI-enabled project management systems.

- Make the work atmosphere more relaxed where workers feel valued and realize they have the necessary resources.(BELHARET2020)

Regarding project management team leaders, a primary advantage of AI devices, at least for now, is that they can save time on busy work. (BELHARET2020)

This also makes the entire process more effective, which, will save time and budget expenses by allowing workers to concentrate on the tasks that matter.(BELHARET2020)

• 8.6.2 Impact of AI on Project Managers

- Considering that AI acts as a project management's 'virtual partner', project leaders must have an innovative mindset and customize their knowledge to drive this digital transformation forward.(BELHARET 2020)

Having strong 'digital know-how' and data science skills is key, alongside security and privacy knowledge.

The legal and regulatory knowledge to manage contracts is also important. (BELHARET2020)

AI and project managers will have to collaborate in the digital era.(BELHARET2020)

A considerable amount of time is spent on record-keeping, recording, and various other remedial activities for most employees. (BELHARET2020)

According to interviews with PMO directors and executive leaders for the 2018 PMI Pulse of Profession report, the following include possible roles the role of the PM is expanding to :

- Strategic Advisor: plans, executes, and delivers.
- Innovator: acts as product owner and developer;
- Communicator: is always clear and concise—no matter the audience;
- Big Thinker: is adaptable, flexible, emotionally intelligent and
- Versatile Manager: has experience with all approaches—waterfall, Scrum, agile, lean, design thinking.

According to PMI's Job Growth and Talent Gap Report from 2018, by 2027, employers will need 87.7 million

project management performance improvement to stay competitive and relevant.(BELHARET2020)

Champion organizations are already making greater investments in their talent through training, formal processes, defined career paths, and knowledge transfer project and program managers, as seen in the figure below: (BELHARET2020)



8.7 What is Chat GPT?

It is an AI chatbot auto-generative system created by Open AI for online customer care. It is a pre-trained generative chat which makes use of (NLP) Natural Language Processing. The source of its data is textbooks, websites, and various articles, which it uses to model its own language for responding to human interaction.

individuals working in Project management-oriented roles, increasing the need for skilled and experienced Project and program managers.(BELHARET2020)

Organizations will continue to focus more on 8.8.1

.8.7.1 What impact does ChatGPT have on project management?

Let's first ask the AI itself what impact it thinks it has on project management:

ChatGPT has several impacts on project management:

Automation of tasks: ChatGPT can automate project management tasks such as creating project plans, monitoring progress and budget, and creating documentation.

.8.7.2 How can ChatGPT help in project management?

ChatGPT can help with project management in different ways, depending on the specific requirements and goals of the Project.

- **Creation of project status reports**

ChatGPT can be used to automatically generate project status reports by analyzing data from project management tools and converting them into readable reports.

- **Meeting support:** ChatGPT can be used to automatically generate minutes of project meetings by transcribing spoken words and converting them into written notes.

- **Analysis of project data:** can analyze the collected project data to identify important trends, challenges and successes in the Project.

- **Generating project status reports:** By converting the analyzed data into a readable form, such as tables or charts and summarizing the key findings, we also can automatically generate project status reports.

Some examples can be:

- **Creating project plans:** ChatGPT can create project plans by automatically generating tasks, schedules and dependencies.

Customize and preview: As an automated tool, it is important that generated project status reports are reviewed and adjusted by a project manager or an experienced team member to ensure that they meet the requirements and objectives of the Project and are up-to-date.

8.7.3 Support for the Creation of project plans

Since ChatGPT states that it can also be used to create project plans, we ask more specifically about this as well and get the answer that it can automatically generate tasks, schedules and dependencies. The AI states that it can do the following tasks:

- **Collect project data:** can be used to automatically collect relevant project data such

- **Analyzing project data:** Based on this data, identify the most important tasks, dependencies and schedules.
- **Generating project plans:** automatically generate project plans by converting the analyzed data into a suitable form such as Gantt charts or tables.
- **Increasing efficiency:** By automating tasks, ChatGPT can help to execute processes faster and more accurately and manage resources more effectively.
- **Minimizing risk:** ChatGPT can help project managers identify risks early and propose solutions, which helps minimize project risk.
- **Support communication and collaboration:** ChatGPT can help project teams develop communication plans and share project data.

Increase transparency: By automating reporting and documentation, ChatGPT can

as goals, requirements, resources and budget
from various sources such as project
documents, emails and other tools.

- Help make the Project more transparent for all stakeholders.

Creating training materials: ChatGPT can be used to automatically create training materials for project teams by extracting relevant information from project documents and data and converting it into easily understandable materials.

9. Study Methodology

Several methodologies will be used in project management, such as the Waterfall, Agile, Adaptive, Scrum, Lean, and Kanban methodologies.

The Waterfall methodology, which is a sequential development process where progress is steadily made till the endpoint of the Project, imitating the movement of a waterfall, is selected for this research project because it provides a better understanding of project stages and it is simple and easy to make and measure.

9.1 Secondary Data

The secondary data is obtained from several online journals and articles that are published on different academic websites and e-books.

In this research paper, secondary data is used to determine the relationship between the project management information system (PMIS) and project management office (PMO) and how it's related to decision-making processes.

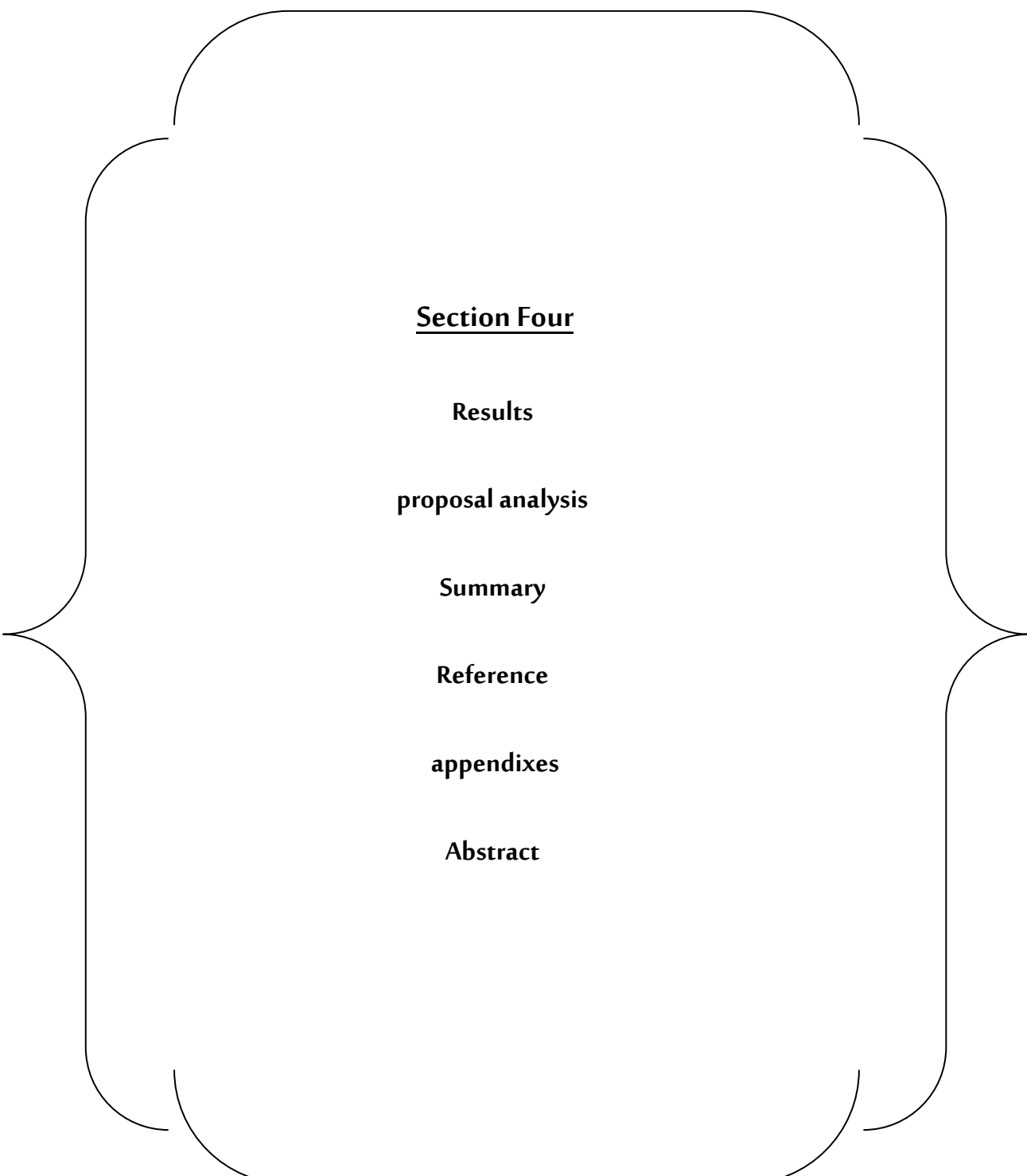
The secondary data helped us to determine the effect of artificial intelligence (AI) on project management information systems and how they can be used to reduce the negative consequences of some external factors that are linked with these systems.

9.2 Primary Data

The data will be collected by conducting a formal interview with an employee working on Projects management from different companies in Riyadh.

The selected questions are related to the central concepts of our research questions and hypotheses about how the application of AI could improve data integrity and quality, in turn improving the decision-making process.

The primary data is used to examine the real situation in the chosen organization.



Section Four

Results

proposal analysis

Summary

Reference

appendixes

Abstract

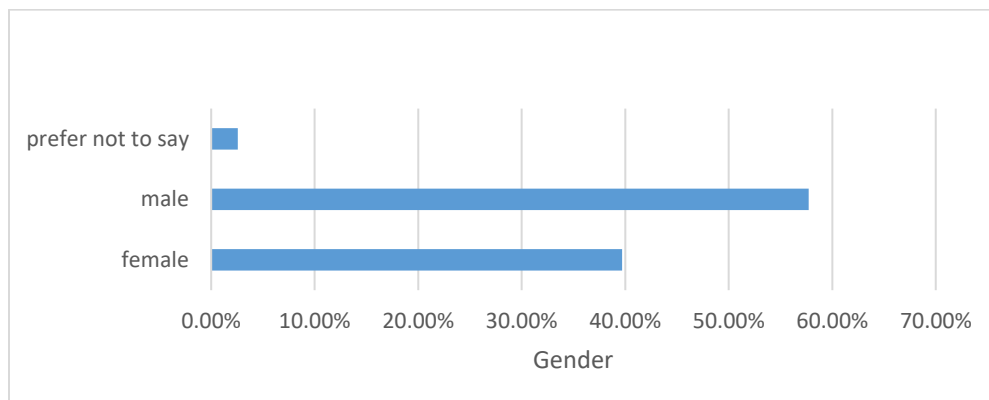
Results

Purpose of the survey:

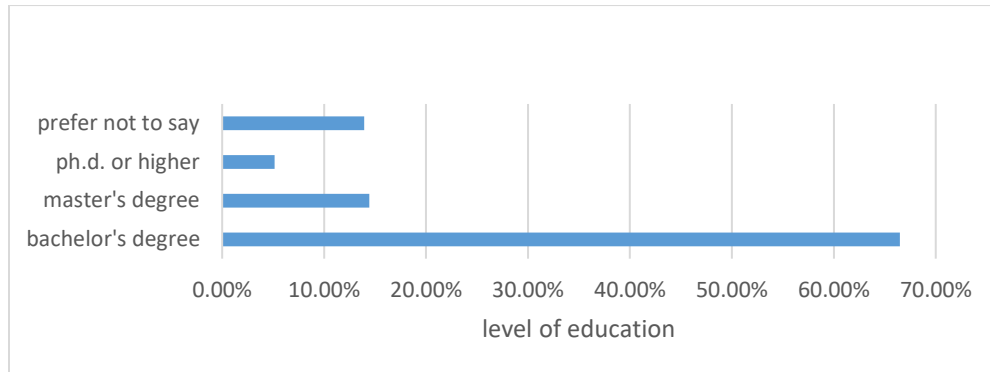
The purpose of this survey was to investigate what Project management employees knew about AI and if they think AI will impact the project management role with efficiency, and if they are ready to adopt AI applications in the near future, such as CHATGPT,

Who are the respondents?

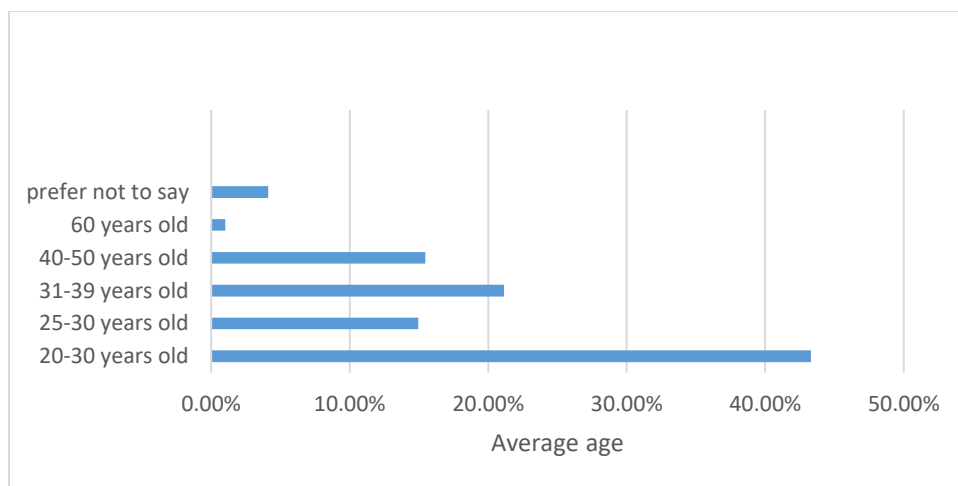
Most respondents (close to 80%) were selected based on their work background in the Project management field in Riyadh ,Saudi Arabia . The majority of respondents' gender (57.73%) were males, as shown in the exhibit below.



Most of the respondents (66.49%) level of education has bachelor's degrees, as shown in the exhibit below.

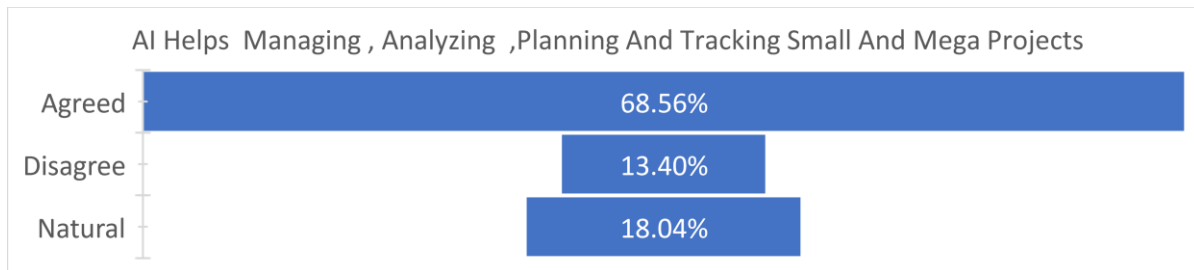


The average age of the respondents is between 20 to 30, as shown in the exhibit below.



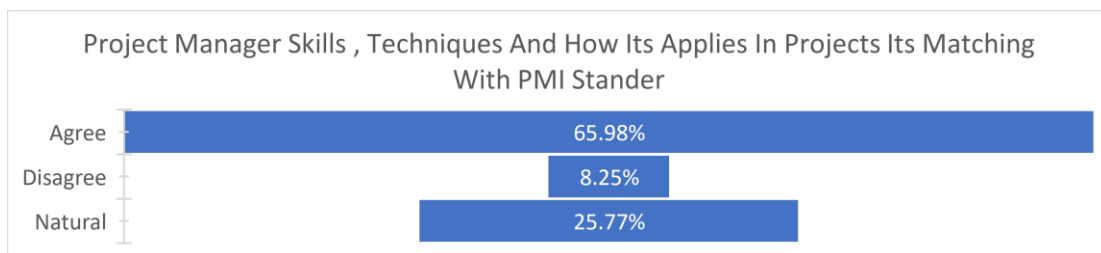
AI maturity among the respondents:

It was quite an interesting result we had regarding the opinion of the respondents if AI can be big Support in managing, analyzing, planning and tracking small and mega projects; the majority of the respondents, 68.56%, agree



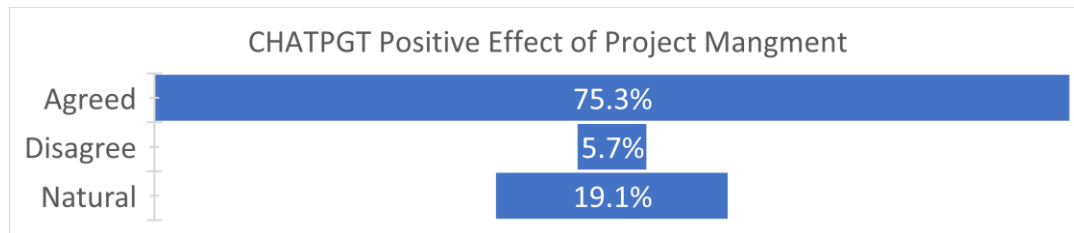
PM maturity among the respondents:

Regarding the Project management sector, the result of Project Manager skills and techniques applies in projects most agrees skills of PM as per the PMI book as shown in the below exhibit



CHARPGT effectivity among the respondent's view:

After seeing the result of the first two sector questionnaires, it was obvious and easy for us to guess what would be strongly corroborative regarding applying CHATPGT, the AI application in Project Management, which you can see 75.30% Agree that it will become effective and efficient.

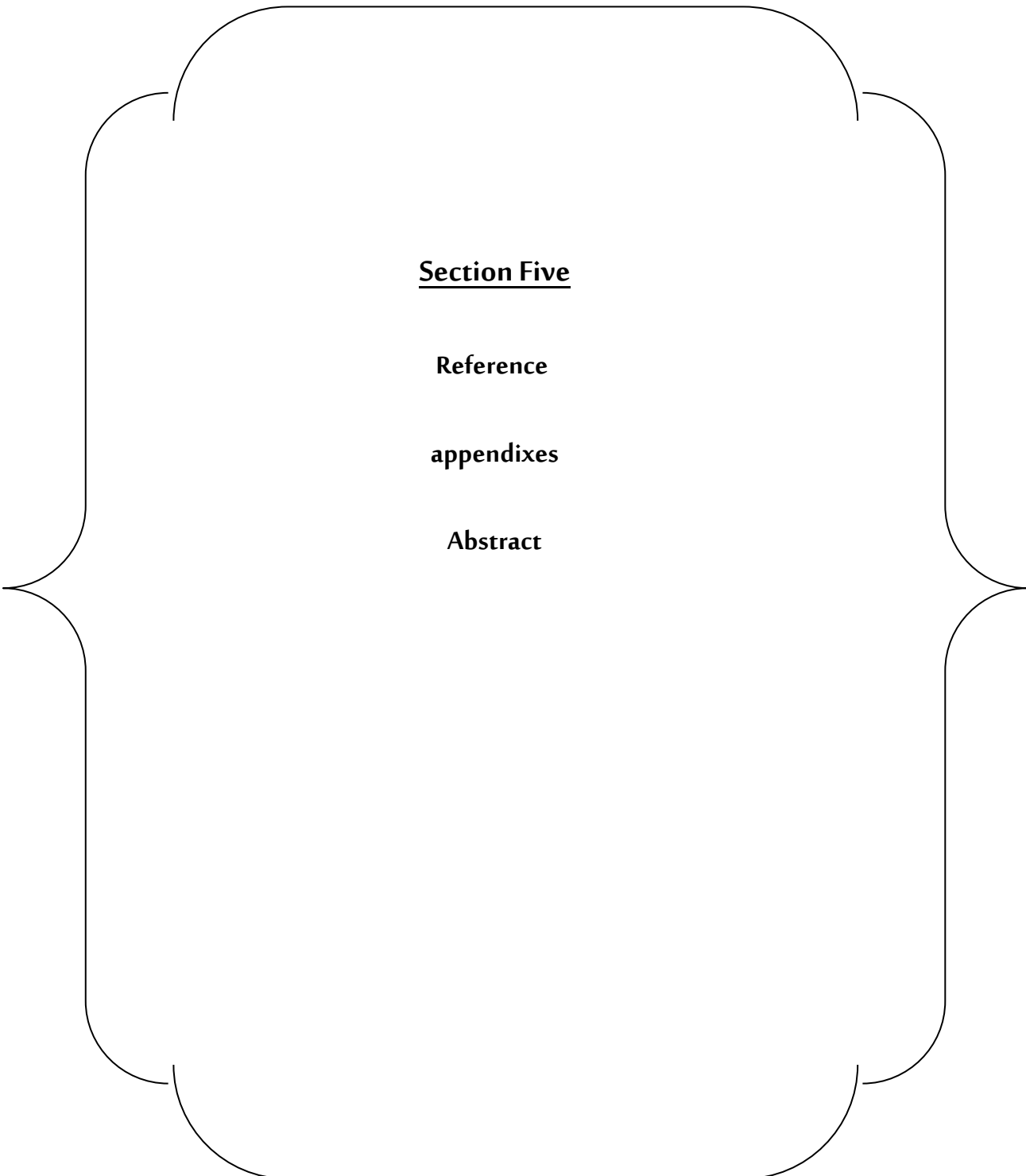


Summary

As per the result, we got from the survey along with the studies and interviews, we can summarise that Artificial Intelligence function and popularity are soaring by the second. Artificial Intelligence is the ability of a Program or a system to think, analyze and learn from the experience of the Project management team. Applications of AI have significantly evolved over a few years ago and are found almost in every business sector. Leveraging artificial Intelligence to improve company processes is no longer a case of "why" or "if" but of "how".

The advantages of Artificial Intelligence are obvious and proven. Organizations in every business around the world understand that what is Artificial Intelligence, while currently AI a competitive choice, will soon become the project management standard due to the advantage of improving both the bottom line and efficiency.

As a growing number of Projects are in a race to adopt Artificial Intelligence, they learn that building AI solutions in-house is exceptionally challenging. For this purpose, 70% of enterprises are choosing the vendor-supplied route to deploy Artificial Intelligence solutions. But once the choice has been made to use vendor-supplied AI software, the vendor type is critical. Until recently, the buy decision was mainly limited to off-the-shelf Artificial Intelligence software, but now, with the development of highly customized AI applications such as CHATGPT, the choice is becoming easier, allowing some organizations to collaborate in the Creation of the solution.



Section Five

Reference

appendixes

Abstract

10. Reference

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appendixes

The researchers conducted a study entitled "The Impact of Artificial Intelligence on Project Management" (CHATGPT), using a descriptive approach to how Intelligence affects projects and their management.

Topic 1: Over the past few years, the benefits of artificial Intelligence have appeared in all areas of our lives, such as project management.

Artificial Intelligence (AI) has become an essential technology in almost every aspect of human life. From big data to learning, auto suggestion for learning and results pages.

From Google's search engine to Apple's Siri - these are just a few examples of AI permeating our daily lives.

As a result, the demand for a skilled AI workforce for online meetings is increasing exponentially.

The project manager is responsible for managing, planning, organizing, tracking, and supervising the project implementation process and ensuring that it is implemented in accordance with standards, plans, and official documents.

Assigning tasks to work teams, defining responsibilities, obligations, and powers, and managing and using all available resources to serve the Project.

In addition to mediating relationships, communicate regularly with official authorities and stakeholders and follow up on project progress.

As a result, ensure the highest levels of quality, efficiency, and real-time decision-making.

- معلومات المحكم -

الاسم	المهنة
T. Waseem Tabbaa	Lecturer
Mohamad Hashem	Procurement & logistics engineer
Yeslam Al-Saggaf	Academic

تاريخ التحكيم: 23/3/2023

Questions	Agree	Disagree	Natural
Demographic information Gender: Female — Male - Prefer not to say. Age: 20- 30, 31 — 39, 40-50, 60 years old - Prefer not to say. Level of education: Bachelor's degrees, Master's degrees, PhD or higher, prefer not to say.			
First variable: effectiveness of Artificial Intelligence: AI can be defined as a machine that inputs data from the real world, processes it and makes specific decisions as a result in order to achieve a goal. Today's applications of AI include driving cars, chatbots, image/voice recognition, etc.			
1. Scribes the applications of AI tools and functions in different PMBOK processes			
2. Artificial Intelligence collects details from meetings and keeps track of stakeholders.			
3. Artificial Intelligence may help in Analyzing component data to predict which parts are likely to fail quality control.			
4. Do you agree that Artificial Intelligence can plan large and small projects as well as analyze them?			

5. Do you agree that through your dealings with artificial Intelligence, you face few problems compared to the work of humans?			
6. Any of the project managers can dispense with human resources by using artificial Intelligence.			
7. Do you agree with artificial Intelligence can schedule a meeting and manage time?			
8. When working with AI, there will be fewer issues than when working with humans.			
9. Based on the vision of the Kingdom of Saudi Arabia 2023, project managers use technology and artificial Intelligence to develop their projects.			

Second variable: Project Management: is the use of specific knowledge, skills, tools and techniques to deliver something of value to people. The development of software for an improved business process, the construction of a building, the relief effort after a natural disaster, and the expansion of sales into a new geographic market. An objective is defined as an outcome toward which work is to be directed, a strategic position to be attained, a purpose to be achieved, a result to be obtained, a product to be produced, or a service to be performed. A deliverable is defined as any unique and verifiable product, result, or capability to perform a service that is required to be produced to complete a process, phase, or Project. Deliverables may be tangible or intangible.

1. PM and BDM play an important leadership role in the Project. When these roles cooperate and work effectively together, the chances of project success are much higher.			
2. BDM works closely with the sponsor to create the business case. When the PM is known, the BDM consults the PM to create a stronger business case through close collaboration.			
3. The areas where the roles of BDM and PM overlap most are Scoping and Planning, Communications, Stakeholder Management and Risk Management.			
4. PM and BDM should collaborate to develop a draft WBS* to provide a framework for controlling bid costs, monitoring bid progress and reporting bid progress.			

5. Lack of collaborative PM leads to project inefficiency, important work is overlooked or duplicated, stakeholders are confused, and project teams are not operating at optimal levels of efficiency.			
6. As bid manager, the PM determines the members of the bid team and their responsibilities.			
7. As a proposal manager, the PM identifies proposal team members and their assignments.			
8. PM and tendering department calculate the total costs of executing the project work items, and profit margins are then added by the BDM. This type of complementary step increases the probability of winning. The bid with the best ROI possible.			
9. The PM helps BDM in cost estimate activities.			
10. PM is interested in understanding the complexity level of the Project in order to allocate sufficient time for project activities, including collaboration and communication with stakeholders.			
Third variable: CHATGPT: is an AI Chatbot developed by Open AI. The chatbot has a language-based model that the developer fine-tunes for human interaction in a conversational manner. Effectively it's a simulated chatbot primarily designed for customer service; people use it for various other purposes, too though. These range from writing essays to drafting business plans to generating code.			
1. Do you agree that CHATGPT can analyze and interpret large amounts of data?			
2. Do you agree that CHATGPT could be used to develop chatbots that can interact with customers or potential customers and gather information about their preferences and needs? This could be a useful tool for market research or customer service.			
3. Do you think CHATGPT and other artificial intelligence systems can be biased in various ways?			

4. Do you support that CHATGPT could solve a problem that would happen in your projects?			
5. Would you like to use a CHATGPT anytime in future?			

Questions	agree	Disagree	Natural	Notes
1- Outlines the ways in which certain PMBOK processes use Artificial Intelligence tools and services				This item is worded differently from the rest of the items. All other items are statements that can be responded to on a scale, but this item does not lend itself to such expectations. I suggest making all items follow the same format
2- AI can keep track of stakeholders and gather information from meetings.				I suggest you break this item into two, one focusing on stakeholders and the other on meetings
3- AI can plan large and small projects as well as analyze them.				Again, I suggest breaking this into two items because I may agree with planning but disagree with analyzing
4- AI can keep projects on schedule and on budget.				Again, break this into two, i.e., schedule and budget

5 When working with AI, there will be fewer issues than when working with humans.				
6- AI is capable of time management and meeting task scheduling.				I suggest you break it into two
7- One of the objectives of Saudi Arabia Vision 2023 is to enable managers to build their projects with the help of Artificial Intelligence.				
8- PM and BDM plays an important leadership role in the Project. When these roles cooperate, the work will go smoothly.				I suggest you flesh this out
9- The areas where the roles of BDM and PM overlap most are Scoping, Planning, and Communications.				
10- PM and BDM should collaborate to develop a draft WBS* to provide a framework for controlling bid costs.				
11- Lack of collaborative PM leads to project inefficiency, and important work is overlooked or duplicated.				
12- The PM selects the bid team members and assigns them their duties.				
13- The proposal manager identifies the members of the proposal team and their responsibilities.				
14- The PM and tendering department determine the overall expenses of carrying out the project work items, and then the BDM adds the profit margins.				
15- CHATGPT can analyze and interpret large amounts of data.				
16- CHATGPT can be used to develop chatbots that can interact with customers.				Duplicates

16- CHATGPT can be used to develop chatbots that can interact with customers.				Duplicates
17- CHATGPT and other AI tools can be biased in various ways.				
18- CHATGPT can solve problems that might arise in your projects.				
19- CHATGPT can customize your projects.				

Questions	Agree	Disagree	Natural
1- All other items are statements that can be responded to on a scale, but this item does not lend itself to such expectations.			
2- AI can keep track of stakeholders.			
3- AI can gather information from meetings.			
4- AI can plan large and small projects.			
5- AI can easily analyze all projects.			
6- AI is capable of time management and task.			
7- AI can keep projects on schedule can remind you of time.			
8- When working with AI, there will be fewer issues than when working with humans.			
9- One of the objectives of Saudi Arabia Vision 2023 is to enable managers to build their projects with the help of Artificial Intelligence.			
10- The areas where the roles of BDM and PM overlap most are Scoping, Planning, and Communications.			
11- PM plays an important leadership role in the Project. When these roles cooperate			
12- PM and BDM should collaborate to develop a draft WBS* to provide a framework for controlling bid costs.			
13- A lack of collaborative PM leads to project inefficiency, and important work is overlooked or duplicated.			
14- The PM selects the bid team members and assigns them their duties.			
15- The PM and tendering department determine the overall expenses of carrying out the project work items, and then the BDM adds the profit margins.			

16- CHATGPT can analyze and interpret large amounts of data.				
17- CHATGPT can be used to develop chatbots that can interact with customers.				
18- - CHATGPT and other AI tools can be biased in various ways.				
19- CHATGPT can solve problems that might arise in your projects.				
20- CHATGPT can customize your projects.				

Abstract

- Project management is the process of planning, organizing, and controlling resources to achieve specific goals and objectives within a defined timeframe. This involves managing tasks, schedules, budgets, and team members to ensure a project is completed successfully.
- Artificial Intelligence (AI) refers to the simulation of human Intelligence in machines that are programmed to think and learn like humans. AI can analyze large amounts of data, identify patterns, and make predictions based on that data.

The best ways to use AI in project management are to identify which tasks can be automated, to use AI to analyze and interpret data, and to use AI to improve communication and collaboration among team members. First, however, it is important to carefully consider the potential risks and ethical considerations of using AI in project management.

- CHATGPT can be used to benefit from AI in project management by providing access to a wide range of AI tools and resources, as well as by connecting project managers with other professionals who are knowledgeable about AI and its applications in project management

الخلاصة

- إدارة المشروع عبارة عن عملية تخطيط وتنظيم ومراقبة الموارد لتحقيق أهداف وغايات محددة ضمن إطار زمني محدد. من ضمنها إدارة المهام والجدول الزمنية والميزانيات وكذلك إدارة أعضاء الفريق لضمان نجاح اكتمال المشروع.
- يشير الذكاء الاصطناعي (AI) إلى محاكاة الذكاء البشري في آلات مبرمجة للتفكير والتعلم مثل البشر. يمكن للذكاء الاصطناعي تحليل كميات كبيرة من البيانات وتحديد الأنماط وإجراء تنبؤات بناءً على تلك البيانات المدخلة. تتمثل أفضل طرق استخدام الذكاء الاصطناعي في إدارة المشاريع في تحديد المهام التي يمكن أتمتتها، واستخدام الذكاء الاصطناعي لتحليل البيانات وتفسيرها ، واستخدام الذكاء الاصطناعي لتحسين التواصل والتعاون بين أعضاء الفريق. ومع ذلك، من المهم النظر بعناية في المخاطر المحتملة والاعتبارات الأخلاقية لاستخدام الذكاء الاصطناعي في إدارة المشروع.
- يمكن استخدام CHATGPT للاستفادة من الذكاء الاصطناعي في إدارة المشاريع من خلال توفير الوصول إلى مجموعة واسعة من أدوات وموارد الذكاء الاصطناعي، كذلك من خلال ربط مديري المشاريع مع محترفين آخرين على دراية بالذكاء الاصطناعي وتطبيقاته في إدارة المشاريع.

الذكاء الاصطناعي وتأثيره على إدارة المشاريع

(CHATGPT) في منطقة الرياض

إشراف الدكتور

د. وليد عبد الجواد

إعداد الطالبتان

منى الحزيم

٠١٢١٣٠٠٠٦٩٦

لى المحييميد

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