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Bachelor of Project Management



The Impact of Digital Transformation on Project Management

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Chapter 1 Introduction

Digital transformation has had a profound impact on project management, revolutionizing the way projects are planned, executed, and monitored. digital transformation has revolutionized project management by streamlining processes, enabling collaboration, facilitating data-driven decision making, and enhancing project outcomes. It has brought greater agility, efficiency, and effectiveness to project management practices, enabling organizations to deliver projects more successfully in an increasingly digital world.

Purpose: The purpose of this paper was to describe the digital transformation journey in an IT services company. The study aimed to examine the impact of project management styles on the success of the cloud-based ERP implementation in the company. This study was conducted using a qualitative case study method to analyze the project management styles and their influence on the success of the digital transformation of the company. The study discovered that the “visionary” and “affiliative” leadership styles are the key factors that affect the digital transformation of a company. The findings also highlighted the importance of the situational leadership style in the digital transformation journey. **Unique contribution to theory, practice, and policy:** The study concluded by suggesting a management competency framework that leadership team could further develop to successfully drive the digital transformation of the company. The study contributed to the literature by elaborating on a solid characterization of digital transformation journey. The study also offered useful insights to practitioners on how to execute effective and sustainable strategies for digital transformation.

While digital transformation has brought significant benefits to project management, there are still some gaps and challenges that organizations may face. Here are a few gaps related to the impact of digital transformation on project management: **Skills and Training:** Digital transformation requires project managers and team members to have the necessary skills and knowledge to effectively utilize digital tools and technologies. However, there may be a gap in the skill sets of existing project teams, requiring organizations to invest in training and upskilling initiatives to bridge this gap. **Change Management:** Implementing digital transformation in project management often involves significant changes in processes, workflows, and tools. Organizations may face challenges in managing this change effectively, including resistance from team members, difficulty in adopting new practices, and ensuring smooth transition and adoption of digital tools. Addressing these gaps requires a strategic approach, including investment in training and development, effective change management practices, robust cybersecurity measures, data management strategies, and a focus on cultural transformation. By addressing these gaps, organizations can maximize the benefits of digital transformation in project management and overcome challenges along the way.

This research aims to investigate the challenges faced by project managers during the adoption of digital transformation in project management and how these challenges impact project success. This research will contribute to the understanding of the impact of digital transformation on project management by uncovering the specific challenges faced by project managers during its implementation. The findings will help project managers and organizations better prepare for and navigate the digital transformation journey, leading to improved project success rates. Additionally, the research will provide insights into strategies and best practices that can be employed to overcome challenges and drive successful digital transformation in project management.

Research Significance: Assessing the Impact of Digital Transformation on Project Management Performance and Organizational Success. Digital transformation has become a prevalent phenomenon across industries, and its impact on project management practices is significant. Understanding the implications and outcomes of digital transformation initiatives in project management can provide valuable insights for organizations seeking to enhance their project performance and overall organizational success. **Improved Project Performance:** Investigating the impact of digital transformation on project management performance can help identify the specific areas where digital technologies and tools bring the most significant benefits. This knowledge can guide organizations in making informed decisions regarding the adoption and implementation of digital solutions, leading to improved project planning, execution, monitoring, and control. By conducting research on the impact of digital transformation on project management, organizations can gain valuable insights into the specific benefits, challenges, and strategies associated with digital adoption. This knowledge can guide their decision-making processes, improve project outcomes, and enable them to harness the full potential of digital technologies for organizational success in the digital age.

Research Problem

This research aims to investigate the challenges faced by project managers during the adoption of digital transformation in project management and how these challenges impact project success. This research will contribute to the understanding of the impact of digital transformation on project management by uncovering the specific challenges faced by project managers during its implementation. The findings will help project managers and organizations better prepare for and navigate the digital transformation journey, leading to improved project success rates. Additionally, the research will provide insights into strategies and best practices that can be employed to overcome challenges and drive successful digital transformation in project management.

1. Theoretical gaps

These gaps represent areas where further research can contribute to a deeper understanding of the topic. Here are a few theoretical gaps related to the impact of digital transformation on project management. There is a need for the development of comprehensive theoretical frameworks that explicitly capture the multifaceted nature of digital transformation in project management. Existing frameworks often focus on specific aspects, such as technology adoption or agile methodologies, but a holistic framework that integrates various dimensions of digital transformation and their impact on project management is lacking.

Addressing these theoretical gaps can contribute to a more comprehensive understanding of the impact of digital transformation on project management. It can help develop robust theoretical frameworks, provide insights into long-term effects, consider the organizational context and stakeholder perspectives, explore ethical and social implications, and facilitate cross-sector comparisons. By addressing these gaps, researchers can advance the knowledge in this field and provide practical recommendations for organizations undergoing digital transformation in project management.

2. Empirical gaps

There is a need for longitudinal studies that track the impact of digital transformation initiatives on project management practices and outcomes over an extended period. Longitudinal research can capture the dynamic nature of digital transformation and provide insights into how its effects evolve over time, including potential challenges, benefits, and sustainability of the changes implemented. Evaluation of Digital Tools and Technologies: Empirical research can evaluate the effectiveness and impact of specific digital tools and technologies used in project management. Comparative

studies can compare different tools and technologies, assessing their suitability for different project types, team sizes, and organizational contexts. This empirical evidence can guide organizations in selecting and implementing the most appropriate

digital tools for their project management needs. By conducting empirical research to address these gaps, scholars and practitioners can gain valuable insights into the impact of digital transformation on project management. These empirical studies can inform decision-making, provide evidence-based practices, and contribute to the knowledge base in this evolving field.

This study addresses the following main research question:

“How does digital transformation impact project management practices and project outcomes?”

Research Significant

Assessing the Impact of Digital Transformation on Project Management Performance and Organizational Success. Digital transformation has become a prevalent phenomenon across industries, and its impact on project management practices is significant. Understanding the implications and outcomes of digital transformation initiatives in project management can provide valuable insights for organizations seeking to enhance their project performance and overall organizational success.

Improved Project Performance: Investigating the impact of digital transformation on project management performance can help identify the specific areas where digital technologies and tools bring the most significant benefits. This knowledge can guide organizations in making informed decisions regarding the adoption and implementation of digital solutions, leading to improved project planning, execution, monitoring, and control. By conducting research on the impact of digital transformation on project management, organizations can gain valuable insights into the specific benefits, challenges, and strategies associated with digital adoption. This knowledge can guide their decision-making processes, improve project outcomes, and enable them to harness the full potential of digital technologies for organizational success in the digital age.

1. Theoretical gaps

Digital transformation is influenced by various organizational factors, such as culture, leadership, and structure. However, there is a lack of research that examines the role of these contextual factors in shaping the impact of digital transformation on project management. Further research is needed to explore how organizational context interacts with digital transformation initiatives and how it influences project management practices and outcomes. While studies have examined the impact of digital transformation on project managers and project teams, there is a need for research that explores the perspectives of other stakeholders, such as clients, customers, and end-users. Understanding how digital transformation affects these stakeholders and their involvement in project management processes can provide valuable insights into the broader impact of digital transformation initiatives.

2. Empirical gaps

While qualitative studies have provided valuable insights, there is a need for more quantitative analysis of project performance metrics in the context of digital transformation. Empirical research can explore how digital transformation initiatives affect project success factors such as cost, schedule, quality, and customer satisfaction. Quantitative analysis can provide more robust evidence and enable statistical comparisons across different projects and organizations. While some studies have examined the benefits of digital transformation, there is a need for empirical research that specifically focuses on the challenges and barriers faced during the

adoption and implementation of digital transformation initiatives in project management. Understanding the factors that contribute to successful or unsuccessful implementation can help organizations anticipate and address potential challenges. Empirical studies can explore the influence of organizational factors, such as culture, leadership support, and change management, on the impact of digital transformation on project management outcomes. These factors can significantly shape the success or failure of digital transformation initiatives, and empirical research can provide insights into their role and impact.

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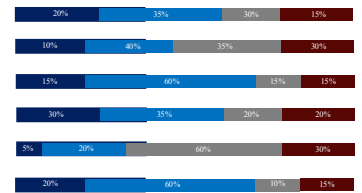
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Appendices List

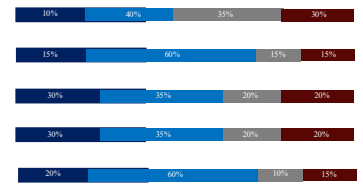
1st Questionnaire

We use technologies such as analytics and social media, to understand our customer better.
 In uncertain times, digital transformation becomes more, not less, important.
 Digital transformation investments are growing briskly, though more slowly than last year.
 Digital maturity's advantages go beyond traditional business benefits.
 Digitally native business units can be an incubator for transformation.
 Digital transformation continues to drive financial performance.



2nd Questionnaire

Does company have a formal Project Management Approach.
 Does company use any approach to verify the project complexity.
 ability to meet project objectives.
 Ability to make decisions.
 What changes have occurred in project cost management and resource allocation due to digital transformation.

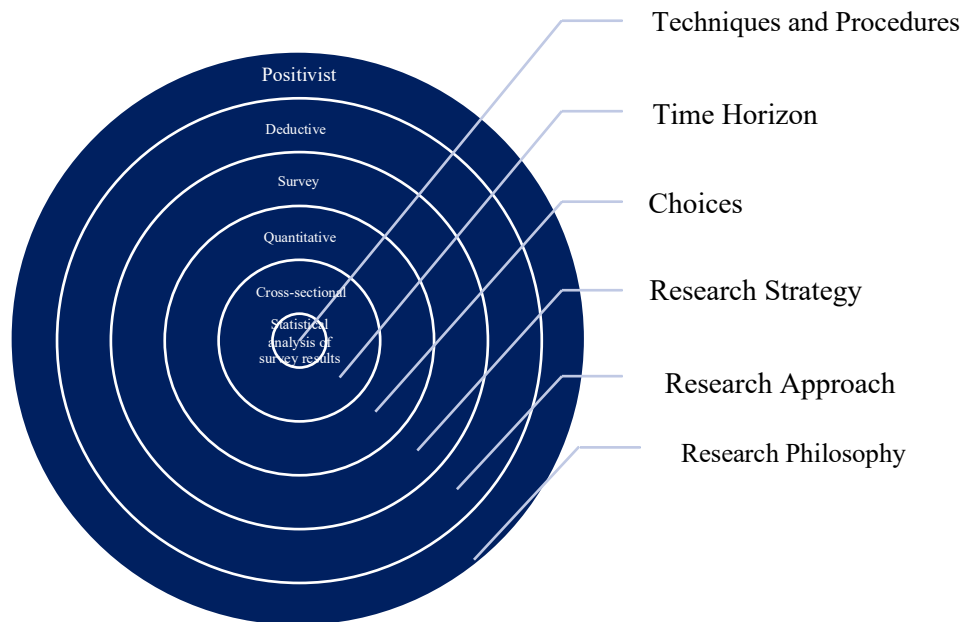


Strongly Agree
 Agree
 Disagree
 Strongly Disagree

Research Questions

- a) What is the extent of digital transformation adoption in project management?
 - To assess the level of digital transformation adoption in project management practices.
 - Hypothesis 1: Higher levels of digital transformation adoption in project management are associated with improved project performance and success rates.
- b) How does digital transformation affect project planning and execution processes?
 - To analyze the impact of digital transformation on project planning, execution, and monitoring processes.
 - Hypothesis 2: Digital transformation positively impacts project planning, execution, and monitoring processes, leading to increased efficiency and effectiveness.
- c) What are the challenges faced by project managers in implementing digital transformation initiatives?
 - To identify and understand the challenges faced by project managers during the implementation of digital transformation initiatives.
 - Hypothesis 3: Project managers face challenges related to change management, skill gaps, and resistance to new technologies during the implementation of digital transformation initiatives.
- d) What are the benefits and opportunities of digital transformation in improving project outcomes?
 - To explore the benefits and opportunities that digital transformation brings to project management, such as improved efficiency, cost savings, or better decision-making.
 - Hypothesis 4: Digital transformation brings benefits such as enhanced decision-making, improved resource allocation, and increased project success rates.
- e) e) How does digital transformation impact project team collaboration and communication?
 - To examine the impact of digital transformation on project team collaboration, communication, and knowledge sharing.
 - Hypothesis 5: Digital transformation improves project team collaboration, communication, and knowledge sharing, leading to better project outcomes.

Research Onion



Research Philosophy

The research on the impact of digital transformation on project management adopts a pragmatic research philosophy. Pragmatism emphasizes the practical implications and real-world applications of research findings. It recognizes the importance of bridging theoretical concepts with practical considerations to address complex phenomena such as the impact of digital transformation on project management.

By adopting a pragmatic research philosophy, this study acknowledges the dynamic and evolving nature of digital transformation and project management practices. It recognizes the need to investigate and understand the practical implications of digital transformation initiatives on project management processes, outcomes, and stakeholder experiences.

Pragmatism allows for the integration of both quantitative and qualitative research methods, enabling the exploration of various dimensions of the research topic. It encourages a flexible and adaptive approach to data collection and analysis, considering the diversity and complexity of digital transformation initiatives and project management contexts.

This research philosophy also emphasizes the importance of collaboration and engagement with practitioners and industry stakeholders. It recognizes their expertise and practical insights as valuable inputs in understanding the impact of digital transformation on project management. By involving stakeholders in the research process, the study aims to generate actionable recommendations and best practices that can inform decision-making and practice in project management.

Overall, the pragmatic research philosophy adopted in this study aims to provide a balanced and practical understanding of the impact of digital transformation on project management. It seeks to bridge the gap between theory and practice by exploring real-world scenarios, considering multiple perspectives, and generating knowledge that can contribute to the effective adoption and implementation of digital transformation initiatives in project management contexts.

Research Approach

The research on the impact of digital transformation on project management adopts a mixed-methods approach. This approach combines both quantitative and qualitative research methods to provide a comprehensive and nuanced understanding of the research topic.

Quantitative research methods will be employed to gather numerical data and measure the impact of digital transformation on various project management metrics. Surveys and questionnaires will be used to collect quantitative data from a large sample of project managers and practitioners. This data will enable the identification of trends, patterns, and statistical relationships between digital transformation initiatives and project management outcomes. Quantitative analysis techniques such as regression analysis and statistical modeling will be applied to analyze the data and draw meaningful conclusions.

Qualitative research methods, such as interviews, focus groups, and case studies, will be utilized to gather in-depth insights into the experiences, perceptions, and challenges related to the impact of digital transformation on project management. These methods will allow for a deeper exploration of individual perspectives, organizational contexts, and the complexities associated with digital transformation initiatives. Qualitative data analysis techniques, such as thematic analysis and content analysis, will be employed to identify common themes, emerging patterns, and contextual factors that influence the impact of digital transformation on project management.

The mixed-methods approach will enable triangulation of data, where quantitative findings can be validated and enriched by qualitative insights. It will provide a more holistic understanding of the research topic by capturing both the quantitative measurements of digital transformation impact and the qualitative narratives behind those measurements. By integrating quantitative and qualitative data, this approach aims to provide a comprehensive and robust assessment of the impact of digital transformation on project management.

The research approach will also involve a collaborative and iterative process, engaging with project management professionals, stakeholders, and experts throughout the research journey. This engagement will help validate findings, gain practical insights, and ensure that research outcomes are meaningful and applicable in real-world project management contexts.

Overall, the mixed-methods approach adopted in this research seeks to capture the multifaceted nature of the impact of digital transformation on project management. It combines the strengths of quantitative and qualitative research methods to provide a comprehensive, rigorous, and practical understanding of the research topic.

Research Strategy

The research strategy for investigating the impact of digital transformation on project management adopts an exploratory and descriptive approach. This strategy aims to explore and describe the current state, trends, and implications of digital transformation initiatives in project management practices.

Literature Review: A comprehensive review of existing literature will be conducted to understand the theoretical foundations, conceptual frameworks, and key themes related to digital transformation and project management. This review will help identify gaps in the literature and provide a foundation for the research study.

Data Collection: Data will be collected from multiple sources to capture a wide range of perspectives and insights. This may include surveys, interviews, case studies, and document analysis. Surveys will be administered to project managers and professionals to gather quantitative data on the adoption of digital transformation initiatives, perceived impacts, and challenges. Interviews and case studies will be conducted with practitioners and industry experts to obtain qualitative data, exploring their experiences, best practices, and lessons learned.

Data Analysis: Quantitative data collected through surveys will be analyzed using statistical techniques to identify trends, correlations, and statistical significance. Qualitative data from interviews, case studies, and document analysis will undergo thematic analysis to identify key themes, patterns, and emerging insights. The analysis will be an iterative process, allowing for the refinement of research questions and further exploration of significant findings.

Triangulation: Findings from quantitative and qualitative data will be triangulated to validate and complement each other. This process will involve comparing the results to enhance the overall understanding of the impact of digital transformation on project management. Triangulation will help ensure the reliability and validity of the research outcomes.

Reporting and Recommendations: The research findings will be compiled into a comprehensive report, presenting the key insights, trends, and implications of digital transformation on project management. The report will provide a descriptive analysis of the impact, highlighting both the benefits and challenges associated with digital transformation initiatives. Based on the findings, practical recommendations and best practices will be formulated to guide organizations in effectively integrating digital transformation into their project management practices.

Dissemination: The research findings will be disseminated through academic publications, conferences, and industry forums. This will contribute to the existing body of knowledge on digital transformation and project management, while also providing actionable insights to practitioners and organizations seeking to navigate the digital landscape.

Choices

When studying the impact of digital transformation on project management, researchers have several choices to consider. These choices can shape the scope, methodology, and focus of the research. Here are some key choices that researchers may need to make:

Research Focus: Researchers can choose to focus on specific aspects of digital transformation that impact project management. For example, they may explore the influence of emerging technologies like artificial intelligence, Internet of Things (IoT), or cloud computing on project management practices. Alternatively, they may investigate the organizational and cultural changes required for successful digital transformation in project management.

Research Methodology: Researchers can choose between quantitative, qualitative, or mixed-methods approaches to gather and analyze data. Quantitative methods, such as surveys or statistical analysis, can provide numerical insights into the impact of digital transformation on project management metrics. Qualitative methods, such as interviews or case studies, can offer in-depth understanding of experiences, perceptions, and challenges associated with digital transformation. A mixed-methods approach combines both quantitative and qualitative methods for a comprehensive analysis.

Sample Selection: Researchers must decide on the appropriate sample for their study. They may choose to target project managers, project team members, or executives involved in digital transformation initiatives. The sample can be selected from a specific industry, organization size, or geographical location to provide context-specific insights. Researchers may also consider including diverse perspectives to capture a broad range of experiences and viewpoints.

Ethical Considerations: Researchers should consider ethical considerations related to data privacy, consent, and confidentiality. They should ensure that participants' information is protected and that the research follows ethical guidelines and regulations. Informed consent should be obtained from participants, and their anonymity or confidentiality should be maintained throughout the research process.

Limitations and Implications: Researchers should acknowledge the limitations of their study, such as sample size, generalizability, or potential biases. They should discuss the implications of their findings for project management theory, practice, and policy. Recommendations for organizations, project managers, or stakeholders can be provided to address the challenges and leverage the opportunities brought about by digital transformation.

Time Horizon

In studying the impact of digital transformation on project management, a longitudinal study with an extended time horizon is a valuable approach. This allows researchers to examine the changes, trends, and effects of digital transformation initiatives on project management practices over a significant period.

Pre-Transformation Phase: The study can begin by examining the project management practices and dynamics within organizations before the implementation of digital transformation initiatives. This phase provides a baseline understanding of traditional project management approaches and their associated challenges.

Implementation Phase: Researchers can then observe and analyze the implementation of digital transformation initiatives within organizations. This phase involves tracking the adoption of digital technologies, changes in project management processes, and the introduction of new tools and methodologies. By collecting data at multiple intervals during this phase, researchers can capture the evolving nature of digital transformation and its immediate impact on project management practices.

Maturation Phase: As digital transformation initiatives become more established within organizations, the study can focus on the maturation phase. Researchers can examine the long-term effects of digital transformation on project management, including changes in project success rates, productivity, stakeholder engagement, and collaboration. This phase enables the assessment of sustained benefits and challenges associated with digital transformation.

Adaptation Phase: Digital transformation is an ongoing process that requires continuous adaptation and improvement. Researchers can explore how organizations and project management practices adapt to the evolving digital landscape. This phase involves examining the strategies, lessons learned, and adjustments made to optimize the impact of digital transformation on project management.

By employing a longitudinal study design, researchers can gain a comprehensive understanding of the impact of digital transformation on project management over time. It allows for the identification of both short-term and long-term effects, as well as the exploration of the dynamics and complexities that arise during different phases of digital transformation implementation. Additionally, a longitudinal study provides insights into the sustainability and durability of digital transformation initiatives and their influence on project management practices in the long run.

Techniques and Procedures

Techniques and Procedures for Studying the Impact of Digital Transformation on Project Management involve a combination of data collection, analysis, and interpretation methods. Here are some key techniques and procedures commonly used in this area of research:

Literature Review: Conducting a thorough literature review is an essential step to understand the existing body of knowledge regarding digital transformation and project management. This involves searching and analyzing relevant academic articles, books, industry reports, and other authoritative sources. The literature review helps identify research gaps, theoretical frameworks, and key concepts to guide the research study.

Surveys and Questionnaires: Surveys and questionnaires are valuable techniques for collecting quantitative data from a large sample of project managers or professionals involved in digital transformation initiatives. These instruments can be designed to measure variables such as the extent of digital transformation adoption, perceived impacts on project management performance, challenges faced, and success factors. Statistical analysis techniques, such as descriptive statistics, correlation analysis, and regression analysis, can be applied to analyze the survey data.

Interviews: Conducting in-depth interviews with project managers, stakeholders, and experts allows for a deeper exploration of their experiences, perspectives, and insights related to the impact of digital transformation on project management. Structured, semi-structured, or open-ended interview formats can be used to gather qualitative data. Transcripts of interviews can be analyzed using qualitative data analysis techniques, such as thematic analysis or content analysis, to identify patterns, themes, and key findings.

Case Studies: Case studies involve in-depth investigation of real-world projects or organizations that have undergone digital transformation. Multiple sources of data, including interviews, documents, and observations, are collected to provide a rich and detailed understanding of the impact of digital transformation on project management in specific contexts. Case studies allow for the exploration of contextual factors, challenges, and best practices associated with digital transformation.

Document Analysis: Analyzing relevant documents, such as project reports, policies, guidelines, and project documentation, can provide valuable insights into the impact of digital transformation on project management. Document analysis helps uncover changes in project management processes, tools, and strategies resulting from digital transformation initiatives. It also allows for the identification of success stories, lessons learned, and organizational adaptations.

Chapter 2 Literature Review

The impact of digital transformation on project management has been a subject of increasing interest and research in recent years. As organizations across various industries embrace digital technologies, project management practices and methodologies are being significantly influenced and transformed. In this literature review, we will explore the existing body of knowledge and examine the key findings and insights regarding the impact of digital transformation on project management. Digital transformation refers to the integration of digital technologies into all aspects of an organization's operations, fundamentally changing how it operates and delivers value to its stakeholders. Project management, on the other hand, involves the planning, execution, and control of projects to achieve specific goals and objectives. The convergence of these two areas brings both opportunities and challenges for project managers.

One of the key impacts of digital transformation on project management is the emergence of new tools and technologies that enhance collaboration, communication, and project execution. For instance, cloud-based project management platforms, virtual collaboration tools, and project management software have revolutionized the way teams collaborate, share information, and track project progress. These technologies have streamlined project workflows, improved team productivity, and facilitated real-time decision-making.

Furthermore, digital transformation has enabled project managers to leverage data and analytics for better project planning and decision-making. With the proliferation of data collection and analysis tools, project managers can access real-time project data, monitor key performance indicators, and gain insights into project performance and risks. This data-driven approach empowers project managers to make informed decisions, optimize resource allocation, and mitigate potential project bottlenecks. Another significant impact of digital transformation on project management is the shift towards agile methodologies and practices. Traditional project management approaches are often linear and sequential, while digital transformation requires organizations to be more agile, adaptable, and responsive to changing market dynamics. Agile methodologies, such as Scrum and Kanban, emphasize iterative development, frequent feedback loops, and continuous improvement. These methodologies enable project managers to respond to changing requirements, deliver value incrementally, and foster greater collaboration and flexibility within project teams.

However, along with the benefits, digital transformation also presents challenges for project managers. The rapid pace of technological advancements requires project managers to constantly update their skills and knowledge to effectively utilize digital tools and technologies. Additionally, the integration of digital systems and platforms may introduce complexities and interoperability issues that need to be carefully managed.

In conclusion, the impact of digital transformation on project management is undeniable. It has revolutionized how projects are executed, monitored, and delivered. The emergence of new tools, data-driven decision-making, and agile methodologies has transformed traditional project management practices. However, organizations and project managers need to carefully navigate the challenges associated with digital transformation to fully harness its potential benefits and achieve successful project outcomes.

1. Importance of conducting Literature Review

Conducting a literature review is a critical step in any research or academic endeavor. It serves several important purposes and offers numerous benefits, including:

Understanding the existing knowledge: A literature review allows researchers to familiarize themselves with the current body of knowledge on a particular topic. By reviewing relevant studies, theories, and scholarly articles, researchers can gain a comprehensive understanding of the existing research landscape, identify gaps in knowledge, and build upon existing theories or findings.

Identifying research gaps: Through a literature review, researchers can identify areas where further research is needed. By examining the existing literature, they can identify unanswered questions, inconsistencies, or contradictions in previous studies. This identification of research gaps helps researchers shape their research questions and objectives, ensuring that their work contributes to filling those gaps and advancing the field.

Refining research questions and objectives: A literature review provides researchers with a solid foundation for refining their research questions and objectives. By critically analyzing the existing literature, researchers can identify key concepts, variables, and theories relevant to their research topic. This process helps researchers clarify their focus and develop research questions that address important gaps or issues in the field.

Avoiding duplication of effort: Conducting a literature review helps researchers avoid duplicating previous research. By examining what has already been done, researchers can determine whether similar studies have been conducted, what methodologies and approaches have been used, and what findings have been reported. This knowledge allows researchers to build upon existing work, avoid repeating studies, and contribute new insights to the field.

Evaluating research methodologies and approaches: A literature review enables researchers to evaluate the methodologies and approaches used in previous studies. By critically analyzing the strengths and weaknesses of different research designs, data collection methods, and analytical techniques, researchers can make informed decisions about the most appropriate methods for their own study. This evaluation helps ensure the rigor, validity, and reliability of their research.

Supporting theoretical frameworks and conceptual frameworks: Literature reviews provide researchers with a foundation for developing and supporting their theoretical or conceptual frameworks. By examining existing theories, models, and frameworks in the literature, researchers can identify those that align with their research objectives and provide a theoretical basis for their work. This process helps establish the theoretical underpinnings of the study and provides a framework for interpreting and analyzing the research findings.

Enhancing scholarly writing and critical thinking skills: Engaging in a literature review enhances researchers' scholarly writing and critical thinking skills. By critically analyzing and synthesizing the literature, researchers develop the ability to evaluate the quality and relevance of research articles, identify key arguments and evidence, and integrate multiple sources into a coherent and well-supported discussion. These skills are essential for producing high-quality research papers and contributing to scholarly conversations.

In summary, conducting a literature review is crucial for researchers and academics. It provides a solid foundation for understanding the existing knowledge, identifying research gaps, refining research questions, avoiding duplication of effort, evaluating methodologies, supporting theoretical frameworks, and enhancing scholarly writing and critical thinking skills. By conducting a thorough literature review, researchers can ensure the relevance, rigor, and originality of their work, ultimately contributing to the advancement of knowledge in their field.

2. Overview of the research variables

Research variables are key elements or factors that are studied or measured in a research study. They are the characteristics, attributes, or properties that can vary or change and are of interest to the researcher. Variables play a crucial role in research as they help define the scope of the study, guide the research design, and provide a basis for data collection and analysis.

There are different types of variables in research, including independent variables, dependent variables, control variables, and extraneous variables. Here is an overview of each type:

Independent Variable: The independent variable is the variable that the researcher manipulates or controls in order to observe its effect on the dependent variable. It is the variable hypothesized to have an impact on the outcome being studied. In experimental research, the independent variable is deliberately manipulated to study its causal relationship with the dependent variable.

Dependent Variable: The dependent variable is the variable that is measured or observed to determine the effect or outcome of the independent variable. It is the variable that is expected to change or be influenced by the independent variable. The

dependent variable is the focus of the study and is often the variable that researchers are trying to explain or predict.

Control Variable: Control variables are variables that are held constant or kept consistent throughout the study to minimize their potential influence on the relationship between the independent and dependent variables. By controlling for these variables, researchers can isolate the effects of the independent variable on the dependent variable.

Extraneous Variable: Extraneous variables are variables that are not the focus of the study but can potentially influence the relationship between the independent and dependent variables. These variables may introduce bias, confounding, or alternative explanations for the observed results. Researchers need to identify and control for extraneous variables to ensure the internal validity of the study.

It is important for researchers to clearly define and operationalize the variables in their research study. This involves specifying how the variables will be measured or manipulated and establishing the criteria or scales for their assessment. The selection and operationalization of variables should align with the research objectives, research questions, and theoretical framework of the study.

Overall, research variables are fundamental components of a research study. They allow researchers to investigate relationships, test hypotheses, and draw conclusions based on empirical evidence. Proper identification, measurement, and control of variables are crucial for conducting valid and reliable research and obtaining meaningful findings.

Variable1: Digital Transformation

- Definition

Digital transformation refers to the comprehensive integration and adoption of digital technologies, tools, and processes by organizations to fundamentally change how they operate, deliver value, and interact with stakeholders. It involves leveraging digital technologies to enhance business operations, improve customer experiences, drive innovation, and achieve strategic objectives. Digital transformation encompasses a wide range of technological advancements, including cloud computing, artificial intelligence, big data analytics, internet of things (IoT), automation, and mobile technologies.

- Development

The concept of digital transformation has gained prominence in recent years as organizations recognize the need to adapt to the rapidly changing digital landscape. The development of digital transformation can be traced back to the increasing availability and advancement of digital technologies, coupled with the growing demands and expectations of customers in the digital age. Organizations across various industries have embarked on digital transformation initiatives to remain competitive, increase operational efficiency, and capitalize on new business opportunities.

- Dimensions

Digital transformation encompasses multiple dimensions that organizations need to consider when implementing digital initiatives. These dimensions include:

Technological Infrastructure: Organizations need to establish a robust technological infrastructure to support digital transformation. This involves investing in hardware, software, networks, and data storage systems that enable the seamless integration and utilization of digital technologies.

Process Transformation: Digital transformation often requires organizations to redefine and reengineer their business processes to leverage digital technologies effectively. This may involve automating manual processes, streamlining workflows, and adopting agile methodologies to improve efficiency, collaboration, and responsiveness.

Customer Experience: Enhancing customer experience is a crucial dimension of digital transformation. Organizations aim to leverage digital technologies to

provide personalized, seamless, and omnichannel experiences to customers, enabling them to interact, transact, and engage with the organization through various digital touchpoints.

Data and Analytics: Digital transformation relies on leveraging data and analytics to drive informed decision-making and gain insights into customer behaviors, market trends, and operational performance. Organizations need to establish data governance frameworks, implement data analytics tools, and develop capabilities to extract actionable insights from data.

Organizational Culture and Change Management: Digital transformation requires a cultural shift within organizations. It involves fostering a digital-first mindset, promoting innovation, and embracing change. Organizations need to invest in change management strategies, provide training and upskilling opportunities, and create a supportive environment to drive successful digital transformation.

- Theories

Several theories and frameworks provide insights into the concepts and drivers of digital transformation. Some of the prominent theories and frameworks include:

Disruptive Innovation Theory: Developed by Clayton Christensen, this theory explains how disruptive technologies can transform industries and create new markets. It highlights the role of digital technologies in disrupting existing business models and driving organizational change.

Technology Acceptance Model (TAM): TAM explores the factors influencing the adoption and acceptance of technology. It helps understand the attitudes and behaviors of individuals towards digital technologies, which is crucial for successful digital transformation initiatives.

Resource-Based View (RBV): RBV focuses on the strategic management of resources and capabilities within organizations. It emphasizes leveraging digital technologies as strategic resources to gain a competitive advantage and achieve superior performance.

Digital Maturity Models: Various digital maturity models, such as the MIT Sloan Digital Maturity Model and the Gartner Digital Business Maturity Model, provide frameworks for assessing an organization's readiness and progress in digital transformation. These models help organizations evaluate their digital capabilities and identify areas for improvement.

These theories and frameworks contribute to the understanding of digital transformation, guiding organizations in formulating strategies, making decisions, and managing the complexities associated with digital transformation initiatives.

Illustrations from literature review

Here are a few illustrations from the literature review highlighting key findings and insights related to digital transformation:

- **Study1: "Digital Transformation: A Literature Review and Guidelines for Future Research" by Valdez et al. (2018)**

Findings: The study identified three prominent themes in the literature on digital transformation: technological factors, strategic factors, and organizational factors. It emphasized the importance of aligning digital technologies with strategic objectives, fostering a digital culture, and developing capabilities to effectively manage digital transformation.

Insight: Digital transformation is a multidimensional process that requires organizations to consider technological, strategic, and organizational factors in their transformation efforts.

- **Study2: "The Impact of Digital Transformation on the Performance of Small and Medium Enterprises" by Dedrick et al. (2020)**

Findings: The research examined the impact of digital transformation on the performance of small and medium enterprises (SMEs). It revealed that SMEs that effectively leverage digital technologies experience improved operational efficiency, increased innovation, enhanced customer satisfaction, and higher financial performance compared to those with limited digital transformation initiatives.

Insight: Digital transformation can have significant positive effects on the performance of SMEs, providing them with a competitive advantage in the digital economy.

- **Study3: "Digital Transformation and Organizational Performance: A Review and Research Agenda" by Sabherwal et al. (2020)**

Findings: The review highlighted the relationship between digital transformation and organizational performance. It found that successful digital transformation initiatives positively impact various performance indicators, including financial performance, productivity, customer satisfaction, and market share. However, the study also emphasized the importance of aligning digital transformation efforts with organizational goals and ensuring effective change management.

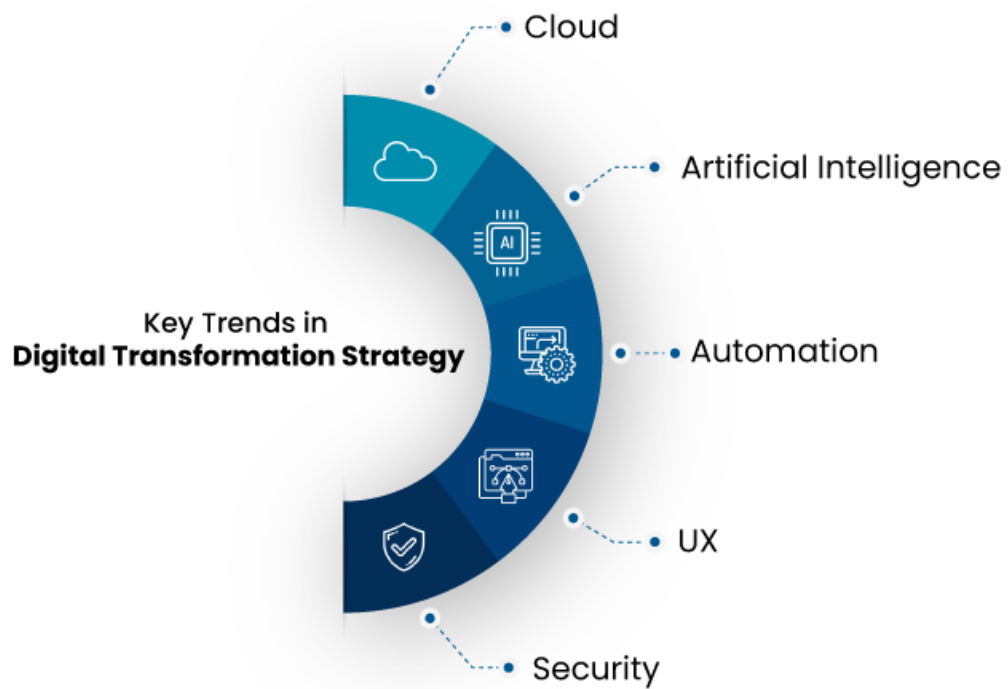
Insight: Digital transformation has the potential to drive organizational performance improvements across multiple dimensions, but it requires careful planning, execution, and management to realize its full benefits.

- **Study4: "Digital Transformation and Innovation: A Systematic Review of the Literature" by Godey et al. (2021)**

Findings: The systematic review explored the relationship between digital transformation and innovation. It highlighted that digital transformation enables organizations to leverage emerging technologies and data to drive innovation in products, services, processes, and business models. The study emphasized the need for organizations to create an innovation-focused culture and develop capabilities to harness the potential of digital technologies.

Insight: Digital transformation acts as an enabler for innovation, providing organizations with opportunities to create new value propositions and differentiate themselves in the market.





These illustrations from the literature review demonstrate the diverse perspectives and insights regarding digital transformation. They underscore the importance of strategic alignment, organizational readiness, effective change management, and the potential benefits of digital transformation on performance and innovation.

Variable2: Project Management

- Definition

Project management refers to the discipline and practice of planning, organizing, and controlling resources and activities to achieve specific objectives within a defined timeframe and budget. It involves applying knowledge, skills, tools, and techniques to initiate, plan, execute, monitor, and close projects. Project management encompasses a systematic approach to managing projects, ensuring that they are completed successfully, meeting stakeholder requirements and delivering desired outcomes.

- Development

The development of project management as a distinct discipline can be traced back to the mid-20th century. Initially, project management was primarily applied to large-scale construction and engineering projects, such as building bridges and dams. Over time, project management principles and practices expanded to various industries and sectors, recognizing the need for effective management of complex initiatives.

The development of project management has been influenced by several factors, including:

1. **Project Complexity:** As projects became more complex, involving multiple stakeholders, diverse resources, and intricate processes, the need for structured project management methodologies and frameworks emerged.
2. **Globalization and Technological Advancements:** The globalization of business and rapid advancements in technology increased the need for efficient project management to handle geographically dispersed teams, cross-cultural collaboration, and the integration of technology into project workflows.
3. **Stakeholder Focus:** The growing recognition of the importance of stakeholder engagement and satisfaction led to the development of project management practices that prioritize clear communication, stakeholder involvement, and effective relationship management.

- Dimensions

Project management comprises various dimensions that encompass the key aspects and elements of managing projects effectively. Some of the dimensions include:

1. **Project Scope Management:** This dimension involves defining and managing the project's scope, including its objectives, deliverables, and boundaries. It includes activities such as requirements gathering, scope definition, scope verification, and scope change control.
2. **Time Management:** Time management focuses on planning, scheduling, and controlling project activities to ensure timely completion. It involves activities such as creating project schedules, setting milestones, tracking progress, and managing schedule variances.
3. **Cost Management:** Cost management encompasses estimating, budgeting, and controlling project costs. It includes activities such as cost estimation, cost baseline development, cost tracking, and cost control.
4. **Quality Management:** Quality management involves planning, executing, and monitoring activities to ensure that project deliverables meet the specified quality standards. It includes processes such as quality planning, quality assurance, and quality control.
5. **Risk Management:** Risk management aims to identify, assess, and mitigate potential risks that may impact project success. It involves activities such as risk identification, risk analysis, risk response planning, and risk monitoring.
6. **Human Resource Management:** Human resource management focuses on acquiring, developing, and managing project team members. It includes activities such as resource allocation, team building, performance management, and conflict resolution.

- Theories

Several theories and frameworks have been developed to support project management practices and enhance project success. Some notable theories include:

1. **Project Lifecycle Models:** Project lifecycle models, such as the Waterfall model and the Agile model, provide frameworks for structuring and managing projects. These models outline the phases, activities, and deliverables throughout the project's lifecycle, guiding project management processes.
2. **Stakeholder Theory:** Stakeholder theory emphasizes the importance of identifying and managing project stakeholders. It highlights the need to understand stakeholders' expectations, engage them in the project, and address their interests and concerns to achieve project success.
3. **Critical Path Method (CPM):** CPM is a project scheduling technique that identifies the critical path, which is the sequence of activities that determines

the project's overall duration. It helps project managers prioritize activities, allocate resources, and manage project timelines effectively.

4. Theory of Constraints (TOC): TOC focuses on identifying and managing the constraints or bottlenecks that limit project performance. It helps project managers identify the critical constraints, optimize resource allocation, and improve project flow to enhance overall project outcomes.

These theories and frameworks provide project managers with valuable insights and tools to effectively plan, execute, and control projects. They assist in managing project constraints, addressing stakeholder needs, optimizing resources, and ensuring successful project delivery.

The relationship between the research variables

The relationship between digital transformation and project management can be examined through patterns, conflicts, and gaps. Let's explore each of these aspects:

1. Patterns:

- Patterns refer to recurring trends, similarities, or correlations observed in the relationship between digital transformation and project management. These patterns can help identify common practices or approaches that organizations adopt when implementing digital transformation initiatives through project management. Some patterns that may emerge include:
- Integration of digital technologies: Organizations often utilize project management techniques to effectively integrate digital technologies into their operations and processes. This may involve managing projects focused on implementing digital tools, systems, or platforms to enable digital transformation.
- Agile project management: Agile methodologies, such as Scrum or Kanban, are commonly employed in digital transformation projects due to their iterative and flexible nature. These methodologies support adaptive planning, collaboration, and quick feedback loops, aligning well with the dynamic nature of digital transformation.
- Change management: Digital transformation often requires significant organizational change. Project management plays a critical role in managing the change process by defining change objectives, facilitating stakeholder engagement, and ensuring smooth transitions during the implementation of digital transformation initiatives.
- Identifying patterns can help organizations learn from successful practices and leverage them in their own digital transformation projects.

2. Conflicts:

- Conflicts may arise in the relationship between digital transformation and project management due to various factors. Conflicts can highlight areas where challenges or tensions exist between the two variables. Some conflicts that may be observed include:
- Pace of change: Digital transformation initiatives often require agility and a fast pace of implementation, while traditional project management approaches may favor a more structured and sequential approach. Balancing the need for speed and adaptability with project management processes can create conflicts in resource allocation, prioritization, and decision-making.

- **Scope management:** Digital transformation initiatives can be broad and wide-ranging, impacting multiple areas of an organization. Managing the scope of such projects within the constraints of project management methodologies and frameworks can pose challenges, potentially leading to conflicts related to scope creep or conflicting priorities.
- **Cultural differences:** Digital transformation efforts often involve cultural changes within an organization. Project management practices may need to address cultural differences, resistance to change, and collaboration challenges that arise during the implementation of digital transformation projects.
- **Identifying conflicts** can help organizations anticipate potential challenges and proactively address them through effective project management strategies and techniques.

3. Gaps:

- **Gaps represent areas where further research, understanding, or improvement is needed in the relationship between digital transformation and project management.** These gaps point to areas where knowledge, methodologies, or practices may be lacking or insufficient. Some gaps that may exist include:
- **Frameworks for digital transformation project management:** While project management methodologies exist, there may be a need for specific frameworks or guidelines tailored to the unique requirements of digital transformation projects. These frameworks could address the challenges, complexities, and uncertainties associated with managing digital transformation initiatives effectively.
- **Change management in digital transformation:** Digital transformation often involves significant cultural and organizational changes. Further research and understanding are needed to develop comprehensive change management approaches that integrate well with project management practices, supporting successful digital transformation outcomes.
- **Measuring the impact of digital transformation on project management performance:** Evaluating the effectiveness and impact of digital transformation initiatives on project management performance requires appropriate metrics and measurement frameworks. Further research can focus on developing robust evaluation methods to assess the outcomes and benefits of digital transformation projects managed using project management practices.
- **Identifying gaps** can guide future research endeavors, inform the development of best practices, and drive improvements in the relationship between digital transformation and project management.

Digital transformation in project management goes beyond the mere adoption of new tools; it represents a fundamental shift in how projects are conceptualized, executed, and delivered. It encompasses the integration of digital technologies to enhance efficiency, improve collaboration, and provide greater value to customers and stakeholders. This transformation is driven by several key factors, including the need for agility, the demand for real-time decision-making, and the expectation of seamless collaboration, regardless of geographical barriers.

Key Trends Shaping the Future

- **Agile and Hybrid Methodologies:** The digital era demands flexibility. Agile methodologies, known for their adaptability and iterative approach, are increasingly being adopted across various industries. Hybrid models that merge traditional practices with Agile principles are enabling organizations to tailor their project management strategies to the specific needs of each project.
- **Automation and AI:** Automation tools are streamlining repetitive tasks, such as scheduling and reporting, freeing up project managers to focus on strategic decision-making and leadership. Artificial Intelligence (AI) and Machine Learning (ML) are beginning to play significant roles by offering predictive insights, optimizing resource allocation, and enhancing risk management.
- **Remote Collaboration:** Digital tools and platforms have made remote work and collaboration the norm. Project teams can now communicate, share documents, and manage tasks in real-time, across different time zones, fostering a more inclusive and flexible working environment.
- **Data-Driven Decision Making:** The ability to collect and analyze vast amounts of data is one of the most transformative aspects of digital project management. Data analytics provide valuable insights that guide strategic decisions, enhance project outcomes, and mitigate risks.
- **Cybersecurity and Risk Management:** As project management processes become increasingly digital, the importance of cybersecurity cannot be overstated. Protecting data and digital assets is now a critical component of project risk management.

Navigating the Digital Transformation

To thrive in this new era, project management professionals must embrace change and adapt their skills and strategies. Here are some ways to navigate the digital transformation effectively:

- **Continuous Learning:** Stay updated on the latest technologies, methodologies, and best practices in digital project management.
- **Embrace Agility:** Cultivate an agile mindset that values flexibility, responsiveness, and collaboration.
- **Leverage Digital Tools:** Explore and integrate digital tools that enhance efficiency, collaboration, and decision-making in your projects.
- **Focus on Data:** Develop skills in data analytics to harness the power of data in improving project outcomes.

- **Prioritize Cybersecurity:** Understand the basics of cybersecurity and ensure that digital projects are designed with security in mind.



Abstract

Purpose: This article aims to investigate the relationship between project management (PM) and digital transformation (DT) in organizations.

Originality/value: This article contributes to expanding the knowledge of the relationship between PM and DT, indicating that PM and its different approaches are used strategically to enable DT implementation in organizations. In addition, it is evidenced that DT demands individuals with technical and behavioral competencies to work in innovative and rapid organizational, cultural, and technological contexts arising from adopting new digital technologies.

Design/methodology/approach: The research is characterized as exploratory with a qualitative approach. The methodology adopted was the systematic literature review and sought to understand the relationship and convergence between PM and DT. The research was carried out broadly, and the articles were selected on the Web of Science, Scopus, and Google Scholar bases, forming the analysis corpus with 104 articles published from 2015 to 2020.

Findings: The results converged in the composition of four factors: competencies; strategy; digital technologies; and portfolio, programs, and projects, demonstrating the evolutionary and adaptive capacity of PM to support major changes such as DT.

Keywords: digital transformation, project management, digital technologies, skills, strategies

Conclusion

The digital transformation of project management is an ongoing journey, marked by continuous innovation and change. By embracing digital technologies and adapting to new methodologies, project managers can enhance efficiency, drive value, and lead their teams to success in this dynamic landscape. As we look to the future, the integration of digital practices in project management will not only be a trend but a fundamental pillar of organizational success.

Engage with this transformation, share your experiences, and let's discuss the future of project management in the digital age. Your insights and questions are invaluable as we navigate this exciting journey together.

In conclusion, digital transformation has a profound impact on project management practices and outcomes. The integration of digital technologies, the adoption of agile methodologies, and the focus on change management are key drivers shaping this relationship.

Digital transformation initiatives require project managers to navigate the complexities of managing projects in a rapidly changing digital landscape. The use of digital tools and technologies enables more efficient project planning, execution, and monitoring. It facilitates improved communication, collaboration, and data-driven decision-making, enhancing project performance and outcomes.

Agile methodologies have gained prominence in digital transformation projects due to their iterative and flexible nature. They enable project teams to adapt to evolving requirements, respond to market dynamics, and deliver value in shorter cycles. Agile principles, such as customer collaboration and continuous improvement, align well with the dynamic nature of digital transformation initiatives.

Moreover, digital transformation often involves significant organizational change.

Project management plays a vital role in managing this change by fostering stakeholder engagement, addressing resistance, and ensuring smooth transitions.

Project managers must consider the cultural, social, and behavioral aspects of digital transformation to facilitate successful adoption and acceptance.

However, the impact of digital transformation on project management also brings challenges. The fast pace of change and broad scope of digital transformation initiatives can create conflicts with traditional project management approaches. Balancing agility and structure, managing scope creep, and addressing cultural differences require careful consideration and adaptation of project management practices.

To maximize the impact of digital transformation on project management, organizations need to invest in developing frameworks and guidelines specifically tailored to digital transformation projects. These frameworks should address the unique challenges and uncertainties associated with managing digital transformation initiatives effectively.

Furthermore, measuring the impact of digital transformation on project management performance is crucial. Organizations should develop appropriate metrics and evaluation methods to assess the outcomes and benefits of digital transformation projects. This will enable them to identify areas for improvement, align project management practices with digital transformation objectives, and demonstrate the value of digital initiatives.

In summary, digital transformation profoundly influences project management practices. It enables the integration of digital technologies, promotes agile methodologies, and necessitates effective change management. By embracing the opportunities and addressing the challenges, organizations can leverage digital transformation to enhance project success, drive innovation, and achieve sustainable growth in today's digital economy.