Studying the Evolution and Development in the Field of Bid and Proposal Management

A dissertation submitted in partial fulfilment of the requirements

for the degree of

Master of Science in International Business

By

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Under Supervision of

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ABSTRACT

This research paper examines the impact of technological innovations and automation on bid and proposal management, a critical process for securing contracts and fostering business growth. The study uses a mixed methods approach that combine both quantitative and qualitative primary data collection method to analyse the key factors shaping the development of bid and proposal management field. It also assesses the key challenges and examines the role of automation in increasing the efficiency and effectiveness of bids and proposals. The quantitative aspect involves survey questionnaires involving bid and proposal management professionals along with examining the adoption and impact of automation tools. The qualitative component includes semi-structured interviews with bid and proposal management professionals and experts to gain in-depth insights on the same.

The study contributes to the understanding of the evolution and development of bid and proposal management practices, highlighting the critical role of automation and technology in enhancing efficiency, quality, and organisational competitiveness. The analysis reveals a pronounced adoption of automation tools, including proposal generation software and workflow automation platforms, which have been instrumental in streamlining processes, enhancing collaboration, and improving decision-making capabilities within the field. Despite the evident benefits associated with these technological advances, the research also identifies challenges associated with their integration into the current practices. These challenges highlights the need for further research aimed at overcoming adoption challenges and maximising the potential of these innovations.

By addressing gaps in existing literature and focusing on the impact of digital transformation and automation, this research aims to contribute valuable insights and sets the foundation for future academic research in this ever-evolving field of bid and proposal management.

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LIST OF ABBREVIATIONS

AI	Artificial Intelligence
APMP	Association for Proposal Management Professionals
BI	Business Intelligence
BPIS	Bid Process Information System
COTS	Commercial Off-The-Shelf
CRM	Customer Relationship Management
ML	Machine Learning
NLP	Natural Language Processing
NLG	Natural Language Generation
RPA	Robotic Process Automation
RFP	Request for Proposal
RFI	Request for Information

1. INTRODUCTION

In the rapidly evolving landscape of business operations, the realm of bid and proposal management stands as a critical component in determining the success and growth trajectory of organisations. Bid and proposal management is a crucial function in organisational procurement processes, where companies compete for contracts and drive business growth. It involves the management of all tasks related to the preparation, coordination, submission, and evaluation of bids for projects in goods, services, or construction domains. The bidding process is a strategic endeavour that requires substantial investment in time and resources to develop compelling pitches that highlight a company's offerings and solutions in response to Requests for Proposals (RFPs) or Request for Information (RFI) (Andrea, 2003).

The field of bid and proposal management has evolved significantly over the years, driven by many factors, including technical modernisations, changes in procurement regulations, and the increasing complexity of procurement processes at both the customers and suppliers ends. This dissertation aims to study the evolution and development of the field of bid and proposal management, with a particular focus on the impact of technological innovations and automation on its practices.

1.1. Background

The field of bid and proposal management has undergone significant changes in recent years, driven by technological innovations and automation. Bid and proposal management is a critical function in the procurement process as it involves the development and submission of proposal in response to requests for proposals (RFP) from potential customers (Bals et al., 2019). In the past bid and proposal management process was majorly paper based, it went in one way between the buyer and the seller, the salespersons were the ones who were in favour of the whole process. Subsequently, a raft of technological innovations has been introduced including the use of the internet, databases, electronic reverse auctions, and most significantly, decision support systems or software packages for supplier evaluation and selection. Many of these changes have come about to cut costs and shift power away from the supplier in the hopes of achieving savings that are more sustainable.

In the past, the process of managing bids and proposals was informal, lacked a structured approach and relied heavily on manual processes, such as paper-based systems and the use of spreadsheets. Companies often responded to requests for proposals (RFPs) or Request for Information (RFI) document in an ad hoc manner, with little consideration to the strategic planning or competitive positioning (Nistala et al., 2024). This approach was partly due to the limited complexity of business transactions and the relatively low volume of competitive bids. Now, the industry has adopted a more systematic approach integrating best practices and adhering to established industry standards, as documented by the Association of Proposal Management Professionals (APMP) (APMP, 2023). This modern approach heavily advocates for the utilisation of standardised templates, defined processes, and collaborative tools, all of which contribute to the expedited development, review, submission, and evaluation of proposals.

The adoption of technology played a pivotal role in transforming bid and proposal management process. From the use of spreadsheets and document management systems to the implementation of specialised software solutions, technology has streamlined the process, facilitated collaboration, and provided valuable insights through data analysis.

These developments have changed how businesses handle their procurement processes, from the preparation and submission of bids to the evaluation and suppliers' selection. Integration of technology in bid and proposal management has resulted in the creation of innovative tools and platforms that have optimised the procurement process, enhancing its efficiency and effectiveness. The recent technological advancement provides a great potential for automating and improving the effectiveness of business processes (Bals et al., 2019).

The latest phase in the evolution of bid and proposal management is characterised by digital transformation. Automation is pursued in this field to achieve productivity improvement, to free professionals from routine tasks so that they can focus on value-added decisions, and to improve the quality of work. Automation of routine tasks reduces the administrative burden on professionals, allowing them to focus on strategic aspects of proposal development (Bals & Turkulainen, 2017). Several commercial off-the-shelf (COTS) proposal automation tools provide effective support to bid and proposal managers in planning, controlling, and monitoring the proposal development process. These tools help managers in defining and

analysing the proposal development process, and in creating a working plan to guide the bid and proposal team. However, the tools lack intelligence to suggest alternative strategies and evaluating the impact of each.

Rapid technological progress has led to a significant rethink in recent years. The development of sophisticated software solutions and automation tools has redefined the landscape which results in offering new opportunities for efficiency and precision in the proposals. Digital transformation has redefined bid and proposal management, with automation tools becoming an integral part of the preparation, submission and evaluation stages. However, the recent developments in AI / ML technologies, like neural networks, Natural Language Processing (NLP), and Natural Language Generation (NLG), have made it possible to automate the process of proposal creation and submission which opens up the new possibilities in this field (Manchanda, 2021). The adoption of digital tools for the data analysis, customer relationship management (CRM) and project management has not only improved operational mechanics but also enhance the strategic decision-making process with real-time data and predictive analytics. Meanwhile, AI and machine learning offer advanced capabilities for analysing RFPs, customising proposals, and predicting success rates (Manchanda, 2021).

1.2. Purpose of the Study

The purpose of this study is to explore and analyse the extent to which technological innovations and automation have impacted bid and proposal management practices. By providing a comprehensive overview of the current state of bid and proposal management and its evolution, the research endeavours to contribute valuable insights to both academic discourse and practical application in the business world.

The primary purpose of this research study is to explore the key factors shaping the evolution of bid and proposal management practices in the context of technological innovation and automation. By examining the impact of these advancements on organisational processes, the study aims to discover insights that can improve the efficiency and effectiveness of bid management practices. Particularly, the research seeks to achieve the following objectives:

- **Investigate the Influence of Innovation:** This study aims to analyse how innovative technologies have reshaped traditional bid and proposal management practices, identifying the benefits and challenges associated with the adoption of new technologies in the procurement processes.
- **Assess the Role of Automation:** By evaluating the role of automation in bid management, the research intends to explore how automated solutions can streamline workflows, improve decision-making processes, and enhance overall efficiency in managing bid and proposal.
- **Explore Organisational Challenges:** The study will also investigate the main challenges faced by organisations in implementing innovation and automation in bid management, with a focus on understanding barriers to adoption and strategies for overcoming these difficulties.
- **Provide Practical Recommendations:** Through collaboration with industry experts and thorough analysis of the research findings, the study aims to offer practical recommendations and potential strategies for organisations to optimise their bid and proposal management practices.

This research study aims to contribute valuable insights to the field of bid and proposal management by achieving these objectives with an objective of assisting organisations to better understand how technological advancements can enhance procurement processes, promote business growth, and increase competitive advantage in the market.

To investigate this, the researcher will be utilising both quantitative and qualitative research methods as the primary approach, it is to be noted that these methods have gained immense popularity in recent years. This approach is also referred to as a mixed method approach according to Bryman (2006). Almalki (2016) argues that although this method is more time consuming, using a mixed method approach provides more comprehensive information compared to using only single approach.

1.3. Overview of the Research Structure

This research is organised in seven chapters:

The first chapter introduces topic of the study and the contents of the research. This chapter sets the stage for the research by outlining the background of bid and proposal management, highlighting its significance in the business environment. It also defines the purpose of the study, emphasising the need to investigate the impact of innovation and automation on bid management practices and gives an overview on the research topic.

The second chapter delves into existing literature to identify gaps, challenges, and opportunities in bid management, providing a foundation for the research study.

The third chapter presents the primary research objectives and questions of the study. In addition, this chapter explains the significance of this research and how the findings will be analysed.

In fourth chapter, a detailed discussion on research philosophy, design, and methodology is provided. This chapter describes the methods used for data collection using two primary research methods, sampling methods, research instruments, and data analysis techniques in detail.

The fifth chapter showcases the findings and analysis present in the quantitative and qualitative results of the research, along with analysing the impact of innovation and automation on bid and proposal management practices. These results are explained with reference to the current literature and research objectives.

The sixth chapter of the study is discussion that further interprets and discusses these findings along with their implications for bid management practices. Furthermore, limitations and challenges are also highlighted under this chapter and lastly, recommendation for further study on this topic were also discussed.

The last chapter of this study is the conclusion, which consist of a summary of overall study.

2. LITERATURE REVIEW

The bid and proposal management landscape has been reshaped by technological innovations and automation, sparking interest for its potential to revolutionise traditional procurement processes. This chapter of the dissertation delves into the significant shifts and progressions within bid management practices, drawing from a range of recent studies and industry insights. This literature review examines the impact of these advancements on bid and proposal management field, with a focus of their impact on efficiency, effectiveness, and business outcomes in organisational procurement processes.

This chapter attempts to provide a comprehensive understanding of the current state and future directions of bid management by examining the impact of innovation and automation, and the challenges and gaps in the existing literature.

2.1 Evolution of Bid and Proposal Management

The bidding process is a competitive and strategic effort undertaken by companies across various industries to secure contracts and drive business progression. Bid and proposal management, a critical part of the sales cycle, requires substantial investments in time and resources to develop compelling pitches that highlight a company's offerings in response to Requests for Proposals (RFPs) or Request for Information (RFI) (Andrea, 2003). Over time, this industry has undergone significant evolution, transitioning from rudimentary submission practices to sophisticated and strategic processes focused on customer needs.

Historically, bid and proposal management was characterised by ad hoc approaches and minimal standardisation. Proposals were crafted and presented without a comprehensive framework, resulting in a process lacked structure (Andrea, 2003). In contrast, contemporary bid and proposal management is recognised as a complex and nuanced process that demands detailed planning, thorough investigation, and strategic execution. The advent of manual procedures, such as paper-based systems and spreadsheets, marked the initial efforts to organise and manage bids. These early methods, while foundational, were limited in their ability to handle the increasing complexity of proposals and the competitive nature of the bidding environment.

Over time, with the increasing complexity and competitiveness within the industries, bid and proposal management process has evolved to incorporate more structured methodologies and tools (Philbin, 2008). The human aspects of bidding are frequently highlighted in literature from the middle to late 20th century, with an emphasis on the part that bid managers and sales teams play in developing and overseeing bids.

As the industry matured, best practices and industry standards such as APMP has became integral to bid management, leading to the adoption of methodical approaches. These strategies emphasise the utilisation of pre-built templates, clear procedural guidelines, and collaborative tools, all aimed at expediting the creation, evaluation, and submission of proposals. The shift towards a structured methodology has been instrumental in enhancing the competitiveness and appeal of proposals (McKenzie, 2023).

The potential for further streamlining the process lies in digital transformation, with automation emerging as a driving force. By automating routine, rule-based tasks, businesses can significantly enhance productivity and efficiency within the bid and proposal management process. Automation provides companies a competitive edge by optimising workflows and fostering teamwork, allowing them to allocate human resources to higher-value tasks such as data analysis, customer relationship building, and the development of innovative solutions specifically tailored to meet customer needs (McKenzie, 2023).

Today, it demands strategic planning and execution, with best practices and industry standards embedded in a methodical approach. The transition from manual procedures to sophisticated artificial intelligence (AI) and automation tools marks a significant development in organisational approaches to bid management (McKenzie, 2023; Philbin, 2008).

The traditional approach to responding to requests for proposals (RFPs) has shifted towards more streamlined and efficient processes, as highlighted in the "RFP Response Trends & Benchmarks 2024 Report" by Loopio (2024). Organisations are increasingly recognising the importance of adopting modern technologies to enhance their bid management practices and stay competitive in the procurement landscape. The evolution of bid and proposal management is characterised by a shift towards digital solutions, automation tools, and collaborative

platforms that enable organisations to handle a higher volume of RFPs and RFIs, improve response quality, and optimise resource utilisation.

2.2 Innovation and Automation in Bid and Proposal Management

Zahaf and Gargouri (2017) explores the importance of the Bid Process Information System (BPIS) in influencing business survival and strategic orientations. The authors emphasise the need for the BPIS to exhibit integrity, flexibility, and interoperability. They propose a methodology organised around four dimensions (operational, organisational, decision-making, and cooperative) to bridge the gap between business and technical infrastructures of the BPIS. Key points discussed in the paper include the challenges faced in implementing the BPIS using the urbanisation approach, the lack of specific modules in existing systems to support bid processes, and the characteristics of the organisational dimension of the BPIS.

The field of bid and proposal management is undergoing a significant transformation driven by advancements in innovation and automation. These technological advancements are reshaping the traditional methodologies, introducing efficiencies previously unattainable in the manual era of bid submissions.

Collaborative Platforms and Cloud-Based Tools

A notable innovation in this domain is the emergence of collaborative platforms and cloud-based tools. These technologies facilitate real-time collaboration, document sharing, and version control among team members, thereby streamlining coordination, enhancing communication, and reducing the time required for proposal development (Fallmann, 2021). The ability to work concurrently on documents and maintain a single source of truth for proposal content has significantly improved the proposal development process. The "RFP Response Trends & Benchmarks 2024 Report" by Loopio (2024) highlights the increasing reliance on online portals for RFP submissions, with 50% of respondents utilising these platforms. By leveraging collaborative platforms and cloud-based tools, organisations can centralise their RFP content, facilitate real-time collaboration among team members and subject matter experts, and ensure easy access to information and resources.

Artificial Intelligence and Natural Language Processing

Further advancements include the application of Artificial Intelligence (AI) and Natural Language Processing (NLP) technologies. These tools automate critical tasks such as proposal generation, content reuse, and compliance checks that helps in enhancing the accuracy, consistency, and speed of proposal development, thereby allowing bid managers to allocate more time to strategic aspects of the proposal process (Fallmann, 2021).

The evolution of bid and proposal management practices, as explored by Escartin (2024), that showcases how AI tools have revolutionised document analysis, ensuring compliance and compelling proposals. By integrating AI into bid and proposal writing, teams can benefit from tailored suggestions, enhanced drafting efficiency, and streamlined development of supporting documents, ultimately boosting competitiveness in the bidding landscape.

Automation on Bid Management Processes

The potential of automation to revolutionise bid and proposal management processes is significant. By eliminating manual tasks and reducing human error, organisations can streamline their proposal development processes, manage their proposal pipelines more effectively, and prioritise proposals to allocate resources efficiently (McKenzie, 2023). Workflow automation tools further contribute to this efficiency by automating task assignments, tracking progress, and sending reminders, which ensures the timely completion of activities and reduces bottlenecks (McKenzie, 2023).

The advent of RFP automation tools has streamlined the response process, enabling organisations to manage and respond to RFPs with greater agility and accuracy. Automation facilitates the rapid assembly of information, allowing for the creation of tailored responses that align with the specific requirements of each RFP. This level of customisation was previously unattainable with manual processes, which were time-consuming and prone to human error (Shankar, 2023).

By leveraging innovative technologies, organisations can automate repetitive tasks, ensure response consistency, and accelerate the overall response time to meet tight deadlines. The integration of automation in bid and proposal management enables organisations to focus on

strategic aspects of the response process, such as content customisation, compliance with requirements, and differentiation from competitors. These innovations drive efficiency, effectiveness, and competitiveness in bid management practices, positioning organisations for success in the increasingly digital and competitive procurement environment (Loopio, 2024).

Technological Trends and Knowledge Repositories

Recent literature highlights the transformative role of technology in bid management. The current trend involves leveraging NLP and search techniques, supported by comprehensive knowledge bases, to automate the creation of bid responses (Rajbhoj et al., 2019). The development of expert systems and decision support systems that simulate the reasoning of human experts during the bid management process complements this trend. Additionally, knowledge repositories have become essential in structuring solution content, providing automation support for quality RFP responses, and leveraging past experience to support future proposals (Rajbhoj et al., 2019).

According to a press release published in 2019 by ResearchAndMarkets.com (www.businesswire.com, 2019), it was predicted that the global market for proposal management software would experience significant expansion as it is expected to move from USD 1.5 billion by the end of 2019 to USD 3.1 billion by the end of 2024. This expected growth suggests a Compound Annual Growth Rate (CAGR) of 14.9%, showcasing a substantial upward trend in the market landscape.

Figure 1: Anticipated expansion path of the Proposal Management Software Market worldwide (MarketsandMarkets,2019)

The driving force behind this expansion has been attributed to the increasing adoption of cloud-based technologies in the bid and proposal management field, illustrating a strategic shift towards more advanced and efficient digital solutions.

The verified Market Reports blog (Reports, 2024) highlights and discusses the key trends shaping the bid and proposal management software industry. The article highlights seven key trends that are transforming the landscape of bid management software (Reports, 2024):

- **Cloud-Based Solutions:** The adoption of cloud-based bid management software is increasing due to its scalability, flexibility, and cost-effectiveness.
- **Artificial Intelligence (AI) Integration:** AI is increasingly being integrated into bid management software to automate tasks, improve accuracy and decision-making.
- **Mobile Accessibility:** Bid management software is becoming more mobile-friendly, allowing users to access and manage bids on the go.
- **Collaboration Tools:** The inclusion of collaboration features in the bid management software enables real-time communication and seamless teamwork between bid team members.

- **Data Analytics:** Advanced data analytics capabilities are integrated into bid management software to provide insights, track performance, and optimise bidding strategies.
- **Integration with CRM Systems:** Bid management software integrates with Customer Relationship Management (CRM) systems to streamline processes and improve customer interactions.
- **Customisation and Personalisation:** Bid management software is offering more customisation options to tailor solutions to specific business needs and preferences.

These trends reflect that industry's focus on leveraging technology to streamline processes, enhance efficiency, and improve overall business outcomes. It embraces cloud-based solutions, AI integration, mobile accessibility, collaboration tools, data analytics, CRM integration, and customisation. Organisations can also optimise their bid management practices and remain competitive in the market by levraging these technologies (Reports, 2024).

2.3 Impact of Digital Transformation and Automation

The potential for streamlining bid and proposal management through digital transformation is substantial. Automation plays a crucial role in driving digital transformation, as it is becoming more prevalent in enhancing workflows and promoting teamwork within organisations (McKenzie, 2023). Companies can significantly increase their productivity and efficiency in the proposal management process by automating routine, and conducting rule-based tasks and activities with minimal human intervention (McKenzie, 2023).

In the highly competitive world of attracting and keeping customers happy, automation brings a clear benefit by maximising efficiency. Even though gaining and keeping customers is challenging, automation can provide companies with a competitive edge by streamlining their processes. By ensuring that automated processes are implemented, companies can redirect resources to more beneficial tasks like data analysis, customer relationships management, and creating innovative solutions to meet client requirements and demands (Fallmann, 2021).

Digital platforms have revolutionised collaboration among bid teams by providing a centralised repository for proposal content and facilitating real-time communication. These platforms support version control and ensure that all the team members have access to the most current

and relevant information. Bid and proposal team can allocate more time to strategic activities that enhance the quality of the proposal by automating routine tasks, such as data entry and document formatting (Shankar, 2023).

Automation and AI-driven tools can analyse RFP documents to identify key requirements and ensure that responses meet all required evaluation criterias. This reduces the risk of non-compliance and enhances the overall quality of the submission, increasing the likelihood of winning bids (Upland Software, 2024). Automating tasks like question analysis, solution recommendation, and response composition reduces the time and effort required to prepare proposals, accelerating the response generation process, and minimising errors (Bidhive, n.d.). Furthermore, the use of knowledge-driven and model-based approaches in bid and proposal management enables organisations to leverage expertise and past experiences stored in machine-processable formats. This structured approach enhances the quality of responses and facilitates collaboration between subject matter experts and proposal teams, leading to more effective and comprehensive proposals.

Nevertheless, there are challenges that come with implementing automation in bid and proposal management. Organisations encountering automation in their bid and proposal management processes must address challenges such as adapting to new technologies and the danger of depending too heavily on technology. Organisations must assign their resources towards training and development initiatives to ensure that the staff acquires the necessary skills and knowledge to use the automation tools efficiently. Additionally, ensuring that the company has adequate controls in place is a necessary measure to avoid the risk of a complete reliance on technology.

Challenges in bid and proposal management, such as tight deadlines, limited resources, intricate requirements, and the necessity for teamwork among different teams and departments, can impede productivity and success (Postolache, 2019). Moreover, time-consuming, and error-prone tasks frequently occur as a result of manual processes like document creation, data gathering, and review cycles. These difficulties may result in inefficiencies, delays, and higher expenses during the bid and proposal management process. The adoption of systems tools and techniques should allow the bid schedule to be reduced, and the use of systems frameworks throughout the bid management process will allow each stage to become more focused.

However, there are significant uncertainties in the early stages of the bid management process, and systems engineering can help in reducing these uncertainties (Philbin, 2008).

2.4 Gaps in Existing Literature

From the analysis of the previous literature in relevance with the topic it can be analysed that the literature on bid and proposal management has undergone considerable growth; however, the existing literature highlights several significant gaps and challenges that require additional exploration.

The research gaps identified in the paper by Zahaf and Gargouri (2017) highlight the lack of detailed modelling of bid processes in complex contexts and the need for knowledge-based systems to address conflicts in business knowledge sharing, and the further development of ontological frameworks for business processes.

Even though systems have been created to automate RFP responses, there is a shortage of thorough empirical research assessing the efficiency of these systems in actual conditions for a prolonged duration (Rajbhoj et al., 2019). Assessments like these are crucial to grasp the lasting efficacy of these systems and how they affect organisational performance. The document emphasises the significance of carrying out further feedback analysis and evaluation to improve the proposal development system (Rajbhoj et al., 2019). This difference indicates that regularly assessing, receiving user input, and evaluating performance are crucial for improving and enhancing AI-powered proposal development solutions. This gap suggests that ongoing assessments, user feedback, and performance evaluations are essential for refining and optimising AI-powered proposal development solutions.

According to an article, the automation of RFP processes has the potential to enhance quality and streamline operations; however, it also raises concerns about generating generic responses that may not fully cater to the specific requirements of the RFP issuer (Shankar, 2023). Further research could explore how to use RFP automation tools while still tailoring proposals to individual RFPs and more in-depth study could explore how automation impacts the creativity and persuasiveness of proposals.

A comprehensive framework of best practices for the adoption of innovation and automation in bid and proposal management, supported by robust case studies, is lacking in existing literatures. Although advancements have been made in RFP automation technology to improve usability and integration with tools like customer relationship management (CRM), communication platforms, and cloud storage, there is still a need for more research on how effective these integrations are. Limited studies assesses how RFP automation affects smooth integration with current systems and processes. Studies that systematically evaluate the impact of RFP automation on seamless integration into existing systems and processes are limited. This gap highlights the need for comprehensive research that explores the interoperability of RFP automation solutions within the broader technological ecosystem of organisations.

Finally, despite the advancements in technology, collaboration, and data analytics that have significantly influenced bid and proposal management practices, there exists a notable deficiency in comprehensive documentation and analysis of these developments. The industry has changed with the development of cooperative platforms, AI-powered solutions, robotic process automation (RPA), and workflow automation tools, but there is still insufficient literature documentation about the effect of these advancements on impact of these developemnts, efficency and accuracy, and business performance and outcomes. This study aims to bridge this gap by identifying and analysing the major developments and innovations that have shaped the field of bid and proposal management.

2.5 Conclusion

This Literature review chapter has systematically examined the transformative impact of technological innovation and automation on the bid and proposal management landscape. By critically analysing recent research studies and insights from the industry, this chapter has provided a comprehensive understanding of the significant changes that have occurred within the field, particularly in relation to efficiency, effectiveness, and business outcomes in organisational bid and proposal mamagement processes.

The transition from basic submission methods to the sophisticated, customer-centric strategies employed in contemporary times highlights the ever-changing and dynamic essence of bid and proposal management. The advancement of the industry has been characterised by a move

away from random approaches towards structured, standardised procedures that prioritise both efficiency and effectiveness. The integration of digital tools and automation has been critical in this transformation and offers unprecedented opportunities to improve organisational procurement processes.

Innovation and automation have emerged as key drivers of this development, with collaborative platforms, AI, and NLP technologies automating tasks and improving the proposal development process (Fallmann, 2021; Rajbhoj et al., 2019). These advancements have not only streamlined workflows but have also empowered bid teams to focus on strategic activities that improve the quality and competitiveness of proposals.

In conclusion, management of bids and proposals is a critical process for organisations to secure contracts and achieve business growth. Innovation and automation can play a significant role in addressing challenges that can impede efficiency and effectiveness of this process and improve the management of overall bids and proposals processes. Collaborative platforms, AI-driven solutions, RPA, and workflow automation tools can streamline tasks, improve accuracy, and enhance the overall process. In spite of all these advancements, there are certain gaps that needs to be addressed which are highlighted in this literature. There is a lack of detailed research on the adoption and acceptance of innovative technologies, a need for empirical studies evaluating the impact of these technologies, and a deficiency in comprehensive documentation of developments in bid and proposal management (Postolache, 2019; Rajbhoj et al., 2019). This research aims at addressing these gaps by examining the major developments and innovations that has potential to transform this field. The findings of this chapter lay the foundations for such research, highlighting the importance of further exploration and innovation in the field of bid and proposal management.

3. RESEARCH QUESTION

3.1 Research Questions

This chapter outlines the research questions that guide this dissertation and provide the framework for investigation into the evolution and impact of technological advancements on bid and proposal management practices.

The main research question is as follows:

How have technological innovations and automation influenced the evolution of bid and proposal management practices, and what impact do these advancements have on the efficiency, effectiveness, and business outcomes in organisational procurement processes?

To comprehensively address the above mentioned primary research question, this study will explore a series of investigative questions to unravel a specific aspect of the main question:

1. **Key Influential Factors:** What are the factors that have influenced the advancement of bid and proposal management practices?
   Examining these factor allows for a comprehensive exploration of the different elements that have impacted the development of strategies and methodologies in this field.

2. **Challenges and Automation's Role:** What are the main challenges that organisations encounter in bid and proposal management, and how does automation impact efficiency and effectiveness?
   Understanding these main challenges provides valuable insights into the difficulties that need to be overcome to achieve success, while also exploring how the integration of automation can enhance efficiency and effectiveness in managing bids and proposals.

3. **Current Practices:** What are the current approach in bid and proposal management in organisations?

An exploration of current practices established in an organisation regarding bid and proposal management offers a glimpse into the existing trends and methodologies employed in this field. By studying the current practices, researcher can gain a deeper understanding of the strategies and approaches commonly utilised by organisations to handle bids and proposals effectively.

4. **Innovative Approaches and Technologies:** What innovative methodologies and technologies can enhance bid and proposal management processes?
   By investigating the various innovative approaches and technologies, organisations can uncover new methods to streamline operations, improve decision-making processes, and ultimately improve the overall efficiency for managing bids and proposals.

5. **Major Developments and Innovations:** What are the significant advancements and innovations that have influenced bid and proposal management field?
   By exploring these key developments, researcher can gain valuable insights into the evolution of best practices and emerging trends in bid and proposal management.

6. **Impact on Business Performance:** How have evolving practices in bid and proposal management impacted business performance and outcomes?
   Understanding the impact on business performance resulting from changes in bid and proposal management practices is essential for organisations aiming to enhance their outcomes. By analysing how evolving practices influences business performance, researcher can identify the effects of strategic decisions and operational changes on the overall success and effectiveness of bid and proposal management processes.

The formulation and definition of these research questions are instrumental in steering the research towards concrete conclusions drawn from the data collected.

3.2 Research Objectives

The aim of this study is to provide a comprehensive understanding of the development and evolution of bid and proposal management, with focus on examining the impact of technological advancements and automation on organisational processes and outcomes.

The primary objective is to identify key factors shaping the development of bid and proposal management practices by assessing the key challenges in bid and proposal management, and examining the role of automation in increasing efficiency and effectiveness. Additionally, the research will assess the impact of innovative technologies on improving bid and proposal management processes and document the key developments and innovations that have shaped this field. The goal is to empower bid and proposal teams by increasing efficiency, accuracy, and productivity in proposal development, thereby improving business development outcomes.

3.3 Conclusion

This chapter outlined the research question, objectives and aims that will guides this research study. The researcher has identified and established a robust framework of research questions aimed at examining the influence of technological innovations and automation on bid and proposal management practices. By addressing these questions, this research aims to offer valuable insights into the evolving landscape of bid and proposal management and its relationship to organisational success in the procurement process. The research methodology used to address the research question, objectives and aims is described in the next chapter.

4. RESEARCH METHODOLOGY

4.1 Introduction

This chapter is dedicated to the methodology which is used in the research to explore the ways in which innovations and automation have been affecting bid and proposal management to the point when this effect could be described as profound. Finally, the consequences of these advancements would be analysed.

The study employs a mixed-method design combining both qualitative and quantitative approaches to secure an in-depth analysis of the topic. The chapter begins with the research methodology component including a pragmatism research philosophy, research design, data collection methods, and analysis approaches which are detailed accordingly to reflect a firm basis for grasping the tech impact on bid and proposal management practices. Lastly, the chapter briefly addresses the quality and ethics concerns of the study.

4.2 Research Philosophy

The study is based on a pragmatism research philosophy which focuses on the practical application of research findings to address real-world problems. This approach was chosen because it is flexible and not committed to any one system of philosophy and reality, liberating researchers from the constraints of traditional paradigms and allowing a more flexible and adaptable approach to integrate both quantitative and qualitative methods, offering a comprehensive understanding of the research problem. As Bryman & Bell (2019) articulate, this philosophical element is necessary to understand and adapt to the research.

The research philosophy gives an indication of the reason for the study by entailing the methodology used to handle the situation. Research philosophy serves as a guiding framework for the data and information collection, as it is embedded with the empirical declarations related to the study topic (Saunders et al.,2019). There are various academic research philosophies that can be utilised to provide the research the right direction and achieve the desired outcomes.

For this study, the pragmatism philosophy has been selected as the directing framework. Pragmatism accepts concepts based on their relevance and ability to support practical actions. This philosophy recognises that there are multiple ways to interpret the world and conduct research. It believes that a single point of view cannot capture the entire picture, and that multiple realities need to be examined appropriately (Saunders et al., 2019).

Pragmatism emerged as a response to a clash of paradigms through the emerging positivism and interpretivism (Morgan, 2014). This study will do data collection from diverse individuals by means of survey questionnaire and semi-structured interviews. The researcher chose the pragmatism philosophy because it aligns with the mixed methods approach proposed for this study. This approach allows the use of both quantitative and qualitative methods to gain a comprehensive understanding of the research problem (Saunders et al., 2019), which is in line with the objectives of this study into the evolution and development of bid and proposal management practices.

4.3 Research Design

The research design is one of the key components of the study, because it sets out the methodological framework that the researcher uses during the analysis (Neuman, 2006). The research design encompasses the overarching plan for collecting, measuring, and analysing data to address the research questions efficiently.

There are three primary types of research design: Exploratory, Explanatory, and Descriptive. The exploratory research design involves investigating research questions, while the explanatory research design aims to enhance the research models as per Neuman (2006).

The mixed method approach is used for this research with the sequential design. This research design method involves collecting and analysing both statistical and non-statistical data, depending on the research question and objectives (Saunders et al., 2019). The goal is to gain a holistic view of the current reality of bid and proposal management practices, look at how innovations, including automation and AI-driven solutions, can influence these processes. It also helps in understanding the concepts and reasons behind the changes that take place in this area of study.

This way, the research aim to to leverage the unique advantages offered by both quantitative and qualitative research for the comprehensive and thorough analysis. The quantitative element involves using statistics to analyse data regarding bid and proposal management approaches, while the qualitative element is about acquiring detailed information and thoughts from professionals through interview proces (Creswell, 2007). Survey and interview were conducted in a systematic approach in order to ensure that the data gathered is valid and reliable.

4.5 Research Instrument

The study target bid and proposal management professionals operating across various regions. Industry experts, executives, and organisations involved in the bidding and proposal processes also included. Their insights is invaluable in understanding the current practices and the role of technological advancements in the field.

With this study, the researcher has chosen both quantitative data gathering tools - a survey and a semi-structured interview within the qualitative data collection (Saunders et al., 2019). The data derived from the survey responses will be quantified using the Likert's scale variables that ranged from strongly agree to disagree were provided to the respondents.

The interviews were conducted through Microsoft Teams in order to allow the researcher with an opportunity to have more immediate access to the interviewees who are all working professionals in the bid and proposal management field. Each meeting was recorded with prior consent of every interviewee and Microsoft Teams was also essential in automatically generating a transcript to support the data analysis process later.

To ensure the effectiveness of the research instruments which is the survey and semi-structured interview, the researcher submitted the questionnaire to the respective supervisor. The aim of this process was to verify the ability of the instrument to elicit information that directly addresses research questions.

4.6 Data Collection Methods

The core component of each research endeavour is the collection and analysis of relevant data and information. To address the research objectives comprehensively, this study employs a mixed methods approach by using both quantitative and qualitative techniques as the primary data collection methods (Qualtrics, 2022).

Quantitative Research: In this research, the quantitative data has been collected using structured questionnaire survey distributed to bid and proposal management professionals. The survey used a Likert scale method to collect quantitative data and measure variables related to the adoption of technological tools, the frequency of automation in bid and proposal processes, impact on efficiency and effectiveness, and the perceived impact on organisational outcomes. The survey questions were aimed to be brief and focused; 50% of the questions used a Likert scale to indicate whether or not the participants agreed with particular statements. In addition, for 25% of the questions, participants had the opportunity to choose from multiple-choice and answer open-ended questions. The remaining 25% of questions were specifically tailored to collect insight and information about the participants roles within the organisation to gain an understanding of the industry in which the respondents organisation operates. These specific questions presented participants with a range of predefined options to select from during the survey process. (Roopa and Rani, 2012). The detailed overview of the survey questionnaire form, which was utilised for data collection and conducting research for the proposed study, is available in Appendix A for reference.

The survey questionnaire was distributed to the bid professionals as the primary participants via email, LinkedIn, and WhatsApp using Microsoft Forms, which is widely used for data collection. A total of 51 responses were collected through the survey.

Qualitative Research: In order to collect the qualitative data, semi-structured interviews were conducted with four bid professionals. The interviews aimed to examine the challenges that organisations face while adopting automation tools, as well as the strategies they use to address these challenges. The semi-structured interview is a qualitative research modality that allows the examination of specific themes as identified by the researcher (Saunders et al., 2019).

This approach utilises open-ended questions that encourage a conversational flow and enables participants to focus on aspects most relevant to their experiences (Clifford et al., 2010). As emphasised by Yin (2016), fostering a conversational tone during interviews relaxes participants and facilitates a two-way dialogue that allows for clarifying questions and the gathering of detailed insights. The researcher practiced this approach to ensure comfortable and open dialogue during the main interviews. Appendix D provides the interview questionnaire used for the research.

The interviews were conducted via Microsoft Teams based on the participants' preferences and feasibility. Each semi-structured interview was allotted a one-hour duration, featuring a series of impartial and open-ended questions that provided the participants—each of whom occupied a managerial position within a global organisation—with ample opportunity for in-depth responses. The results from the participants responses were then analysed for the purpose of understanding the attitudes, experiences, and opinions of the each participants.

4.7 Sampling Strategy

4.7.1 Quantitative Data Collection: Survey Methodology

Target Population

The research focuses on a broad spectrum of professionals engaged in bid and proposal management across various geographical regions. This encompasses industry experts, executives, and organisations actively involved in the bidding and proposal processes.

Sampling Frame

The methodology does not explicitly define a sampling frame. Nonetheless, potential avenues for constructing a sampling frame might include:

- Membership lists from professional associations, such as the Association for Proposal Management Professionals (APMP).
- Online directories that list bid and proposal management professionals.
- LinkedIn groups dedicated to discussions and networking among bid and proposal management practitioners.

Sampling Technique

Using a probability sampling method like random or stratified sampling is the best way to assure that the target population is properly represented. Nevertheless, the methodology suggests utilising convenience sampling via channels like email, LinkedIn, and WhatsApp. Although this approach is efficient, it could result in bias since the sample might not represent the overall population of bid and proposal management experts accurately.

4.7.2 Qualitative Data Collection: Interview Methodology

Target Population

The qualitative component of the study targets bid professionals and industry experts, selected for their profound knowledge and experience within the field.

Sampling Technique

Purposive Sampling: The selection of the participants is based on their expertise and experience, employing a purposive sampling technique. This method is chosen to ensure that the individuals interviewed can provide in-depth and relevant information about the research topic.

Sample Size: The study conducted interviews with four participants. While this number permits a detailed exploration of the subjects' perspectives, increasing the sample size could potentially bolster the robustness and credibility of the qualitative findings.

4.8 Data Analysis

Data analysis refers to the process of examining, aligning, and obtaining the patterns in the obtained data that allow the researcher to meet the research goals. (Dudovskiy, 2016).

4.8.1 Quantitative Analysis: Statistical Techniques

Since the survey was conducted using Microsoft Forms, a Microsoft Excel Sheet was automatically generated, and this sheet is uploaded to IBM SPSS software to compute descriptive statistics for the survey data. The quantitative data collected through the survey was

analysed using statistical methods, including correlation analysis to identify the strength and direction of relationships between continuous variables.

4.8.2 Qualitative Analysis: Thematic Analysis

The qualitative data gathered from semi-structured interviews was analysed using a thematic analysis approach (Quinlan et al., 2019). Thematic analysis is the way of identifying repetitions in data and classifying them into themes, where a theme is thus a pattern that appears systemically in the data (Willig, 2013).

To accomplish this, there was a need for coding of data as well as categorising codes into themes. The thematic analysis protocol together with 'NVivo' software will be used during the thematic analysis to address the research objectives and aims. Reviewing interview transcripts carefully revealed certain patterns and recurring ideas to form themes based on them (Braun and Clarke, 2006). The study sought to establish the major problems and approaches linked with use of automation tools in bid and proposal management processes.

For this research and data analysis, the researcher will follow Braun & Clarks (2006) 6 step framework, which has become the most widely used method among qualitative research as outlined in the below figure 2.

Phase	Steps Carried out
1. Familiarising oneself with the data	Transcribing data; reading and re-reading; noting down initial codes
2. Generating initial codes	Coding interesting features of the data in a systematic fashion across the data-set, collating data relevant to each code
3. Searching for the themes	Collating codes into potential themes, gathering all data relevant to each potential theme
4. Involved reviewing the themes	Checking if the themes work in relation to the coded extracts and the entire data-set; generate a thematic 'map'
5. Defining and naming themes	Ongoing analysis to refine the specifics of each theme; generation of clear names for each theme
6. Producing the report	Final opportunity for analysis selecting appropriate extracts; discussion of the analysis; relate back to research question or literature; produce report

Figure 2: 6 Step Thematic Analysis Procedure – Source: Braun & Clarke (2006)

The utilisation of thematic analysis provides researchers with a valuable methodological approach that allows for a comprehensive understanding of the various components and intricate aspects pertaining to a particular phenomenon as articulated by the interviewee. This analytical framework facilitates the identification and exploration of the nuanced relationships and interplay existing between the reported events and the overarching thematic theories, thereby offering a deeper insight into the underlying patterns and meanings embedded within the data.

4.9 Validity and Reliability

The integrity of research findings hinges significantly on the robustness of validity and reliability tests. These tests are instrumental in gauging the research's accuracy and in identifying the extent of errors within the study. Validity testing is used to determine the accuracy of the data collected in the analysis process and to ensure that the research findings are reflective of the actual experiences being studied. Reliability tests, on the other hand, assess

the consistency of the research methodology and ensure that the methods employed yield a stable and consistent results across different instances of the study (Kothari, 2004).

In addressing the common issue of missing data within quantitative questionnaires, a stringent approach was adopted whereby all questions were made mandatory, eliminating instances of missing data and negating the need for additional coding for non-responses within SPSS. The case processing summary indicates that all collected cases were subjected to a rigorous screening process to ascertain their suitability for inclusion in the study. A total of 51 cases were identified as valid, each representing a complete set of responses with no missing values across all variables considered in the analysis. This comprehensive dataset accounted for 100% of the cases processed, as shown in the following table:

Description	N	%
Valid Cases	51	100.0
Excluded Cases	0	0.0
Total	51	100.0

Table 1: Case Processing Summary

All 51 cases collected were complete, with no missing data across the variables under investigation, accounting for 100% of the dataset. No cases were excluded from the analysis, indicating a dataset with no missing values and thus no need for imputation strategies, which could potentially introduce bias.

Regarding internal validity, this study employed pre-validated questions from prior research or used pre-validated questions as a foundation for developing appropriate questions in order to construct the research tool for this study (Roopa and Rani, 2012).

Concerns regarding the standardisation of qualitative interviews were addressed through a cross-sectional approach, ensuring that interviews were conducted within the same market/economic timeline to maintain data reliability (Malhotra and Briks, 2007). To uphold the validity of the qualitative data, particular steps were taken, including the consideration of entire interviews to avoid reliance on fragmented memories or inaccurate notes, the use of open-ended questions to capture interviewees' genuine opinions, and the independent

consideration of each interviewee's subjective opinions to prevent the imposition of the interviewer's interpretations (Flick, 2018).

This summary encapsulates the measures taken to ensure the validity and reliability of the research methodology by highlighting the critical role these tests play in underpinning the credibility of the research findings.

4.10 Ethical Considerations

This research was conducted with paramount consideration for ethical principles. The researcher ensured the study maintained the validity and reliability of the research outcomes, while upholding the highest standards of integrity and following the 'Ethical Guidelines and Procedures for Research Involving Human Participants' published by the National College of Ireland.

The data collected through in-depth interviews and survey questionnaires was used solely for the purposes of this study. The data does not contain any sensitive or personally identifiable information about the research participants. Confidentiality and anonymity of the participants were maintained throughout the study. The survey questionnaire was anonymous, and participants could keep their participation private. For interviews, the researcher had made sure that the participant’s identity was kept secret by not revealing any information that the participants give so that they can give in-depth answers and will not feel any excuses around their answers.

Before answering the survey, all respondents were informed that the information provided would be used only for this specific research study. The research instrument used an exploratory design without collecting any data that could physically identify the participants. The data was handled with utmost care and was accessible only to the researcher, who had to pass an authentication process to access it via Microsoft Forms.

For the interviews, participants were reminded that their participation was voluntary, and they could withdraw consent at any time during, before or after the interview process. All interviews

were conducted over the encrypted Microsoft Teams platform, and the recordings were stored securely within Microsoft Teams, accessible only to the researcher.

4.11 Limitations

While this study strives to provide an extensive analysis of the consequences of innovations and automation on bid and proposal management practices, it is crucial to acknowledge the inherent restrictions that accompany the chosen methodology.

Sample Representation: The study employs convenience sampling via electronic communication platforms, including email, LinkedIn, and WhatsApp, to assemble the quantitative dataset. While this approach facilitates efficient data collection, it could lead to bias by not properly reflecting the overall population of bid and proposal management professionals. This restriction might impact the applicability of the numerical findings.

Sample Size for Qualitative Interviews: Conducting interviews with four bid professionals for the qualitative part of the study may provide in-depth insights but could limit the range of perspectives gathered. The somewhat limited sample size might not accurately capture the range of experiences and opinions in the field, which could affect the strength of the qualitative insights.

Technological Bias: The emerging issues in bid and proposal management also includes technology bias when there's a greater demand for automation, thus lacking human factor and traditional practices' recognition.

The study was limited with respect to the bid and proposal management process and results may not have the practical value for the rest of the company’s activities.

4.12 Conclusion

This chapter has outlined the research methodology used in this study, including the mixed methods approach, data collection, and data analysis techniques. The use of both quantitative and qualitative methods allowed for a comprehensive analysis of the research problem,

providing insights into the adoption of automation tools and their impact on bid and proposal management processes. The subsequent chapter will build upon these methodological insights by delving deeper into the findings and their significance in the context of bid and proposal management evolution.

In conclusion, the methodological journey charted in this chapter has been instrumental in advancing our understanding of the pivotal role played by technological innovations in bid and proposal management field. As we move into the next chapter, the methodological foundation laid out in this chapter is critical for interpreting the data considering the research questions. The subsequent analysis discusses the implications of the results and discusses comprehensive analysis of the impacts on efficiency, effectiveness, and business outcomes, directly responding to the research question and contributing to the broader discourse how integrating technological innovations into bid and proposal management affects organisational procurement processes.

5. FINDINGS & ANALYSIS

This chapter presents the results of a research conducted to explore the influence of technological innovations and automation on bid and proposal management practices within organisational procurement processes.

The main research question for this research is:

How have technological innovations and automation influenced the evolution of bid and proposal management practices, and what impact do these advancements have on the efficiency, effectiveness, and business outcomes in organisational procurement processes?

To address this question, a mixed methods approach was employed to identify patterns and correlations for quantitative data and thematic analysis of qualitative data to extract key themes and insights from semi-structured interviews.

The analysis revealed several significant relationships between technological innovations and automation factors and their impact on bid and proposal management practices.

5.1 Quantitative Results and Analysis

The survey data collected from 51 bid and proposal management professionals provides valuable insights into the adoption and impact of automation in their organisations. For valuable analysis the Microsoft Forms and statistics program SPSS were used which helps in visualising the research findings in form of graphs and tables and helps in identifying the details and comparing proportions, trends and conjunctions between the variables.

5.1.1 Descriptive Statistics

The response of the respondents and interpretation are presented here:

Team Size and Experience

According to the survey report as shown below in figure 3 and 4, highlights that the majority of teams who participate in the bid and proposal stages are between 1 to 5 members, and most of the respondents have more than a decade of experience in the field. This indicates a shift towards smaller, more seasoned teams in bid and proposal management.

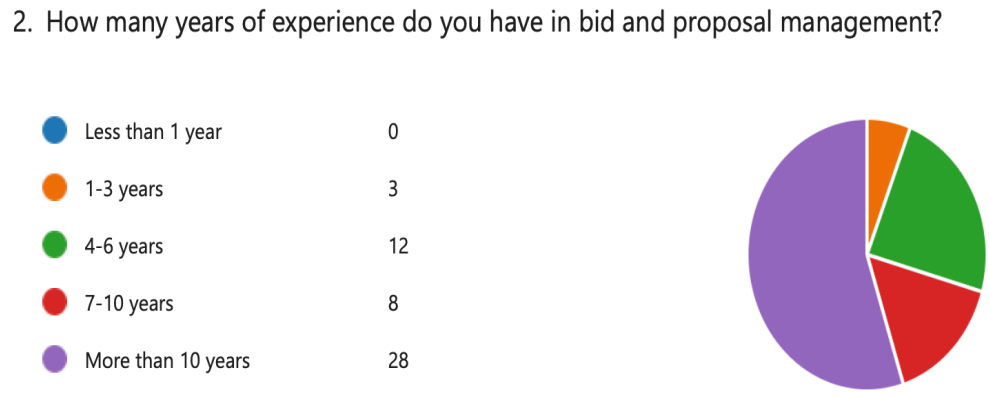

Figure 3: Survey Report - Experience Break Down

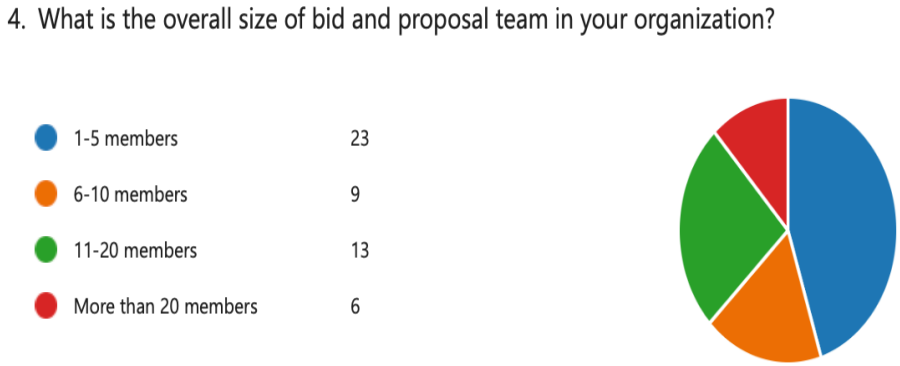

Figure 4: Survey Report - Team Size

Technological Integration

The integration of technology within bid and proposal management is evident, with a notable reliance on customer relationship management (CRM) systems, bid and proposal management software, and cloud storage platforms. Figure 5 below reveals that the Microsoft SharePoint and Teams Site emerged as the leading tool, emphasising its pivotal role in facilitating collaborative and efficient proposal development processes.

6. What software or tools does your organization currently use for bid and proposal management?

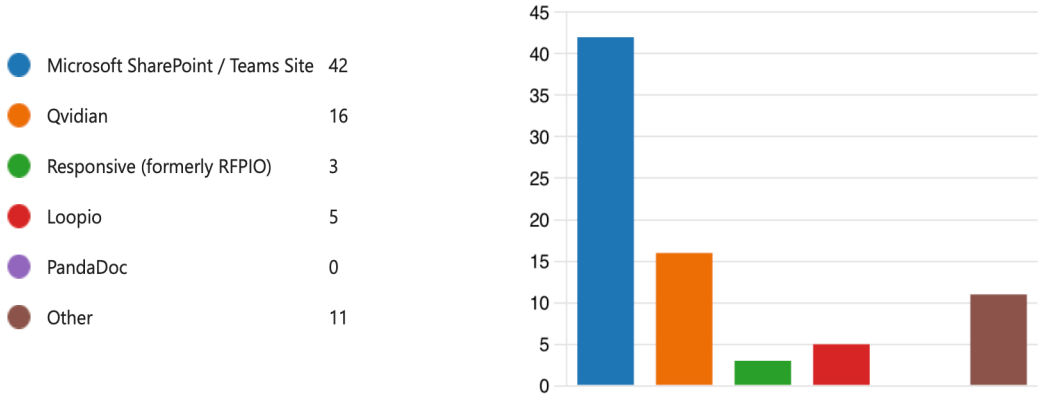

Figure 5: Survey Report - Software or Tools Usage

In terms of software and tools currently in use as shown in below table, the study finds that MS (Microsoft) SharePoint and Teams are the most frequently used (82.4%), followed by Qvidian (31.4%), Responsive (formerly RFPIO) (5.9%), Loopio (9.8%), Power BI Apps Automate (3.9%), and other software or tools (16.0%).

Software and Tools Current Usage					
		Frequency	**Percent**	**Valid Percent**	**Cumulative Percent**
MS SharePoint_Teams					
Valid	0	9	17.6	17.6	17.6
	1	42	82.4	82.4	100.0
	Total	51	100.0	100.0	
Qvidian					
Valid	0	35	68.6	68.6	68.6
	1	16	31.4	31.4	100.0
	Total	51	100.0	100.0	
Responsive (formerly RFPIO)					
Valid	0	48	94.1	94.1	94.1
	1	3	5.9	5.9	100.0
	Total	51	100.0	100.0	
Loopio					
Valid	0	46	90.2	90.2	90.2

Software and Tools Current Usage					
		Frequency	Percent	Valid Percent	Cumulative Percent
	1	5	9.8	9.8	100.0
	Total	51	100.0	100.0	
Power BI_Apps_Automate					
Valid	0	49	96.1	96.1	96.1
	1	2	3.9	3.9	100.0
	Total	51	100.0	100.0	
Other softwares or tools					
Valid	0	42	82.4	84.0	84.0
	1	9	15.7	16.0	100.0
	Total	51	100.0	100.0	

Table 2: Survey Report for Software and Tools Current Usage

Automation Effectiveness

Respondents rated the effectiveness of automation tools favourably, with an average score of 3.73 out of 5 as represented below in figure 6. This positive perception reflects the growing acknowledgment of automation as a catalyst for streamlining bid and proposal management tasks, thereby enhancing overall efficiency.

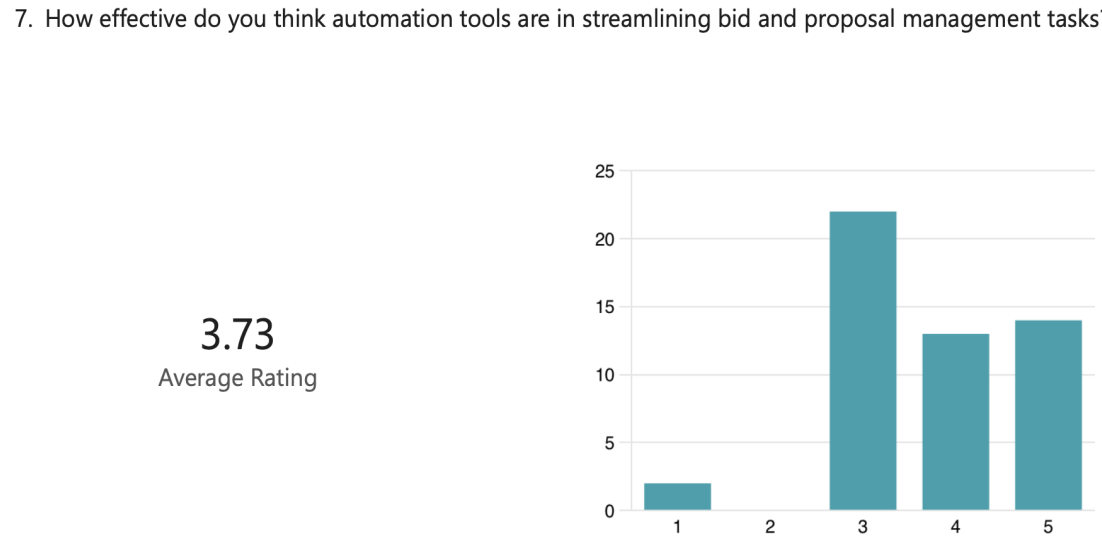

Figure 6: Perceived Effectiveness of Automation Tools

Accuracy and Coordination

Automation tools were attributed with moderate to significant improvements in the accuracy of proposals and the enhancement of team coordination and communication among teams, with average ratings of 3.20 and 4.00 respectively. These findings in figure 7 and 8 highlight the potential of technological solutions to mitigate errors and foster a more synchronised approach to proposal management.

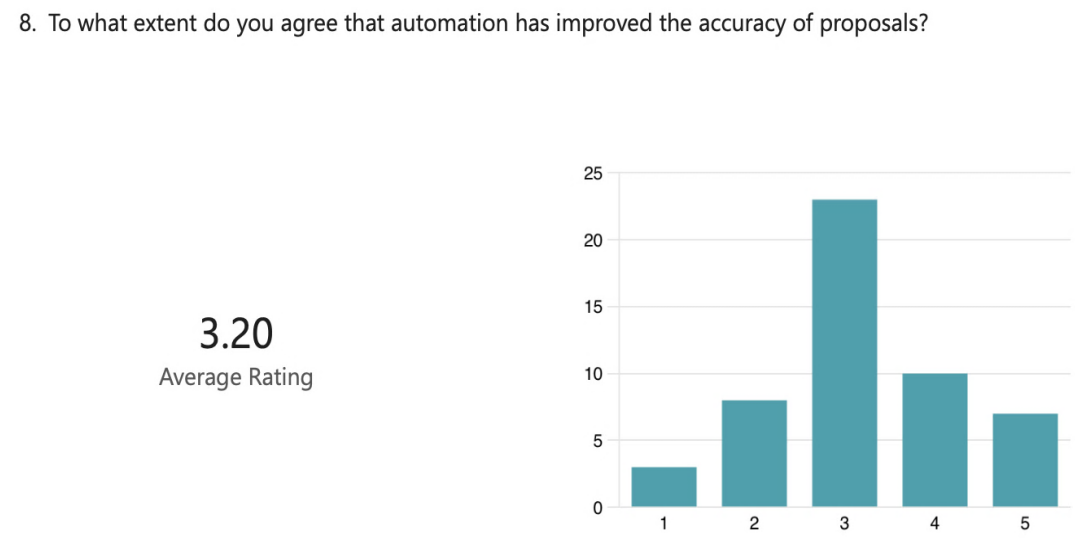

Figure 7: Proposal Accuracy Rating

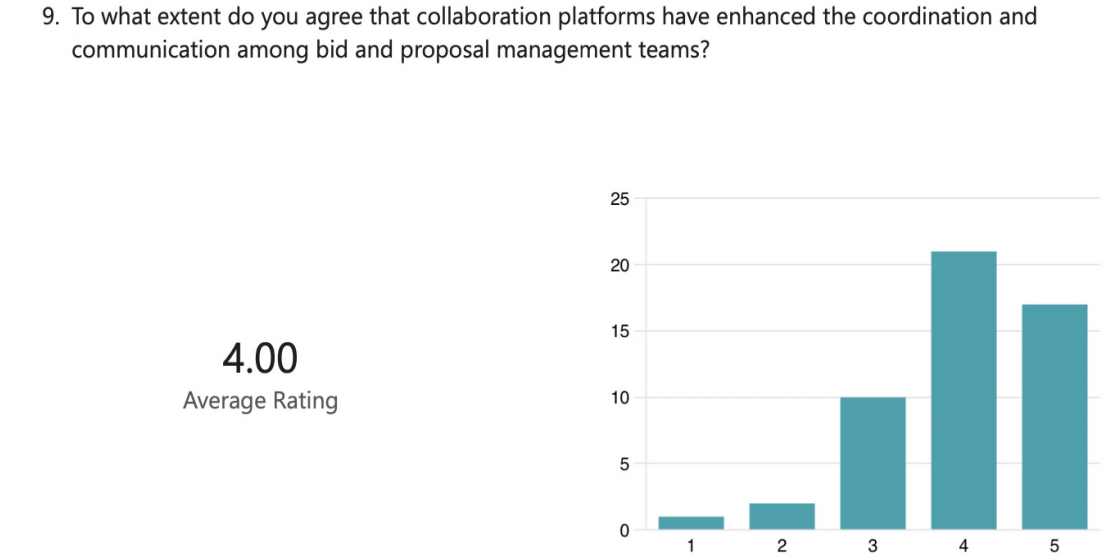

Figure 8: Collaboration Platforms Approval Rating

Contribution to Success Rate

The respondents acknowledged to a moderate extent that technological advances contributed to the success rate of bids (figure 9). This suggests that while technology plays a critical role, it is not the sole determinant of success in the competitive landscape of bid and proposal management.

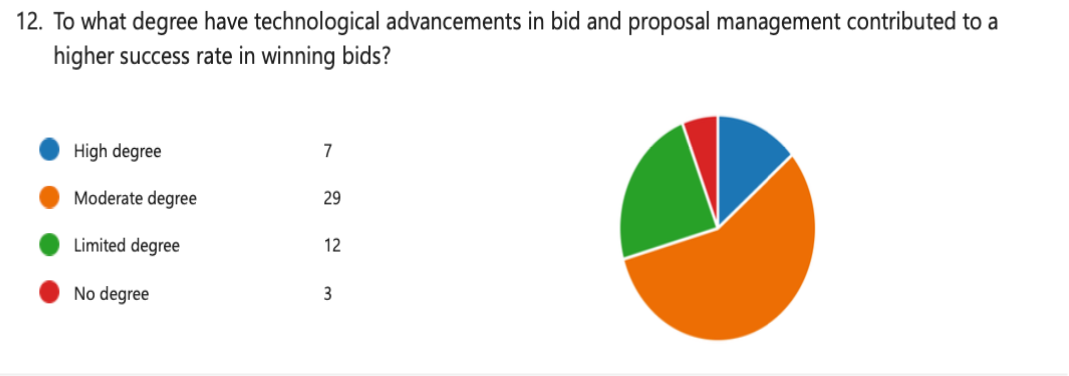

Figure 9: Impact of Technological Advancement on Bid Success Ratio

5.1.2 Analysis of Correlations

This analysis involves calculating Pearson correlation coefficients, p-values for significance levels, sum of squares and cross-products, and covariance for pairs of variables among a sample size of 51. The findings highlighted several statistically significant correlations, such as between automation effectiveness and improved accuracy, and between automation effectiveness and the reduction of errors and inconsistencies.

Pearson's correlation coefficient is used to indicate the linear relationships between two variables which ranges from -1 to 1. A positive correlation indicates that as one variable increases, the other variable also increases, while a negative correlation implies an inverse relationship. The significance level of values are marked with an asterisk (*), where ** represents a significance level of 0.01 and * represents a significance level of 0.05.

The Pearson product-moment correlation analysis gave statistical evidence for the connections between different aspects of automation effectiveness and outcomes in bid and proposal management.

	Automation_ Effectiveness	Automation_ improved the accuracy	Collaboration platforms_Enhanced_Process	Tech_reduced errors and inconsistencies	Tech_success rate	SharePoint automation_Proposal management software_effectiveness
Automation_Effectiveness	1					
Automation_improved the accuracy	.712**	1				
Collaboration platforms_Enhanced_Process	0.255	0.101	1			
Tech_reduced errors and inconsistencies	.457**	.714**	.367**	1		
Tech_success rate	-.475**	-.553**	-0.225	-.594**	1	
SharePoint automation_Proposal management software_effectiveness	.389**	0.247	.587**	.313*	-.303*	1

**. Correlation is significant at the 0.01 level (2-tailed).

*. Correlation is significant at the 0.05 level (2-tailed).

Figure 10: Quantitative Data - Corelation Analysis

The result presented above in figure 10 depicts that:

There is a strong positive correlation between the effectiveness of automation and the improvement in accuracy ($r = .712$, $p < .001$), indicating a statistically significant relationship. Therefore the result indicates that as the effectiveness of automation tools increases, the precision with which bids and proposals are crafted also increases; potentially leading to higher quality submissions.

Although the correlation between automation effectiveness and enhanced processes through collaboration platforms was positive, it is not statistically significant ($r = .255$, $p = .070$). This suggests an area for further exploration, as it indicates a potential trend where effective automation may contribute to better collaborative practices among bid and proposal management teams.

A moderate positive correlation was observed between automation effectiveness and error reduction ($r = .457$, $p < .001$), reinforcing the role of automation in enhancing the precision of proposals. This finding supports the view that automation tools can play a crucial role in minimising mistakes, thereby improving the overall integrity of the bid and proposal management process.

On the other hand, the analysis revealed a negative correlation between automation effectiveness and the success rate of bids ($r=-.457$ $p<.001$), which is an interesting and statistically significant finding.

There is a moderate positive relationship between the effectiveness of automation and the effectiveness of SharePoint automation in proposal management software ($r=.389$ $p =.005$). This highlights SharePoint's role as a valuable tool in the automation of bid and proposal management, aligning with its widespread use in the industry.

5.2 Qualitative Results and Analysis

This section details the results of the semi-structured interviews conducted by the researcher with 4 bid professionals of different levels of expertise in the field. To enhance the credibility of the thematic analysis approach (Braun and Clarke, 2006), the researcher used the NVivo software to ensure that the themes being identified were representative of the acquired data. The study reflects perspectives, experiences, and insights of the participants. The researcher approach to interpreting the data in this section is to look for themes and questions that surface during the coding and analysis process.

Crosstab Data Interpretation

An analysis of the relationships found between key themes related to advantages of automation, productivity, and the innovations and difficulties in bid and proposal management are presented in figure 11 and table 3 below:

	A : Automation Benefits and Positive Emotions	B : Automation Efficiency	C : Challenges and strategies in adopting automation	D : Challenges in Bid and Proposal Management	E : Current Practices in Bid and Proposal Management	F : Evolution of Bids and Proposal Management	G : Impact of Technology on Bid and Proposal Management	H : Impact on business performance and outcomes	I : Innovations in Bid and Proposal Management
P1	23	30	9	4	0	19	26	10	10
P2	19	5	7	8	1	17	36	6	20
P3	7	0	12	7	6	7	9	7	7
P4	12	5	6	6	3	9	13	6	16

Figure 11: Participant Responses Across Various Themes in Bid Management

Participant / Themes	A	B	C	D	E	F	G	H	I
P1	23	30	9	4	0	19	26	10	10
P2	19	5	7	8	1	17	36	6	20
P3	7	0	12	7	6	7	9	7	7
P4	12	5	6	6	3	9	13	6	16

Table 3: Participant Responses Across Various Themes in Bid and Proposal Management

The data were collected from four participants (P1, P2, P3, P4), each providing scores across nine themes:

- A: Automation Benefits and Positive Emotions
- B: Automation Efficiency
- C: Challenges and strategies in adopting automation
- D: Challenges in Bid and Proposal Management
- E: Current Practices in Bid and Proposal Management
- F: Evolution of Bids and Proposal Management
- G: Impact of Technology on Bid and Proposal Management
- H: Impact on business performance and outcomes
- I: Innovations in Bid and Proposal Management

The scores indicate the extent to which each participant has encountered or observed the respective variables in their professional context.

Correlation Analysis

The Pearson product-moment correlation coefficients were determined to analyse the magnitude and orientation of the associations among the variables. The analysis yielded provides significant results as shown in the below figure 12.

Themes	A : Automation Benefits and Positive Emotions	B : Automation Efficiency	C : Challenges and strategies in adopting automation	D : Challenges in Bid and Proposal Management	E : Current Practices in Bid and Proposal Management	F : Evolution of Bids and Proposal Management	G : Impact of Technology on Bid and Proposal Management	H : Impact on business performance and outcomes	I : Innovations in Bid and Proposal Management
A : Automation Benefits and Positive	1								
B : Automation Efficiency	0.811	1.000							
C : Challenges and strategies in adopting automation	-0.397	-0.047	1.000						
D : Challenges in Bid and Proposal Management	-0.444	-0.865	-0.037	1.000					
E : Current Practices in Bid and Proposal Management	-0.980	-0.744	0.571	0.406	1.000				
F : Evolution of Bids and Proposal Management	0.984	0.753	-0.300	-0.331	-0.942	1.000			
G : Impact of Technology on Bid and Proposal Management	0.832	0.369	-0.428	0.126	-0.826	0.889	1.000		
H : Impact on business performance and outcomes	0.561	0.910	0.366	-0.851	-0.433	0.538	0.114	1.000	
I : Innovations in Bid and Proposal Management	0.341	-0.210	-0.872	0.459	-0.484	0.329	0.636	-0.579	1.000

Figure 12: Qualitative Data - Correlation Analysis Among Variables

A strong positive correlation coefficient of r = 0.811, highlights the importance of automation in not only improving the operational aspects but also the emotional facets of bid and proposal management. It can be concluded from this correlation that as an organisations invest in enhancing their automation capabilities, they are not only able to streamline their processes and enhance efficiency but also contribute positively to the emotional wellbeing of their workforce, thus creating a more conducive working environment.

The progression of bid and proposal management shows a strong positive correlation coefficient of r = 0.984 with automation benefits and positive emotions. This correlation

suggests that the perceived benefits of automation are closely linked to the evolution of bid and proposal management practices, indicating that automation plays a crucial role as a catalyst for change and progress in this area. The correlation highlights automation as a fundamental driver shaping the evolution of bid and proposal management practices, aligning closely with the positive emotions associated with automation adoption. When considering the impact of technology on bid and proposal management, there is a strong positive correlation coefficient of r = 0.832 with automation benefits and positive emotions. This correlation demonstrates how technology is reshaping bid and proposal management processes, highlighting its transformative potential in driving innovation and efficiency.

In contrast, there were negative correlations observed between challenges in bid and proposal management and automation efficiency of r = -0.865, indicating that increased automation efficiency is associated with fewer challenges in this field. Additionally, the research revealed a remarkably strong inverse relationship between the current methodologies employed in bid and proposal management and the advantages derived from automation technologies, demonstrating a correlation coefficient of r = -0.980. These results highlight the intricate interplay between technological advancements, efficiency, challenges, and the development of bid and proposal management practices.

Comprehensive Analysis

The diverse group of participants contributed valuable perspectives across nine thematic areas, which were coded for clarity:

- Benefits and Positive Emotions (Ben, PE)
- Efficiency, Effectiveness and Time Saving (EE, TS)
- Challenges in Adopting Automation (AdeCtrl, AD)
- Challenges in Bid and Proposal Management (Aimprov, WS, HP, MP Draw)
- Current Practices in Bid and Proposal Management (Best Prac)
- Evolution of Bids and Proposal Management (Cul, Tech Adv)
- Impact of Technology on Bid and Proposal Management (RPA ML, AI, MS)
- Impact on Business Performance and Outcomes (Perf)
- Innovations in Bid and Proposal Management (Tech-Hum, Clie, DS, PM Tool, Collab, PMS, CMS QVD, RemoteWrk, SF, VC, Metric)

Participants / Themes	Automation Benefits and Positive Emotions	Automation Efficiency	Challenges and strategies in adopting automation	Challenges in Bid and Proposal Management	Current Practices in Bid and Proposal Management	Evolution of Bids and Proposal Management	Impact of Technology on Bid and Proposal Management	Impact on business performance and outcomes	Innovations in Bid and Proposal Management
P1	Ben	EE	AdeCtrl	Aimprov		Cul	AI	Perf	Tech-Hum
	PE	TS	AD	MP Draw		MP	MS	Win R	Clie
			RC			PI	Collab	Metric	VC
			Train			Tech Adv	CMS QVD		
P2	Ben	EE	AD	Aimprov	Best Prac	Cul	RPA ML	Perf	Tech-Hum
	PE	TS	RC	WS		MP	AI	Win R	DS
			Train	HP		PI	Collab	Metric	PMS
				MP Draw		Tech Adv	CMS QVD		RemoteWrk
									SF
									VC
P3	Ben		AD	Aimprov	Best Prac	Cul	RPA ML	Perf	Tech-Hum
	PE		RC	WS		Tech Adv	AI	Win R	Clie
				HP			Collab	Metric	PMS
				MP Draw			CMS QVD		
P4	Ben	EE	AD	HP	Best Prac	Cul	AI	Perf	Tech-Hum
	PE	TS	RC	MP Draw		Tech Adv	MS	Metric	Clie
			Train				Collab		DS
							CMS QVD		PM Tool
									PMS
									SF

Participants	P1, P2, P3, P4

Codes							
Ben	Benefits	**Aimprov**	Areas for improvement	**RPA ML**	Adoption of robotic processing automation (RPA) and machine learning	**Clie**	Client side Changes in Procurement process
PE	Positive Emotions	**WS**	Work Stress_Nature of Work	**AI**	Generative AI and Chat bots	**DS**	Document Sharing
EE	Efficiency and Effectiveness	**HP**	Hiring Practice	**MS**	MIcrosoft Power Automate, BI, Word,Powerpoint	**PM Tool**	Project Management Tools to Manage Bids
TS	Time Saving	**MP Draw**	Manual Process Drawbacks	**Collab**	Use of Collaborative Platforms	**PMS**	Proposal Management Software
AdeCtrl	Adequate control to mitigate risks of over reliance on technology	**Best Prac**	Industry Best Practcies	**CMS QVD**	Use of Qvidian for Storing and Sharing Content	**RemoteWrk**	Remote Work Enablement
AD	Automation Drawbacks	**Cul**	Cultural and contextual factors	**Perf**	Business Performances and outcomes	**SF**	Salesforce
RC	Resource Constraints	**MP**	Manual Process	**Win R**	Impact on Win rate success	**VC**	Version Control
Train	Training and developments to ensure effective use of AI and automation	**PI**	Pandemic Impacts	**Metric**	Use of Metrics		
		Tech Adv	Technology advancements	**Tech-Hum**	Balancing Technology and Human Involvement		

Figure 13: Comprehensive Analysis

According to figure 13 above, all participants has highlighted and discussed about the benefits of automation, emphasising its ability to enhance efficiency and effectiveness in bid and proposal management field. Positive emotions and time saving were recurrent themes, suggesting that automation not only streamlines processes but also positively impacts the morale and workload of those involved. In spite of the substantial benefits linked to the implementation of automation, participants also highlighted challenges such as automation drawbacks (AD), resource constraints (RC), and the necessity for adequate control to mitigate risks (AdeCtrl). Training and development (Train) were identified as crucial strategies to ensure the effective utilisation of artificial intelligence (AI) and automation technologies.

The evolution of bids and proposal management has been influenced by cultural and contextual factors (Cul) as well as advancements in technology (Tech Adv). The adoption of robotic processing automation and machine learning (RPA ML), as well as generative AI and chatbots (AI), were acknowledged as specifically significant advancements. During the interviews participants emphasised the importance of striking a balance between technology and human involvement (Tech-Hum), highlighting the importance of retaining a human touch in the increasingly automated landscape.

The beneficial impacts of technology on business performance and outcomes (Perf) were recognised, particularly in enhancing bid success rates / win rates (Win R) and enabling remote work (RemoteWrk) capabilities. Innovations in bid and proposal management, such as the use of collaborative platforms (Collab), proposal management software (PMS), and tools like Qvidian for content storage and sharing (CMS QVD), were identified as key contributors to the field's evolution.

5.3 Summary

This chapter presented a detailed analysis and results of the data gathered by the researcher to accomplish aims and objectives of the research. This chapter includes an overview and analysis of the survey and semi-structured interview results. Current bid professionals' perspectives were used to examine the function and implications of advanced automation.

The integration of quantitative and qualitative findings provides a comprehensive understanding to the research question. This comprehensive approach, combining correlation analysis with descriptive statistics and qualitative insights from semi-structured interviews, provides a robust framework for understanding the diverse impacts of automation in organisational environments. The analysis demonstrates a strong positive correlation between automation effectiveness and the other factors such as automation improving accuracy, collaboration platforms enhancing the process, and the use of technology reducing errors and inconsistencies. Furthermore, the analysis reveales a positive correlation between the effectiveness of proposal management software and SharePoint automation in the bid and proposal management practices.

The next chapter will involve a critical discussion of these findings. Following that, it will outline required actions that can be taken based on these findings, providing direction for future studies in this field.

6. DISCUSSION

This chapter will focus on discussing the results from the "Findings and Analysis" chapter and their alignment with existing literature paper along with the potential impact on future research and practical use in the bid and proposal management field. The aim of the research is to offer a broad insight, focusing on the impact of innovation, automation, and technological advancements on organisational processes and outcomes. The study aims to identify key factors influencing the evolution of bid and proposal management practices, assess the main challenges, and explore the role of automation in enhancing efficiency and effectiveness. The integration of survey data, semi-structured interviews, and correlation analysis from the quantitative and qualitative data collection provides a comprehensive understanding of the research objectives.

6.1 Key Findings Critical Evaluation and Alignment with Literature

The findings from the mixed methods study provides a comprehensive understanding of the evolution and development in the field of bid and proposal management, particularly in the context of innovation and automation. The combination of quantitative and qualitative findings enables a comprehensive understanding of the research question. This comprehensive approach, combining correlational analysis with descriptive statistics and qualitative insights from semi-structured interviews, provides a robust framework for understanding the diverse impacts of automation in organisational environments.

Adoption and Impact of Automation Tools

The survey data showed a high adoption rate of automation tools among bid and proposal management professionals, indicating the industry's recognition of the benefits offered by these technologies. Proposal creation software, workflow automation platforms, and AI-based content reuse solutions were identified as the most widely used automation tools. This aligns with the literature, which suggests that automation can significantly improve efficiency, reduce errors, and enable bid managers to focus on more strategic aspects of the proposal development process (McKenzie, 2023; Fallmann, 2021). Respondents reported benefits such as improved

efficiency, reduced human errors and faster turnaround times, supporting the positive impact of automation on bid and proposal management.

The correlation analysis demonstrates that automation effectiveness has a positive impact on various factors such as improved accuracy ($r=0.712$, $p<0.001$), reduced errors and inconsistencies ($r=0.457$, $p<0.001$), and the effectiveness of automation in proposal management software ($r=0.389$, $p=0.005$). These results align with the literature's emphasis on the automation's ability to improve accuracy, consistency, and streamline operations (Shankar, 2023.; Fallmann, 2021).

However, a surprising and contrary discovery was the inverse relationship between automation efficiency and success rate ($r=-0.475$, $p<0.001$). This finding suggests that as automation effectiveness increases, the perceived success rate decreases. This contradicts the general expectation that automation should lead to improved success rates. Further research is required to explore the potential reasons for this negative correlation, heavy dependency on automation tools or the limitations of automation tools in capturing detailed aspects of proposal preparation.

Collaboration and Process Efficiency

The positive correlation between automation effectiveness and the enhancement of processes through collaboration platforms ($r=0.255$, $p=0.070$), although not statistically significant, aligns with the literature's emphasis on collaborative platforms' ability to streamline coordination and enhance communication (Fallmann, 2021). This finding suggests that automation tools, when combined with effective collaboration platforms, can potentially improve the overall efficiency of bid and proposal management processes.

Qualitative Insights Interpretations

The Qualitative insight from the interviews provides a deeper understanding of the experiences and strategies employed by bid professionals and industry experts. The interviewees emphasise the transformative impact of automation on their bid and proposal processes, enabling them to streamline operations and focus on value-adding activities. Thematic analysis of interview data revealed the transformative impact of automation on streamlining operations and focusing on

valuable activities. The themes that emerged from qualitative data, such as the transformative impact of automation, the role of collaboration platforms, and the challenges faced in adopting automation, aligns with the quantitative findings and existing literature.

The correlation matrix among the themes revealed some interesting relationships. The strong positive correlation between "Automation Benefits and Positive Emotions" and "Automation Efficiency" (r=0.811) indicates that the significant benefits and positive emotions associated with automation are closely related to its ability to improve efficiency. These finding supports the automation's potential to streamline processes and enhance productivity, as highlighted in the literature (McKenzie, 2023; Fallmann, 2021).

Similarly, the strong positive correlation between "Impact of Technology on Bid and Proposal Management" and "Evolution of Bids and Proposal Management" (r=0.889) suggests that technology's impact is closely linked to the ongoing evolution of bid and proposal management practices. This result aligns with the literature's emphasis on the transformative role of technological advancements in reshaping the bid management landscape (McKenzie, 2023; Fallmann, 2021).

On the other hand, the negative correlation between "Automation Benefits and Positive Emotions" and "Challenges and Strategies in Adopting Automation" (r=-0.397) indicates that as the perceived benefits and positive emotions increase, the challenges and strategies for adoption become less significant. This could be interpreted as a potential disconnect between the perceived benefits of automation and the actual challenges faced during implementation. Organisations might underestimate the complexities involved in adopting automation, leading to potential pitfalls in the adoption process.

6.2 Challenges of Automation Adoption

The research findings align with existing literature on the role of technology in transforming bid and proposal management practices, highlighting the critical role of technology in improving the quality and efficiency. The positive correlations between automation effectiveness and factors such as automation improving accuracy, collaboration platforms which improve the process, highlight the diverse impact of technology on bid processes. The

benefits of improved collaboration, increased productivity, and improved decision-making underscore the impact of technological advancements on procurement processes. This alignment with previous studies confirms the significant influence of automation and technology on the bid and proposal management practices.

One critical insight that emerges from the analysis is the need for organisations to not only invest in technological solutions but also focus on the change management strategies to facilitate a smooth transition to automated bid management processes. Resistance to change and lack of awareness about technology benefits can hinder the successful implementation of automation, highlighting the importance of training, communication, and stakeholder engagement in driving organisational change.

These results support the primary research question that automation tools, such as RPA and workflow automation can reduce manual tasks and human errors, leading to greater efficiency and optimised processes. The interview data also revealed the strategies used by organisations to address the challenges of automation adoption, including comprehensive training, careful tool selection, and a phased implementation approach. These insights contribute to the understanding of the role of cultural and contextual factors in the evolution and development of bid and proposal management practices.

However, this study has also identified the challenges faced in adopting automation, such as resistance to change, lack of technical skills, integration problems, and data privacy concerns. Organisations facing financial constraints may face difficulties in investing in tools and technologies to improve proposal management processes. These findings align with the existing literature which highlights the need for organisations to invest in training, change management, and robust data security measures to overcome the barriers to automation adoption (Postolache, 2019).

To address these challenges the interviewees shared strategies, such as providing comprehensive training and change management support to employees, selecting automation tools that integrate with their existing technology, and adopting a phased approach to automation implementation to build trust among stakeholders. Furthermore, robust data

security and access control measures were implemented to address the concerns related to privacy.

6.3 Significance and Implications

The significance of this research lies in its contribution to the understanding of how innovation and automation are reshaping bid and proposal management practices. By providing empirical evidence of the benefits and challenges related to technological implementation, this study provides essential insights for companies aiming to enhance their procurement processes and maintain a competitive edge in a rapidly changing business landscape.

The figures and tables presented in the Findings & Analysis chapter serve as visual narratives that summarise the impact of innovation and automation on bid and proposal management. The analysis of the current software and tools used for bid and proposal management shows that Microsoft SharePoint and Teams are the most widely used by 82.4% of the participants. This finding suggests that organisations are using the automation and collaboration features of these platforms to streamline their bid and proposal management processes. However, the study also identified the use of other specialised tools, such as Qvidian and Responsive (formerly RFPIO), which are designed specifically for bid and proposal management. This signifies that while organisations are adopting general-purpose productivity tools, they are also realising the need of specialised solutions to tackle the specific challenges and demands of this industry

The correlation analysis charts (as shown above in figure 10 and 12), for instance, not only quantifies the relationship between automation effectiveness and accuracy improvement but also visually underscores the strength and significance of this relationship. They provide a quantitative foundation for our qualitative observations and offer a compelling narrative about the benefits and challenges of integrating automation into organisational processes.

The findings suggest that while automation can improve accuracy and reduce errors, its effectiveness is not uniformly beneficial across all measures of success. This has significant implications for how organisations should approach the integration of automation, emphasising the need for customisation and strategic implementation.

6.4 Limitations and Future Research Recommendations

While the results of this study align with past research in this field, it is important to acknowledge that there are also certain limitations to consider. The study employed convenience sampling via electronic communication platforms, which could lead to bias and may not properly reflect the overall population of bid and proposal management professionals. This limitation might impact the applicability of the numerical findings. The relatively small sample size of four bid professionals for the qualitative part of the study may limit the range of perspectives gathered and might not accurately capture the range of experiences and opinions in the field.

The study was limited to the bid and proposal management process, and the results may not have practical value for the rest of the company's activities. There is a gap in comparative studies across different industries to understand how varying sectors are responding to the challenges in business proposal management. Such studies could provide valuable insights into industry-specific factors and best practices; facilitating the development of tailored solutions and strategies.

There is a lack of research on organisational resistance to adopting automation and innovative technologies in bid management processes. Conducting studies in this area could help identify the reasons behind this resistance and enable the development of effective strategies to overcome it. Additionally, it could also promote a culture of innovation within organisations.

As RFP automation technologies become increasingly sophisticated, ethical and legal considerations emerge, especially concerning data privacy, security, and compliance. The current literature has not adequately addressed these important aspects, which highlights a significant gap in understanding the ethical and legal implications of RFP automation. Conducting thorough research on these considerations is crucial to guide the responsible development and implementation of RFP automation solutions.

Moreover, further investigation into the long-term impacts of proposal automation software on proposal quality, client satisfaction, and business growth is recommended. Longitudinal studies could offer insights into the sustainability of the benefits and potential challenges that may

arise over time, enabling organisations to develop proactive strategies for maintaining and enhancing the efficacy of automation initiatives. Addressing these gaps may provide opportunities for future research and innovation, leading to an improved understanding and more effective implementation of automation in bid and proposal management.

6.5 Chapter Summary

The research findings contribute to the understanding of how bid and proposal management practices have been developed and highlights the transformative impact of automation and technological advancements in this process. The integration of quantitative and qualitative data offers a comprehensive perspective on the benefits, challenges, and strategies related to automation adoption in this field is provided.

While the study demonstrates the positive impacts of automation , it also emphasises the need for organisations to proactively address challenges. These challenges include resistance to change, integration issues, and data privacy concerns. Organisations can address these challenges through comprehensive training, careful tool selection, and robust security measures. The findings of this study align with and contribute to the existing literature. They provide empirical evidence and insights into factors that influence adoption and acceptance, the impact of automation on key performance indicators, and major developments in the field.

However, there are still gaps in the literature that needs to be addressed and gives an opportunity for the future research. For example, there is a need for comparative studies across industries, quantitative performance measurement through case studies, and an exploration of the legal and ethical implications of automated decision-making. These gaps present opportunities for future research to further our understanding and ensure responsible implementation of automation in bid and proposal management.

Future research should focus on addressing these identified gaps, particularly in areas such as ethical and legal implications, cross-industry comparative studies, quantitative performance measurement, organisational resistance, and long-term impact assessment. The field of bid and proposal management can continue to evolve by addressing these gaps, leveraging innovation and automation to enhance efficiency, quality, and organisational competitiveness.

7. CONCLUSION

The research has successfully demonstrated the impact of automation on bid management and has systematically examined the impact of these advancements, offering insights into their potential to redefine traditional practices. Through the utilisation of two primary data sources, specifically interviews and survey this research seeks to delve deeper into the fundamental factors that influence the transformation of bid and proposal management practices. This mixed methods combining both quantitative and qualitative research approach has provided valuable insights into the evolution and development of bid and proposal management, and assess how automation can enhance the efficiency and effectiveness of bid and proposal management processes. The results of this study clearly indicate that the integration of automation tools, such as software for generating proposals, platforms for automating workflows, and AI-powered solutions, has significantly impacted the efficiency, and accuracy of bid and proposal management processes.

Based on the analysis and findings presented in the dissertation, the answer to the primary research question is that technological innovations and automation have significantly influenced the evolution of bid and proposal management practices. The adoption of automated solutions has led to increased efficiency, reduced costs, and streamlined procurement processes. These advancements has shown a positive impact on the overall effectiveness of bid management practices, thereby contributing to improved decision-making, enhanced collaboration, and moderate effect on organisational performance in procurement processes.

Technological Advancements: This study highlights the critical role of collaborative platforms, cloud-based tools, artificial intelligence (AI), and natural language processing (NLP) in the enhancement of the proposal development process. These technologies have not only facilitated better coordination and communication but have also significantly improved the accuracy and quality of proposals.

Automation's Role: Automation have emerged as a cornerstone for streamlining proposal development, effectively managing proposals, and optimising resource allocation. The adoption of workflow automation tools has been particularly significant for their ability to

automate task assignments, track progress, and ensure timely completion of the activities. Additionally, the empirical evidence gathered indicates that participants frequently utilise software such as Loopio, Responsive, and Qvidian.

Benefits and Challenges of Automation: Automation generally helps in improving accuracy and reducing errors. However, complexities such as a decrease in success rate require further investigation. The use of SharePoint and other automation tools appears to be positively correlated with the effectiveness of bid and proposal management processes. This correlation suggests that while automation increases efficiency, effectiveness, and business outcomes in organisational procurement processes, it also introduces new challenges that need to be addressed.

Insights from Data: The mixed methods approach has yielded a data set that shows a high adoption rate of automation tools among bid and proposal management professionals. The benefits of these tools includes improved collaboration, increased productivity, and enhanced decision-making capabilities.

The synthesis of quantitative and qualitative data correlation insights paints a comprehensive picture of the evolving landscape of bid and proposal management. The data reveal a symbiotic relationship between technological tools and the expertise of bid and proposal management professionals. While automation is instrumental in refining the mechanics of proposal development, the strategic insights and decision-making process of experienced personnel are irreplaceable.

Impact and Challenges: While technological advancements have numerous benefits, this study also highlights the difficulties in integrating these innovations into current practices. It calls for future research to focus on overcoming these challenges and fully realising the potential of these advancements. However, despite of the progress, there are still a lot of unanswered questions in the current literature, especially when it comes to the long-term effects, industry specific analysis, and the comparisons of automated and manual processes. Addressing these gaps through future research will be crucial in fully understanding the potential and limitations of technology and automation in bid and proposal management.

The findings from this study offers actionable strategies and methods for companies to enhance the effectiveness and efficiency of their bid and proposal management systems, thus supporting their pursuit of new business opportunities and growth. These findings contribute to the existing body of knowledge like APMP and best practices by addressing gaps in the literature, such as the limited research on the adoption and acceptance of innovative technologies in bid and proposal management, the need for more empirical studies on the impact of innovation and automation, and the lack of comprehensive documentation of developments and innovations in this field.

In conclusion, this research not only offers valuable understanding regarding the current condition of bid and proposal management in light of technological progress but also lays a solid foundation for forthcoming studies to delve deeper into these essential discoveries, ensuring that the field evolves in synchronisation with the rapid growth of technological advancements. Through the embracement of innovation, fostering collaboration, and the pursuit of continuous enhancement, organisations have the opportunity to enhance their response capabilities, drive efficiency, and achieve success in the ever-changing and fiercely competitive realm of organisational procurement.

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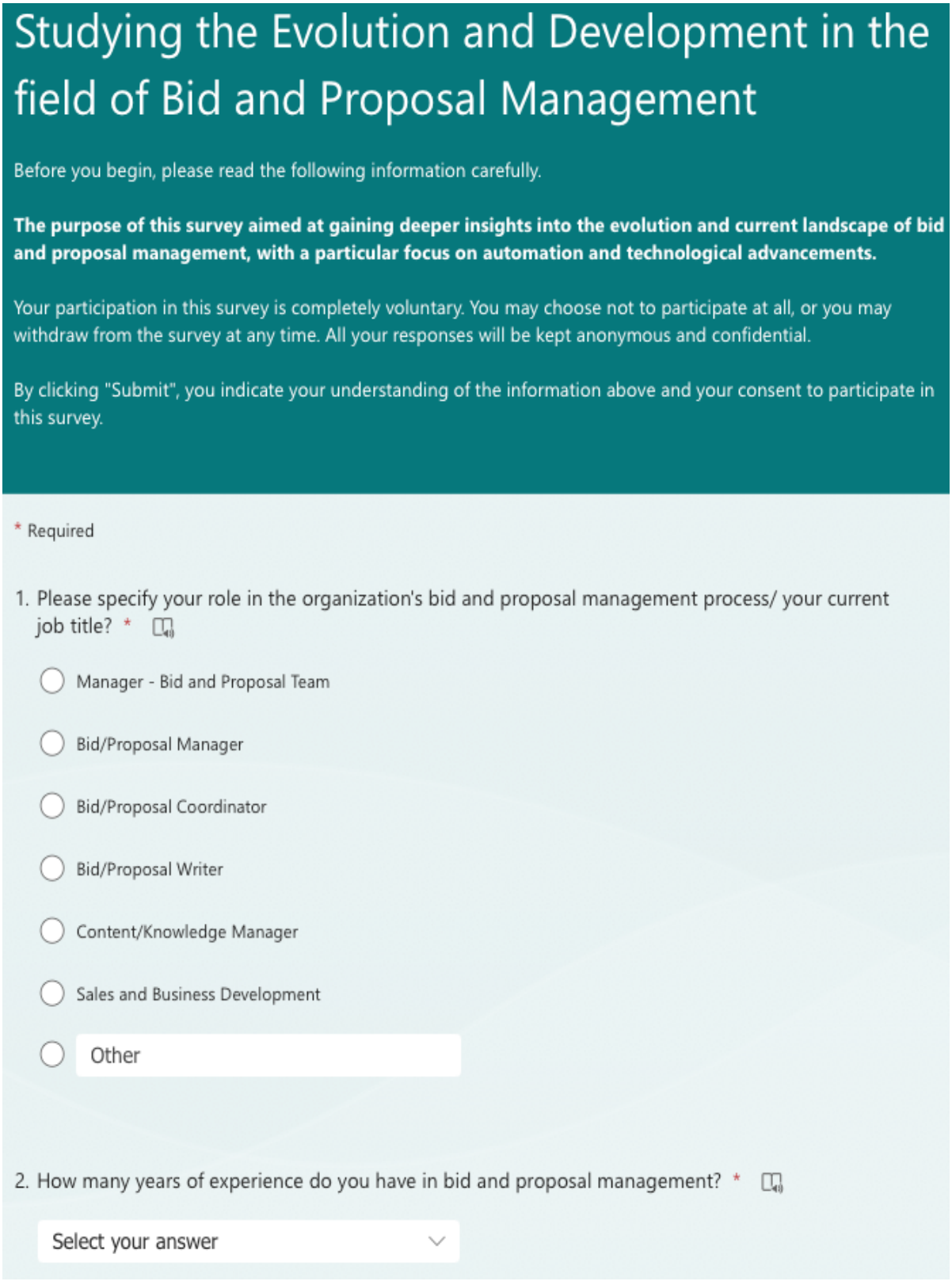
APPENDICES

Appendix A: Survey Form



Studying the Evolution and Development in the field of Bid and Proposal Management

Before you begin, please read the following information carefully.

The purpose of this survey aimed at gaining deeper insights into the evolution and current landscape of bid and proposal management, with a particular focus on automation and technological advancements.

Your participation in this survey is completely voluntary. You may choose not to participate at all, or you may withdraw from the survey at any time. All your responses will be kept anonymous and confidential.

By clicking "Submit", you indicate your understanding of the information above and your consent to participate in this survey.

* Required

1. Please specify your role in the organization's bid and proposal management process/ your current job title? *

- Manager - Bid and Proposal Team
- Bid/Proposal Manager
- Bid/Proposal Coordinator
- Bid/Proposal Writer
- Content/Knowledge Manager
- Sales and Business Development
- Other

2. How many years of experience do you have in bid and proposal management? *

Select your answer

3. Which industry does your organization operate in? *

- ○ Information Technology
- ○ Healthcare
- ○ Construction
- ○ Financial Services
- ○ Manufacturing
- ○ Other

4. What is the overall size of bid and proposal team in your organization? *

- ○ 1-5 members
- ○ 6-10 members
- ○ 11-20 members
- ○ More than 20 members

5. Which of the following technologies have you used in bid and proposal management? *

(Check all that apply)

- ☐ Customer Relationship Management (CRM) systems
- ☐ Bid and Proposal Management Software
- ☐ Cloud Storage Platforms
- ☐ Artificial Intelligence (AI) / Machine Learning (ML) tools
- ☐ Other

6. What software or tools does your organization currently use for bid and proposal management?
*
(Check all that apply)

- [ ] Microsoft SharePoint / Teams Site
- [ ] Qvidian
- [ ] Responsive (formerly RFPIO)
- [ ] Loopio
- [ ] PandaDoc
- [ ] Other

7. How effective do you think automation tools are in streamlining bid and proposal management tasks?
*

Not effective 😄 😄 😄 😄 😄 Extremely effective

8. To what extent do you agree that automation has improved the accuracy of proposals?
*

Strongly Disagree 😄 😄 😄 😄 😄 Strongly Agree

9. To what extent do you agree that collaboration platforms have enhanced the coordination and communication among bid and proposal management teams?
*

Strongly Disagree 😄 😄 😄 😄 😄 Strongly Agree

10. To what extent do you believe that innovative technologies have reduced errors and inconsistencies in proposal submissions?
*

Strongly Disagree 😄 😄 😄 😄 😄 Strongly Agree

11. How much do you agree that SharePoint workflow automation / Proposal management software tools have improved the overall effectiveness of bid and proposal management in your organization?
*

Strongly Disagree 😁 😁 😁 😁 😁 Strongly Agree

12. To what degree have technological advancements in bid and proposal management contributed to a higher success rate in winning bids?
*

- ○ High degree
- ○ Moderate degree
- ○ Limited degree
- ○ No degree

You can print a copy of your answer after you submit

Submit

Appendix B: Email Invite Sent To Participants for Interview

Share Your Expertise: Dissertation Research Invitation | Shruti Tekade

Shruti Tekade <x22182152@student.ncirl.ie>
Fri 15-03-2024 14:59
To:
Cc:

1 attachments (115 KB)
Consent Form.pdf;

Hello ,

Hope you are doing well!

As part of my Master's dissertation, I am conducting in-depth research on bid and proposal management, specifically focusing on the challenges faced by professionals in the field and the impact of technological advancements. I would like to invite you to participate in a research interview where we can delve deeper to discuss the challenges, benefits, and impact of innovation and automation in the bid management process.

The conversation will be guided by a series of open-ended questions, but the format will be flexible to accommodate an in-depth exploration of your valuable insights. Please rest assured that all information shared will be treated with the utmost confidentiality and will be used solely for academic research purposes.

Along with this invitation, I have attached a consent form. This form outlines the purpose of the study, confidentiality agreements, and your rights as a participant. Your completion of this form signifies your consent to participate in the research.

If the proposed time is not convenient for you, I would be more than happy to accommodate your schedule.

I am looking forward to the opportunity to speak with you and greatly appreciate your contribution to advancing the understanding of bid and proposal management practices.

Thank you for considering this request.

Kind regards,
Shruti Tekade
MSc in International Business
National College of Ireland (NCI)

Microsoft Teams meeting

Appendix C: Consent Form

Participant Consent Form

National College of Ireland

Title of Research Project: Studying the Evolution and Development in the Field of Bid and Proposal Management

Consent to take part in research

- I..... voluntarily agree to participate in this research study.
- I understand that even if I agree to participate now, I can withdraw at any time or refuse to answer any question without any consequences of any kind.
- I understand that I can withdraw permission to use data from my interview within two weeks after the interview, in which case the material will be deleted.
- I have had the purpose and nature of the study explained to me in writing and I have had the opportunity to ask questions about the study.
- I understand that participation involves interview conducted in a semi-structured format, allowing for open discussion and exploration of participant experiences.
- I understand that I will not benefit directly from participating in this research.
- I agree to my interview being audio-recorded.
- I understand that all information I provide for this study will be treated confidentially.
- I understand that in any report on the results of this research my identity will remain anonymous. This will be done by changing my name and disguising any details of my interview which may reveal my identity or the identity of people I speak about.
- I understand that disguised extracts from my interview may be quoted in the dissertation.
- I understand that if I inform the researcher that myself or someone else is at risk of harm they may have to report this to the relevant authorities - they will discuss this with me first but may be required to report with or without my permission.

- I understand that signed consent forms and original audio recordings will be retained in password protected folder until the exam board confirms the results of dissertation. Access to this data is restricted to authorized research personnel for confidentiality and security purposes.

- I understand that a transcript of my interview in which all identifying information has been removed will be retained for two years.

- I understand that under freedom of information legalisation I am entitled to access the information I have provided at any time while it is in storage as specified above.

- I understand that I am free to contact any of the people involved in the research to seek further clarification and information.

Researcher Name: Shruti Tekade

Degree: MSc in International Business

Affiliation: National College of Ireland (NCI)

Contact details of researcher: x22182152@student.ncirl.ie

Supervisor Name: Victor del Rosal

Signature of research participant

---------- ----------

Signature of participant Date

Signature of researcher

I believe the participant is giving informed consent to participate in this study

---------- ----------

Signature of researcher Date

Appendix D: Semi-Structured Interview Questionnaire

1. Could you briefly describe your professional background and your experience with bid and proposal management?
2. How long have you been involved in bid and proposal management, and how has your role evolved during this time?
3. How have you seen the bid and proposal management process change throughout your career?
4. What do you believe are the key factors that have influenced the evolution of bid and proposal management in your organisation or industry?
5. In your experience, how have collaborative platforms, AI, or other technologies impacted the bid and proposal management process?
6. What technological advancements have you found most impactful in changing the bid and proposal management landscape?
7. What innovative approaches or technologies would you like to see implemented to improve bid and proposal management processes?
8. How do you approach the balance between technological innovation and the human element in bid and proposal management?
9. Where do you see the future of bid and proposal management heading in the next 5 to 10 years, especially in terms of technological integration?
10. How have the changes in bid and proposal management practices affected the overall performance and outcomes of your business?
11. What metrics or indicators do you use to measure the effectiveness of your bid and proposal management processes?
12. Any additional comments or thoughts you would like to share about bid and proposal management?