EXPLORING THE IMPACT OF DECISION-VARIABLES ON ENTERPRISE

DIGITAL TRANSFORMATION

DISSERTATION

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EXPLORING THE IMPACT OF DECISION-VARIABLES ON ENTERPRISE DIGITAL TRANSFORMATION

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DEDICATION

This research study is dedicated to my dear Family, whose unwavering support, encouragement, and love have been my most significant source of strength throughout this journey.

To all those who strive for knowledge and growth, may this work contribute in some small way to your path.

ACKNOWLEDGEMENT

ABSTRACT

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Every Enterprise's Digital Transformation (EDT) is unique and is influenced by its organisational environment. The execution and successful implementation of such a transformation depends on numerous factors affecting the desired outcomes. These decision factors or variables can significantly impact Enterprise Digital Vision's (EDV) overall accomplishment. By definition, the variables refer to any factors, such as resources, skills, enterprise digital strategy, governance, schedule and budget, which may prevent a transformation in achieving its envisioned goals. Successful execution and implementation of an Enterprise Digital Transformation relies on effective identification and management of the decision variables through strategic and tactical interventions. While the strategic vision provides a global enterprise view and the overall execution &

implementation strategy, tactical interventions will ensure timely decision-making and risk mitigation.

Purpose: This research explores and analyses the influence of 'Enterprise Architecture '- focused decision variables on 'Enterprise Digital Transformation'.

Methods: The research examines various decision variables gathered via leadership surveys, interviews, and literature reviews. It analyses the effectiveness of strategic and tactical interventions in managing these variables and their influence on program success. In this research study, a specific focus has been placed on Enterprise Architecture as a critical decision variable impacting EDT.

Results: The study finds that unaddressed decision variables related to enterprise architecture can significantly hinder an EDT program's progress. Strategic planning offers a high-level approach to program execution, while tactical planning enables timely interventions and risk mitigation. Both are essential for managing decision variables and ensuring EDT goals are met.

Conclusions: This research study was initiated with the question of why enterprise digital transformations had a high failure rate. During the literature study, 23 key variables were identified as primary decision variables that impact EDT outcomes most. The scope of this study was limited to understanding the effects of variables related to 'Enterprise Architecture'. The primary focus was enterprise strategy, discovery, governance & change management. The findings were further analysed and validated by the survey results. The respondents were asked about their view of the challenges that impacted the EDT initiative. To avoid any bias, the respondents were presented with various options.

The results highlighted that Enterprise Architecture variables, Skills gap & availability of talent were significant factors that impacted EDT outcomes.

Leadership across enterprises acknowledged that effective management of decision variables, especially Enterprise Architecture, is crucial for the success of EDT programs. Organisations that identify and address these factors early, through strategic and tactical planning, are better positioned to achieve their digital transformation objectives. The research emphasises the need to acknowledge and govern the 23 identified decision variables to ensure successful Enterprise Digital Transformation (EDT).

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KEY TERMS & DEFINITIONS

Business-IT alignment

Business–IT alignment is a process in which an organisation integrates and uses information technology (IT) to achieve business objectives. It is the ability to produce business value, which means establishing an environment where IT and business professionals can work together to achieve common goals in any specific area of work.

Digital Strategy

A digital strategy defines an organisation's priority initiatives for future investment in digital technology. Its goal is to make a business more competitive by digitalising its processes and reviewing its business model. The strategy has a broad scope and covers how digital technology can support business goals.

Digital Transformation (DT)

Digital transformation is a business strategy initiative incorporating digital technology across all areas of an organisation. It evaluates and modernises an organisation's business processes, day-to-day operations, and technology architecture.

Digital Transformation Strategy

A digital transformation strategy is a holistic approach that organisations use to incorporate digital technology across all areas of their operations. It aims to streamline processes, enhance decision-making, and create innovative products and services.

Data-driven Enterprise Architecture

       Data-driven Enterprise Architecture supports projects with business-critical information by determining which areas to focus on based on data.

Decision Factors

These are the criteria or considerations that influence the decision-making process. They represent the various elements that must be evaluated before a decision is made.

Decision Variables

These are the specific elements that can be controlled or adjusted within the decision-making process. They represent the options or choices available to decision-makers.

Enterprise Architecture (EA)

       An enterprise architecture (EA) is a conceptual blueprint that defines an organisation's structure and operation. Its intent is to determine how an organisation can successfully achieve its current and future objectives.

Enterprise Digital Transformation (EDT)

       Enterprise digital transformation integrates digital technologies across all business areas, including processes, products, operations, and technology stack. It involves rethinking the business model, reshaping the product/service portfolio, and instilling a new culture to drive customer-driven innovation. Enterprise Digital Transformation is explicitly tailored to major enterprises' complex, large-scale environments.

Enterprise Architecture and Innovation

Enterprise Architecture is critical for understanding the connection between new technology trends and business. It helps the organisation identify, evaluate, and respond to opportunities and trends in its broader ecosystem. An enterprise's complexity needs to be governed to facilitate innovation. Enterprise Architects play a crucial role in developing products that require high technical involvement; they determine the product requirements, functional designs, and risks associated with Innovation.

EA in Digital Transformation

Enterprise architecture (EA) involves the practice of analysing, planning, designing, and eventually implementing and applying the findings in the enterprise. EA helps businesses undergo digital transformation by bringing legacy applications and processes together to form a seamless environment.

Enterprise Architecture frameworks (EA Framework)

An enterprise architecture framework (EA framework) defines how to create and use an enterprise architecture and provides principles and best practices for creating and using a system's architecture description. Enterprise architecture is a strategic framework that aligns an organisation's business strategy, processes, information, and technology to achieve its goals. EA frameworks help design, plan, and manage enterprise IT systems.

Enterprise Architecture governance

Enterprise architecture governance refers to the procedures and guidelines that enable the effective management, control, and alignment of an organisation's Enterprise Architecture. It involves monitoring and directing enterprise architecture to ensure

alignment with business strategy. This practice enables effective IT processes and promotes an enterprise's strategies.

Environment Social Governance (ESG)

ESG refers to standards used to measure an organisation's environmental, social and governance impact.

Factors

Factors are the underlying elements or conditions that can influence an outcome.

Information technology (IT)

Information technology (IT) uses computers, networking, storage and other devices, infrastructure, and procedures to create, process, store, secure, and exchange electronic data.

Sustainability

Sustainability refers to the broader concept of fulfilling current needs without hampering future generations' ability to meet theirs. It balances environmental, social, and economic factors and encompasses efforts to reduce environmental impact, conserve resources, and promote social equity on a macro scale. In business, sustainability might involve adopting renewable energy sources, reducing carbon footprints, promoting ethical labour practices, and considering long-term environmental impact in every aspect of decision-making.

Sustainable Operations

Sustainable Operations focuses on the specific actions and practices within an organisation's daily operations that minimise environmental impact and use resources efficiently. This can include water conservation, waste reduction, energy efficiency, supply chain management, and resource optimisation. Sustainable operations are practical implementations of sustainability principles on a micro scale directly related to how a business functions internally, such as optimising processes to reduce energy consumption or minimise waste.

IT governance (ITG) and Enterprise Architecture governance (EAG)

IT governance (ITG) primarily focuses on IT management and operations. In contrast, EA governance (EAG) focuses on aligning IT with broader business objectives to ensure coherence and consistency across organisational architecture.

The Open Group Architecture Framework (TOGAF)

TOGAF is a standard of The Open Group that provides universal concepts, best practices, and guidance for Enterprise Architecture.

Variables

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CHAPTER I:

INTRODUCTION

1.1 Research Background and Scope

Organisations start their Digital Transformation journey with a vision, objectives and goals. Some of them could be driving a seamless digital user experience, best-in-class & meaningful innovation, social responsibility & sustainability, improved sales, service & marketing performance, customer-centric chatbots & conversational AI, data-centric business operations, blockchain-driven supply chain & logistics management, IoT & Connected devices and many more. While all of these are relevant, somewhere along the digital transformation journey of these enterprises, there are deviations, primarily due to unstructured and uninformed decision-making. Invariably, unstructured and uninformed decision-making is due to unmanaged decision factors or variables. These decision factors or variables can steer towards unfavourable outcomes even with the right Enterprise Digital Transformation Strategy. Hence, there is a need for Enterprises to acknowledge the presence & strong impact that these decision variables can have on the Enterprise Digital Transformation Program. When these decision variables are identified, it is possible to plan mitigation strategies and interventions proactively. A recent Harvard survey of directors, CEOs, and senior executives found that digital transformation (DT) risk is their #1 concern in 2019. Yet, 70% of all DT initiatives do not reach their goals. Of the $1.3 trillion spent on DT in 2018, it was estimated that $900 billion went to waste. With this history & background, this research will explore key decision variables from the lens of various stakeholders across enterprises and explore & understand the impact of decision-making at all levels. While the CxOs are the key influencers, the role of other stakeholders cannot be ignored. We should also acknowledge that the various decision variables cannot be considered in total isolation. This study will focus on 'Enterprise

Architecture' as the independent variable and the other Enterprise Architecture-related variables as dependent variables. The different variables will be considered Constant variables for this study. Future research can focus on one or more of the below-mentioned 23 decision variables & hypotheses listed in this research paper that have been identified during the literature review and through prior work experience and academic background.

1. **Communication Management**: Effective communication strategies across all levels of the organisation for seamless information flow.
   Hypothesis - Effective communication management practices positively influence the success of EDT projects.

2. **Cross-Functional/Departmental Collaboration**: Facilitating collaboration between various departments to break silos and improve workflow.
   Hypothesis - Higher levels of cross-functional collaboration positively influence the success of EDT projects.

3. **Enterprise Architecture Discovery**: Understanding the current state of enterprise systems, infrastructure, and architecture to plan digital transformation.
   Hypothesis - Higher levels of EA Discovery implementation positively influence the success of EDT projects.

4. **Ethical ESG (Environmental, Social & Corporate Governance)**: Integrating ethical, environmental, social responsibility and corporate governance principles into digital initiatives.
   Hypothesis - Higher ESG compliance scores positively influence the success of EDT initiatives.

5. **Meaningful Innovation / Adoption rate of new technology**: Strategic application of AI, ML, IoT, AR/VR, and Blockchain to drive 'meaningful' innovation aligned with business objectives.

   Hypothesis - A higher technology adoption rate positively influences the success of EDT initiatives.

6. **Solution Blueprint (Big Picture)**: A comprehensive overview of the technology solutions and their integration into business processes.

   Hypothesis - A more comprehensive solution blueprint positively influences the success of EDT initiatives.

7. **Business & EDT Roadmap**: A strategic plan outlining critical digital transformation initiatives, timelines, and milestones for business growth.

   Hypothesis - A more precise and comprehensive business & EDT roadmap positively influences the success of EDT initiatives.

8. **Enterprise Architecture – Strategy & Governance**: Defining the enterprise architecture's structure, standards, and governance to support digital transformation.

   Hypothesis - Higher effectiveness of EA strategy and governance positively influences the success of EDT initiatives.

9. **Physical Infrastructure & Work Environment**: Optimizing physical assets and the workspace for enhanced digital operations and employee efficiency.

   Hypothesis - Higher quality of physical infrastructure and work environment positively influences the success of EDT initiatives.

10. **Cloud Infrastructure**: Leveraging cloud services for scalability, flexibility, and cost-effectiveness in digital operations.

Hypothesis **-** A more robust cloud infrastructure positively influences the success of EDT initiatives.

11. **Contracting and Licensing**: Managing software, services, and partnership contracts to ensure compliance and optimal resource utilisation.

    Hypothesis **-** Higher efficiency in contracting and licensing processes positively influences the success of EDT initiatives.

12. **Seamless Human Resources Collaboration**: Ensuring smooth collaboration among employees, contractors, and third-party vendors and managing contracts/licenses effectively.

    Hypothesis **-** Higher HR collaboration effectiveness positively influences EDT initiatives' success.

13. **People Performance Management**: Using data-driven methods to manage and improve employee performance in the digital workplace.

    Hypothesis **-** Higher employee performance ratings positively influence the success of EDT initiatives.

14. **Automation**: Implementing automation tools to streamline workflows, reduce manual effort, and increase efficiency.

    Hypothesis **-** A higher level of process automation positively influences the success of EDT initiatives.

15. **Integration & Enterprise Data Interchange (EDI)/Exchange, Open Standards**: Enabling seamless data integration across systems through open standards and interoperable technologies.

    Hypothesis **-** Higher effectiveness of EDI/Exchange and open standards implementation positively influences the success of EDT initiatives.

16. **Human Resource Management (Employees & Partners)**: Effectively managing internal employees and external partners' workforce to support digital initiatives.

    Hypothesis **-**Higher effectiveness of HR management practices positively influence the success of EDT initiatives.

17. **Circular Economy**: Applying sustainable practices to reduce waste and enhance resource efficiency within the digital economy.

    Hypothesis **-**A higher degree of circular economy implementation positively influences the success of EDT initiatives.

18. **Resource Planning – Onboarding and Offboarding**: Efficiently managing the onboarding and offboarding of staff and resources in alignment with project needs.

    Hypothesis **-** Higher efficiency in onboarding and offboarding processes positively influences the success of EDT initiatives.

19. **Organization Culture**: Fostering a culture that embraces change, innovation, and continuous learning in the digital age.

    Hypothesis **-**A positive employee perception of organisational culture positively influences the success of EDT initiatives.

20. **Enterprise Change Management**: Implementing structured change management and governance processes to minimise disruptions during the digital transformation journey.

    Hypothesis **-** Higher effectiveness of change management practices positively influences the success of EDT initiatives.

21. **Strategic Vision**: Defining a clear digital vision that aligns with long-term business goals and drives transformation efforts.

Hypothesis **-**Higher clarity and alignment of the strategic vision positively influence the success of EDT initiatives.

22. **Thought Leadership**: Leading innovation and influencing digital trends by promoting new ideas and solutions within the industry.

Hypothesis **-** Greater impact of thought leadership initiatives positively influences the success of EDT initiatives.

23. **Digital Transformation Roadmap**: This is a step-by-step guide for implementing digital transformation initiatives and ensuring alignment with strategic business goals.

Hypothesis - Higher clarity and detail of the digital transformation roadmap positively influence the success of EDT initiatives.

Strategic Digital transformation (Zaoui and Souissi, 2020)As we know, it has emerged as crucial for organisations to thrive in today's dynamic business landscape.

It is inevitable for organisations and enterprises to embark on Digital Transformation journeys with the right strategy. However, having just the right strategy is not adequate. It needs to be backed up with knowledge of the various decision variables that can impact digital transformation journeys.

While all 23 variables are significant in an organisation's Digital Transformation journey, this study will focus on Enterprise architecture-related factors as the key decision variable at this point in time.

Enterprise Architecture has a significant bearing on Digital Transformation Program journeys, but very little understanding and research exists on its impact.

In their conceptual paper, (Korhonen and Halén, 2017a) explore the implications of digital transformation on enterprise architecture.

In this research paper, however, we examine whether and how Enterprise Architecture—specifically strategy, discovery, governance, and change management—can significantly impact Enterprise Digital Transformation.
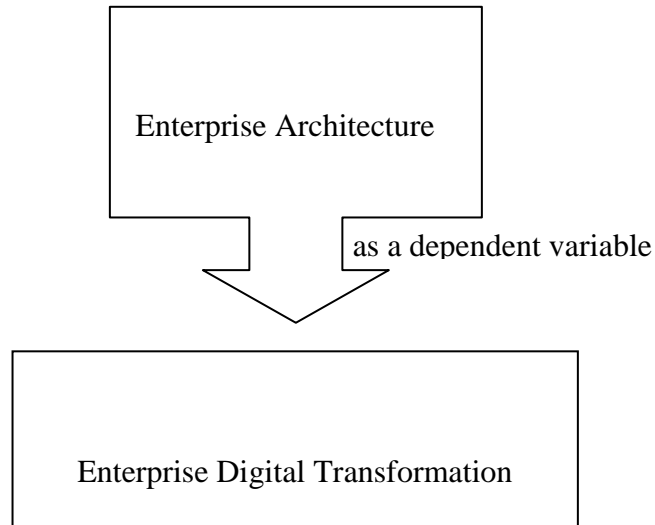
Figure 1 - Enterprise Architecture as the critical driver of EDT

In Figure 1 above, 'Enterprise Architecture' is a dependent variable for Enterprise Digital Transformation. In the table below, we substantiate this with an initial analysis of survey respondents' responses to a critical question. The respondents are global stakeholders who have been part of digital transformation journeys and programs.

1.2 Research Problem

A high rate of failure of Enterprise Digital Transformation across the globe was the primary research problem.

Enterprises fail to acknowledge and understand that aligning EA, ESG, and DT enables organisations to create value by integrating sustainability considerations into digital innovation efforts, fostering responsible business practices, and driving long-term growth and competitiveness in a rapidly changing business landscape.
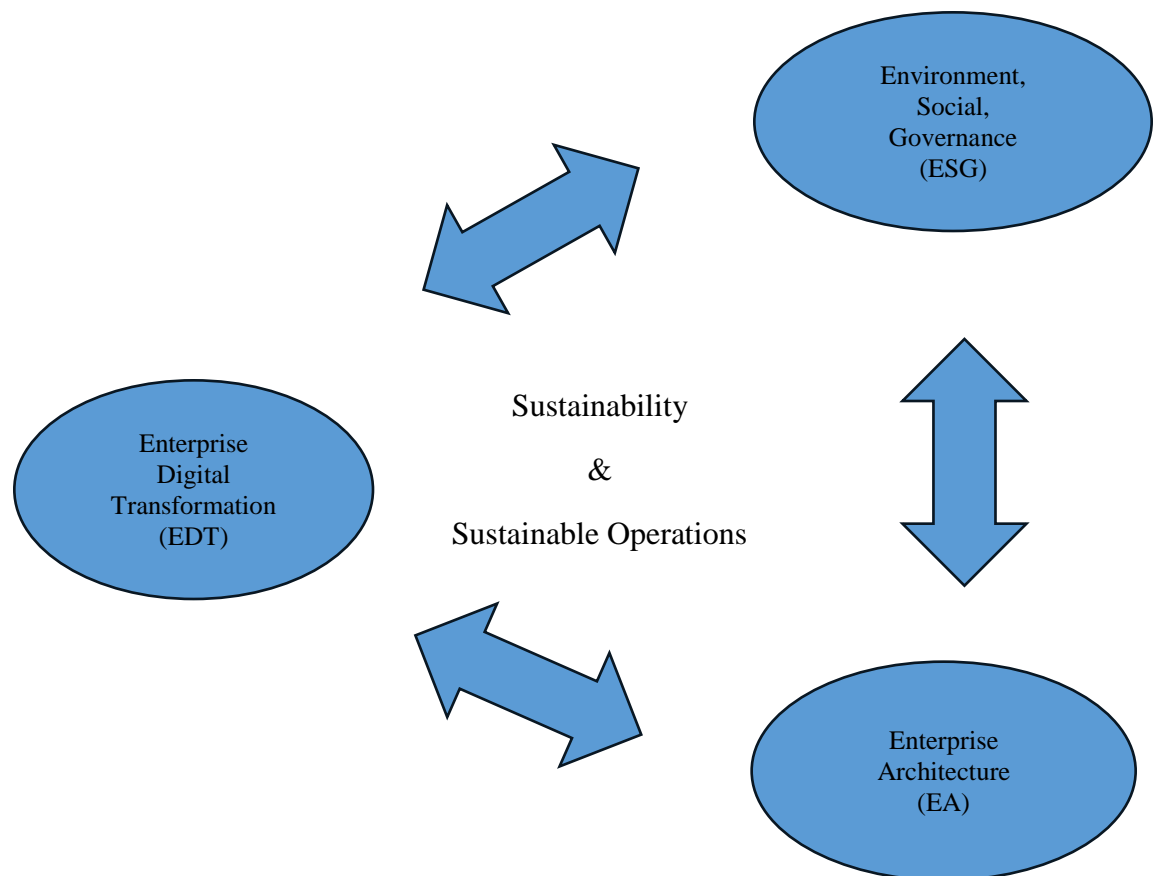
Figure 2 - Key Pillars of an Enterprise

1.3 Purpose of Research

The purpose of this research study is to explore the impact of various decision variables that exist and strongly impact the outcomes of Enterprise Digital Transformation, considering that some of these factors are less understood or acknowledged as significant influences on the success of EDT.

1.4 Significance of the Study

This study highlights three core paradigms forming the 'Foundational Pillars of a Modern Enterprise'. They are:

- Environment, Social & Governance (ESG),

- Enterprise Architecture (EA) and

- Enterprise Digital Transformation (EDT),

with the primary goal of achieving Sustainability and Sustainable Operations.

1.5 Research Questions

The fields of Enterprise Digital Transformation and Enterprise Architecture have existed for more than a decade. The ever-changing landscape of businesses and technologies has significantly contributed to the lack of control over EDT outcomes. That said, a few key questions, if answered, can lead to a better understanding and knowledge of the decision variables.

This study aims to address the following three research questions:

1. Is there a consensus amongst Industry Leaders worldwide that some key decision variables, such as Enterprise Architecture, significantly impact EDT outcomes?

2. What other EA-related variables influence EA as critical drivers of EDT?

3. Can we establish that EA, ESG, and DT are three critical pillars of an Enterprise that enable it to create value and lead to successful EDT outcomes in terms of Sustainability and Sustainable Operations?

1.6 Research Limitations

While 23 decision variables were identified, the scope of this research will be limited to those directly related to Enterprise Architecture.

1.7 Structure of Research Dissertation

This dissertation document is organised into six chapters.

Chapter One provides an introduction to the research study. It details the background and scope of the study. The section defines the research problem, including the motivation and the evidence gap in the literature. Besides, the chapter examines the significance of the study, including its purpose and objectives.

Chapter two examines the literature and work related to Digital Transformation in the context of Enterprise Architecture (EA). It also provides substantial inputs to this research by reviewing the methods, aims, processes, findings, and underpinning theoretical constructs of previous research in the study context.

Chapter three examines the methodological approach to research design. It also discusses ethics and data generation techniques, such as the semi-structured interview and the observation process.

Chapter four provides a view of the survey results conducted to explore the impact of crucial decision variables.

Chapter five discusses the research and survey results and examines the impact of the Enterprise architecture-focused decision variables on EDT outcomes.

Chapter VI summarises the research study and the implications of the decision variables explored. It references accelerators, future study recommendations, and how this research can improve EDT outcomes across large organisations.

CHAPTER II:

LITERATURE REVIEW

2.1 Introduction

Organisations start their Digital Transformation (DT) journey with promising goals and objectives. Some of them expect to leverage Digital Transformation to drive a seamless digital user/customer (internal and external users/customers) (UX / CX), end-user experience (Henriette *et al.*, 2015); best in class & meaningful innovation (design & engineering); social responsibility & sustainability initiatives; improved sales, service and marketing performance; customer-centric chatbots & conversational AI; data-centric business operations; blockchain-driven supply chain and logistics management; IoT & connected devices, business growth and many more.

The transition from business to digital is quite complex and requires a gradual transition (Ilin et al., 2022).

While all of these are relevant, somewhere along the transformation journey of these enterprises, we have often seen a mis-orientation / deviation from the objectives and quality of the outcomes.

2.2 Digital Transformation

Digital Transformation has gained immense research interest in both academia and practice. While existing literature demonstrates new levels of research interest in the area and how business leaders have engaged in digital transformation journeys, there is evidence of a lack of shared understanding of this concept (Morakanyane *et al.*, 2017).

The above statement indicated that there is indeed a lack of understanding of digital transformations (DT). Without adequate knowledge of DT, transformation success rates can be poor.

The digital transformation of our life changes the way we work, learn, communicate, and collaborate. Enterprises are presently transforming their strategy, culture, processes, and their information systems to become digital. The digital transformation deeply disrupts existing enterprises and economies (Zimmermann et al., 2018).

Delen and Ramesh (2021) indicate that digital transformations intended to improve efficiency have a high failure rate of up to 90%, resulting in adverse impact to firms' operations and intent to further innovate.

Digital customer experience (DCX) is one of the most critical and least understood factors significantly influencing customer adoption of digital innovation. (Ramesh, 2022).

Numerous studies have been done in the domain of Digital Transformation, and perhaps thousands of such Digital Transformations have been done so far. It can be surprising to see that failure rates are indicated to be as high as 90%.

'What factors potentially impact the digital transformation outcomes and are there any specific factors that we are not paying much attention to or are being overlooked?'

The above question led this research study to examine various articles, research papers, and literature to understand what work has been done in this area and what experts have indicated in their research studies.

Johannes (2021) in his paper People Navigating Digital Transformation, addresses organisational culture change (OCC). While this is definitely a challenge, OCC can lead to improved performance if it optimises the way a firm's culture is aligned with its strategy. This leads to the fact that the People factor, perhaps, is most neglected. While we talk of Cultural change at a high level, I sense a deep-rooted involvement of this factor in the outcomes of Digital Transformation Programs.

A detailed literature review was conducted to gather relevant domain knowledge and the work already done in digital transformation. This helped to better understand the various aspects of Digital Transformation, for example. (Mergel *et al.*, 2019) whose study indicates that the demands for digital transformation in public administration are primarily driven by external rather than internal demands, mainly through changes observed in other organisations' environment, technology, and stakeholder requests.

Every organisation has its unique organisational environment, which drives the outcomes of EDT. Governance and change management must be customised and tailored to meet enterprise expectations. Relying solely on external influence, stimulus, and inputs may jeopardise the outcomes of EDT for the enterprise.

By focusing on specific areas of digital transformation earlier research studies have addressed understanding of particular areas, of digital transformation (Schwertner, 2017). This indicates that a great deal of research is needed on EDT.

Organisations understand that besides technology implementation, organisational changes must also be adopted (Vukšić *et al.*, 2018)EDT's focus has typically been driven by technology, not strategy, though it is well-known that 'Strategy, not Technology, drives EDT.'

In their (Nadkarni and Prügl, 2021) A two-step approach is used to review the literature on digital transformation, technological disruption, and corporate entrepreneurship. First, existing articles on digital transformation are reviewed, analysed, and synthesised. Then, in a second step, they supplement these findings by simultaneously reviewing the literature stream on technological disruption and corporate entrepreneurship.

Another area that has not received due attention is enterprise architecture (EA). EA has been suggested to facilitate enterprise transformation; the focus has traditionally

been on process standardisation and integration rather than on continuous adaptation to the changing business and technological landscape. For EA to have the desired impact, more adaptive conceptualisations of EA that address the requirements of the new digital environment is necessary (Korhonen and Halén, 2017b).

Despite the ongoing research in academia, the benefits and the role of EA management in digital context are still a topic of lively discussions, and there is a gap in research on how to leverage EA for digital transformation (Hafsi and Assar, 2016).

(Chen and Tian, 2022) their paper states that a successful transformation depends on interactions between environmental uncertainty and resource orchestration.

In other words, Digital Transformation is about orchestrating the decision variables and managing their optimisation. These decision variables cannot be considered in isolation but are known to impact each other. However, we will have to gather input from various industry experts who have been part of EDT and have possibly seen and acknowledged factors that impacted their ETD outcomes.

This study aims to tap into that rich knowledge base and experience to explore the impact of various decision variables. It would be impossible to do full justice to this research if all the variables identified were considered for the study. Hence, this research study looks only at the Enterprise Architecture dimension and its impact on EDT outcomes.

2.3 Key trends & perspectives

A detailed literature review was conducted to gather relevant domain knowledge in the area of Digital Transformation. The work already done to gain a better understanding of the various aspects of Digital Transformation; for example, Mergel et al. (2019) study indicates that the demands for digital transformation in public

administration are mostly driven by external rather than internal demands in particular through changes observed in other organisations' environments, technology, and requests made by stakeholders.

By focusing on specific areas of digital transformation earlier research studies have addressed understanding of particular areas, (for example of business) of digital transformation (Schwertner, 2017).

Organisations understand that besides technology implementation, organisational changes must also be adopted (Vukšić *et al.*, 2018).

In their (Nadkarni and Prügl, 2021) A review of the literature on digital transformation, technological disruption, and corporate entrepreneurship is conducted using a two-step approach. First, they review, analyse and synthesise existing articles on digital transformation. Then, in a second step they supplement these findings by simultaneously reviewing the literature stream on technological disruption and corporate entrepreneurship.

Digital transformation and resultant business model innovation have fundamentally altered consumers' expectations and behaviours, putting immense pressure on traditional firms, and disrupting numerous markets (Verhoef et al., 2021).

Despite the ongoing research in academia, the benefits and the role of EA management in digital context are still a topic of lively discussions, and there is a gap in research on how to leverage EA for digital transformation (Hafsi and Assar, 2016).

(Chen and Tian, 2022) their paper states that a successful transformation depends on interactions between environmental uncertainty and resource orchestration. In other words, Digital Transformation is about orchestrating the decision variables and managing their optimisation.

2.4 Enterprise Architecture

Enterprise architecture is a vast field of study with various bodies of knowledge, such as the Open Group TOGAF, a widely recognised and used framework for enterprise architecture (EA). It provides a comprehensive approach to designing, planning, implementing, and governing enterprise information architecture. TOGAF also helps organisations align their business strategy with IT and offers a structured method for managing enterprise architectures to ensure efficiency, consistency, and alignment with organisational goals.

2.5 Key components of TOGAF

- The Architecture Development Method (ADM) is a step-by-step process for developing and managing enterprise architecture. It includes the Preliminary Phase, Architecture Vision, Business, Information Systems, Technology Architecture, Opportunities and Solutions, Implementation and Governance, and Architecture Change Management.

- Enterprise Continuum is a classification system that helps categorise the different artefacts and models used in EA, facilitating reuse and standardisation.

- The Architecture Content Framework guides structuring architecture outputs, including catalogues, matrices, and diagrams representing different perspectives of architecture.

- TOGAF Reference Models are standard models for typical enterprise architecture components, such as the Technical Reference Model (TRM) and the Integrated Information Infrastructure Reference Model (III-RM).

- Architecture Capability Framework that focuses on the skills, roles, and organisational structures required to support and manage EA.

2.6 Other frameworks related Enterprise Architecture

- Zachman Framework is a foundational framework for enterprise architecture that defines a set of perspectives and focuses on aligning business and IT through a matrix approach.

- ArchiMate is a modelling language that complements TOGAF by visually representing enterprise architectures. The Open Group also maintains it, often used in tandem with TOGAF.

- ITIL (Information Technology Infrastructure Library) is a framework for IT service management that can work alongside TOGAF by aligning IT services with business needs and ensuring continuous improvement.

- COBIT (Control Objectives for Information and Related Technologies) is a framework for IT governance and management that integrates IT with enterprise goals and optimises business performance.

- PRINCE2 / PMI's PMBOK are project management methodologies that can be integrated with TOGAF during enterprise architecture projects' implementation and governance phases.

- Business Process Management (BPM), a technique for improving and optimising business processes, often aligns with EA efforts to enhance organisational efficiency.

- ISO/IEC 42010 is a standard for describing the architecture of systems. It provides guidelines for creating architecture descriptions that align with TOGAF's modelling practices.

TOGAF is often a preferred choice for organisations due to its flexibility and scalability in guiding complex enterprise digital transformations across industries.

It is evident from the above that numerous frameworks and practices help manage Enterprise Architecture. However, it is often not considered a priority or an overhead until it is too late. In the pursuit of a quick ROI, enterprises fail to recognise the impact it can have on EDT. This research aims to explore such potential pitfalls and gain additional insights into the high rate of EDT failures.

Additionally, (Ngcetane-Vika, 2023) states that Digital transformation has far-reaching implications for commercial contracts. Legislative frameworks are needed to regulate online business, which culminates in the standardisation of commercial agreements in areas like Blockchain and Artificial intelligence.

While Digital Transformation has expanded to all sectors of activity, there are some areas with more prospects of being developed in the future than others (Reis et al., 2018), which indicates the potential to do more research on this topic.

Hence, it is fair to say that no amount of research can entirely help identify the best approach to Digital Transformation (DT). This study will look at a subset of the 23 decision variables identified as having an immense bearing on the success of Digital Transformations, especially in this transformative decade and beyond. This exhaustive list of decision variables can have varied levels of impact on different organisations. Still, it is essential to recognise, manage and control them throughout all the stages of the Digital Transformation.

In support of the above statements, one of the studies considers the concept of action fields. By considering the action fields (customer, value proposition, operations, data, organisation, and transformation management), organisations will ensure they develop a holistic yet concrete perspective on digital transformation, which will reduce the risk that they will experience silo thinking with individual departments' striving for partial solutions (Gimpel et al., 2018). This indicated that researchers acknowledge that

no amount of research can fully qualify the best approach to a successful digital transformation across organisations.

Another study done by (Zaoui and Souissi, 2020) has developed digital reflection from a strategic and, above all, multidimensional perspective. It then proposes a framework of digital transformation based on strategic guidelines and makes all the dimensions that must be involved in a transformative process interact with each other.

(Schwertner, 2017) mentions that the ability to digitally reimagine the business is determined largely by a clear digital strategy supported by leaders who foster a culture of new innovations. What remains unique to digital transformation is that risk taking is becoming a cultural norm as more digitally advanced companies seek new levels of competitive advantage.

Also, (Gebayew et al., 2018) It mentions that Digital transformation is the integration of digital technology into all sectors of a business, fundamentally altering how you perform and bring value to customers. It impacts and benefits business models, operational processes, and customer experiences.

In a study by (Straub et al., 2021) indicate that Research on digital transformation is limited by two perceptions, i.e. the definition is unclear and it specifically affects organisations. They conducted five levels of analysis for digital transformation, i.e. individual, community, organisation, industry, and economy, and their underlying characteristics, i.e. resources, processes, and values.

Thus, it is evident, conclusive and in agreement with the research community, that the decision variables play an essential role in enabling a successful Digital transformation.

Strategic Digital transformation, see (Zaoui and Souissi, 2020)As we know, it has emerged as crucial for organisations to thrive in today's dynamic business landscape.

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This literature review further delves into the impact of decision variables, specifically Enterprise Architecture (EA) and related decision variables, on digital transformation. EA in digital transformation is an underrated aspect, as evidenced by the global survey responses from industry leaders. While the adoption of enterprise architecture frameworks and digital transformation strategies exists, there are apparent gaps in EA and business strategy alignment and understanding of the impact of enterprise architecture on digital transformation. Additionally, enterprise architecture governance's contribution to EA and organisational change is underrated and often ignored in most digital transformation (DT) journeys. Hence, it is essential to understand, acknowledge and implement EA best practices in Digital Transformation to achieve successful outcomes.

Additionally, three other aspects are often ignored when it comes to qualifying an Enterprise Digital Transformation as 'successful'.

Ethical ESG – Environmental, Social & Corporate Governance

Meaningful Innovation – Strategic use of Generative AI, ML, NLP, Biomimicry, IoT, AR, VR, Cyber Security, Blockchain

Seamless Human Resources Collaboration – Employees, Contractors, Third Party Vendors and Stakeholder Management

The above are essential for any organisation, both public and private sector enterprises globally. This is extremely important, especially when we see a dire need for sanity in all aspects. Enterprises have shown little consideration for these aspects over the years, decades, and centuries.

Consumerism and hyper-consumerism have overshadowed the need for sustainable living, and we are only now recognising its impact on the global climate, natural resources, and mental well-being.

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Consumerism is the theory that individuals who consume goods and services in large quantities will be better off. Hyper-consumerism has been widely criticised for its economic, social, environmental, and psychological consequences.

The concept of ethics has evolved over centuries. In this age, it is essential to include ESG as an integral part of ethics and to be ethical rather than merely consider it a compliance parameter. This is a crucial parameter when measuring and considering an EDT initiative successful.

Let's discuss the research details on these three specific theories and how Enterprise Architecture interventions can address them and potentially lead to successful and holistic Enterprise Digital Transformation.

2.7 Theory 1 – EA and 'Ethical ESG'

Enterprise Architecture (EA) and Ethical Environmental, Social, and Governance (ESG) practices intersect meaningfully, as both paradigms guide organisations' long-term sustainability and operational excellence, which are crucial to successful EDTs. The concept of ethics has evolved over the ages. Considering global climate change and environmental concerns, ESG needs to be considered as basic Ethics and not a compliance parameter that it currently is; hence, the concept of 'Ethical ESG'.

Environmental, Social & Corporate Governance (ESG) has been the critical focus for nearly 20 years while this paper was initiated in 2023. The topic was mentioned in the UN report in 2006, emphasising the principles of responsible investment. The attention to ESG has intensified as the evidence of climate change has been pouring in from the scientists, media, and geo-political discussions. We are experiencing this daily across the globe: heat waves, wild forest fires, floods, droughts and whatnot. The increasing attention and urgency have raised concerns about the E in ESG and the public

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eye, which is critical / strictly scrutinising organisations. Organisations are being viewed with a new lens. They are expected to play a major role in being responsible social citizens and applying governance practices. They are expected not to treat ESG as just a checklist item but do so in the spirit of a better environment for our current and future generations. While we have a lot of KPIs, ecosystems, and terms like 'net zero' and carbon footprint, I sometimes get a sense that we are missing the big picture. During interviews and discussions, I have come across ESG initiatives being treated as KPIs and the gross misuse of organisation budgets.

(Zhong *et al.*, 2023) their paper mentions that there are three main driving factors in promoting digital transformation: restraining the short-sightedness of management, improving the transparency of the internal information of enterprises, and improving the technological innovation of enterprises. This indicates that no research on how to drive successful Digital transformations is adequate. We must have the right mindset and intent and the right conscience for execution and implementation. In other words, we need the ethical element to be added to ESG and look at making changes from the ground up as we transform our organisations digitally. The true purpose should always be the guiding principle of Digital Transformation (George and Schillebeeckx, 2022). Purpose can serve as a control mechanism that reduces monitoring needs.

(Sheng *et al.*, 2023) indicates that although Digital Transformation has aroused the interest of scholars and practitioners, how to reach a win-win situation between economic and carbon performance in the context of carbon neutrality has not been well addressed.

A true digital transformation involves adopting technological changes and aligning them with ethical and sustainable practices to build more innovative businesses

and a more robust world. This includes considering the environmental impact of digital initiatives, ensuring that social implications are positive, and maintaining strong governance to uphold transparency and accountability.

Environmental, social, and corporate governance considerations have gained significant attention in the context of digital transformation. Organisations increasingly recognise the importance of aligning their Enterprise Architecture and Digital strategies with sustainable and ethical practices, but that's only a tiny/negligible percentage of corporates and organisations.

Research by (Shaofeng Wang, José Paulo Esperança, 2023) emphasises and asks if Digital Transformation can improve ESG performance. This is a good research question and can be stated differently by emphasising that Enterprise Architecture and its undiluted consideration of Ethical ESG is the crucial decision variable that should be the key driver for a Digital Transformation to be called Successful.

Another study by (Wu, S. and Li, Y., 2023) also states From an external perspective, the contribution of digital transformation to ESG performance diminishes when environmental uncertainty increases; from an internal perspective, the positive effect of digital transformation on ESG performance is more significant in larger-scale enterprises. In addition, digital transformation will further enhance ESG performance by promoting green innovation, i.e., green innovation has a mediating role in the relationship between the two factors. The study's findings introduce new thinking on the factors influencing corporate ESG performance, advance relevant research, and provide essential references for corporate managers and government departments concerned about ESG performance to make appropriate decisions. Yet another study by (Kwilinski *et al.*, 2023) mentions that Digital transformation can potentially enhance ESG performance.

The question should be: does integrating ESG factors into digital initiatives enhance long-term value creation? ESG-conscious digital transformation (Kwilinski *et al.*, 2023) can lead to reduced environmental impact which is the key idea and also help improve stakeholder relationships, and enhanced corporate reputation.

Further, EA and ESG align in primarily five key aspects:

1. Governance and Compliance, wherein EA provides the blueprint for aligning business processes and IT with strategic objectives, which includes complying with regulatory standards. Ethical ESG mandates reducing carbon footprint, ethical labour practices, and transparent governance that can be integrated into EA frameworks to ensure compliance at all levels, especially through the design of systems that monitor and report on ESG metrics.

2. Sustainable IT Architecture, wherein EA can support ESG initiatives by fostering sustainable technology solutions, such as cloud infrastructures that reduce energy consumption, more efficient data centres, and incorporating renewable energy. This optimises costs and aligns IT systems with an organisation's ethical stance on environmental responsibility.

3. Social Impact via EDT, wherein EA drives EDT, and that can be designed to include ethical ESG priorities like accessibility, diversity, and inclusion. EA strategies can ensure that technology systems are built with accessibility in mind, providing equitable access for people with disabilities or underrepresented groups. When done with the right intent, this can result in favourable EDT outcomes based on ethical considerations and not merely compliance.

4. Risk Management, wherein ethical ESG involves managing risks related to environmental and social impacts. EA frameworks can address this by embedding ESG risk factors into enterprise risk management systems. This ensures that decisions are made with complete and comprehensive awareness of ethical considerations, such as climate risks or labour issues in global supply chains.

5. Data-Driven ESG Strategies, where we know that EA often involves collecting and analysing data across an enterprise. This can be leveraged to support ESG initiatives, such as tracking carbon emissions, monitoring compliance with ethical labour laws, or assessing the social impact of company policies. Effective EA ensures that organisations can gather accurate, real-time data, leading to better ESG reporting and accountability.

This indicates that incorporating ethical ESG principles within Enterprise Architecture ensures that organisations are efficient, profitable, and socially and environmentally responsible. This alignment helps create a sustainable future while ensuring long-term business viability.

A PwC report says organisations must do an honest effort check and identify whether they are conformists, pragmatists, strategists, or idealists. However, the need of the hour is to be realistic and understand that nothing matters more than saving our environment today. Every Digital Transformation Program activity should run via the EDT, EA, and ESG lens with a '100% coverage' target.

2.8 Theory 2 – EA & Meaningful Innovation

We are in an era of innovation. Every business is in a rush to introduce innovations. In a recent car launch of a luxury brand, they introduced a feature of voice

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recognition to open the sunroof or window. It comes with challenges, wherein sometimes your voice may not be recognised. When this happens, it could upset you and impact your driving experience and safety. This is a typical case of innovation going overboard when you could have done the same with a button. Combined with more innovations, this could leave you with quite a cluttered, overloaded yet innovative interface, which can become overwhelming rather than exciting. These innovative features will be used for self-gratification and to show off to your family and friends for a few days or weeks. Some meaningful innovations have improved the safety, user experience, and comfort. Innovation, if not meaningful, can lead to waste and hyper-consumerism. This applies to all Enterprise Digital Transformation journeys.

Strategic and Meaningful use of Technological Solutions is a cornerstone of digital transformation. The adoption of Enterprise Solutions Architecture, Generative AI, Machine Learning (ML), Natural Language Processing (NLP), Biomimicry, Internet of Things (IoT), Augmented Reality (AR), Virtual Reality (VR), Gamification, Cybersecurity, and Blockchain has reshaped business models and processes. In the paper (Ayoko, 2021) mentions that Digital Transformation(DT), Robotics and AI are ultimately connected with organisational outcomes such as innovation and organisational behaviours.

Like most industries, education has undergone a forced digital transformation with quick solutions like Zoom, MS Teams, Kahoot, Mentimeter and gaming platforms adopted by education institutions. With Generative AI rapidly emerging as a transformative innovation along the likes of the internet and the smartphone, there is now a golden opportunity to reimagine and transform the future of education truly (Lim et al., 2023). This is an identifiable trend across most industries. Digital Transformations are done out of the fear of looking 'outdated' rather than having a meaningful purpose. EA-

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based innovations are often done with a meaningless intent based on closer examination. The value propositions/value-adds do not justify the price of the innovation. Its impact on ESG is yet another dimension.

Additionally, the role and importance of innovative technologies and Enterprise Architecture in Digital Transformation cannot be stressed enough. Researchers (van de Wetering *et al.*, 2021) emphasises this by stating, The strategic role of enterprise architecture (EA) in modern firms has gained considerable interest in the Information Systems (IS), management, and business and consulting communities. Over the past years, there have been numerous critical appraisals on the value and role of EA. However, in recent years, firms have undergone a series of business and IT transformations (e.g., migration to the cloud, the introduction of analytics and AI tools, and rationalisation of legacy). EA maps out and orchestrates business and IT assets and processes and their interconnections and is, therefore, a crucial ingredient for firms to drive digital transformation.

Current enterprise architecture frameworks are used for analysis, design, and strategy execution, helping an enterprise transition from an as-is state to a to-be state. However, emerging trends suggest the need for richer models to support ongoing adaptations and periodic transformations (Babar and Yu, 2015)Enterprises must consider the cultural and generational shifts we are experiencing. The onset of AI-related technologies has disrupted and impacted all areas of transformation. The Gen Z demographic cohort in IT is witnessing the era of Low-Code, No-Code. This innovation and paradigm are meaningful as they help improve productivity and the quality of digital transformation outcomes. Hence, EDT initiatives need to adapt to the changing ecosystem and update the way of working.

Innovation has also advanced in the area of IoT. Since IoT is already a pervasive element of most people's contemporary lives, it is essential to consider how we might benefit from IoT or, more notably, how IoT can enhance our levels of happiness (Ahmad and Zulkifli, 2022). In other words, meaningful innovations can only achieve high, lasting happiness.

(Ayoko, 2021) mentions that DT, Robotics and AI are ultimately connected with organisational outcomes such as innovation and organisational behaviours and that the adoption of DT, robotics and AI by contemporary organisations will continue to be on the rise. He says that in organisational behaviour, these emerging technologies have implications for cyber security issues (e.g., hacking, employee surveillance, HR practices, leadership, safety, working from home, hybrid work, collaboration, and employee wellbeing). The proliferation of these technologies also suggests that organisations must secure their technological platforms seriously and develop a more innovative, proactive and adaptive approach in the use of these technologies.

Value creation for consumers, as the condition sine qua non for value capture, is at the heart of demand-side strategy research and is a core element of almost any business model (Priem *et al.*, 2018). The focus here is on customer-centricity and creating value. Innovation, too, should be meaningful and well thought out during the digital transformation journey. Also, innovation cannot be looked at independently; it has to pass through the lens of ESG. Thus, there is a very close inter-connectedness between the EA-related three decision variables discussed in this research study.

Another example of innovation that cannot be ignored is Conversational / Gen AI. Generative AI can create not only income inequality at the societal level but also monopolies at the market level. Individuals who are engaged in low-skilled work may be replaced by generative AI, causing them to lose their jobs (Zarifhonarvar, 2023).

In another paper (Gupta et al., 2023) indicate that cyber offenders can use the GenAI tools in developing cyber-attacks, and explore the scenarios where ChatGPT can be used by adversaries to create social engineering attacks, phishing attacks, automated hacking, attack payload generation, malware creation, and polymorphic malware. So, we must factor in ways to make GenAI secure, safe, and trustworthy as we digitally transform our businesses.

Innovations in cybersecurity are critical and have a tremendous impact on the outcomes of Digital Transformation. Enterprise architecture (EA) helps integrate cybersecurity across an organisation's IT framework. It involves aligning security strategies with the broader business architecture, ensuring compliance, resilience, and risk management at every layer. The rapid advancements in cybersecurity require constant innovation, particularly in countering new threats. Emerging fields like AI-based threat detection, quantum cryptography, and decentralised security models (like blockchain) are reshaping enterprise defences. Innovations from the past are also surfacing as potential techniques that can be used. For instance, steganography, the method of hiding information within other non-secret data, is emerging as having significant use cases and applications in cybersecurity, particularly in data protection and covert communications. It's increasingly used in counter-surveillance and digital watermarking to prevent enterprise data breaches. Cybersecurity becomes paramount as companies undergo EDT, shifting to cloud-based services, IoT, and mobile platforms. Innovations like zero-trust architecture, secure access service edge (SASE), and AI-driven threat hunting are critical to safeguarding digital transformation initiatives. New-age companies are developing innovative cybersecurity and holistic identity solutions with a vision to revolutionise the current paradigm of digital identity, empowering

individuals to reclaim ownership of data, regain control over digital identities, and actively safeguard consent while respecting privacy.

(Reyes-Cornejo et al., 2022) in their paper have nicely provided a global overview of the digital transformation from 1975 to 2021. Between 2018-2022, citable documents about artificial intelligence (AI) have grown by about 40% on average, which is proof enough of the impact that AI has on Digital Transformations.

Understanding Digital Transformation is critical to the success of such programs (Vial, 2019)However, we lack a comprehensive portrait of its nature and implications. The researcher also lists the various definitions of Digital Transformation today, which is the starting point for a better understanding of Innovation regarding Digital Transformation.

Digital enterprise transformation is the blend of digital techniques in a business enterprise, fundamentally altering how one can deliver security and ethics to clients. As security plays an important role, meaningful, innovative technologies like multi-factor authentication, federated authentication, steganography and cryptography facilitate digital transformation in any business, thus building on the concept/element of 'zero-trust', a necessity in today's world. Therefore, Digital identity, Trust, Security, and Privacy are vital factors to consider in any Digital Transformation.

(Tang, 2021) very rightly states that, at its core, Digital Transformation is driven by the tangible shift in the role of technology within an organisation. No longer as purely a support function that enables business processes, technology is now capable of much more.

Technology now allows for new, innovative business models. We often see this as being overdone. Organisations rushing to keep pace with the latest innovations adopt newer technologies without having a valid business case. This decision variable can thus

impact the success of the Digital Transformation and also have a bearing on the first decision variable, ESG, in this research paper. This gives rise to the concept of 'Meaningful Innovation.

2.9 Theory 3 – Enterprise Resources Management

Human Resources (HR) is a significant part of Enterprise Resources. HR Collaboration relates to Employees / Contractors, Third Party Vendors, and Licenser Management. It also relates to how Talent Acquisition is conducted and the collaboration between the recruiter and the candidate. A win-win situation must be created wherein the employer gains a skilled resource on time and is compelling enough to retain the talent. At the same time, the employee also gains from being part of the organisation by utilising their skills and experience and being remunerated adequately per industry standards. The employer and employee must be constantly engaged to ensure that the expectations of both parties are met. This can be hampered if communication and collaboration are lacking. Research by Bughin et al. (2018) highlights the importance of a flexible workforce and robust vendor governance mechanisms. Organisations such as General Electric have successfully navigated these challenges through strategic HR planning and meticulous vendor management (Bharadwaj et al., 2018). The research paper (Çögenli, 2023) mentions that the digital transformation process emerges as a critical and complex process that requires organisational goals and objectives to adapt to the digital era. For this reason, performing digital transformation correctly and successfully also means being a part of the new world and creating a sustainable organisational structure. This indicated the importance of people in any Digital Transformation. The role of human resources and efficient management of external relationships is pivotal in the digital transformation journey. An organisation may have the best Digital Strategy &

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Transformation plans and Enterprise Architecture Strategy. Still, the EDT journeys can go south if the right talent is unavailable at the right time. The transition to digital processes impacts employee roles and necessitates upskilling efforts. Additionally, effective governance & management of third-party vendors and contracts becomes critical for seamless integration.

Internet of Things (IoT), machine learning, cyber-physical systems and other recent technological innovations offer new opportunities for enterprises in the context of Digital Transformation (DT) but also cause new challenges or Enterprise Architecture Management (EAM) (Kaidalova *et al.*, 2018) which traditionally deals with enterprise-IT planning and coordination by human resources.

The researcher also aptly states that digital transformation needs a heart. In an age of digital innovation, leaders in every industry should strive to transform every part of the company, from customer experience to business models to operational management. But we cannot forget that it is people who make companies work.

(Pappas et al., 2023) highlights the emergence of corporate digital responsibility (CDR) and the shift from industry 4.0 to industry 5.0, which focuses on human-centric approaches and human-AI partnerships. Furthermore, organisations can contribute to a more sustainable and responsible digital future by integrating sustainable Information and Communication Technology (ICT) principles into digital transformation initiatives.

It is a well-known fact that people are essential in Digital Transformation. (Bozkurt and Sharma, 2022) in their paper argues that by ignoring the social aspects and not positioning humans at the center of digital transformation and failing to understand the philosophy, vision and mission that lies behind it, we will be at risk of writing failure stories rather than success stories. Human resources or people play a crucial role in enterprise architecture (EA) and enterprise digital transformation (EDT), but this aspect is

often unimportant. This is conclusive enough to state that it is one of the primary reasons for the 70% failure rate recorded in Enterprise Digital Transformation endeavours.

The reference to People is usually synonymous with Man in the 3M (Man, Machine Material) parlance or Stakeholder in the PMI terminology. The term 'Stakeholder' is a general term that describes individuals, groups, or organisations interested in the project and can mobilise resources to affect its outcome in some way. Alternatively, a stakeholder is an Individual or an Organization that is actively involved in the project or whose interests may be positively or negatively affected due to project execution or successful project completion (Project Management Institute (PMI®), 1996). A Digital Transformation Initiative should typically be considered a program or a series of projects with specific start and end dates or milestones. Now, these milestones are usually regarded as dependent on various factors, including People, but more often than not, the term People or Stakeholder is narrowed down to a few individuals.

In this Research Paper, I intend to focus on this gap in HR's role in EA governance, research the true scope of the term "People" or "Stakeholders" in reference to Enterprise Architecture, and realise the true impact of this factor on the success or failure of Digital Transformation Programs.

Similarly, collaboration or collaborative focus (Stakeholders or people) is often ignored as significantly impacting digital transformations. We could look at the People factor in Digital Transformation from various perspectives/lenses.

Client / Customer / Consumer - Often, when a Large Organization is going through a Digital Transformation, it is expected that there will be involvement of various departments, teams, business / IT groups, markets, partners, vendors, contractors and product companies, to list a few. Each has its goals and objectives and typically works in a siloed construct. Hence, the primary purpose of Digital Transformation is to improve

CX (Customer Experience loses focus. The focus is more on individual department Output than Digital Transformative Outcomes.

1. Integration Partners / Contractors - A Digital Transformation is very unlikely to have teams entirely sourced by internal employees of an organization. Organisations will depend on source teams/contractors/partners/external consultants from service providers. While it is in the best interest of these service providers to provide the best service, market dynamics play an essential part. We often see that milestones on the critical path are hugely impacted if proper due diligence is not done and sufficient / buffer lead time is not factored in. Cost pressures drive service providers to keep a lean bench, especially for niche skills, primarily due to scarcity of resources. Just-in-time resourcing strategy often significantly impacts Digital Transformation program milestones, and this factor/risk is hugely underestimated and inadequately planned/mitigated.

2. Software Vendors / Partners—We often see that Software Vendors and product Companies have competent Solution Architects and Sales Personnel who do a great job selling, which is their primary KPI. If proper due diligence is not done and the Vendor does not engage the right people, the Solutions may fall short of expectations, jeopardising the Digital Transformation initiatives. This factor, too, is often ignored/undermined.

3. Licensee—Licensor / Contract Management—This is a neglected Enterprise Architecture landscape governance process area. It is often noticed that Digital Transformation programs run into schedule and cost overruns, primarily because this is considered an external factor that Leadership or Enterprise Architects have less control over. The proper control levers can

significantly impact the outcomes of a digital transformation program and the

organisation's bottom line.

2.10 Gaps in Existing Research Literature

To summarise, this literature review can conclude that gaps exist in the existing

research literature and that there are many research opportunities regarding decision

variables that impact Enterprise Digital Transformation (EDT), especially Enterprise

Architecture (EA). These variables are often ignored, not prioritised, or not considered

critical, resulting in Digital Transformation programs not being successful. Research

studies have indicated this strongly and have tried to identify factors that can help

improve Digital Transformation outcomes. (Kraus et al., 2021) in their paper

qualitatively classifies the literature on digital business transformation into three different

clusters based on technological, business, and societal impacts. Earlier research also

indicates that while digital transformation and digital technologies are well-established

research areas, the implications of digital transformation on IT are rarely in focus

(Gerster, 2017). The goal of a digital transformation, as outlined in the new McKinsey

book Rewired: A McKinsey Guide to Outcompeting in the Age of Digital and AI (What

is digital transformation? | McKinsey, n.d.), should be to build a competitive advantage

by continuously deploying tech at scale to improve customer experience and lower costs.

This literature review is thus conclusive that a mindset change and an enterprise

culture change are required. A more profound study is needed to understand and

acknowledge the impact of the decision variables related to these changes to see positive

outcomes based on the principles of ethical, meaningful, and impactful Digital

Transformations. While many research studies have focused on the impact of EDT, there

is a gap in understanding Enterprise architecture-related decision variables and their

effects on EDT outcomes.

CHAPTER III:

RESEARCH METHODOLOGY

3.1 Introduction

This section details the Research Methodology Framework for Exploring the Impact of Enterprise Architecture on Enterprise Digital Transformation. It provides a structured approach to investigating how EA influences enterprises' success, adoption, and effectiveness of digital transformation efforts. The diagram below is a comprehensive framework used to guide this research.

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┌──────────────────┐         ┌─────────────────────────────────────────┐
│ Research Problem │ ──────▶ │ Problem Definition: How does Enterprise   │
└──────────────────┘         │ Architecture focused decision variables   │
         ▲                   │ contribute to or impact the outcomes of   │
         │                   │ Enterprise Digital Transformation (EDT)?  │
         ▼                   └─────────────────────────────────────────┘

┌──────────────────┐         ┌─────────────────────────────────────────┐
│ Research         │ ──────▶ │ Understand the role of EA in shaping      │
│ Objectives       │         │ digital transformation outcomes           │
└──────────────────┘         └─────────────────────────────────────────┘
         ▲
         ▼

┌──────────────────┐         ┌─────────────────────────────────────────┐
│ Research Question│ ──────▶ │ To what extent does Enterprise            │
└──────────────────┘         │ Architecture (EA) serve as a decision     │
         ▲                   │ variable impacting the outcomes of        │
         │                   │ Enterprise Digital Transformation?        │
         ▼                   └─────────────────────────────────────────┘

┌──────────────────┐         ┌─────────────────────────────────────────┐
│ Research Theories│ ──────▶ │ The research is grounded in existing EA   │
└──────────────────┘         │ frameworks (Ex: TOGAF) and other          │
         ▲                   │ decision variables as indicated by        │
         │                   │ Leaders via the primary & secondary       │
         ▼                   │ data collection.                          │
                             └─────────────────────────────────────────┘

┌──────────────────┐         ┌─────────────────────────────────────────┐
│ Research         │ ──────▶ │ Given that the intersection of EA, ESG    │
│ Approach         │         │ and EDT is still emerging, an exploratory │
└──────────────────┘         │ approach was used to discover patterns,   │
         ▲                   │ challenges, and opportunities.            │
         │                   └─────────────────────────────────────────┘
         ▼

┌──────────────────┐         ┌─────────────────────────────────────────┐
│ Research Methods │ ──────▶ │ Mixed Methods: A combination of both      │
└──────────────────┘         │ qualitative and quantitative approaches   │
         ▲                   │ were used to derive a comprehensive       │
         │                   │ analysis of EA w.r.t. EDT.                 │
         ▼                   └─────────────────────────────────────────┘

                             ┌─────────────────────────────────────────┐
                     ──────▶ │ Qualitative Approach (Case Studies &      │
                             │ Interviews): To understand the            │
                             │ experiences, challenges, and perceptions  │
                             │ of organisations that have adopted EA in  │
                             │ their EDT efforts.                        │
                             └─────────────────────────────────────────┘

┌──────────────────┐
│ Research Design  │
└──────────────────┘
                             ┌─────────────────────────────────────────┐
                     ──────▶ │ Quantitative Approach (Surveys): To       │
         ▲                   │ assess the measurable outcomes of EA's    │
         │                   │ influence on digital transformation.      │
         ▼                   └─────────────────────────────────────────┘
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Data Collection Methods

Primary Data via Surveys, Interviews & Focus Groups

Secondary Data via Literature Review & Industry Reports

Data Analysis Techniques

Qualitative Data Analysis via Thematic Analysis and Content Analysis

Quantitative Data Analysis via Statistical Analysis and Correlation & Regression

Emerging Themes and Insights

EA, ESG and EDT intersection is still emerging, hence the study will focus on gaining additional insights in this area of research.

Contributions to Theory & Practice

Insights into EA as a key decision variable.

Potential accelerators, tools & Decision Support Systems (DSS) to assist in leveraging EA for better EDT outcomes

Future Research

Focus on other Key Decision variables & Longitudinal studies to assess how the relationship between EA, ESG and EDT evolves over time.

Figure 3 - Research Methodology Framework for EDT

3.2 Research Design

The research design follows a qualitative and quantitative approach, incorporating a literature review and questionnaire survey to enhance the understanding of the impact of lesser-focused decision variables. The focus is on using the quantitative approach more extensively.

Qualitative Approach: To understand the experiences, challenges, and perceptions of organisations adopting EA in their EDT efforts.

- Case Studies: In-depth analysis of organisations that have successfully (or unsuccessfully) integrated EA with EDT. The case studies are expected to provide real-world examples and rich insights. These will be used to assess the impacting decision variables.

- Interviews: Conduct semi-structured interviews with CIOs, Enterprise Architects, and DT leaders to explore their experiences with EA and its impact on transformation efforts.

Quantitative Approach: To assess the measurable outcomes of EA's influence on DT.

- Surveys: Distribute structured surveys to gather data on how organisations use EA in their EDT initiatives. This includes project success rates, time-to-value, and business outcomes.

- The primary research method for this study is literature review, leadership stakeholder surveys and subsequent statistical analysis.

3.3 Participants

The participants include leaders and stakeholders contributing to one or more digital transformation programs. The sample size is 60 (n=60) people between the ages of 25 and 75.

3.4 Overview of the Research Problem

Table 1 lists the survey responses for one of the questions regarding 'Challenges faced by Leaders during digital transformation'.

Challenges faced by Leaders during digital transformation	Count of respondents agreeing to challenges faced (n=60)	% of respondents agreed to the challenges faced (n=60)
Lack of focus on Enterprise Architecture Strategy	22	62%
Lack of focus on Enterprise Architecture Discovery	13	
Lack of focus on Enterprise Architecture Governance & Change Management	19	
Lack of Stakeholder Management (Employees, Contractors, Partners, Vendors)	29	48%
Lack of Business alignment / Business Stakeholder Management	36	59%
Skills gap and more Lead time to acquire talent;	38	62%
Integration issues between technology components/software	25	41%
More focus on Technology than Strategy as a driver for EDT	18	30%
Less focus on Environment, Social & Governance (ESG) considerations	2	3%

Less meaningful innovations and use of technology	5	8%
Other	4	7%

Table 1 - Challenges faced by Leaders during digital transformation

Table 1 shows that most respondents agreed that a few variables significantly impacted Enterprise Digital Transformations.

The sample size was 60 (n=60). The respondents were mainly senior leaders involved in one or more enterprise digital transformations.

62% of participants stated that Enterprise Architecture (Strategy, Discovery, Governance, and Change Management) contributed to the outcomes of Digital Transformation. This indicates that leaders know EA is crucial to successful EDT outcomes.

62% of the participants indicated that a skills gap and more lead time were essential for acquiring talent.

The lower rates of 2% and 5 % agreement with Ethical ESG and Meaningful Innovation also indicate that there is very little focus, acknowledgement, and understanding of these EA-related topics.

3.5 Research Approach

Given that the intersection of EA, ESG and EDT is still emerging, an exploratory research approach will be used to discover patterns, challenges, and opportunities.

Mixed Methods (Qualitative and Quantitative): A combination of qualitative and quantitative approaches has been used to understand this research topic comprehensively.

3.6 Systematic Review Method and Interviews

This data collection, measurement, and analysis methodology has been used to gather inputs to research questions, identify key decision variables, and accomplish the study's objectives. Primary and secondary sources were used to compile the data for this research.

3.7 Target Population

Selecting the right target population for this research study is very important. If the researcher chooses a target population that does not meet the research criteria, not only will the study's findings be inaccurate, but the study will also be unable to resolve the research problem and achieve the objectives of specified research work. Therefore, selecting the right target population is essential. This study selected the target population with the project objectives and research problem in mind.

Considering that the research problem was to explore the impact of decision variables on DT, it was evident that the target population needed to be Leaders and EDT experts from across the globe who had implemented or actively participated in at least one digital transformation.

3.8 Sample Size

After selecting the target population, the next task was to choose the sample population. By selecting a suitable sample, the validity and reliability of the data set can be better determined. If the sample size is too small, it will not represent the whole population, and the study results will not be reliable. Similarly, if the sample size is too large, it will be unachievable in the stipulated time. Hence, a sample size of 60 was considered for this research.

3.9 Research Philosophy

Analysing the relationship between variables was done using quantitative research methods. This research study aimed to explore the impact of EA decision variables on the Enterprise Digital Transformation (EDT).

3.10 Data Collection

The data (Primary & Secondary) collected were analysed using Mixed Methods - Qualitative & Quantitative Methods (but not constrained to):

- Literature Review
- Surveys, Interviews, Questionnaires and a website (http://perim.digital)
- Trend Analysis of Decision Factors / Variables.
- Correlational Quantitative Research

Primary Data:

- **Interviews**: I participated in various conferences and discussed vital stakeholders, such as enterprise architects, CTOs, CIOs, and business transformation leads, with them.
- **Surveys**: Distributed surveys to a broader audience of IT and business professionals involved in EDT projects via Personal Google Forms and websites (http://perim.digital).
- **Focus Groups**: Engaged multiple stakeholders in discussions about the role of EA in transformation, challenges faced, and best practices.

Secondary Data:

- **Literature Review**: Analyzed existing studies, reports, and frameworks on EA and DT to identify trends and gaps in research.

- **Industry Reports**: Reviewed case studies and reports from consulting firms like Gartner, McKinsey, PwC and Forrester on EA and digital transformation.

This study was conducted between September 2022 and Sept 2024.

3.11 Data Collection Tool

Research data collection tools are how researchers gather data for their studies. Some of the tools used as part of this research study on EDT included:

Surveys and Questionnaires: Structured questions designed to gather information from many respondents.

Interviews: One-on-one conversations that provide in-depth insights into participants' thoughts and experiences.

Focus Groups: Group discussions that explore a topic in depth through interaction among participants.

Document Analysis: Reviewing existing literature & documents to gather information.

Each tool has strengths and weaknesses, and the choice often depends on the research question, context, and available resources.

The below section details some of the tools used and the extent of usage in this research study.

As discussed earlier, the data was collected from both primary and secondary approaches. Literature reviews, books, and internet articles were the key source of secondary data. Primary data was collected by gathering the data through the interviews. There are different ways to gather the data through the interviews. The researcher can manually survey the respondents by personally meeting them and collecting data. The team can also consider telephonic interviews and other interview methods. Online interviews are better conducted by pre-defining the statements for the interviews. Some of the questions provided for the interview purposes were open-ended. The stationery, travel, and other expenses were reduced through online interviewing. In addition, it offered the opportunity to collect primary data quickly. The primary tools used for this research include Google Forms and Survey Forms on the http://perim.digital website.

3.12 Data Collection Procedures

Data collection is systematically gathering and measuring information that may be used to address research questions and assess study outcomes. Surveys are a standard tool for gathering information on huge populations. When polling the public, two things stand up as necessities:

- Questions
- Responses

One common technique for gathering data is the systematic gathering of data, followed by measuring and evaluating a single variable. The goal of any method is to get accurate data. The overarching goal of any data collection endeavour is to aim for high-quality evidence that can be used in a comprehensive data analysis to provide convincing and trustworthy responses to the research questions.

Primary Data - Survey questions with a Likert Scale were used to collect most of the information.

Secondary Data - In addition to potentially reducing the amount of time and energy spent on data collection, secondary data analysis also has the potential to provide researchers access to more comprehensive and up-to-date data sets than they would be able to get otherwise. Secondary data may be gathered from a variety of sources:

Secondary resources, such as journal articles and books, were accessed through the Internet for this study.

3.13 Data Analysis

Data analysis is considered among the most essential parts of the research study. In this phase, the data is analysed for accuracy and validity. Various techniques are used for this. Usually, statistical methods such as mean, median, mode, and standard deviation are used to determine the central tendency of quantitative data. Statistical techniques such as linear regression are used to analyse the relationship among the variables (Schervish, 2012).

Qualitative Data Analysis:

- **Thematic Analysis**: Identify common themes from interview transcripts, such as barriers, enablers, and success factors in using EA for digital transformation.
- **Content Analysis**: Analyse the content of case studies and interview transcripts to identify key patterns and insights.

Quantitative Data Analysis:

- **Statistical Analysis**: Use tools like SPSS or R to analyse survey data, focusing on correlations between EA practices and digital transformation success.

- **Correlation and Regression**: Explore the relationship between EA maturity (independent variable) and digital transformation outcomes (dependent variable).

Mixed Methods Analysis: Integrate qualitative findings (e.g., challenges, best practices) with quantitative metrics (e.g., project success rates) to provide a holistic view of EA's impact on digital transformation.

Microsoft Excel was used to analyse the data for this quantitative research study. The Microsoft Excel worksheet helped convert the given data into an understandable form.

Data review is the initial step in analysis and interpretation, which leads to providing a recommendation. Data was gathered through surveys using Google Forms. The response was received from 60 globally distributed participants, most of whom reached out through LinkedIn and other leadership contacts from across the globe. The data was then analysed for this research study. For this research paper, a subset of the data was analysed to ascertain that the research study's direction was valid and could be taken forward for detailed research. Data was collected from a Literature review of various other research papers, articles, whitepapers, blogs, websites, stakeholders, leadership from across the globe, LinkedIn and other social media channels.

Through the initial data analysis about one key question in the survey, it was evident that most respondents agreed that a few variables stood out as having had a significant impact on Enterprise Digital Transformations.

The sample size of the respondents was 60 (n=60). The respondents were mainly senior leaders who were part of one or more enterprise digital transformations. The analysis resulted in 62% of participants stating that Enterprise Architecture (Strategy, Discovery, Governance, and Change Management) contributed to the outcomes of Digital

Transformation. 62% of the participants indicated that Skills gap and more Lead time to acquire talent were the other important factors.

Thus, this study focuses on enterprise Architecture-related decision variables through initial data analysis.

3.14 Statistical Technique in Data Analysis

Statistical techniques are used to make data understandable and help test research hypotheses. This research employed the following statistical methods to assess variables: mean, standard deviation, percentile, range, and percentage.

The dataset from this research study includes responses from individuals in various roles and industries across different geographical regions. It focuses on the impact of EA and related decision variables, viz., ethical ESG considerations, Meaningful Innovation, Enterprise Architecture Discovery, Change Management, and EA Governance.

1. Descriptive Statistics:

- **Demographics:** We analysed the distribution of respondents across age, education, professional role, industry, and country, providing a profile of the survey participants.
- **Digital Transformation Experience:** Summarised the frequency of involvement in digital transformation programs and their organisation's perceived digital maturity levels.
- **Digital Initiatives:** Identified the most commonly implemented digital initiatives.
- **Impact of Digital Transformation:** Determined EDT's most frequently reported effects on work and daily life.

- **Challenges Faced:** Analysed the distribution of challenges encountered during digital transformation initiatives. Noted the frequency of responses, such as lack of focus on enterprise architecture strategy, skill gaps, and budget restrictions.
- **ESG Importance:** Assessed the perceived importance of environmental sustainability and social responsibility in digital transformation strategies and how integrated ethical considerations are into digital transformation initiatives.

2. Correlations and Relationships:

- **ESG and EDT Success:** Explored whether a higher emphasis on ESG factors correlates with the perceived success of EDT programs.
- **Enterprise Architecture and Challenges:** Examined the relationship between the maturity of EA practices and the challenges encountered. Reviewed if a lack of EA focus correlates with specific challenges.
- **Innovation and Transformation Outcomes:** Investigate the correlation between the level of innovation (and specific technologies used) and the positive impact reported. Also, review the correlation with barriers to innovation and transformation success.
- **Confidence Levels:** Analyse how confidence in EDT programs evolved and its relationship with success.

3. Qualitative Analysis:

- **Open-Ended Responses:** Examined the open-ended responses to identify recurring themes, insights, and challenges not captured in the multiple-choice questions. This did provide rich qualitative data on the experiences and perspectives of participants.

4. Segmentation:

- **By Industry:** Compared responses across different geographies & industry sectors to identify location & sector-specific challenges, successes, and priorities regarding EDT and ESG.

- **By Role:** Analysed responses based on job title or seniority to determine variations in perspectives and challenges at different organisational levels.

- **By Region:** Compared responses from different geographical regions to uncover regional differences in the approach to EDT, ESG considerations, and EA.

By performing these analyses, we understand the key factors influencing the success or failure of digital transformation initiatives, the role of ESG considerations, the importance of innovation, and the impact of enterprise architecture as the critical decision variables for any EDT.

3.15 Emerging Themes and Insights

- **EA as a Strategic Enabler**: How EA frameworks help align IT and business for successful EDT.

- **EA Maturity**: The impact of EA maturity on the effectiveness and speed of EDT efforts.

- **Alignment Challenges**: Organisations face common challenges when aligning EA with EDT initiatives.

- **Organizational Culture and EA**: The role of organisational culture in adopting and acknowledging the impact of EA during EDT.

3.16 Contributions to Theory and Practice

- **Theoretical Contributions**:
    - A new or refined framework or findings linking EA and related EA practices with the success of EDT.
    - Insights into how EA frameworks can be adapted to better support EDT in various industries.

- **Practical Contributions**:
    - Best practices and guidelines for organisations looking to integrate EA into their EDT efforts.
    - Tools, Accelerators, and a Decision Support System (DSS) for measuring the effectiveness of EA, primarily related to ESG, EA Discovery, EA Change, and Governance, in driving transformation initiatives.
    - Recommendations for policymakers on how EA can be leveraged to foster innovation and transformation in public and private sectors.

3.17 Ethical considerations

This research study adheres to the following ethical considerations:

Data Privacy: Ensuring confidentiality and protection of sensitive business data.

Informed Consent: Obtaining consent from participants before conducting interviews or surveys.

Bias Mitigation: Addressing potential biases from the researcher's perspective and in participants' responses.

Ethical thinking reflects a wide range of values and standards that should be maintained and ensures that no one acts unsafely in the community or person. It is essential to collect data from respondents in the most ethical way possible to preserve the validity and reliability of the data. The data will be ethically collected from the

respondents in this research study. The researcher must seek their approval before obtaining information from the respondents and ensure their data and details will be kept confidential. Only once the respondents agree to provide this information will the researchers proceed with the data collection process. All the respondents will provide information without any pressure, which means that respondents will not be forced to answer any questions. Respondents who provide primary information to the research team will not be under the influence of any researcher. Respondents will be encouraged to provide their own opinions freely. Maintaining the data files in the researcher's system will keep the respondents' information confidential. Respondents will also have the option to skip any questions they do not want to answer. Overall, it can be said that the researcher focused on the privacy and confidentiality of the respondent's information. The researcher strictly adhered to ethical standards, legal data protection, and privacy requirements. Access to the stored information has been restricted to the individual directly involved in the research, preventing any unauthorised disclosure or use. After collecting respondents' data, it was analysed based on the research questions and purpose.

Ethical considerations were adhered to during this research study. The participant's overall security and rights to data privacy were complied with throughout. Informed consent was obtained after providing the participants with information about the study. Participants were guaranteed that the data collected would be confidential and anonymous and that their participation was voluntary, allowing them to withdraw at any study stage.

3.18 Limitations and Future Research

This research limits the study to crucial decision variables related to Enterprise Architecture. The findings would benefit from further research to better understand other decision variables that impact digital transformation. The 23 decision variables are listed earlier in this document. This will allow the researcher to determine a more in-depth understanding of the factors that can lead to successful digital transformation outcomes.

Future Research Directions:

- Focused exploration of other key decision variables listed in this research study.
- Detailed exploration of industry-specific EA frameworks and how they need to adapt and transform over time.
- Longitudinal studies to assess how the relationship between EA and EDT evolves.
- Comparative analysis of EA's impact across different digital transformation maturity stages, geographies, cultures, industries and other demographics.

3.19 Conclusion

This research study was initiated to investigate why enterprise digital transformations had a high failure rate or suboptimal transformation outcomes. The literature study identified 23 critical factors or variables as primary decision variables that impact EDT outcomes the most. The scope of this study was limited to understanding the effects of variables related to 'Enterprise Architecture'. The primary focus was on ESG, enterprise strategy, discovery, governance & change management. The survey results further validated the findings. The respondents were asked about their view of the challenges that impacted the EDT initiative the most. To avoid any bias, the respondents were presented with various options. The results highlighted that Enterprise Architecture

variables, Skills gap & availability of talent were significant factors that impacted EDT outcomes. For this research study, EA-related variables were considered.

CHAPTER IV:

RESULTS

4.1 Introduction

This section seeks to present objectively the findings derived from the data collection. The results section first discusses the response rate from the interviews conducted and then discusses the respondents' characteristics. The chapter then explores the results as they pertain to the decision variables that impact the outcomes of Enterprise Digital Transformation (EDT).

Data Analysis was conducted, which included analysing, cleansing, manipulating, and modelling data to identify usable information, make conclusions, and assist in decision-making. Statistical analysis, data visualisation, and machine learning were just a few of the techniques and methods used in this process, encompassing various techniques and procedures. The primary objectives of data analysis were to identify patterns and trends, generate forecasts and generate insights that may be used to guide choices and drive action. Utilising data to provide answers to specific questions, identifying links and dependencies, and putting hypotheses to the test were all components of this process.

The expected results of this study include a detailed understanding of the 'Enterprise Architecture' decision variable and other related variables and their impact on enterprise digital transformation journeys and programs.

Enterprise Architecture as the critical decision variable	Count of valid respondents agreeing to challenges faced (n=60)	% of valid respondents agreeing to challenges faced (n=60)
Lack of focus on Enterprise Architecture Strategy	22	62%
Lack of focus on Enterprise Architecture Discovery	13	
Lack of focus on Enterprise Architecture Governance & Change Management	19	

Table 2 - Enterprise Architecture as the critical decision variable

62% of the respondents agreed that EA was a key driver for positive EDT outcomes. They acknowledged that EA and related factors and variables are essential in EDT. This provided confirmation and a solid basis for continuing this research study and exploring all aspects of EA that drive EDT.

4.1.1 Research Question One

Question Q-01 relates to the age of the survey respondents.

Q-01. Age
60 responses
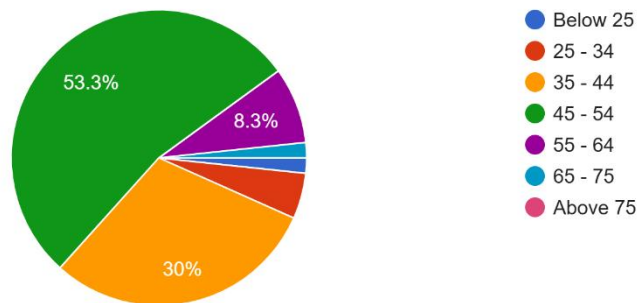
Figure 4 - Age of survey respondent

The pie chart titled Q-01. Age, represents the distribution of age groups among 60 respondents. The chart is divided into six distinct age categories, each represented by a different colour.

Key Insights:

1. **Largest Age Group (45-54 years)**:

    o   The majority of respondents, **53.3%**, fall in the age range of **45 to 54 years**.

    o   This indicates that more than half of the surveyed population belongs to this middle-aged demographic, which implies a significant representation of experienced professionals or those in mid-career stages.

2. **Second Largest Group (35-44 years)**:

    o   **30%** of the respondents are in the **35 to 44** age group.

    o   Together with the 45-54 group, this suggests that around **83.3%** of the respondents are in the mid-range of their working lives, likely contributing a wealth of experience and insight relevant to the survey's purpose.

3. **Other Age Groups**:

    o   **8.3%** of respondents are between **55 and 64**, indicating a small representation of people nearing or past retirement age but still active.

    o   **Below 25 years** and **65-75 years** age groups comprise a small portion of the respondents, at **3.3%** and **1.7%,** respectively.

    o   There is no representation of people **above 75 years**.

Interpretation:

- The chart shows that the survey predominantly targets or attracts individuals in their **mid-career (35-54 years)**. These respondents likely have substantial professional experience and could play key roles in decision-making or organisational leadership.

- The smaller percentages for younger and older age groups suggest that the survey may be less appealing or relevant to early-career professionals and those past the traditional retirement age.

4.1.2 Research Question Two

Question Q-02 relates to the Highest Educational Qualification of the survey respondents.

Q-02. Highest Educational Qualification (select highest educational qualification)
60 responses
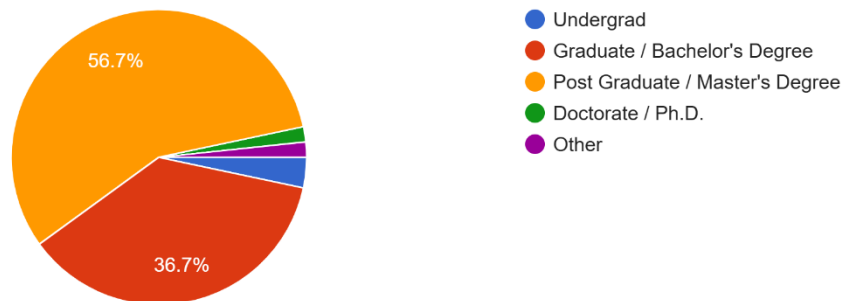
Figure 5 - Highest Educational Qualification of the survey respondents

This pie chart, Q-02. Highest Educational Qualification provides a breakdown of the educational levels among 60 respondents. Each section of the chart represents different qualification levels, with a clear majority indicated in one of the categories.

Key Insights:

1. **Majority with Postgraduate/Master's Degrees (56.7%)**:

   o **56.7%** of respondents hold a **Postgraduate/Master's Degree**, represented by the orange section of the chart.

   o This indicates that most respondents have advanced educational qualifications, implying a well-educated and specialised workforce or demographic likely to be involved in professional or managerial roles.

2. **Graduate/Bachelor's Degrees (36.7%)**:

   o The second largest group, accounting for **36.7%**, consists of respondents with a **Graduate/Bachelor's Degree**, indicated by the red section.

   o This reflects that many respondents have foundational higher education but may not have pursued further postgraduate studies.

3. **Other Educational Levels**:

   o **Undergraduate** respondents, represented by the blue section, comprise **3.3%** of the group, suggesting that very few respondents have completed a formal higher education degree.

   o **Doctorate/Ph.D. holders** make up only **1.7%**, represented by the green section, indicating that only a small minority of respondents have the highest academic qualification.

   o **Other** qualifications, represented by the purple section, account for **1.7%** of respondents, implying that some have non-traditional or alternative educational qualifications.

Interpretation:

- The chart highlights a highly educated respondent base, with **over half** holding advanced degrees. This suggests that the group is likely composed of professionals in fields that require specialised knowledge or higher academic achievement.

- A significant **36.7%** with Bachelor's Degrees also reflects a solid educational background, though not as specialised as those with Master's or higher qualifications.

- The small number of respondents with a **PhD or Doctorate could imply that the survey was not focused on academia or research-based roles** but on practical, professional settings where a Master's degree suffices for career advancement.

This educational qualification distribution shapes the nature of the insights derived from the survey, particularly on this topic that involves specialised knowledge of EDT, EA, and ESG, which are more likely to be found among postgraduate-qualified respondents.

4.1.3 Research Question Three

Question Q-03. relates to the Professional Role / Designation of the survey respondents.

The 60 survey respondents hold senior and technical positions in leadership roles across various industries.

Key positions include:

- **Executive roles**: Directors, CEOs, CIOs, and CTOs, representing senior decision-makers responsible for strategic direction.

- **Technical leadership**: Several respondents serve in technical management positions, such as Directors of Technology Solutions & Architecture, Senior Technical Program Managers, and Solutions Architects.
- **Product and project management**: Many participants occupy roles related to product ownership and project finance, such as Global Product Owners, Product Managers, and Program Managers.
- **Consultants and analysts**: The survey includes consultants, systems analysts, and individuals involved in delivery and enterprise architecture.

The respondents bring expertise from various fields, including engineering, digital architecture, IT management, sales and marketing, and finance. This diverse representation indicates that the survey captures perspectives from multiple facets of organisational leadership and technical execution relevant to digital transformation efforts.

ID	Professional Role / Designation
1	Director
2	CEO
3	Product Manager
4	Director
5	Director - Technology Solutions & Architecture
6	Director - Architecture
7	Student
8	MBA Student
9	Head of Sales & Digital Marketing
10	Project Finance / Cc- Lead

11	Business Capability Leader
12	Sr. Director, Engineering
13	Sr. Technical program manager
14	Founding Director
15	Data Architect
16	Associate Manager. Finance
17	CIO & CISO
18	Systems Analyst
18	Delivery Excellence
20	DWP Consultant
21	Technical Lead
22	Program Manager
23	IT Professional - Delivery Manager
24	Associate Vice President
25	Managing Director
26	Global Product Owner
27	Product owner
28	Senior Solution Architect
29	CIO
30	Head of digital architecture
31	CTO/Director
32	Tech Lead
33	Senior Manager TPM at Uber
34	Insights & Analytics Leader - Diagnostic Imaging

35	Manager
36	Product development
37	Founder
38	Founder & CEO
39	Digital Architect
40	Retired
41	Senior Software Engineer
42	Regional Technical & Consulting Manager
43	Senior Business Analyst
44	Devsecops Manager
45	Head of Digital Technology
46	Transformation director
47	IT manager
48	Director and Principal Enterprise Architect
49	Freelance Digital Consultant AI
50	Solution Architect
51	Enterprise Architecture Lead
52	Solutions Architect
53	Director IT
54	Director/Delivery Head
55	IT Manager
57	Others / Not Applicable
58	Others / Not Applicable
59	Others / Not Applicable

60	Others / Not Applicable

Table 3 - Role / Designation of Survey Respondents

4.1.4 Research Question Four

Question Q-04 relates to the industry sector that the survey respondents belong to.

Q-04. Industry Sector (select all that apply)
60 responses
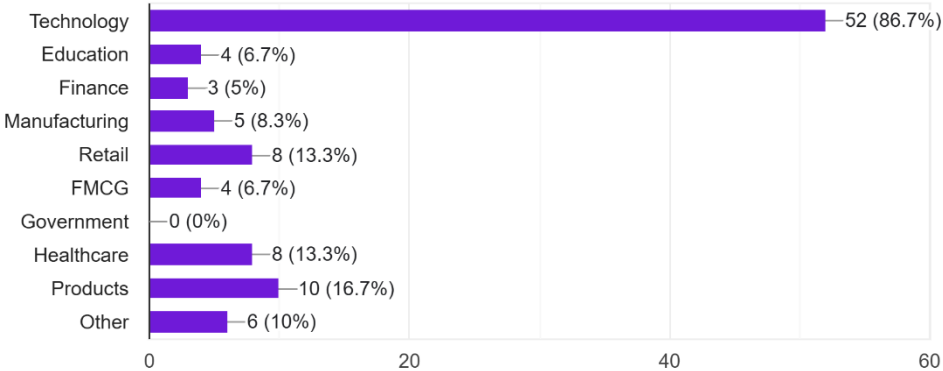
Figure 6– Industry sector of the survey respondents

The Q-04. The industry Sector bar chart represents the distribution of respondents across various industry sectors, with 60 responses. Each bar shows the percentage and count of respondents working in a specific industry. Here's an analysis:

Key Insights:

1. **Dominance of the Technology Sector**:
   - A vast majority, **52 respondents (86.7%)**, indicated working in the **Technology** sector.

- o This suggests that the survey primarily attracted individuals from tech-related fields, likely making technology professionals the most influential group in the survey results.
- o < UNK> Given the overwhelming representation, ∘ This could imply that the survey's subject matter may be closely related to digital transformation, IT solutions, or technology trends.

2. **Other Significant Sectors**:
   - o **Products (16.7%)**: The second most represented sector is **Products**, with **ten respondents** indicating their involvement. This could encompass consumer goods, software, or tangible product development industries.
   - o **Healthcare and Retail (13.3% each)**: The **Healthcare** and **Retail** sectors have **eight respondents** each, representing **13.3%** of the total.
     - ▪ Healthcare's presence may reflect the increasing technology adoption in medical fields.
     - ▪ Retail's strong showing could relate to digital commerce, supply chain management, or technological advancements transforming the retail industry.

3. **Less Represented Sectors**:
   - o **Manufacturing (8.3%)**: **5 respondents** work in the **Manufacturing** sector, indicating some interest in integrating technology in manufacturing processes, such as automation or intelligent factories.
   - o **Education (6.7%)**, **FMCG (6.7%)**, and **Finance (5%)**: These sectors are represented by **four respondents** in **Education** and **FMCG** and **three respondents** in **Finance**.

- The representation of Education may reflect the growing relevance of e-learning or digital platforms in teaching, especially post-COVID.
- Finance's presence suggests engagement with FinTech or digital banking solutions.

4. **Other and Government Sectors**:

- **Other (10%)**: **6 respondents** indicated their involvement in other sectors not listed, reflecting diverse industries outside the specified categories.
- **Government (0%)**: Interestingly, there are no respondents from the **Government** sector, suggesting limited public sector participation in this survey or study.

Interpretation:

- The apparent dominance of the **Technology sector** demonstrates that the survey's audience is heavily inclined toward tech-based roles, likely focusing on digital innovation, discovery, governance, transformation, or enterprise technologies.
- The presence of respondents from diverse sectors such as **Healthcare, Retail, Manufacturing, and Products** suggests a broad interest in how technology impacts these industries, reflecting the cross-sectoral nature of digital transformation and innovation.
- The absence of **Government** respondents might indicate that the survey primarily targeted private-sector professionals.

This distribution of industry sectors has been considered when interpreting the survey's overall findings, as the high concentration of professionals in any industry can be misleading. This research survey shows more technology professionals, and results may seem skewed toward tech-related solutions or concerns. Though called IT

professionals, technology professionals are typically deployed to various projects across industry sectors. It is usual for a technology professional to have worked in more than one industry vertical; hence, this distribution typically represents most industry sectors.

4.1.4A Research Question Four – Additional Details

Question Q-04A relates to the industry sectors that were not listed and to which the survey respondents belong.

Q-04A. If you have selected 'Other', please specify below (optional):7 responses

ID	Industry sector (others)of the survey respondents
1	R&D
2	Technology consulting
3	Human Resources
4	NA
5	Management Consulting
6	ICT
7	Food and Agriculture

Table 4 - Industry sector (others)of the survey respondents

4.1.5 Research Question Five

The question Q-05. relates to the country of origin of the survey respondents.

Q-05. Country of Origin
60 responses
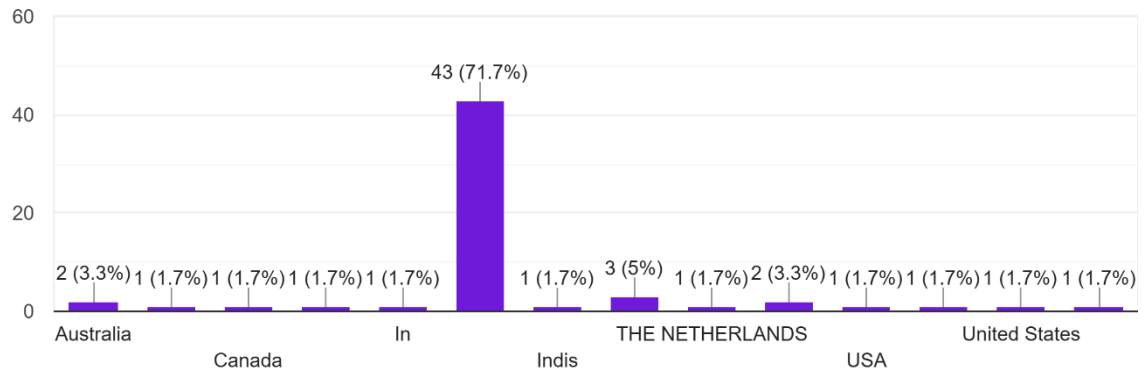
Figure 7- Country of origin of the survey respondents

The diagram shows the distribution of the respondents' countries of origin from a survey of 60 participants. Here's the analysis:

1. **Dominant Country**: The vast majority of respondents (43 people, 71.7%) are of Indian origin, indicating a solid representation of this country worldwide.

2. **Other Countries**: A small number of participants come from other countries, such as:

   o   **Australia**: 2 respondents (3.3%)

   o   **The Netherlands**: 3 respondents (5%)

   o   **USA**: 2 respondents (3.3%)

   o   **Canada, United States, and other unspecified regions**: Each has one respondent (1.7%).

3. **Regional Concentration**: There is a significant concentration of respondents of Indian origin, which suggests that the survey may primarily reflect perspectives from individuals based there. However, the survey does have a global reach, with participants from other regions like North America, Europe, and Australia.

This skew toward Indian respondents could influence the overall results, especially regarding regional practices, challenges, or trends in digital transformation and enterprise architecture.

4.1.6 Research Question Six

Question Q-06. relates to the primary work region of the survey respondents.

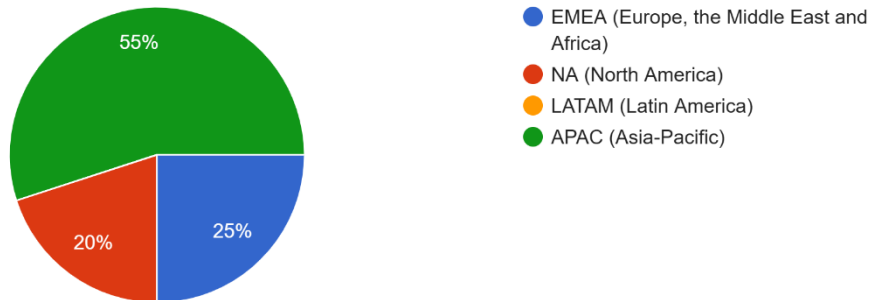Q-06. Primary Work Region
60 responses

Figure 8- Primary work region of the survey respondents

This diagram represents the Primary Work Region of the 60 survey respondents, breaking them into four global regions:

1. **APAC (Asia-Pacific)**:

- 55% of respondents are based in the APAC region, indicating that more than half of the survey participants primarily work in Asia-Pacific. This aligns closely with the previous chart, where **71.7% of respondents were from India**, a country within APAC. Thus, the APAC region is heavily represented in the survey.

2. **EMEA (Europe, Middle East, and Africa)**:
   - 25% of respondents work in this region. While the earlier chart shows fewer respondents from countries like **The Netherlands**, this suggests that Europe and surrounding areas have a significant number of participants in the survey.

3. **NA (North America)**:
   - 20% of respondents work in North America. This corresponds to the 3.3% of respondents from the **USA** and **Canada**, although some might work in North America while residing elsewhere.

4. **LATAM (Latin America)**:
   - No respondents from Latin America are represented in this survey (0%).

Analysis of the Previous Diagram:

The results from this Primary Work Region chart further confirm the dominance of India and the broader APAC region in the survey data, with 55% of respondents working in APAC and 71.7% being from India.

While there is some global distribution, especially with EMEA (25%) and NA (20%), the over-representation from India could suggest that the findings reflect the digital transformation experiences, challenges, and practices in India and APAC more than in other regions. Considering the move to a global workforce by most enterprises, the results of this study may apply universally, and future studies can substantiate this.

4.1.7 Research Question Seven

Question Q-07. This relates to the survey respondents being part of at least one digital transformation initiative.

Q-07. Have you been a key stakeholder of / part of / involved in, at least one digital transformation program / initiative within your organization?
60 responses
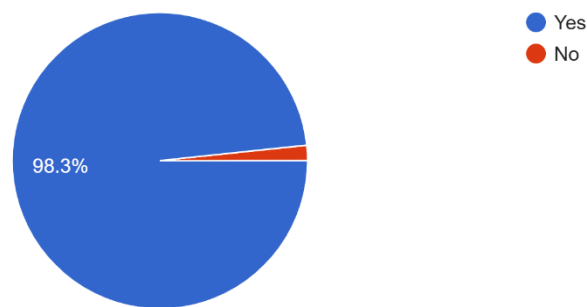
Figure 9 – Digital Transformation work experience

This pie chart presents the results of a survey asking respondents if they've been critical stakeholders in, part of, or involved in at least one digital transformation program or initiative within their organisation. The data is based on 60 responses.

The majority of respondents (98.3%) answered Yes, indicating widespread involvement in digital transformation initiatives within their organisations. Only a tiny minority (1.7%) answered No.

This result suggests that the survey participants predominantly work in organisations that have recently undergone digital transformation. This finding has several implications:

Though the first impressions of this result could be a sample bias, the respondents were expected to have Digital Transformation experience, though they could have

belonged to various industry sectors. This heavily accounts for those working in organisations actively engaged in digital transformation.

The survey's results likely focus on the experiences and perspectives of individuals deeply involved in digital transformation initiatives.

The survey provides limited insights into professionals' experiences in organisations that have yet to undertake significant digital transformation efforts. This absence of a counterpoint may appear to limit the complete understanding of the digital transformation landscape.

Future Research: Future surveys could aim for a more balanced representation, including organisations at various stages of digital transformation or those that have chosen not to adopt it, to provide a broader context for analysis. Strategies such as stratified or quota sampling could help achieve a more representative sample. The chart indicates high engagement with digital transformation among the surveyed population.

4.1.7A Research Question Seven – Additional Information

The question Q-07A. relates to the number of EDTs the survey respondents were part of.

Q-07A. If Yes to the above question, how many?
59 responses
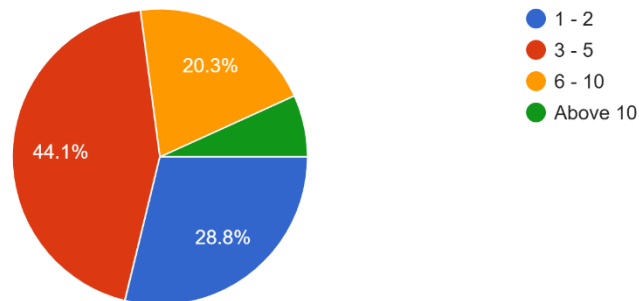
Figure 10 - Number of EDTs the survey respondents were part of

This pie chart shows the distribution of responses to a follow-up question (Q-07A) about the number of digital transformation programs or initiatives respondents were involved in. The question is conditional and only asked of those who answered Yes to the previous question (Q-07). Note that 59 responses indicate one respondent did not answer this question despite answering yes to Q-07.

Key Insights

The data shows a relatively even spread across the response categories, although the most significant proportion falls into the 3-5 range:

- **3-5 initiatives (44.1%):** This is the largest segment, suggesting a significant portion of respondents have been involved in a moderate number of digital transformation projects.

- **1-2 initiatives (28.8%):** A sizable portion has participated in fewer initiatives.

- **6-10 initiatives (20.3%):** This indicates that many respondents have been involved in a more significant number of digital transformations.

- **Over ten initiatives (6.8%):** A small but notable percentage have participated in many projects.

The distribution suggests a mix of experiences among the respondents regarding their involvement in digital transformation programs. There isn't a clear dominance of any single category, pointing to a range of levels of involvement within the organisations represented. This indicates:

- **Varied Organizational Sizes and Digital Maturity:** The variation in the number of initiatives might be due to organisations of different sizes and levels of digital maturity. Larger organisations or those further along in their digital transformation journeys may have more projects underway.

- **Different Roles and Responsibilities:** Respondents' roles might affect their involvement in different numbers of projects. Those in leadership or project management roles may have been involved in more initiatives than those with more specialised or focused roles.

- **Timing of Participation:** The number of initiatives might depend on how long a respondent has been with their organisation and their involvement in digital transformation efforts. A longer tenure could correlate with a higher number of projects.

Limitations:

- **Conditional Question:** The data only applies to the subset of respondents who answered Yes to the previous question, which, as we have seen before,

overrepresents individuals from organisations already active in digital transformation.

- **Missing Context:** In hindsight, additional information on respondents' roles and organisational characteristics, such as the organisation's size, could have enriched this analysis.

In summary, the chart highlights different levels of participation in digital transformation projects. While providing valuable data, understanding the limitations regarding the missing context is essential for a thorough interpretation.

4.1.8 Research Question Eight

Question Q-08 relates to the survey respondents' organisational EDT maturity.

Q-08. How would you rate your current / most recent organizations' digital maturity level?
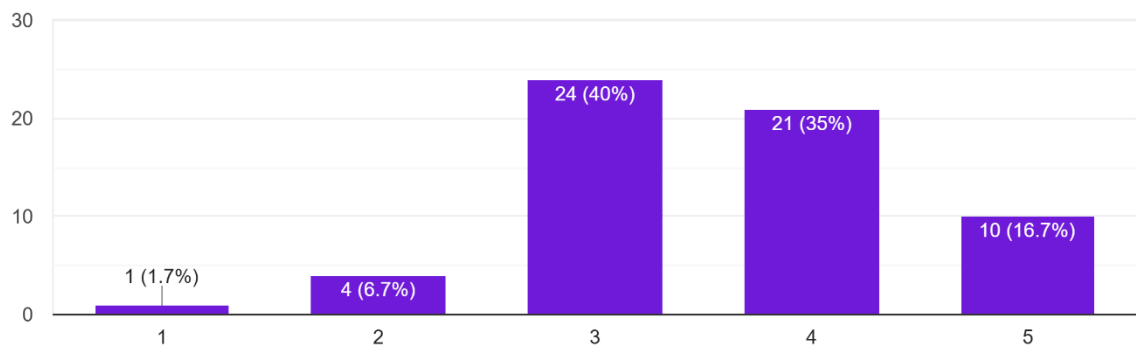60 responses

Figure 11 - Organizational EDT maturity

This bar chart illustrates the self-assessed digital maturity levels of 60 organisations, rated on a scale of 1 to 5, with 5 being the highest level of maturity. The chart reveals a distribution wherein respondents have indicated that their organisation has attained middle and higher maturity levels. Let's analyse this further:

- **Bimodal Distribution:** The data displays two prominent peaks at maturity levels 3 and 4. This indicates a concentration of organisations at intermediate to advanced stages of digital transformation.

- **Level 3 Dominance (40%):** The largest segment of respondents (24 out of 60) rated their organisation's digital maturity as a 3, indicating a substantial number of organisations are at a moderate level of digital sophistication. They likely have implemented certain digital technologies and initiatives but haven't fully integrated digital capabilities across their operations.

- **Level 4 Significant Presence (35%):** A significant portion (21 out of 60) rated their organisation at level 4, suggesting a substantial number of organisations have progressed beyond the moderate level and are at an advanced stage of digital transformation. They probably have more comprehensive digital strategies and greater integration across their business processes.

- **Level 5 Moderate Representation (16.7%):** A smaller but still notable number of organisations (10 out of 60) self-assess as being at the highest level of digital maturity (level 5). This suggests a group of organisations with well-established digital capabilities and transformation fully integrated into their operations.

- **Levels 1 and 2 Under-Represented (1.7% and 6.7%, respectively):** The deficient representation of organisations at maturity levels 1 and 2 (only 1 and 4 organisations, respectively) is a crucial observation. The findings may not be

generalisable to organisations in the earlier stages of digital adoption or those that lack developed digital capabilities.

The low representation of low-maturity organisations is intentional. Considering that this study explores the impact of Enterprise architecture-related variables on EDT, there was an intentional bias toward respondents expected to have some EDT experience. The results likely do not represent the broader landscape of organisational digital maturity, only organisations with a significant degree of digital transformation already underway.

- **Stage of Digital Transformation:** The concentration at maturity levels 3 and 4 suggests that a large segment of the surveyed organisations is actively pursuing digital transformation and is implementing and integrating digital technologies and strategies.

- **Qualitative Data:** Including qualitative data would provide a richer understanding of why organisations self-assess at specific maturity levels.

Recommendations for Future Studies:

To obtain a more representative sample and more robust results, future surveys should:

- **Increase Sample Size:** A larger sample size could yield more statistically significant and reliable results.

- **Include Qualitative Data:** Supplement quantitative data with open-ended questions to gain richer insights into the factors driving digital maturity and organisations' challenges at different stages.

In conclusion, this data shows a snapshot of self-assessed or self-reported digital maturity. Respondents tend to overestimate their Enterprise Digital Maturity, as we have seen in the results.

4.1.9 Research Question Nine

The question Q-09. relates to the survey respondents' organisations' most recent digital initiative.

Q-09. Which of the following digital initiatives has your current / most recent organization implemented? (select all that apply)

60 responses

Cloud Technologies adoption	51 (85%)
Generative Artificial Intelligence…	32 (53.3%)
AI, ML and DL	22 (36.7%)
Industry 4.0 – Internet of Thing…	11 (18.3%)
Digital Commerce & Marketing…	28 (46.7%)
Mobile Tech, Mobile Apps & 5G	21 (35%)
Social Media and API based int…	20 (33.3%)
Data Science and Real-time an…	23 (38.3%)
AR/VR/ER/Digital Twin	3 (5%)
Biomimicry	0 (0%)
Robotics & Robotic Process Au…	15 (25%)
Other	3 (5%)
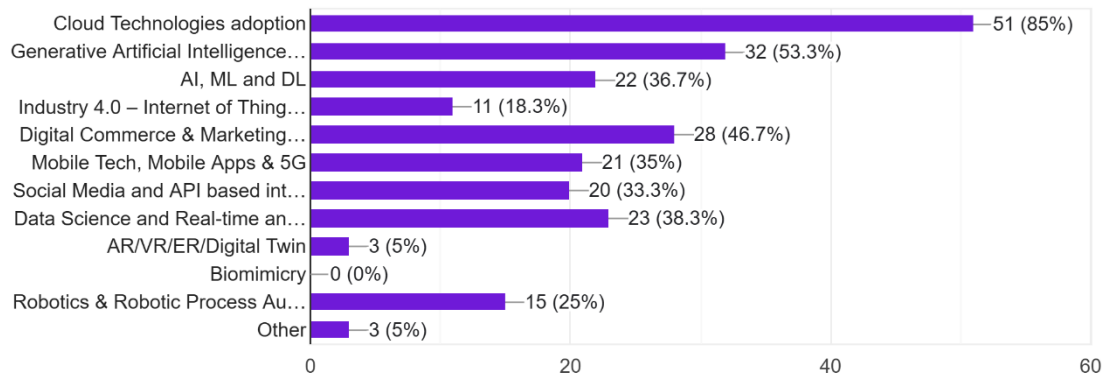
Figure 12 - Organizations' most recent digital initiative.

This horizontal bar chart presents the results of a survey question (Q-09) asking respondents to select all applicable digital initiatives implemented by their current or most recent organisation. The data is based on 60 responses. Because respondents could choose multiple options, the percentages add up to more than 100%.

The chart reveals a clear preference for specific digital initiatives, with significant variations in adoption rates across the different technologies:

85

- **Cloud Technologies Adoption (85%):** This initiative shows the highest adoption rate, indicating its widespread implementation across the surveyed organisations. Cloud adoption has been the cornerstone of many modern digital transformation strategies. We have seen organisations go out of business due to not adopting cloud technologies or merely postponing the decision, which indicates the need for Enterprise Architecture practice in any Enterprise.

- **Generative AI, AI, ML, and DL (High Adoption):** These technologies related to artificial intelligence show substantial adoption rates. Generative AI (53.3%) and AI, ML, and DL (36.7%) are becoming increasingly important in various industries. This shows a strong interest in leveraging the capabilities of these technologies for digital transformation. This, though, has to be meaningfully adopted and related to Meaningful Innovation. Typically, an Enterprise Architecture Review Board (EARB) can bring a lot of focus to implementing Meaningful Innovations.

- **Digital Commerce & Marketing (46.7%):** This indicates a significant focus on enhancing online presence and customer engagement through digital channels.

- **Data Science and Real-time Analytics (38.3%): This** considerable adoption suggests a growing emphasis on leveraging data-driven decision-making and real-time insights.

- **Mobile Tech, Mobile Apps, & 5G (35%):** This points to efforts to improve mobility and user experience through mobile technologies.

- **Social Media & API Integrations (33.3%):** The moderate adoption rate suggests that many organisations use social media for engagement and integrate APIs to enhance functionalities.

- **Robotics & Robotic Process Automation (25%):** The adoption of automation technologies is notable but less widespread, possibly reflecting a higher entry barrier in terms of cost or expertise.
- **AR/VR/ER/Digital Twin (5%):** This shows low adoption, suggesting these technologies may still be in the early stages of adoption within the surveyed organisations. The meagre adoption rate could also indicate that this type of technology is niche and only valid for specific industries.
- **Biomimicry (0%):** The lack of adoption suggests that this approach is not currently being used in the surveyed organisations.
- **Other (5%):** This category includes unspecified initiatives, indicating the need for further investigation to understand their nature.

The chart prioritises cloud technologies and artificial intelligence in digital transformation initiatives. Many organisations also focus on improving digital commerce, leveraging data, and enhancing mobile capabilities. The relatively low adoption of AR/VR/ER/Digital Twin and biomimicry highlights the potential of these technologies, suggesting opportunities for future innovation and adoption. It also shows that the technologies that are easier to implement are the ones that are implemented first.

The chart provides valuable insights into the digital initiatives most frequently implemented by organisations undergoing digital transformation. It underlines a preference for cloud technologies, AI, and improvements in digital commerce, while other emerging technologies, like AR/VR/ER, remain less widely adopted.

4.1.9A Research Question Nine – Additional Information

Question Q-09 relates to the survey respondent's organisation's most recent digital initiative, which was not listed in the options of the previous question.

Q-09A. If you have selected 'Other', please specify below (optional) 4 responses

ID	Other Digital Initiatives indicated by survey respondents
1	Finance Systems
2	Data Visualization
3	AI-Powered Automation
4	NA

Table 5 - Digital Initiatives

In addition to the digital initiatives or technologies specified in the previous question, some participants also included the initiatives their organisations implemented, which they considered part of Digital Transformation, likely used within a broader digital transformation strategy. They suggest a focus on:

- **Financial Technology (FinTech):** Finance Systems indicates using technology to improve financial processes and operations.

- **Data-Driven Insights:** Data Visualization implies using tools to present data clearly and understandably, facilitating better decision-making.

- **Automation:** AI-Powered Automation shows using artificial intelligence to automate tasks and processes.

- **Missing Data:** NA signifies missing or unspecified data.

In short, the list points towards a combination of core financial systems modernisation and the leveraging of data and AI for improved efficiency and insight.

4.1.10 Research Question Ten

Question Q-10 relates to the survey respondent's confidence level in their most recent EDT program.

Q-10. What was your confidence level in the initial stages of your current / most recent Digital Transformation Program?
60 responses
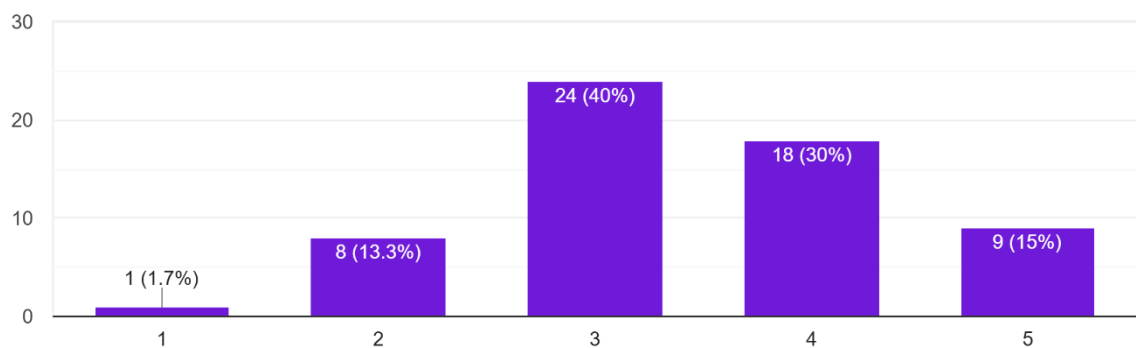
Figure 13 - Confidence level of their most recent EDT program

This bar chart shows the distribution of confidence levels among 60 respondents regarding their most recent digital transformation program in its initial stages. Confidence is rated on a scale of 1 to 5, with 5 being the highest confidence level.

The data reveals a bimodal distribution with two prominent peaks:

- **Confidence Level 3 (40%):** This represents the most frequent response, indicating that many respondents (24 out of 60) expressed a moderate confidence level in the initial stages of their digital transformation programs.

- **Confidence Level 4 (30%):** A significant portion of respondents (18 out of 60) reported a relatively high confidence level. This suggests that many felt quite optimistic about their program's prospects.
- **Lower Confidence Levels (Under-Represented):** Confidence levels 1, 2, and 5 are less frequently reported. This suggests that most respondents had at least moderate confidence from the start.

The chart shows respondents' relatively high initial confidence in their digital transformation programs. However, the considerable difference in reported confidence levels between categories 3 and 4 suggests variation in the initial confidence levels, and a subset of respondents had considerably higher confidence than others from the outset. While many respondents rated their Enterprise Digital Maturity as high, the confidence level when implementing EDT initiatives was significantly lower.

The results might indicate various factors influencing initial confidence:
- **Prior Experience:** Organizations with prior successful digital transformation projects might have entered their latest programs with higher confidence.
- **Planning and Preparation:** Thorough planning and preparation, including stakeholder buy-in and well-defined objectives, might have boosted initial confidence.
- **Leadership Support:** Strong leadership support and a clear vision for the transformation could have positively impacted initial confidence levels.
- **Resource Availability:** Adequate resources (budget, personnel, technology) could also play a key role in building initial confidence.

In conclusion, the chart provides valuable insight into the initial confidence levels associated with digital transformation programs. While most respondents expressed at least moderate confidence, a notable segment reported high confidence. However, further research, including qualitative data gathering and a more representative sample, would be beneficial to understand the factors driving these differences entirely.

4.1.11 Research Question Eleven

Question Q-11 relates to the survey respondents' perceptions of the success of their most recent EDT program.

Q-11. Do you consider your current / most recent Digital Transformation Program successful?
60 responses
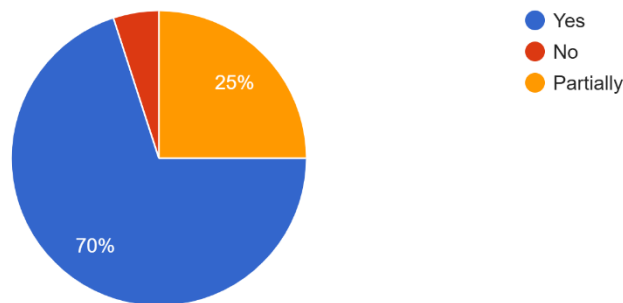
Figure 14 - Perception of success of their most recent EDT program

This pie chart displays the results of a survey question (Q-11) asking 60 respondents whether they considered their current or most recent digital transformation program successful.

The majority of respondents (70%) considered their program successful. A smaller portion (25%) viewed it as partially successful, and a small minority (5%) believed it was unsuccessful.

The high percentage of respondents (70%) rating their digital transformation programs as successful indicates a generally positive perception of their outcomes. This suggests that many organisations have achieved their goals or made significant progress.

However, the substantial proportion (25%) who rated their programs as only partially successful suggests that while some progress was made, certain objectives might not have been fully met or areas needed improvement. The remaining 5% reporting the transformation was unsuccessful highlights that not all transformation efforts result in positive outcomes, even when substantial resources are dedicated to them.

This data could be insightful when analysed in conjunction with other survey data, such as:

- **Initial Confidence Levels (Q-10):** Comparing initial confidence levels with the ultimate success rate could reveal relationships between initial optimism and final results. High initial confidence might not necessarily predict ultimate success.

- **Challenges Faced (Q-13):** Understanding the challenges encountered by organisations might help identify areas for improvement to increase the likelihood of successful transformation.

- **Digital Maturity Levels (Q-08):** There might be correlations between an organisation's digital maturity level and the success of its transformation programs. Higher digital maturity could potentially lead to higher success rates.

- **ESG Considerations (Q-13-Q-25):** Determining whether the integration of ESG factors impacted the success rates of these programs could provide valuable insights for future initiatives.

Limitations:

- **Self-Reported Data:** The assessment of success is subjective and based on self-reporting, which might be biased.

- **Definition of Success:** The survey doesn't explicitly define success, which could vary widely between organisations, but going by the studies done by various entities like Harvard, the success rate of EDT has been dismal 30% only, which leads us to the fact that there could be a bias when respondents report their EDT initiatives as successful.

In summary, the chart presents a positive overall outlook on the success of digital transformation programs among the surveyed organisations, although a substantial portion reported only partial success. Combining this information with additional data points from the survey would allow for a more complete understanding of the factors influencing the success or failure of digital transformation efforts.

4.1.12 Research Question Twelve

Question Q-12 relates to the survey respondent's confidence level at the final stages of their EDT program.

Q-12. Did your confidence in your most recent / current Digital Transformation Program evolve during its final stages?

60 responses
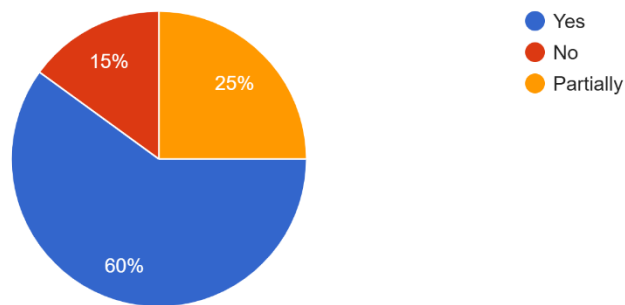
Figure 15 - Confidence level at the final stages of the EDT program

The chart shows the responses to a question about confidence in a Digital Transformation Program during its final stages. Here's the breakdown:

- 60% responded Yes, indicating their confidence evolved positively.
- 25% responded Partially.
- 15% responded No, indicating no change or negative evolution in confidence.

There were 60 total responses.

4.1.13 Research Question Thirteen

The question Q-13. relates to the survey respondent' challenges faced during their EDT journey.

Q-13. What challenges have you faced during digital transformation? (select all that apply)
60 responses
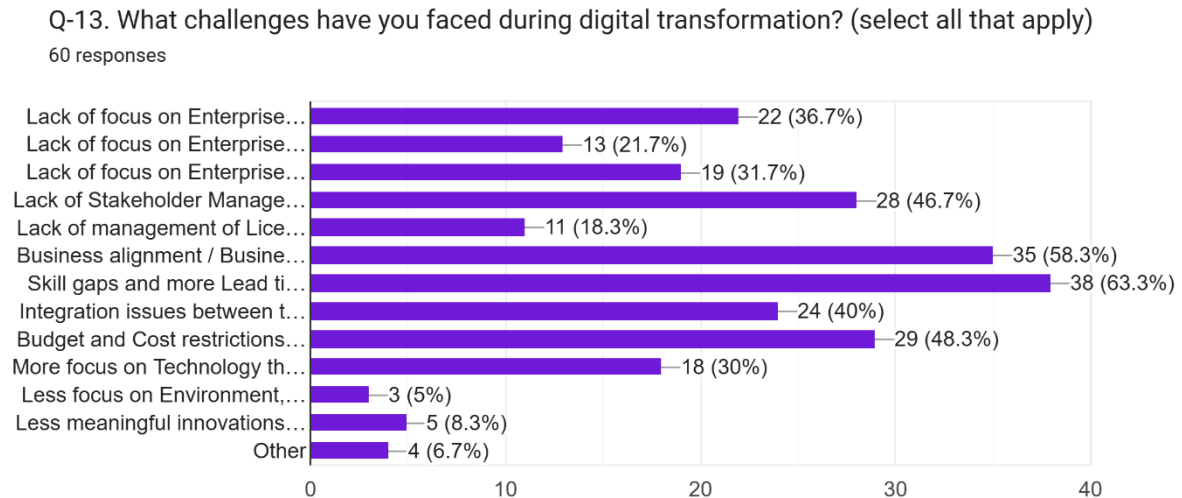
Figure 16 - Challenges faced during the EDT journey

The chart displays the challenges faced during digital transformation. Here's the breakdown of responses:

- Lack of focus on Enterprise Architecture: 22 (36.7%)

- Lack of focus on Enterprise Architecture resources: 13 (21.7%)

- Lack of focus on Enterprise Architecture technology/tools: 19 (31.7%)

- Lack of Stakeholder Management: 28 (46.7%)

- Lack of management/license-related issues for EA resources: 11 (18.3%)

- Business alignment/Business traceability to Enterprise Architecture: 35 (58.3%)

- Skill gaps and more Lead time in resource availability: 38 (63.3%)

- Integration issues between tools/technologies: 24 (40%)

- Budget and Cost restrictions for Enterprise Architecture related projects: 29 (48.3%)

- More focus on Technology than Business Transformation: 18 (30%)

- Less focus on training for utilising EA tools: 3 (5%)

- Less meaningful innovations through EA at the business level: 5 (8.3%)

These percentages indicate the prevalence of each challenge among the 60 respondents.

This question strongly highlighted the lack of acknowledgement of Enterprise Architecture's role in EDT. Unique responses were considered, arriving at a response rate of 62%, meaning that if a respondent responded to 2 similar questions related to Enterprise Architecture, it was considered one response.

In summary, Enterprise Architecture (EA), encompassing elements like strategy, governance, discovery, and change management, is crucial for the success of digital transformation projects. The lack of focus on EA, as indicated by 36.7% of the respondents, highlights a significant challenge. Effective EA practices ensure that the digital transformation initiatives are aligned with organisational goals, well-planned, and smoothly executed. Enhancing focus on EA-related factors can significantly improve the success rates of digital transformation initiatives.

By addressing these EA-related challenges collectively, organisations can create a robust framework for their digital transformation efforts, reducing failure rates and achieving their strategic objectives more efficiently.

4.1.13A Research Question Thirteen – Additional Information

Question Q-13A relates to the survey respondents' challenges faced during their EDT journey that were not listed as options in Q-13.

Q-13A. If you have faced other challenges, please specify below (optional):7 responses

ID	Challenges Faced during EDT
1	Process Heaviness
2	Lack of skilled resources on Enterprise Architecture
3	Lack of skills and misaligned management goals
4	NA
5	Lack of business alignment because no clear business requirements / stakeholders
6	Inadequate skilled personnel
7	Lack of proper leadership, lack of understanding business impact of some mayor IT decisions.

Table 6– Challenges faced during EDT

The challenges faced by survey participants during digital transformations can be summarised as follows:

1. **Process Heaviness**: The processes involved in digital transformation are often overly complicated or bureaucratic.

2. **Resource Gaps**: There is a significant shortage of skilled resources, particularly in Enterprise Architecture and other essential technical areas.

3. **Misalignment of Skills and Goals**: A mismatch between the skills available and the management's goals leads to ineffective transformation efforts.

4. **Business Misalignment**: The absence of precise business requirements and stakeholder involvement hinders alignment between IT and business objectives.

5. **Inadequate Leadership**: Poor leadership and a lack of understanding regarding the business implications of significant IT decisions negatively affect transformation initiatives.

These challenges highlight resources, leadership, and alignment issues within organisations undergoing digital transformations.

4.1.14 Research Question Fourteen

The question Q-14. relates to how EDT affected the survey respondents' work or daily life.

Q-14. How has digital transformation affected your work or daily life? (select all that apply)
60 responses

Improved efficiency	38 (63.3%)
Enhanced communication and…	35 (58.3%)
Better access to information	39 (65%)
Increased flexibility	32 (53.3%)
Created new opportunities	23 (38.3%)
Disrupted / disturbed Way of W…	15 (25%)
Other	4 (6.7%)
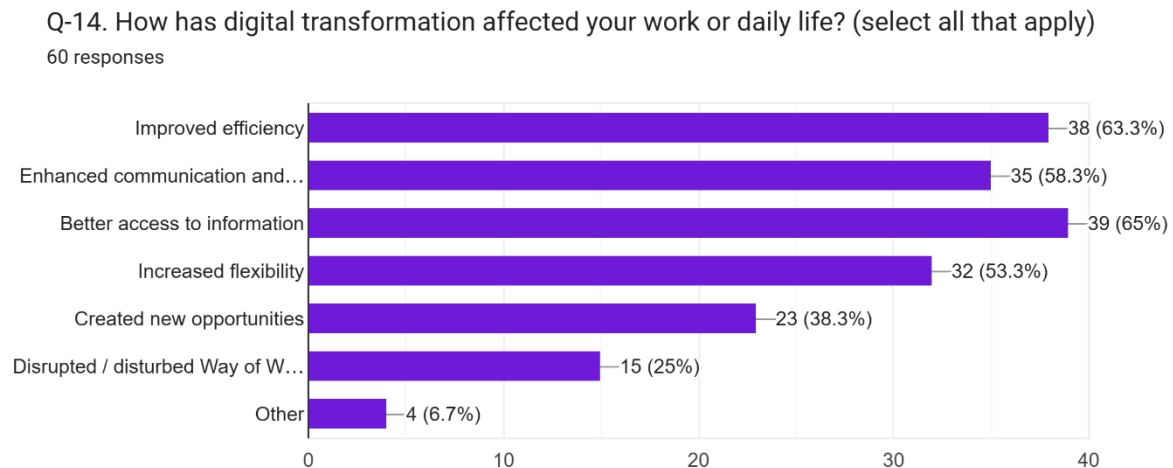
Figure 17- EDT effects on work or daily life

How digital transformation has affected participants' work or daily life is summarised as follows:

1. **Improved Efficiency**: 63.3% (38 responses) reported improved efficiency.

2. **Enhanced Communication and Collaboration**: 58.3% (35 responses) experienced better communication and collaboration.

3. **Better Access to Information**: 65% (39 responses) noted improved access to information.

4. **Increased Flexibility**: 53.3% (32 responses) found increased flexibility.

5. **Created New Opportunities**: 38.3% (23 responses) identified new opportunities.

6. **Disrupted/Disturbed Way of Working**: 25% (15 responses) felt a disruption in their way of working.

7. **Other**: 6.7% (4 responses) selected other effects.

These results suggest that digital transformation has predominantly positive effects, improving various aspects of work and daily life for most participants, although some have experienced disruptions.

4.1.14 A Research Question Fourteen – Additional Information

Question Q-14A relates to how EDT affected the survey respondents' work or daily life, which is not listed as an option in Q-14.

Q-14A. If you have selected 'Other', please specify below (optional):

ID	EDT Impact
1	User Experience
2	More collaboration options
3	NA
4	If 13 is limited to the last digital transformation program, it did not impact my life in any way. If better solutions had been chosen, new opportunities would have been the answer.

Table 7 - EDT Impact on work or daily life

Few respondents responded with others about the UX, Collaboration, and unrealised potential.

1. **User Experience**: This suggests that digital transformation has enhanced or altered the user experience, potentially aligning with improved efficiency and better access to information.

2. **More Collaboration Options**: This response aligns with the Enhanced Communication and Collaboration finding, indicating increased tools or methods for working together.

3. **NA**: This might indicate no direct impact or specific feedback from the respondent.

4. **Limited Impact/Unrealized Potential**: The respondent feels the digital transformation program had no personal impact, but better choices could have created new opportunities. This highlights instances where digital transformations might not be fully exploited, aligning with challenges like lack of alignment or leadership.

Overall, these responses emphasise the variability in digital transformation impacts, with some experiencing tangible benefits while others see missed potential.

4.1.15 Research Question Fifteen

Question Q-15 relates to the survey respondents' acknowledgement of EA as pivotal to EDT's success.

Q-15. Do you understand and acknowledge that Enterprise Architecture plays a major role in defining the success of EDT initiatives?
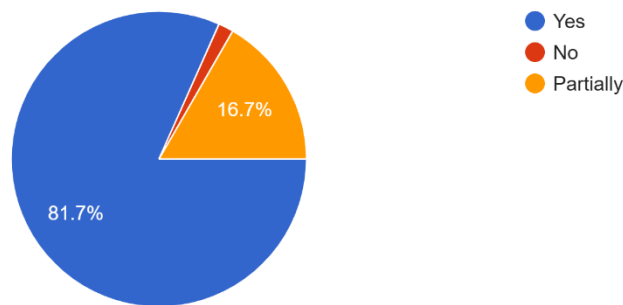60 responses

Figure 18 - Acknowledgement of EA as a critical contributor to the success of EDT

To the question about the role of Enterprise Architecture in digital transformation initiatives, observations are as follows:

- **Yes**: 81.7% acknowledge that Enterprise Architecture plays a significant role in defining the success of EDT initiatives. This indicates a strong understanding of its importance among the majority.

- **No**: 1.7% do not recognise its significance, suggesting a small gap in awareness or understanding.

- **Partially**: 16.7% have a limited understanding, acknowledging its role to some extent but perhaps lacking complete comprehension or certainty.

Overall, there is a strong recognition of the importance of Enterprise Architecture for successful digital transformations. However, some participants may benefit from further education or clarity on its role.

4.1.16 Research Question Sixteen

The question Q-16. relates to the survey respondents' responses on the use of EA Enablers.

Q-16. Does your organization maintain and use Enterprise Architecture Standards, Frameworks, Reference Architectures, Tools, Models, Best Practices and Guides?
60 responses
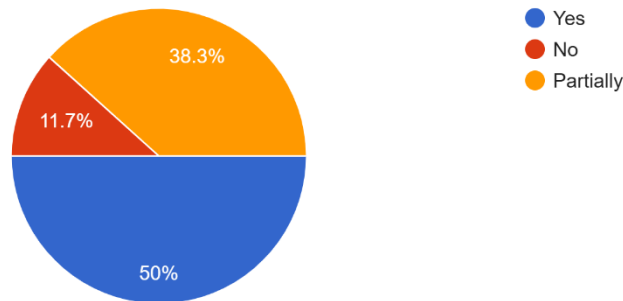
Figure 19 - Use of EA Artefacts and Enablers

The survey participants indicated the use of the Enterprise Architecture resources as indicated below:

- **Yes**: 50% of organisations maintain and use Enterprise Architecture standards, frameworks, and related resources. This indicates that half of the participants' organisations actively utilise these practices.

- **No**: 11.7% do not use these resources, suggesting some organisations might not integrate Enterprise Architecture into their processes.

- **Partially**: 38.3% use some components but not entirely. This indicates a partial implementation or adoption of Enterprise Architecture practices.

These suggest that while half of the organisations are committed to using Enterprise Architecture resources, a significant number either do not fully utilise them or only partially implement these practices. This indicates that EA focus is lacking and is likely the highest contributing factor or a decision variable that has the most impact on EDT outcomes.

4.1.17 Research Question Seventeen

Question Q-17 relates to the survey respondents' responses on EA Artefacts maintained.

Q-17. Which of the following Enterprise Architecture artifacts does your organization maintain? (select all that apply)

60 responses
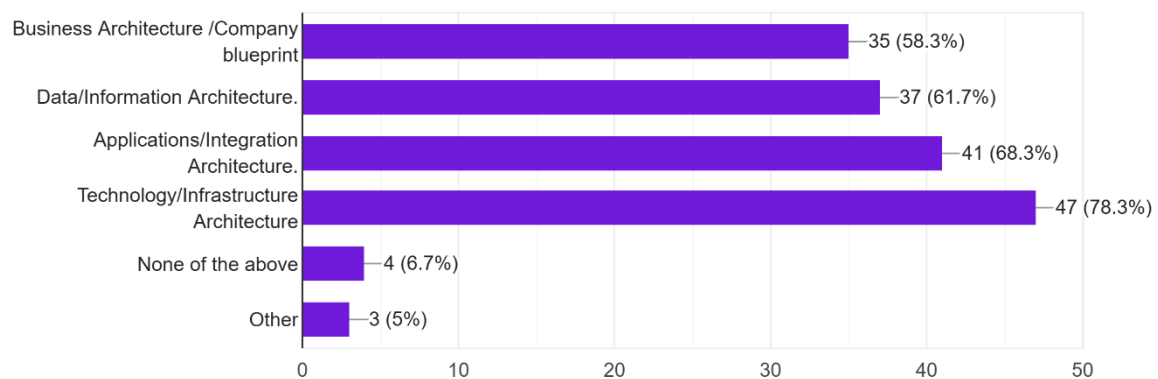
Figure 20 - EA Artefacts maintained

The Enterprise Architecture artefacts are critical to a successful EDT. While some organisations understand and acknowledge this, others consider it an overhead and focus more on immediate ROI for their organisational initiatives. The following results from this survey question indicate the gap:

- **Business Architecture/Company Blueprint**: Maintained by 58.3% (35 responses), this reflects significant attention to organisational structure and strategy.

- **Data/Information Architecture**: 61.7% (37 responses) maintained, focusing on managing and organising data effectively.

- **Applications/Integration Architecture**: 68.3% (41 responses) maintained, emphasising software and system integration.

- **Technology/Infrastructure Architecture**: Maintained by 78.3% (47 responses), highlighting the importance placed on technology systems and infrastructure.

- **None of the Above**: Chosen by 6.7% (4 responses), indicating that many organisations do not maintain these artefacts.

- **Other**: Selected by 5% (3 responses), suggesting using additional or unspecified artefacts.

Overall, the results show strong engagement with various Enterprise Architecture artefacts, particularly in technology and applications, while some organisations still lack these practices.

4.1.17A Research Question Seventeen – Additional Information

Question Q-17A relates to the survey respondents' response regarding EA Artefacts maintained but not listed as options in Q17.

Q-17A. If you have selected 'Other', please specify below (optional) 4 responses

ID	Artefacts
1	Architecture Diagrams
2	High-Level Diagrams of Architecture
3	NA
4	It mainly was a work in progress , I'd say

Table 8 – EA Artefacts

A few of the survey respondents shared the following additional Enterprise Architecture artefacts:

1. **Architecture Diagrams**: These primarily visualise and communicate architectural structures. They are fundamental tools for clarity and planning in architecture.

2. **High-Level Diagrams of Architecture**: Similar to architecture diagrams, these focus on broader aspects and provide a strategic overview. They help in understanding the overall architecture without delving into specifics.

3. **NA**: Indicates no response or applicability, suggesting some respondents might not use or have insights into specific artefacts.

4. **Work in Progress**: This term reflects ongoing development and refinement of architectural practices. It implies that efforts are being made, but full implementation might not yet be achieved.

In summary, these inputs suggest a focus on visual tools for architecture and ongoing development, with some respondents indicating incomplete processes.

4.1.18 Research Question Eighteen

Question Q-18 relates to the survey respondents' organisation prioritising EA Discovery.

Q-18. To what extent did your organization prioritize on Enterprise Architecture Discovery in its digital transformation strategy?

60 responses

Figure 21 - Organization prioritising EA Discovery

The chart represents responses to the question: To what extent did your organisation prioritise Enterprise Architecture Discovery in its digital transformation strategy?

The data reflects 60 responses on a scale of 1 to 5, where:

- 1 indicates low prioritisation.
- 5 indicates high prioritisation.

Key Observations:

1. **Low Prioritization (1 and 2)**:
   - **1** (6.7%): 4 respondents indicated low prioritisation.
   - **2** (16.7%): 10 respondents indicated low prioritisation.
   - A total of 14 respondents (23.4%) felt that Enterprise Architecture Discovery was a lower priority in their organisation's strategy.

2. **Moderate Prioritization (3)**:
   - **3** (30%): 18 respondents chose the middle-ground, suggesting that Enterprise Architecture Discovery was somewhat considered but not a primary focus.
   - This represents the largest group of respondents, indicating that many organisations may see it as necessary but not critical.

3. **High Prioritization (4 and 5)**:
   - **4** (28.3%): 17 respondents indicated that Enterprise Architecture Discovery was prioritised to a high extent.
   - **5** (18.3%): 11 respondents indicated the highest level of prioritisation.
   - A total of 28 respondents (46.6%) indicated that their organisations strongly prioritise this aspect of their digital transformation strategy.

Insights:

- The majority of organisations (76.6%) acknowledge some level of focus on Enterprise Architecture Discovery in their digital transformation strategy, with nearly half of them (46.6%) assigning a high priority (scoring 4 or 5).

- A notable 30% of respondents placed themselves in the middle (score of 3), indicating that while they recognise the importance of Enterprise Architecture Discovery, it may not be a top priority in their strategic efforts.

- A small yet significant group (6.7%) rated this aspect as a very low priority, suggesting potential areas of opportunity for those organisations to improve their focus on architecture discovery.

Conclusion:

Most organisations recognise the importance of Enterprise Architecture Discovery in their digital transformation efforts, with a significant portion (46.6%) assigning it high importance. However, the varied responses suggest that there is still room for improvement in how organisations align their strategies with architectural discovery to drive their transformation goals.

4.1.19 Research Question Nineteen

Question Q-19 relates to the survey respondents' organisation prioritising EA Governance.

Q-19. To what extent did your organization prioritize on Enterprise Architecture Governance in its digital transformation strategy?
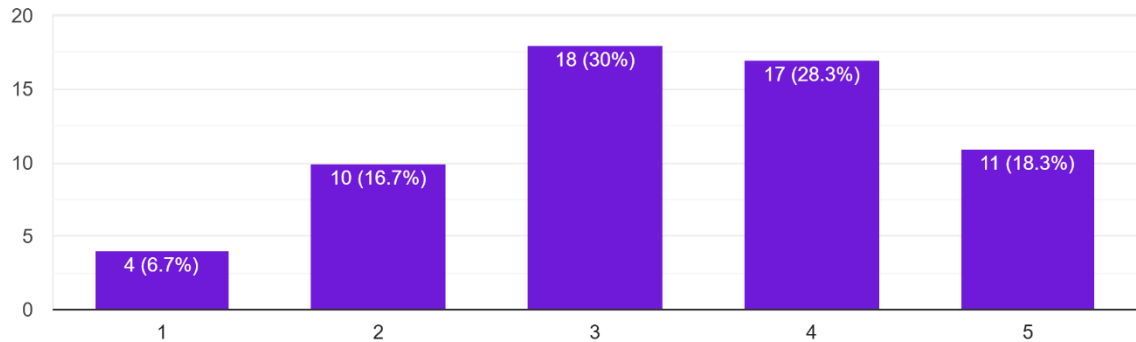60 responses
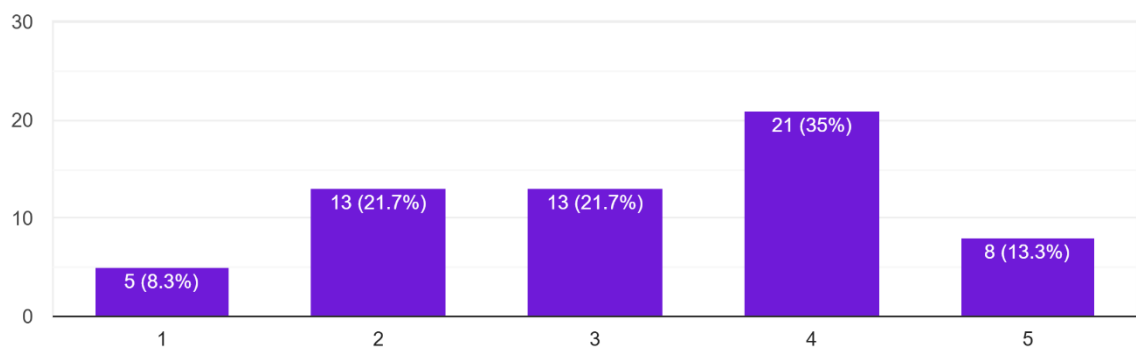
Figure 22 - Organization Prioritising EA Governance

The chart represents responses to the question: To what extent did your organisation prioritise Enterprise Architecture Governance in its digital transformation strategy? The data reflects 60 responses on a scale of 1 to 5, where:

- 1 indicates low prioritisation.
- 5 indicates high prioritisation.

Key Observations:

1. **Low Prioritization (1 and 2)**:
   - **1** (8.3%): 5 respondents indicated very low prioritisation.
   - **2** (21.7%): 13 respondents indicated low prioritisation.

- In total, 18 respondents (30%) felt that Enterprise Architecture Governance was a lower priority in their organisation's digital transformation strategy.

2. **Moderate Prioritization (3)**:
   - **3** (21.7%): 13 respondents indicated a moderate prioritisation.
   - Similar to the previous chart, the number of organisations that placed themselves in the middle shows some attention to governance but not complete alignment with its significance.

3. **High Prioritization (4 and 5)**:
   - **4** (35%): 21 respondents indicated a high level of prioritisation for governance in their strategy.
   - **5** (13.3%): 8 respondents gave the highest prioritisation.
   - In total, 29 respondents (48.3%) assigned high priority to Enterprise Architecture Governance.

Insights:
- Most organisations (70%) recognise the importance of Enterprise Architecture Governance, with nearly half (48.3%) prioritising it.
- A smaller portion of respondents (30%) considered governance a lower priority (scoring 1 or 2), which suggests that governance is still not universally prioritised across organisations, though it's more commonly prioritised than deprioritised.
- The significant portion of organisations rating governance as a 4 (35%) indicates that many organisations understand the importance of Enterprise Architecture Governance in their digital transformation but may not yet consider it entirely critical to the success of their efforts.

Comparison with Q-18 (Enterprise Architecture Discovery):

- The prioritisation of Enterprise Architecture Governance (48.3% high priority) is slightly higher than that of Enterprise Architecture Discovery (46.6% high priority). This suggests that governance is slightly more critical in digital transformation strategies than discovery.

Conclusion:

Enterprise Architecture Governance is widely acknowledged as necessary in digital transformation, with 48.3% of respondents rating it highly. However, 30% still assign it a lower priority, signalling an opportunity for those organisations to strengthen their governance frameworks to align more effectively with their digital transformation objectives.

4.1.20 Research Question Twenty

The question Q-20. relates to the survey respondents' agreement on the importance of EA.

Q-20. Do you agree that your organization can do better in driving the success of Digital Transformation journeys with focus on Enterprise Architecture?
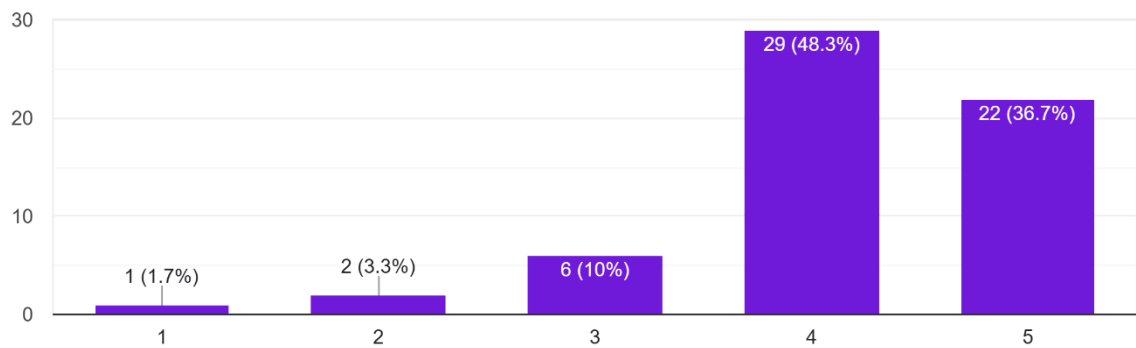60 responses

Figure 23 - Importance of EA

The chart represents responses to the question: Do you agree that your organisation can do better in driving the success of Digital Transformation journeys with a focus on Enterprise Architecture? The data reflects 60 responses on a scale of 1 to 5, where:

- 1 indicates strong disagreement.
- 5 indicates strong agreement.

Key Observations:

1. **Low Agreement (1 and 2)**:

     o **1** (1.7%): Only one respondent strongly disagreed with the statement, suggesting their organisation is already driving success with a strong focus on Enterprise Architecture.

     o **2** (3.3%): 2 respondents gave a low agreement score, showing minimal belief that their organisation could improve in this area.

     o In total, only three respondents (5%) believe their organisation is already doing well and doesn't need significant improvement in this area.

2. **Moderate Agreement (3)**:

     o **3** (10%): 6 respondents chose the middle score, suggesting they acknowledge room for improvement but may not see a strong need for significant changes.

3. **High Agreement (4 and 5)**:

     o **4** (48.3%): 29 respondents agreed that their organisation could do better, indicating a high level of acknowledgement that improvements in this area are needed.

     o **5** (36.7%): 22 respondents strongly agreed that their organisation could improve its focus on Enterprise Architecture to drive better digital transformation outcomes.

     o Combined, 51 respondents (85%) strongly believe there is significant room for improvement in their organisations regarding Enterprise Architecture's role in digital transformation.

Insights:

- The overwhelming majority of respondents (85%) believe their organisation could perform better in driving successful digital transformation journeys with a stronger focus on Enterprise Architecture.

- The distribution shows that nearly half (48.3%) acknowledge this to a substantial degree (rating 4), while over a third (36.7%) see a critical need for improvement (rating 5).

- Only a tiny percentage of respondents (5%) are satisfied with their organisation's current efforts in this area, suggesting a consensus on the need for improvement in leveraging Enterprise Architecture to achieve digital transformation goals.

Comparison with Other Questions:

- Compared to Q-18 (Enterprise Architecture Discovery) and Q-19 (Enterprise Architecture Governance), the responses here show a stronger belief that organisations can improve their efforts. While governance and discovery had a significant number of respondents indicating high prioritisation, this question reveals that most people feel more can still be done to improve outcomes in digital transformation with a stronger focus on architecture.

Conclusion:

Respondents strongly agree that their organisations can improve their focus on Enterprise Architecture to better drive the success of their EDT efforts. With 85% of respondents indicating a need for improvement, this highlights an opportunity for organisations to leverage architecture practices more effectively in achieving strategic transformation goals.

4.1.21 Research Question Twenty-One

Question Q-21 relates to the level of innovation fostered by EDT initiatives in the respondent's organisation.

Q-21. How would you rate the level of innovation fostered by digital transformation initiatives in your organization?
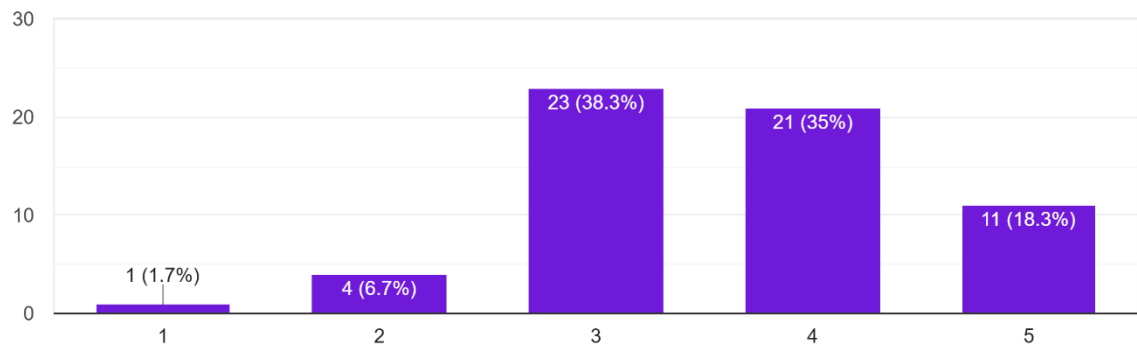
60 responses

Figure 24 - Level of innovation fostered by EDT initiatives

Respondents of the survey indicated digital transformation initiatives foster the following levels of innovation:

- **Level 1**: 1.7% (1 response) indicates deficient levels of innovation.
- **Level 2**: 6.7% (4 responses) rate innovation as low.
- **Level 3**: 38.3% (23 responses) suggest a moderate level of innovation.
- **Level 4**: 35% (21 responses) see a high level of innovation.
- **Level 5**: 18.3% (11 responses) report very high levels of innovation.

Overall, most respondents perceive digital transformation initiatives as fostering moderate to high levels of innovation, with a smaller portion reporting low innovation.

While Innovation is a significant driver of EDT, these innovations need to be meaningful. This can happen only when due diligence is conducted via an Enterprise

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Architecture discovery and understanding where the innovation fits into the larger landscape instead of being something working in silos without consideration for the impact it has on the Enterprise Architecture landscape. It also required a structured governance mechanism to be in place.

4.1.22 Research Question Twenty-Two

Question Q-22 relates to the primary barriers to innovation in EA in the context of EDT.

Q-22. In your opinion, what is the primary barrier to achieving significant innovation in Enterprise Architecture within the context of digital transformation?
60 responses
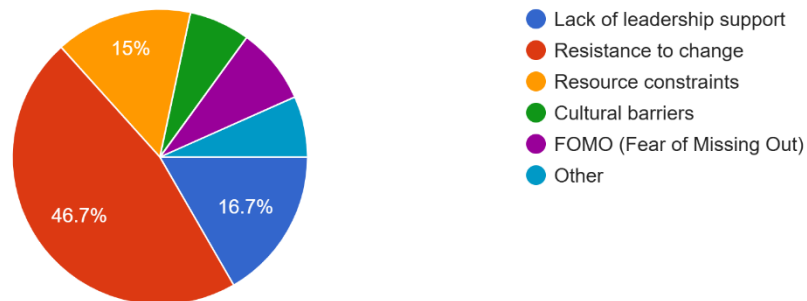
Figure 25 - Primary barriers to innovation in EA

The survey respondents indicate the following barriers to achieving significant innovation in Enterprise Architecture during EDT:

- **Lack of Leadership Support**: 46.7% view this as the main barrier, indicating the critical role of strong leadership in fostering innovation.

- **Resistance to Change**: 16.7% identify this as a barrier, highlighting challenges in adapting to new processes or technologies.

- **Resource Constraints**: 15% see limited resources as a significant obstacle to innovation.

- **Cultural Barriers**: 10% cite organisational cultural issues as hindrances to innovation.

- **FOMO (Fear of Missing Out)**: 3.3% consider this a barrier, suggesting that distractions or reactive decision-making can impede strategic innovation.

- **Other**: 8.3% mention additional unspecified factors impacting innovation.

Leadership support is considered the most critical factor, followed by adaptability, resources, and organisational culture.

4.1.22 A Research Question Twenty-Two – Additional Information

Question Q-22A relates to the primary barriers to innovation in EA, which are not listed in Q-22.

Q-22A. If you have selected 'Other', please specify below (optional) 4 responses

ID	Primary barriers to innovation in EA
1	Lack of Design and Creative Thinking
2	NA
3	Clear vision and roadmap
4	I have no idea about any innovation barriers in enterprise architecture as I was not an architect in the organisation.

Table 9- Primary barriers to innovation in EA

The summarised responses from the survey regarding barriers to innovation in enterprise architecture are as follows:

1. **Lack of Design and Creative Thinking**: Some participants felt that the absence of creativity and design thinking in enterprise architecture is a crucial barrier to innovation.

2. **NA**: This response suggests the respondent did not provide additional input.

3. **Clear Vision and Roadmap**: One of the respondents highlighted the need for a clear strategic vision and roadmap as essential for overcoming innovation barriers.

4. **Lack of Knowledge of Barriers**: Another respondent admitted that they were unaware of any barriers to innovation in enterprise architecture because they were not involved in architecture within their organisation.

This reflects a range of perspectives, from strategic concerns to a lack of involvement in the area.

4.1.23 Research Question Twenty-Three

Question Q-23 relates to the impact of emerging tech (AI-related) on EA and EDT outcomes.

Q-23. How do you evaluate the impact of emerging technologies such as Generative AI, AI, ML, DL, NLP, and LLMs on your organization's Enterprise Architecture and its digital transformation outcomes?
60 responses
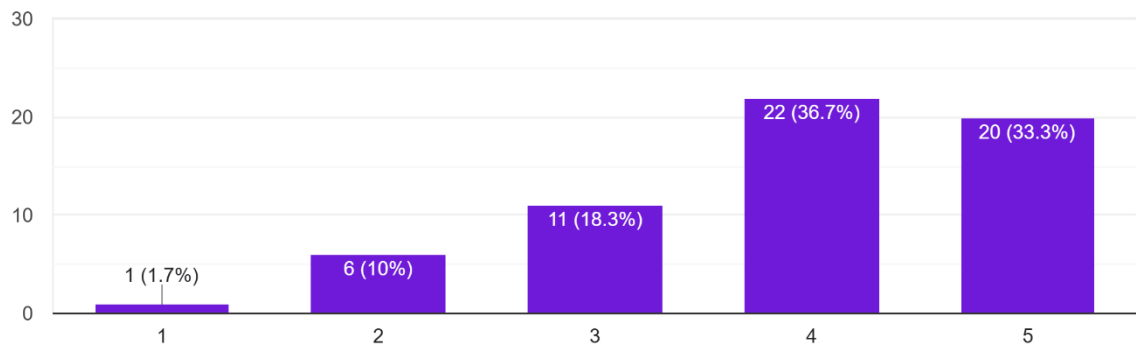
Figure 26 - Impact of emerging tech (AI-related) on EA and EDT outcomes

The emerging technologies on Enterprise Architecture and digital transformation outcomes are:

- **Level 1**: 1.7% (1 response) report low impact.
- **Level 2**: 10% (6 responses) perceive a low impact.
- **Level 3**: 18.3% (11 responses) see a moderate impact.
- **Level 4**: 36.7% (22 responses) rate the impact as high.
- **Level 5**: 33.3% (20 responses) observe a very high impact.

Most respondents recognise a significant positive impact of emerging technologies like AI, ML, and NLP on Enterprise Architecture and digital transformation outcomes.

Emerging technologies such as AI, ML, DL, NLP, and LLMs can significantly impact Enterprise Digital Transformation by enhancing various aspects of Enterprise Architecture:

1. **Automation and Efficiency**:

   o **AI and ML** streamline operations by automating repetitive tasks, leading to faster and more accurate processes. This improves overall efficiency and reduces costs.

2. **Data-Driven Decision Making**:

   o **NLP and LLMs** enable better data analysis and natural language interactions. This enhances decision-making by providing deeper insights from unstructured data and improving accessibility.

3. **Scalability and Flexibility**:

   o **Cloud-based architectures** supported by these technologies allow organisations to scale operations efficiently, adapting quickly to changing business needs without significant infrastructure investments.

4. **Enhanced Customer Experience**:

   o **AI and NLP** personalise customer interactions and improve service delivery, leading to better customer engagement and satisfaction.

5. **Innovation and Competitive Advantage**:

   o Leveraging these technologies can foster innovation by enabling the development of new products and services, providing a competitive edge in the market.

6. **Improved Security**:

- **AI and ML** enhance threat detection and response times, strengthening cybersecurity measures and reducing risks associated with digital transformation.

7. **Integration and Interoperability**:
   - These technologies facilitate seamless integration between legacy systems and new platforms, ensuring smoother operational transitions and enhanced interoperability.

By incorporating emerging technologies into Enterprise Architecture, organisations can drive innovation, efficiency, and resilience, ultimately leading to successful digital transformation.

4.1.24 Research Question Twenty-Four

Question Q-24 relates to the impact of emerging tech (others) on EA and EDT outcomes.

Q-24. How do you evaluate the impact of emerging technologies such as IoT, AR, VR, MR, Biomimicry, META, and Blockchain on your organizat...ecture and its digital transformation outcomes?
60 responses
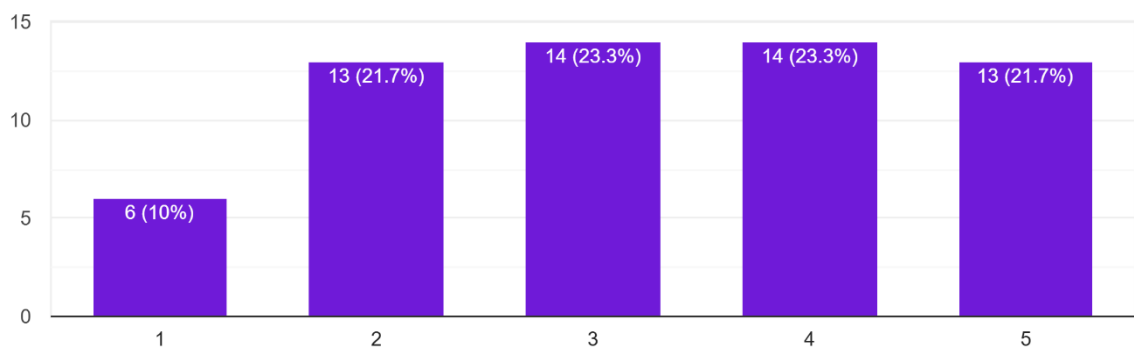
Figure 27 - Impact of emerging tech (others) on EA and EDT outcomes

This image is a bar chart that displays the results of a survey question (Q-24) asking respondents how they evaluate the impact of emerging technologies like IoT, AR, VR, MR, Biomimicry, META, and Blockchain on their organisation's architecture and digital transformation outcomes. The survey collected 60 responses, and the respondents rated their evaluation on a scale of 1 to 5.

Breakdown of Responses:

- **Rating 1 (Least Impact)**: 6 respondents (10%) rated the impact of these technologies as low.

- **Rating 2**: 13 respondents (21.7%) gave this rating, indicating a moderately low impact.

- **Rating 3**: 14 respondents (23.3%) selected this neutral position, indicating that they consider the impact average.

- **Rating 4**: 14 respondents (23.3%) believe the impact is somewhat high.

- **Rating 5 (Most Impact)**: 13 respondents (21.7%) rated the impact of these emerging technologies as high.

Key Observations:

1. **Distribution of Responses**: The responses are relatively evenly distributed across ratings 2, 3, 4, and 5, with the highest percentage (23.3%) falling in the middle (ratings 3 and 4). This suggests that respondents are somewhat divided on the level of impact these emerging technologies have on their organisations.

2. **Neutral to High Impact**: Most respondents (64.9%) rated the impact between 3 and 5, showing a general perception that these technologies have a neutral to high impact on organisational architecture and digital transformation.

3. **Low Impact**: A minority (10%) rated the technologies' impact as low, indicating that few respondents believe these emerging technologies have a negligible effect.

Implications for Organizations:

- **Adoption and Awareness**: The results indicate that many organisations recognise the potential of emerging technologies in their digital transformation strategies. However, the divided opinion suggests that while some organisations already see the benefits, others might still be in the exploratory or initial stages.

- **Investment in Technology**: The clustering of responses in the middle and high ranges (3 to 5) could imply that organisations increasingly invest in these technologies or consider their implications in plans.

- **Focus Areas**: The listed technologies (IoT, AR, VR, MR, etc.) are likely considered vital components of future-proofing digital transformation strategies,

but organisations may differ in their readiness or capacity to leverage them effectively.

4.1.25 Research Question Twenty-Five

Question Q-25 relates to the impact of insufficient innovation in EA on successful EDT outcomes.

Q-25. Do you agree that insufficient innovation in Enterprise Architecture impedes the progress of digital transformation initiatives?
60 responses
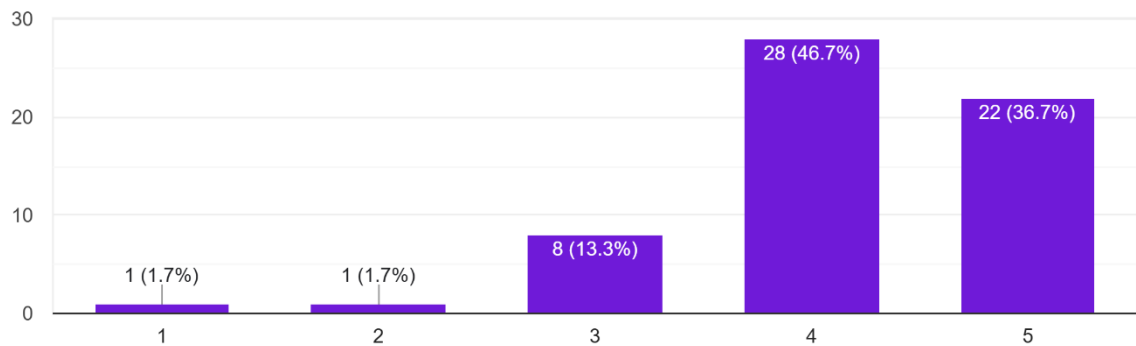
Figure 28 - Impact of insufficient innovation in EA on successful EDT outcomes

This image is a bar chart illustrating the responses to survey question Q-25: Do you agree that insufficient innovation in Enterprise Architecture impedes the progress of digital transformation initiatives? A total of 60 responses were collected, and respondents rated their level of agreement on a scale from 1 to 5.

Breakdown of Responses:

- **Rating 1 (Strongly Disagree)**: 1 respondent (1.7%) strongly disagrees that insufficient innovation in Enterprise Architecture impedes digital transformation.

- **Rating 2 (Disagree)**: 1 respondent (1.7%) also disagrees, meaning 3.4% of respondents do not view this lack of innovation as a hindrance.
- **Rating 3 (Neutral)**: 8 respondents (13.3%) took a neutral stance, indicating they neither strongly agree nor disagree.
- **Rating 4 (Agree)**: 28 respondents (46.7%) agree that insufficient innovation does hinder digital transformation.
- **Rating 5 (Strongly Agree)**: 22 respondents (36.7%) strongly agree, showing a high level of concern about the impact of insufficient innovation in Enterprise Architecture.

Key Observations:

1. **High Level of Agreement**: Most respondents (83.4%) agree or strongly agree that insufficient Enterprise Architecture (EA) innovation is a crucial barrier to digital transformation. This suggests widespread recognition of the importance of continuous innovation within EA to achieve successful digital transformation outcomes.

2. **Minimal Disagreement**: Only 3.4% of respondents (ratings 1 and 2 combined) believe a lack of innovation in EA does not impede digital transformation initiatives. This indicates a consensus that innovation in EA is critical.

3. **Neutral Responses**: 13.3% of respondents are neutral, which may reflect that they either do not have enough experience or insight to form a strong opinion or see other factors as more significant barriers to digital transformation.

Implications for Enterprise Architecture and Digital Transformation:

- **Innovation as a Catalyst**: The results strongly suggest that organisations perceive Enterprise Architecture as a crucial enabler of digital transformation.

Failure to innovate in EA can lead to stagnation, making it difficult to achieve the agility and flexibility needed for effective digital initiatives.

- **Strategic Focus**: Given the high level of agreement, this data implies that organisations should focus on innovating within their Enterprise Architecture strategies to avoid bottlenecks in their digital transformation efforts. Adopting modern architectures (e.g., microservices, API-first approaches) and integrating emerging technologies should be prioritised.

- **Investment in EA**: Nearly 83.4% of respondents indicated concern about the impact of innovation in EA, which may indicate a growing need for investments in EA teams, tools, and training. Organisations must empower their EA functions with modern approaches and frameworks to facilitate seamless digital growth.

Overall, this analysis emphasises that organisations view Enterprise Architecture innovation as fundamental to maintaining the momentum of digital transformation, and failure to prioritise it may lead to substantial delays or challenges in meeting transformation goals.

4.1.26 Research Question Twenty-Six

Question Q-26 relates to how much EA is considered in shaping and planning EDT.

Q-26. How integral or to what extent is enterprise architecture considered in shaping the planning and execution of digital transformation initiatives within your organization?
60 responses
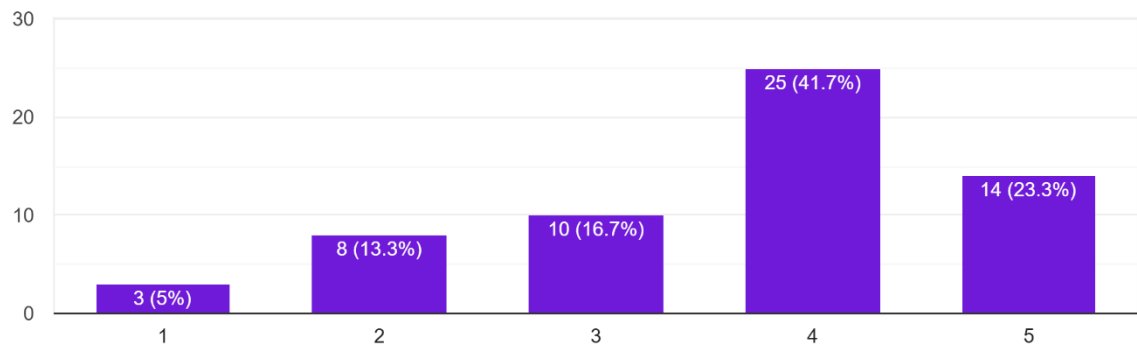
Figure 29 - Extent EA is considered in shaping and planning EDT

This image is a bar chart reflecting the responses to survey question Q-26: How integral or to what extent is enterprise architecture considered in shaping the planning and execution of digital transformation initiatives within your organisation? The survey collected 60 responses, and the respondents rated the importance of enterprise architecture (EA) on a scale from 1 to 5.

Breakdown of Responses:

- **Rating 1 (Not Integral)**: 3 respondents (5%) believe that enterprise architecture is minimally or not at all involved in shaping digital transformation initiatives.

- **Rating 2**: 8 respondents (13.3%) consider EA to play a somewhat minor role.

- **Rating 3 (Neutral)**: 10 respondents (16.7%) see EA as having an average or neutral level of importance in digital transformation efforts.

- **Rating 4**: 25 respondents (41.7%) agree that EA is important and plays a significant role in shaping the planning and execution of digital transformation initiatives.
- **Rating 5 (Highly Integral)**: 14 respondents (23.3%) view enterprise architecture as integral to digital transformation.

Key Observations:

1. **Majority Agreement on Importance**: Most respondents (65%) rate EA as integral (ratings 4 and 5), indicating a solid consensus that enterprise architecture is essential for guiding digital transformation initiatives.

2. **Neutral to Moderate Importance**: A smaller segment of respondents (16.7%) gave a neutral rating, indicating that while they recognise the importance of EA, it might not be fully integrated or prioritised in their organisation's strategy.

3. **Low Importance**: Around 18.3% of respondents (ratings one and 2) believe that EA is not as critical. This suggests that a few organisations may either be in the early stages of formalising their enterprise architecture or may focus on other aspects of digital transformation.

Implications for Enterprise Architecture and Digital Transformation:

- **Critical Role of EA in Strategy**: With over 65% of respondents indicating that enterprise architecture plays an essential or integral role, it is clear that EA is seen as a strategic enabler of digital transformation. It provides the necessary frameworks, standards, and governance to align digital initiatives with business goals.

- **Challenges in Integration**: The 18.3% who rated EA's importance as low (ratings 1 and 2) may point to challenges in integrating enterprise architecture

within their digital transformation strategy. This could be due to organisational silos, lack of EA resources, or a limited understanding of EA's potential benefits.

- **EA Maturity**: The spectrum of responses indicates varying levels of EA maturity among organisations. Those who rate EA as integral likely have well-established EA practices that contribute significantly to digital transformation, while others may be in the process of building or refining their EA frameworks.

Recommendations:

- **Enhancing EA Involvement**: Organizations that rated EA's importance as low or neutral should consider further integrating enterprise architecture into their digital transformation planning. This could involve upskilling EA teams, promoting collaboration between EA and digital transformation leaders, and clearly defining EA's role in supporting digital initiatives.

- **EA as a Change Driver**: As EA helps align IT strategies with business objectives, organisations that recognise its value can leverage it to accelerate digital transformation by reducing complexity, ensuring scalability, and facilitating technology adoption.

In conclusion, most respondents consider enterprise architecture highly valuable, but some organisations may still underutilise its potential. Fostering greater collaboration between EA teams and digital transformation stakeholders can help organisations unlock more successful and sustainable digital outcomes.

4.1.27 Research Question Twenty-Seven

Question Q-27 relates to the maturity level of EA in the respondent's organisation.

Q-27. How do you assess the maturity level of enterprise architecture practices within your organization's digital transformation initiatives?
60 responses
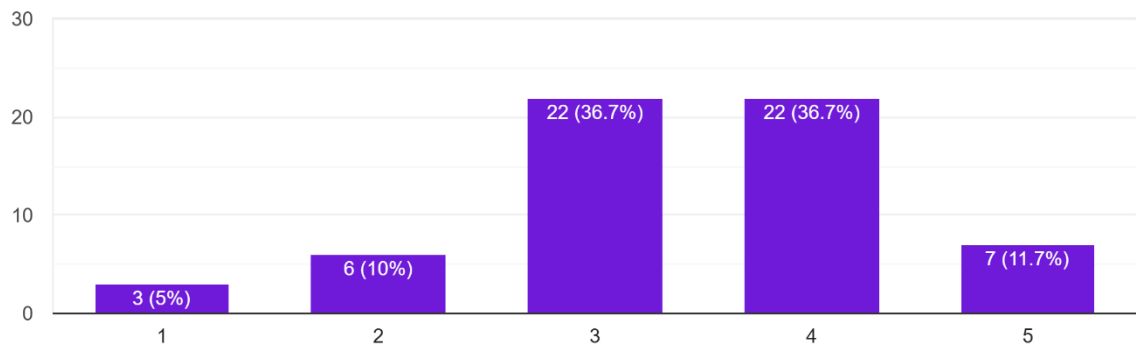
Figure 30 - Maturity level of EA practices

The chart you uploaded shows the survey results where participants were asked to assess the maturity level of enterprise architecture practices within their organisation's digital transformation initiatives. The data consists of 60 responses, categorised into five levels of maturity:

- **Level 1**: 3 responses (5%)
- **Level 2**: 6 responses (10%)
- **Level 3**: 22 responses (36.7%)
- **Level 4**: 22 responses (36.7%)
- **Level 5**: 7 responses (11.7%)

Most respondents rated their organisations at Levels 3 and 4, each making up 36.7% of the total responses, indicating a middle-to-higher maturity level. Only a few respondents rated their practices as at Level 1 or Level 5 extremes.

The survey question assesses the maturity level of enterprise architecture (EA) practices related to digital transformation initiatives across various organisations. Maturity levels are typically rated on a scale from 1 to 5, with 1 indicating a deficient level of maturity (likely initial or fragmented efforts) and 5 representing a very high level of maturity (fully optimised and integrated EA practices).

Key Observations and Breakdown of the Data

- **Level 1 (5%) – Initial Maturity**

  Only three respondents (5%) rated their EA maturity level as the lowest (Level 1). This suggests that few organisations are beginning their journey, whereas enterprise architecture practices might still be informal or ad-hoc. These organisations might have little alignment between EA and digital transformation efforts. The fact that only a tiny percentage fall into this category indicates that most organisations have surpassed this early stage.

- **Level 2 (10%) – Developing Maturity**

  Six respondents (10%) rated their EA practices at Level 2. This represents organisations where some EA practices may exist but are still developing. Enterprise architecture in these organisations might be limited in scope or applied inconsistently. The 10% result here shows that while a notable number of organisations are still evolving their EA capabilities, most have moved beyond this foundational stage.

- **Level 3 (36.7%) – Intermediate Maturity**

  The largest group, 22 respondents (36.7%), placed their organisation at Level 3. This level likely reflects organisations that have made significant progress with EA but are still not fully mature. Established frameworks and processes for enterprise architecture might exist, and EA practices actively support digital transformation initiatives. However, these organisations might still face challenges such as limited integration, siloed efforts, or gaps in governance. The large percentage here indicates that many organisations are in a transitional stage, where EA is recognised and growing but not yet fully optimised.

- **Level 4 (36.7%) – Advanced Maturity**

  Another 22 respondents (36.7%) assessed their organisation's EA maturity at Level 4, showing an equal number of organisations at an advanced level of maturity. At this level, EA is likely well-integrated into the organisation's digital strategy. EA practices are mature, aligned with business goals, and provide tangible benefits for digital transformation. This high percentage suggests that many organisations are approaching a level of EA maturity where they can strategically leverage their architecture to drive innovation, efficiency, and digital initiatives.

- **Level 5 (11.7%) – Optimized Maturity**

  Seven respondents (11.7%) placed their organisation at Level 5, the highest level of maturity. These organisations likely have fully optimised and well-governed EA practices deeply embedded in their digital transformation efforts. They may experience improved agility, more effective decision-making, and better alignment between IT and business goals. The relatively lower percentage of organisations at this level suggests that while many are progressing, only a more

minor group has reached full maturity, where enterprise architecture is a strategic asset that drives long-term innovation and competitive advantage.

Interpretation of the Results

1. **Middle Ground Dominates**:

   The most significant finding is that 73.4% of the respondents rated their organisation at Level 3 or Level 4, indicating that most organisations are either at an intermediate or advanced stage of EA maturity. This suggests that enterprise architecture is increasingly recognised as critical in digital transformation efforts. Many organisations are actively working to establish and formalise their EA practices, though they may face some barriers to complete optimisation.

2. **Limited Extreme Ends**:

   Only a small percentage of organisations (5% at Level 1 and 11.7% at Level 5) rated their maturity at the extreme ends of the spectrum. The low percentage at Level 1 shows that very few organisations are in the earliest stages, which is a positive sign for the overall state of enterprise architecture adoption. On the other hand, the relatively low number of organisations at Level 5 indicates that achieving full EA maturity remains a challenge for most.

3. **Potential Barriers to Higher Maturity**:

   The fact that many organisations are at Level 3 or 4 suggests that they may face common challenges, such as difficulty scaling EA practices, lack of enterprise-wide adoption, limited alignment with business strategies, or insufficient resources and governance structures. Transitioning from Level 3 to Level 5 often requires organisations to formalise EA governance, ensure strong leadership support, and deeply integrate EA practices into business and IT operations.

4. **Encouraging Progress**:

    The data reflects an encouraging trend. The significant number of respondents at Level 4 (36.7%) shows that many organisations have made great strides in embedding EA into their digital transformation initiatives. For these organisations, EA is about technology alignment, driving business value, and supporting strategic initiatives.

Conclusion

This survey highlights that most organisations are making solid progress in maturing their enterprise architecture practices regarding digital transformation. While a large portion are in the intermediate stages (Levels 3 and 4), only a few have achieved the highest level of maturity (Level 5), suggesting room for growth. Continued investment in EA practices, more robust governance, and alignment with broader business goals will be critical to achieve complete optimisation.

This analysis provides insight into how organisations currently view their enterprise architecture capabilities. The majority indicate a maturing yet still evolving approach to supporting digital transformation efforts.

4.1.28 Research Question Twenty-Eight

Question Q-28 relates to the lack of alignment of EA to business goals, leading to adverse EDT outcomes.

Q-28. Do you agree that lack of alignment between enterprise architecture and business goals can lead to failure in digital transformation projects?
60 responses

Figure 31 - Lack of alignment of EA to business goals leading to adverse EDT outcomes

The diagram shows the responses to a survey question about whether respondents agree that a lack of alignment between enterprise architecture (EA) and business goals can lead to failure in digital transformation projects. The data consists of 60 responses, and the agreement is measured on a scale of 1 to 5, with 1 indicating strong disagreement and 5 indicating strong agreement.

Key Observations and Breakdown of the Data

- **Level 1 (1.7%) – Strong Disagreement**

    Only one respondent (1.7%) strongly disagrees with the statement that misalignment between enterprise architecture and business goals could lead to failure in digital transformation projects. This indicates that almost no one believes that misalignment isn't a risk.

- **Level 2 (1.7%) – Disagreement**

  Another respondent (1.7%) disagrees, although not as strongly as those in Level 1. Again, this shows that only a few respondents think this isn't a serious concern.

- **Level 3 (1.7%) – Neutral**

  Only one respondent (1.7%) selected the middle option (Level 3), suggesting that few people are neutral. This suggests that most respondents have a firm opinion, with most leaning towards agreement.

- **Level 4 (38.3%) – Agreement**

  A significant number of respondents, 23 (38.3%), agree that misalignment between enterprise architecture and business goals can lead to failure in digital transformation projects. This indicates that many organisations believe that alignment is critical but perhaps not as critically urgent as those in the Level 5 category. These respondents likely acknowledge the risks of misalignment but may feel that it is one of several factors that contribute to success or failure.

- **Level 5 (56.7%) – Strong Agreement**

  The largest group of respondents, 34 (56.7%), strongly agree that failure to align enterprise architecture with business goals can lead to failure in digital transformation projects. This overwhelming majority underscores the widely accepted view that alignment between EA and business goals is crucial for digital transformation success. The high percentage here indicates that many organisations have experienced or anticipate significant risks when there is a disconnect between architecture efforts and business strategies.

Interpretation of the Results

1. **Strong Consensus on the Importance of Alignment**:

   95% of respondents agree or strongly agree that misalignment between enterprise

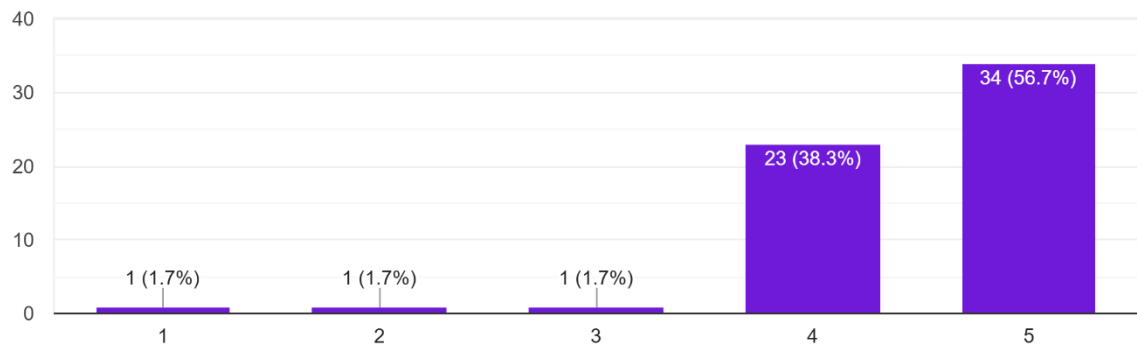architecture and business goals can lead to failure in digital transformation projects (Levels 4 and 5 combined). This near-consensus suggests that alignment is a critical success factor, with most organisations recognising that digital transformation cannot succeed if enterprise architecture doesn't closely follow business objectives.

2. **Minimal Disagreement or Indifference**:

Only 3 out of 60 respondents (5%) selected Levels 1, 2, or 3, indicating some form of disagreement or neutrality. Only 5% of respondents are not concerned about this alignment issue, which suggests that it is widely regarded as essential for organisational success. The minimal number of respondents in these categories likely reflects that even in organisations where enterprise architecture is still maturing, there is a strong understanding of the importance of aligning technology with business goals.

3. **The Role of EA in Digital Transformation**:

Enterprise architecture provides the framework that helps align technology and digital initiatives with the overall business strategy. Organisations with mature EA practices will likely ensure business goals guide their digital transformation efforts. The high percentage of agreement in the survey indicates that organisations understand the role EA plays in ensuring that digital transformation is not just about implementing new technology but about using technology to achieve business objectives.

4. **Risks of Misalignment**:

The results show that organisations perceive real risks if enterprise architecture is not aligned with business goals. Misalignment could lead to project failure, wasted resources, and missed opportunities. For example, a digital transformation

project could introduce new technologies that don't align with the company's long-term strategy or fail to integrate with existing systems, ultimately hindering rather than helping the organisation's growth.

5. **The Importance of Strategic Integration**:

   The high level of agreement suggests that many organisations know the need to integrate enterprise architecture into their strategic planning processes. EA closely aligns with business goals and ensures that technology investments are purposeful and drive value. Conversely, misalignment could lead to siloed efforts, where technology projects are carried out in isolation, with little consideration for their impact on the broader business.

6. **High Priority for Organizations**:

   Since more than half of the respondents (56.7%) strongly agree that misalignment is a critical factor, many organisations are likely prioritising the alignment between EA and business goals as a top concern. These organisations might be actively working to enhance the integration between their IT and business teams, ensuring that technology is an enabler of their strategic goals rather than a roadblock.

Conclusion

The data reveals a near-universal agreement among respondents that enterprise architecture must align with business goals to avoid failure in digital transformation projects. The fact that over 95% of respondents agree or strongly agree with this statement underscores how critical this alignment is to organisational success. Digital transformation is not just about implementing new technologies—it's about using those technologies to achieve business outcomes, and enterprise architecture plays a crucial role in ensuring those outcomes are realised.

In summary, most organisations acknowledge that misalignment between EA and business goals can derail their digital transformation efforts, making it imperative for businesses to closely integrate their architecture and technology strategies with broader business objectives. This strong consensus highlights the need for EA to be a strategic driver in digital transformation initiatives, ensuring technology investments directly support the company's goals and long-term vision.

4.1.29 Research Question Twenty-Nine

Question Q-29 relates to applying EA principles to decisions in EDT.

Q-29. Do you believe that applying enterprise architecture principles such as "Alignment with Business Goals", "Standardization and Integration" a...ent decisions in digital transformation projects?
60 responses
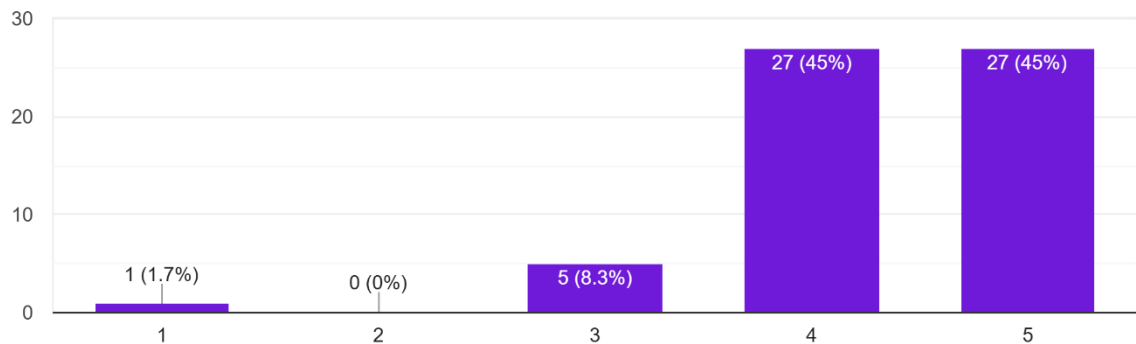
Figure 32 - Applying EA principles to decisions in EDT

The chart you provided shows the results of a survey asking respondents whether they believe that applying enterprise architecture (EA) principles such as Alignment with Business Goals,   Standardization and Integration, and others affect decisions in digital

transformation projects. The survey had 60 responses, and the results were distributed across five levels of agreement, ranging from strong disagreement to strong agreement.

Key Observations and Breakdown of the Data

- **Level 1 (1.7%) – Strong Disagreement**

  Only one respondent (1.7%) strongly disagrees that applying EA principles impacts decisions in digital transformation projects. This suggests that almost everyone recognises some value in applying these principles.

- **Level 2 (0%) – Disagreement**

  There are no respondents in Level 2, indicating that none of the participants outright disagreed. The absence of responses here reinforces the agreement that EA principles are essential.

- **Level 3 (8.3%) – Neutral**

  Five respondents (8.3%) selected Level 3, indicating a neutral stance. These respondents may see some benefit to applying EA principles but may not feel strongly that they are essential or critically impactful in digital transformation decision-making.

- **Level 4 (45%) – Agreement**

  A significant portion of respondents, 27 people (45%), agree that applying EA principles such as alignment with business goals, standardisation, and integration impacts decisions in digital transformation projects. These respondents likely believe that while EA principles are essential, other factors may influence these projects' decision-making.

- **Level 5 (45%) – Strong Agreement**

  An equal number of respondents, 27 (45%), strongly agree that applying EA principles is crucial in influencing decisions in digital transformation projects.

This group sees EA principles as a foundational aspect of successful digital transformation, highlighting the belief that alignment, standardisation, and integration are key drivers of success.

Interpretation of the Results

1. **Overwhelming Consensus on the Importance of EA Principles**:

   With 90% of respondents (Levels 4 and 5 combined) agreeing or strongly agreeing that applying EA principles affects decisions in digital transformation projects, there is a clear consensus that EA principles are crucial. The fact that nearly half of the respondents strongly agree (45%) suggests that for many organisations, the connection between EA principles and successful digital transformation is direct and undeniable.

2. **Minimal Disagreement or Neutrality**:

   The minimal number of respondents who strongly disagree (1.7%) or are neutral (8.3%) further emphasises the substantial agreement among most participants. This indicates that most respondents recognise the value of EA principles in guiding and shaping digital transformation initiatives. The small percentage of neutral responses suggests that while some organisations may not fully understand or experience the benefits of EA, very few outright reject its relevance.

3. **The Role of EA in Shaping Digital Transformation**:

   The high level of agreement reflects the belief that enterprise architecture is more than just a framework for IT governance—it plays an essential role in ensuring that digital transformation efforts are aligned with business goals and operational requirements. EA principles like standardisation and integration help to avoid fragmented or siloed technology implementations, ensuring that digital transformation is strategic and cohesive across the organisation.

4. **Why EA Principles Are Key to Decision-Making**:

   - **Alignment with Business Goals** ensures that digital transformation initiatives support and drive the organisation's strategic objectives rather than being just IT-driven projects. When business and IT are aligned, investments in technology provide more excellent value.

   - **Standardization** is essential because it ensures that systems and processes across the organisation are consistent and interoperable. This reduces complexity and enhances the ability to scale solutions.

   - **Integration** ensures that various systems and processes work together seamlessly, which is crucial for achieving the operational efficiencies that digital transformation promises. Digital initiatives can become disjointed without integration and fail to deliver the intended value.

5. **EA as a Strategic Enabler**:

   The strong consensus on the importance of EA principles suggests that organisations increasingly view enterprise architecture not as a back-office function but as a strategic enabler that guides digital transformation efforts. By applying EA principles, organisations can make informed decisions that balance innovation with operational stability, helping to ensure that digital initiatives are both sustainable and scalable.

6. **Challenges of Applying EA Principles**:

   While the overwhelming agreement points to the importance of EA principles, the neutral responses may reflect organisations struggling to implement or realise the benefits of EA in practice fully. For some, there may be barriers such as organisational silos, limited resources, or challenges in aligning diverse

stakeholder needs. These challenges can prevent EA principles from being fully integrated into decision-making processes.

Conclusion

The survey results reveal a strong consensus that applying enterprise architecture principles significantly affects decisions in digital transformation projects. Most respondents (90%) agree or strongly agree that principles like alignment with business goals, standardisation, and integration are essential for guiding digital transformation efforts. These principles help ensure technology initiatives support business objectives, reduce complexity, and enable seamless integration across systems and processes.

The minimal disagreement or neutrality further underscores the importance of these principles in shaping successful digital transformation. The data suggests that organisations that embrace and apply EA principles are better positioned to navigate the complexities of digital transformation, ensuring that their technology investments are aligned with their strategic goals and deliver long-term value.

4.1.30 Research Question Thirty

Question Q-15 relates to the survey respondents' view of strategies or measures for successful EDT outcomes.

Q-30. What strategies or measures should organisations implement to effectively mitigate the risks of failure in digital transformation projects?   (optional)19 responses

ID	Strategies and Measures for successful EDT outcomes
1	Organisations can design trainings and workshops to onboard employees on the EDT journey.
2	Training and Leadership Intent
3	Willing to take a minimal risk and not follow a hierarchical decision
4	Align business goals, cost structure, and resource optimisation as daily practices.
5	Acceptance of change and support from management
6	Training and knowledge transformation is the key.
7	Commitment to business goal as opposed to technical goal
8	Clear enterprise architecture documentation & process flow blueprints.
9	Strong governance, reviews and implementation rigour
10	Always consider the non-happy or reverse flows.
11	Clear cloud adoption
12	Business goals should align with technological innovations to meet digital transformation projects.
13	Leadership buy-in and sufficient investment.
14	Invest in innovation rather than looking at organisational goals. Catch up with the technology before it's too late. Organisations would never find

	the impact without investing in new and innovative solutions. Try things, fail fast and move on, rather than never try.
15	Infrastructure, licensing, data, and migration strategies should align with the roadmap and vision, which should not evolve much.
16	Closely align with business strategy and opportunities.
17	In most cases, Digital Transformation is required due to changing customer expectations, and ignoring these changes over a more extended period of time requires a much more significant step in a shorter period. It should start with the customer, clear, defined business goals split into micro goals to validate iteratively if we are going in the right direction. The rest could be considered details, including tools and architecture.
18	Change management and communication
19	Focus on empowering people and building a bottom-up culture, along with top-down strategy and architecture governance.

Table 10 - Strategies or measures for successful EDT outcomes

The survey question on strategies to mitigate the risks of failure in digital transformation projects gathered 19 responses, offering various insights. Below is a summarised analysis of the key themes:

1. **Training and Employee Onboarding**:
   - o Organizations should prioritise designing training programs and workshops to onboard employees into the digital transformation (DT) journey, ensuring they are well-equipped for the change.
   - o Knowledge transformation and consistent training are critical elements to drive successful transformation.

2. **Leadership and Governance**:

   o Strong leadership buy-in is essential, with management support and commitment to business goals being crucial factors.

   o Leadership must be willing to take calculated risks, emphasising not following rigid, hierarchical decision-making processes.

   o Strong governance, regular reviews, and rigorous implementation are necessary for managing risks.

3. **Alignment with Business Goals**:

   o Several respondents stress aligning DT initiatives with clear business goals rather than solely focusing on technical objectives. This includes aligning cost structures, resources, and daily practices with the business vision.

   o Business goals should also be closely linked with technology innovations to meet the ultimate objectives of DT projects.

4. **Clear Documentation and Strategy**:

   o Having well-documented enterprise architecture, process blueprints, and cloud adoption strategies is highlighted as critical for managing transformation.

   o A focus on infrastructure, licensing, and data migration strategies aligned with long-term roadmaps is emphasised to reduce project risks.

5. **Change Management and Communication**:

   o Change management and effective communication are essential to gaining organisational acceptance of the transformation. This includes support from leadership and an environment where employees are encouraged to adapt to change.

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6. **Innovation and Agility**:
   - A culture of innovation is necessary, with the willingness to invest in new solutions. Organisations should be prepared to fail fast and move on, using an agile approach to innovation and problem-solving.
   - The focus should be on both top-down governance and bottom-up empowerment, encouraging a culture of participation at all levels.

7. **Customer-Centric Approach**:
   - Respondents recommend starting the DT journey by addressing changing customer expectations, setting clear, defined business goals, and validating progress through micro-goals.
   - It is essential not to ignore customer-driven changes, which may require a faster and more significant transformation effort.

In conclusion, organisations can mitigate the risks of digital transformation failures by investing in employee training, ensuring strong leadership and governance, aligning transformation efforts with business goals, maintaining clear documentation, promoting innovation, managing change effectively, and staying customer-focused throughout the transformation process.

4.1.30 General Comments from Survey respondents

The following is a section on General Comments from Survey respondents.

Do you have any additional comments or insights you would like to share regarding the shortcomings of digital transformation initiatives and the role of decision variables such as Enterprise Architecture, Ethical ESG and Meaningful Innovation? (optional)11 responses

ID	General Comments
	EDT's success relies heavily on the organisation's focus on EA.
	While organisations have many initiatives, they often fail due to employees' lack of proper intent and alignment with ethical practices. Leadership must be an example and motivate staff to make their contributions more meaningful and valuable.
	Technology is changing so rapidly that it's challenging to match it.
	Not really, at this point. There is a lot to understand about the importance of Enterprise Architecture in the success of Digital Transformations.
	One solution will not be standard across all lines of business, especially when multiple ERP platforms support an organisation.
	Proper training and efficiency in implementation are required.
	Independence of enterprise architecture from the rest of the IT organisation
	Ethical ESG frameworks help build viable business models.
	Sometimes, the EA discussion overlooks business use cases' priority, speed, and criticality. This needs to be addressed early on.

	Some questions were inexperienced as suggestive/steering by asking, Do you agree… It is pretty architecture / tech-focused, which raises the question of whether the research is about digitisation or digital transformation. However, it could be that we have a different perception of the term digital transformation, as there are plenty of flavours.
	Focusing on addressing business problems using technology as a means to achieve better results, many organisations focus on technology and fail with business problems.

Table 11– General Comments

4.2 Summary of Findings

The research survey captured insights from individuals worldwide with significant decision-making authority in digital transformation initiatives. Responses emphasised the importance of proper enterprise architecture interventions, including ESG, Discovery, Enterprise architecture tools and diagrams, and clear documentation. This suggests that visual clarity and high-level strategic alignment in enterprise architecture are crucial in ensuring success in enterprise digital transformations.

Process complexity and lack of skilled resources: Participants noted that process heaviness, inadequate personnel, and alignment between business and technical goals are significant hurdles.

Leadership and strategic misalignment: There is also a concern over a lack of clear leadership, understanding, and business alignment when making IT decisions.

4.3 Conclusion

In conclusion, the research survey gathered various responses emphasising the need for better enterprise architecture (EA) interventions to support EDT. Some noted that initiatives often fail due to rapid technological changes and misaligned goals, while others suggested that EA frameworks need to factor in ESG (Environmental, Social, and Governance), which could help develop green and sustainable transformation models.

Enterprise Architecture (EA) (and related variables like EA Strategy, EA Discovery, ESG, EA Change Management, and Governance) are key decision variables that impact the outcomes of Enterprise Digital Transformation (EDT). As a Harvard study in 2018 reported, EA negligence is likely a key contributor to the failure rate of EDT, which is over 70% globally.

CHAPTER V:

DISCUSSION

Many decision variables exist in various organisations and can vary depending on the organisation's ecosystem. Nevertheless, a few key decision variables can significantly impact and are often not given the attention they deserve. No two organisations can be compared and subjected to the same interventions to enable successful Enterprise Digital Transformation (EDT).

In this study, we have researched whether Enterprise Architecture (EA)- related variables are critical success factors for any Enterprise Digital Transformation (EDT).

Organisations often undertake limited-scope Digital Transformations. Enterprise Stakeholders are expected to achieve quicker ROIs. Hence, they tend to ignore key decision variables that could potentially negatively impact the P&L and Revenue Growth. Enterprise architecture-related variables can be considered one such category of decision variables.

We have a holistic view of the enterprise before venturing into large-scale digital transformation initiatives. It is essential to understand the enterprise landscape and the architecture of the entire organisation, right from business goals & capabilities across various departments, geographic locations and regional markets/establishments/factories. Ignoring these can lead to cost overruns and substantial maintenance costs, especially concerning contracting, licensing, resourcing and integrations. The enterprise gradually becomes a complex ecosystem if the importance of efficient EA management and governance is not recognised. In the following sections, we will provide details based on the results from the previous chapter.

Building on insights from earlier research, the survey reveals that many respondents identify Enterprise Architecture as a critical factor in the success of digital

transformation efforts. Effective interventions span from establishing a clear EA strategy through thorough discovery of existing architecture to robust governance and change management. The success of these strategies is closely linked to the maturity of the enterprise's governance and change management practices. The study delves into the specific components of Enterprise Architecture, analysing key factors contributing to high failure rates in EDT and outlining potential interventions to mitigate these risks in future digital transformation initiatives.

The research survey's data visualisation shares insights on the strategic, technical, and personnel challenges organisations encounter during digital transformation. It highlights the critical importance of clear leadership, thorough documentation, and aligning business objectives with technological advancements.

We have seen recent developments in the telecommunications sector, which is at the forefront of technological evolution. It is driven by an insatiable demand for faster, more reliable telecom (5G, 6G, data, ISP, wireless, internet, broadband, satellite, OTT, mobile, etc.) services and a seamless user experience. As the necessity for global connectivity grows, telecom companies encounter the dual challenge of rapidly innovating while maintaining robust, scalable, and secure infrastructures. EDT initiatives are focused on driving customer experience through seamless omnichannel engagement and personalisation, operational efficiency through automation and cloud adoption and new and innovative revenue streams.

Project Kuiper is Amazon's satellite constellation initiative that promises to provide fast, affordable broadband to communities worldwide that are currently unserved or underserved by traditional internet and communications options. To achieve this goal, Amazon is expected to deploy thousands of satellites in low Earth orbit (LEO) linked to a global network of antennas, fibre, and internet connection points on the ground. Space

safety and sustainability are said to be the core tenets of Project Kuiper. Large Enterprises are expected to lead by example in adopting ESG initiatives.

Yet another entrant in this space is Starlink, which also claims to be the world's first and largest satellite constellation using a low Earth orbit to deliver broadband internet capable of supporting streaming, online gaming, video calls, and more. It leverages advanced satellites and user hardware and coupled with our deep experience with spacecraft and on-orbit operations, Starlink delivers high-speed, low-latency internet to users worldwide.

The above two initiatives by Starlink and Amazon are perfect examples wherein Enterprises recognise that ESG alignment is non-negotiable and has to be the critical driver of EDT initiative. These are good examples of enterprises aligning to the social & environmental aspects of ESG. An enterprise architecture function in an organisation, with its built-in frameworks and tools, can help make digitally-enabled ESG decisions easier and steer the organisation towards its ESG goals.

Often, Enterprises find themselves compromising the planning for an Enterprise Architecture Discovery. Imagine undertaking a long road trip without understanding the basics of the vehicle you are travelling on. This is similar to implementing an enterprise-scale EDT. It is essential to understand the enterprise landscape before venturing into EDT. You could look at being productive by adopting tools like the Enterprise Architecture Discovery Accelerator, where you will not have to deploy your team to work with the client team physically. Instead, you could share the accelerator with the stakeholders to gain insights into the Enterprise Architecture.

This can help the team better understand the EA and make more informed decisions about the EDT, which are critical to its success.

Enterprise Architecture unites strategic and operational teams, enabling organisations to achieve their business objectives. It serves as a powerful decision engine, combining robust modelling with the management of business capabilities, application portfolios, information portfolios, and technology portfolios.

Enterprise Architecture Discovery helps you decide whether to invest, sustain, or replace applications based on the business need to be aligned towards the organisation's goal. You can address business challenges such as:

- Redundant applications for similar functions.

- Increasing cost of owning and maintaining applications.

- Increasing demand to upgrade the existing applications for new functions.

- Conflict between in-house legacy applications and that of the vendors.

- Inadequate performance because of outdated applications.

With these enterprise architecture processes, we can overcome these challenges, improve business functions efficiently and smoothly, and optimise cost.

As part of the Enterprise Architecture Governance, the Enterprise Architecture Review Board (EARB) is crucial for an organisation to ensure consistent governance, technical alignment, and the maintenance of architectural standards. Respondents to the survey have strongly highlighted this. The specific focus has been on achieving the following:

1. Ensure Architectural Consistency

2. Align Technology & Business Strategy

3. Facilitate Risk Management and Compliance

4. Drive Meaningful Innovation and Best Practices

5. Provide Technical Oversight and EA Governance

6. Influence Collaboration Across Teams

7. Rationalize & Optimize Use of Technology Resources

8. Support Change Management and Flexibility

The following section discusses how organisations can address some enterprise architecture concerns.

5.1 Ensure Architectural Consistency

The objective is to promote a unified architectural approach across projects and systems, ensuring compatibility and reducing technical debt. This helps avoid fragmented or inconsistent architectures leading to integration challenges or inefficiencies. To achieve this goal, the enterprise can implement the following strategies through its Architecture Review Board (EARB):

1. Define and Standardize Architectural Frameworks by establishing a set of architectural principles, frameworks, and patterns that must be followed across all projects (e.g., TOGAF). This will guide all teams on design approaches, ensuring uniformity in the architectural process.

2. Create and Enforce Architectural Standards and Guidelines by developing and documenting standards for system design, APIs, data modelling, security protocols, and technology stacks. These should be easily accessible (e.g., stored in a shared repository like Confluence or SharePoint). This will ensure teams follow consistent approaches, technologies, and design practices across all projects.

3. Implement a Centralized Repository for Architectural Artefacts by using a central repository (e.g., GitHub, Bitbucket, or internal platforms) to store architectural artefacts, templates, and reference models all teams can refer to. This creates a single source of truth for architectural decisions and artefacts, ensuring consistency across projects.

4. Conduct Regular EARB Reviews and Audits for all major architectural decisions for ongoing and new projects and evaluate solutions against established standards. This will keep projects aligned with organisational and architectural goals and ensure deviations are identified and addressed early in the project lifecycle.

5. Influence Communication and Knowledge Sharing by facilitating collaboration among architects across teams through regular meetings, knowledge-sharing platforms (e.g., internal forums), and architectural review sessions. This will promote knowledge sharing, reduce the likelihood of inconsistent design choices, and encourage using proven architectural solutions.

6. Provide Training and Education on Standards by offering architects, engineers, and developers training on the organisation's architectural principles, patterns, and guidelines. This will ensure everyone involved in architectural decisions is well-versed in the approved frameworks and practices.

7. Monitor and Measure Adherence to Standards by developing metrics and KPIs to track adherence to architectural standards (e.g., number of deviations, projects following guidelines, etc.). Automate checks where possible, using tools to flag inconsistencies in design or implementation. This will help ensure that teams consistently adhere to approved standards and make identifying and correcting issues easier.

8. Implement a Review and Feedback Loop to continuously gather feedback from project teams and architects on the relevance and effectiveness of architectural standards. Considering the ever-changing technology landscape, use this feedback to evolve and refine the standards. This will keep the architectural standards relevant and aligned with growing business and technology needs, ensuring long-term consistency.

By implementing these practices, the organisation can systematically enforce architectural consistency across its projects, reducing technical debt, improving integration, and ensuring long-term scalability and maintainability.

5.2 Align Technology & Business Strategy

The objective is to ensure that all architectural decisions align with the organisation's broader business goals, strategies, and objectives. This enables IT to support business outcomes and long-term goals effectively.

Organisations should focus on integrating technology planning with their business objectives to achieve this goal through their EARB. They can accomplish this by:

1. Involving Business Stakeholders in the EARB

Include key business leaders, product owners, and strategy teams in EARB meetings to provide insights on business goals, market trends, and customer needs. This will help ensure that architectural decisions directly support business priorities and align technology initiatives with business strategy.

2. Translate Business Goals into Technology Requirements

Work closely with business units to break down high-level business objectives into specific technology requirements (e.g., growth scalability and product innovation flexibility). This will clarify how technology can support business strategies, ensuring technology investments focus on achieving measurable business outcomes.

3. Establish a Business-Technology Alignment Framework

Create a formalised framework or checklist that ensures all architectural decisions are evaluated based on their alignment with business strategy (e.g., TOGAF's Business Architecture phase). This can help EARB members assess whether each

technology solution or project supports the company's business objectives, such as revenue growth, customer experience, or operational efficiency.

4. Prioritize Strategic Projects for EARB Review

Prioritise reviewing projects closely tied to business strategy, such as digital transformation initiatives, customer experience improvements, or cost reduction efforts. This will help focus the EARB's efforts on the projects most critical to business success, ensuring these initiatives receive sufficient technical oversight.

5. Measure Technology Impact on Business Outcomes

Establish metrics to track how technology decisions impact business KPIs (e.g., revenue growth, customer satisfaction, market share, time-to-market). This will help create a direct link between architectural decisions and business performance, enabling the EARB to adjust technology direction based on real-world business results.

6. Ensure Flexibility for Future Business Changes

Design architecture with flexibility in mind to accommodate future business needs, such as the ability to pivot to new business models or enter new markets. This will support business agility and innovation by ensuring that technology can evolve as the business strategy grows.

7. Align Technology Roadmaps with Business Strategy

Develop and maintain a technology roadmap directly aligned with the business strategy and ensure the EARB regularly reviews it. This helps ensure that the organisation's technology investments align with its long-term business plans, fostering strategic alignment.

8. Facilitate Regular Business-Technology Strategy Reviews

Hold regular reviews between business leaders and EARB members to assess progress and ensure that business and technology strategies remain aligned. This helps keep the organisation's technology initiatives on track and responsive to any shifts in business strategy, market conditions, or competitive pressures.

9. Leverage Business Architecture Models

Use business architecture models (e.g., capability maps, value streams) to map technology solutions to specific business capabilities and objectives. This represents how technology supports each part of the business, ensuring the architecture serves critical business needs.

10. Embed Business Value in Technology Governance

Make business value a core criterion in the EARB's technology decision-making process, ensuring that every project contributes directly to the business's strategic goals. This will help prioritise projects that deliver the highest business value, creating a more impactful and aligned technology portfolio.

By fostering close collaboration between business and technology teams and aligning architectural decisions with measurable business outcomes, enterprises can ensure that technology investments directly support their business strategy, driving competitive advantage and long-term success.

5.3 Facilitate Risk Management and Compliance

The objective is to identify and mitigate architectural risks (e.g., security, scalability, compliance) early in the project lifecycle. This will help reduce the likelihood of costly rework, vulnerabilities, and compliance issues in the future.

Organisations must embed risk assessment and compliance checks into the architectural review process to achieve this goal through the EARB. They can accomplish this by:

1. Incorporating Risk Assessment into the EARB Process

Develop a formal risk assessment framework for evaluating architectural decisions. This should include security, operational risks, technology obsolescence, scalability, and vendor dependencies. This will ensure that risk considerations are consistently evaluated for every project, enabling early identification and mitigation of potential risks.

2. Define Risk Categories and Evaluation Criteria

Create a standardised set of risk categories (e.g., security, privacy, legal, compliance, operational, financial) and corresponding evaluation criteria. The EARB can use this as a checklist to assess the risk level of each project. This ensures a comprehensive and consistent approach to identifying risks across all projects.

3. Integrate Security and Compliance Standards

Establish security and compliance guidelines (e.g., ISO 27001, GDPR, SOC 2) that must be adhered to in all architectural designs. Ensure the EARB includes a security or compliance officer to assess solutions against these guidelines. This will help ensure that all architectural solutions meet organisational and regulatory requirements, reducing the risk of compliance breaches and security vulnerabilities.

4. Develop a Compliance Checklist for EARB Reviews

Create a compliance checklist that must be completed during EARB reviews. This could include regulatory requirements (e.g., data privacy laws, industry

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standards), internal governance policies, and security protocols. It ensures compliance requirements are systematically checked during project reviews, reducing non-compliance risk.

5. Monitor and Manage Technical Debt

Implement a process for evaluating the potential technical debt created by architectural decisions. This could include using outdated technologies, lack of documentation, or insufficient testing. It helps the EARB proactively manage and minimise technical debt, reducing long-term risks related to maintainability and scalability.

6. Engage Experts for Specialized Risk Areas

For projects involving high-risk areas (e.g., security-critical systems, heavily regulated industries), bring subject matter experts (e.g., legal counsel, cybersecurity experts, compliance officers) to the EARB reviews. It helps ensure that high-risk and compliance-heavy projects receive the appropriate level of scrutiny and that architectural decisions are guided by expert input.

7. Implement a Risk Mitigation and Tracking System

Create a process for documenting identified risks during the EARB reviews and assigning mitigation actions. Use a tool (e.g., Jira, Confluence) to track risks and their resolutions over time. It provides visibility into ongoing risks and ensures they are actively mitigated and monitored throughout the project lifecycle.

8. Establish Risk Tolerances and Decision-Making Guidelines

Define acceptable risk levels for different types of projects (e.g., low-risk vs. high-risk projects) and outline a decision-making process for when risk levels are exceeded. This should include escalation paths and approval mechanisms. This

creates clear guidance for how risks are managed, escalated, or accepted, ensuring consistency in decision-making.

9. Audit and Review Risk Management Practices

Regularly audit projects post-completion to assess whether the risks identified during the EARB process were mitigated correctly. Review the effectiveness of risk management practices and refine them based on lessons learned. Learning from past projects helps improve the EARB's risk management framework, leading to more effective risk identification and mitigation in future projects.

10. Foster a Culture of Risk Awareness and Proactive Management

Encourage teams across the organisation to prioritise risk management in their day-to-day work. Conduct training on risk identification and mitigation and make risk management part of the project culture. This promotes a proactive risk management culture, where risks are anticipated and mitigated early rather than addressed reactively.

11. Develop Incident Response and Contingency Plans

Ensure the EARB requires contingency and incident response plans for critical systems or high-risk projects. This includes plans for disaster recovery, data breaches, and compliance failures. This ensures the organisation is prepared to respond effectively to materialise risks, minimising the impact on business operations and compliance obligations.

By embedding risk management and compliance practices into the architecture review process, enterprises will meet regulatory requirements and minimise the likelihood of costly security incidents and operational disruptions, leading to more robust and resilient technology solutions.

5.4 Drive Innovation and Best Practices

The objective here is to encourage the adoption of modern technologies, frameworks, and architectural patterns while maintaining best practices. It balances innovation with standards, enabling scalable and maintainable solutions.

To help organisations achieve this goal through the EARB, they should create a culture that encourages experimentation and the adoption of cutting-edge meaningful solutions while maintaining technical excellence. They can accomplish this by:

1. Encouraging Experimentation with Emerging Technologies

Allocate time and resources for R&D initiatives that explore new technologies, frameworks, or methodologies (e.g., AI, blockchain, microservices, MACH architecture). This encourages innovation by allowing teams to experiment and identify opportunities for technology advancements that align with business goals.

2. Establish a Sandbox Environment for Prototyping

Provide a sandbox environment where architects and developers can safely experiment with new technologies, architectures, and best practices without affecting production systems. This fosters a culture of innovation by giving teams a low-risk environment to prototype new solutions and validate their feasibility before adoption.

3. Adopt an Innovation Framework

Implement an innovation framework (e.g., design thinking, Lean startup) within the EARB process to evaluate and prioritise innovative ideas that can potentially deliver business value. This ensures that the EARB systematically identifies and fosters the most promising and meaningful innovative ideas while balancing innovation with strategic goals.

4. Regularly Review Industry Trends and Emerging Best Practices

Keep the EARB up-to-date with industry trends and best practices through ongoing market research, attending conferences, and networking with industry peers. Incorporate external expertise (e.g., consultants, analysts) as needed. This will help ensure that the EARB stays current with the latest technology trends and can integrate cutting-edge solutions that provide a competitive advantage.

5. Facilitate Knowledge Sharing and Collaboration Across Teams

Create forums (e.g., innovation workshops, cross-team architectural reviews) where teams can share successful innovations and best practices with the broader organisation. This promotes cross-functional collaboration, knowledge sharing, and the reuse of innovative ideas and proven solutions across multiple projects.

6. Define and Enforce Best Practice Standards

Establish best practice guidelines for architecture, coding, security, and deployment based on industry standards (e.g., SOLID principles, cloud-native architecture, DevOps practices). Ensure that EARB reviews evaluate adherence to these best practices. This improves the overall quality and consistency of technology solutions while ensuring that innovations are built on a foundation of proven technical excellence.

7. Leverage Open Source and External Tools

Promote open-source software and external tools that offer cutting-edge solutions or address complex architectural challenges. Encourage contribution to open-source projects to stay engaged with the broader innovation community. This enables the organisation to leverage technological advances and contribute to external innovation ecosystems.

8. Recognize and Reward Innovation

Implement a recognition program within the organisation to celebrate innovative solutions that have been successfully adopted and have positively impacted the business. These could be awarded for technological innovation, process improvement, or best practices. This can create a culture that values and encourages innovation, motivating teams to continuously push the boundaries of what's possible.

9. Adopt a Kaizen (Continuous Improvement) Mindset

Establish a feedback loop where lessons learned from past projects are analysed and integrated into future architecture decisions. Encourage teams to refine and evolve their solutions continuously based on this learning. This drives ongoing innovation by ensuring the organisation constantly learns from experience and refining its approaches.

10. Implement Metrics to Measure Innovation and Best Practice Adoption

Define metrics to measure the impact of innovation and best practice adoption (e.g., reduction in technical debt, improved performance, faster time to market). Track these metrics and report them regularly to the EARB and senior leadership. This provides a data-driven approach to ensuring that innovations deliver measurable business value and that best practices are consistently adopted across teams.

11. Create a Tech Radar for Monitoring Innovations

Develop an internal Tech Radar or similar tool to track emerging technologies, tools, and techniques the organisation is experimenting with or plans to adopt. Iteratively review and update it based on experiment outcomes. This helps the EARB and the organisation stay aligned with the most relevant and strategically

beneficial innovations, ensuring a structured approach to adopting new technologies.

12. Partner with Innovation Hubs or Startups

Build partnerships with startups, universities, or innovation hubs to access cutting-edge technology ideas, resources, and talent. Consider running innovation challenges or hackathons to stimulate creative solutions. This helps tap into external innovation ecosystems, bringing new perspectives and technologies into the organisation's architectural landscape.

Enterprises can drive technological advancements while ensuring architectural integrity and business alignment by embedding innovation and best practices into the EARB's processes and fostering a culture that rewards experimentation and continuous learning.

5.5 Provide Technical Oversight and Governance

The objective is to offer a formal process for reviewing, approving, or adjusting architectural decisions and solutions. This will help establish a clear governance framework, ensuring transparent, well-documented, and accountable choices.

To help Enterprises achieve this goal through the EARB, they need to establish robust processes, enforce standards, and continuously monitor projects for adherence to architectural principles. They can accomplish this by:

1. Defining and Enforcing Architecture Principles

Establish clear architectural principles and guidelines for all projects (e.g., modular design, scalability, security-first approaches). This ensures project

consistency and provides a framework for making informed architectural decisions that align with the organisation's long-term goals.

2. Create a Clear Governance Structure

Define the EARB's role, responsibilities, and decision-making authority. Set up a governance framework that details how decisions are made, who is accountable, and how escalations are handled. This clarifies how technical oversight is managed, reducing ambiguity and ensuring all projects follow a consistent governance process.

3. Conduct Regular Architecture Reviews

Schedule regular architecture review sessions for all major projects. These reviews should assess compliance with architectural standards, project alignment with business goals, and potential risks. This ensures ongoing technical oversight, allowing early identification and correction of issues affecting the solution's quality, scalability, or compliance.

4. Establish a Decision-Making Framework

Develop a formal decision-making framework for the EARB that includes criteria for evaluating architectural choices (e.g., business impact, cost, risk, scalability, compliance). This will ensure that technical decisions are made based on a structured and objective evaluation process, reducing the risk of ad hoc or inconsistent decisions.

5. Monitor Observance of Standards and Best Practices

Implement tools and processes to continuously monitor ongoing projects for observance of architectural standards and best practices. This could include automated code reviews, static analysis tools, or regular audits. This ensures that

projects comply with technical guidelines throughout their lifecycle, reducing the likelihood of technical debt or security issues.

6. Foster Communication Between Development Teams and the EARB

Create open communication channels between development teams and the EARB to facilitate regular updates, provide guidance, and resolve issues quickly. This will ensure that development teams have the support they need to align their work with architectural standards and prevent the EARB from becoming a bottleneck in project delivery.

7. Develop Technical KPIs and Metrics

Establish key performance indicators (KPIs) to measure the success of technical governance. These could include metrics like adherence to standards, system uptime, security incidents, and time-to-market. This provides a data-driven approach to assessing the effectiveness of technical oversight and ensures that the EARB can track the health of architectural decisions.

8. Create an Architectural Knowledge Repository

Build a repository for architectural documents, decisions, templates, and best practices that can be accessed by all teams (e.g., Confluence, SharePoint). Ensure it is regularly updated and maintained. This provides a single source of truth for technical standards and governance policies, improving uniformity and making it easier for teams to align with enterprise architectural (EA) requirements.

9. Review and Approve Key Architectural Artefacts

Key architectural artefacts, such as design diagrams, data flow models, and security models, must be submitted to the EARB for approval before development. This ensures that architectural designs are thoroughly reviewed and

aligned with organisational goals before implementation, reducing costly changes later in the project lifecycle.

10. Enforce Compliance with Security and Regulatory Standards

Ensure the EARB includes checks for compliance with internal security policies and external regulatory requirements (e.g., GDPR, PCI-DSS, HIPAA). Use security audits and vulnerability scans as part of the review process. This ensures that all projects meet security and regulatory requirements, minimising the risk of breaches or legal issues.

11. Provide Oversight for Technology Choices

The EARB must review and approve significant technology choices (e.g., selecting new platforms, frameworks, or vendors) and evaluate these choices for long-term scalability, supportability, and alignment with strategic goals. This ensures that the organisation's technology stack is standardised and strategically aligned, reducing the risk of fragmentation and future integration issues.

12. Develop a Continuous Improvement Process

Implement a feedback loop where lessons learned from past projects are regularly reviewed and used to refine architectural standards and governance processes. Gather input from both the EARB and development teams. This ensures that the EARB and governance processes evolve, improving efficiency and adapting to new business needs and technological advancements.

13. Maintain Flexibility for Innovation

While enforcing governance, allow flexibility in the EARB process for innovative projects or cutting-edge technologies that may not entirely stick to to existing standards. Create a fast-track review process for innovation-focused initiatives. This balances the need for governance with innovation, ensuring that the

organisation remains agile and can adopt new technologies while maintaining control over core systems.

14. Use Tools to Support Technical Governance

Use tools like architecture management software (e.g., Sparx EA, ArchiMate), CI/CD pipelines, and project management platforms to automate governance checks and provide visibility into architectural compliance across projects. This improves governance processes' efficiency and scalability, making enforcing technical standards easier across multiple teams and projects.

By applying these strategies, Enterprises will be able to ensure strong technical oversight and governance while fostering an environment that supports consistency, compliance, and long-term scalability.

5.6 Influence Collaboration Across Teams

The objective is to bring together enterprise and solution architects, engineers, product owners, and business stakeholders to ensure cross-functional collaboration and knowledge sharing. It improves cross-team communication, reduces silos, and provides shared ownership of architectural decisions.

To help the Enterprises achieve this goal through the EARB, they should create a collaborative environment where cross-functional teams can work together effectively, share knowledge, and align their efforts toward common architectural goals. They can accomplish this by:

1. Involving Cross-Functional Teams in EARB Discussions

Include representatives from different teams (e.g., development, operations, security, business, and product management) in EARB meetings to provide

diverse perspectives. It ensures that decisions reflect input from all relevant stakeholders, fostering a sense of shared responsibility and alignment across teams.

2. Create Clear Channels for Communication

Set up dedicated communication channels (e.g., Slack, Microsoft Teams, or email groups) for teams to discuss architectural decisions, share updates, and raise questions. This facilitates transparent and open communication, making it easier for teams to collaborate and stay informed on architectural changes or issues.

3. Hold Regular Cross-Team Architecture Workshops

Organise workshops & forums where teams can discuss architectural challenges, share knowledge, and brainstorm solutions to common problems. This promotes cross-team learning and collaboration, helping teams align on best practices and innovative solutions.

4. Establish a Shared Architectural Knowledge Base

Create a centralised repository (e.g., Confluence, SharePoint) where teams can access architectural documentation, guidelines, patterns, and best practices. Ensure it is regularly updated and maintained. This provides a single source of truth for architecture-related information, making it easier for teams to collaborate and align on architectural standards and solutions.

5. Implement Joint Architecture Reviews

Facilitate joint architecture reviews where multiple teams participate to assess and provide feedback on enterprise architectural decisions that impact numerous projects or systems. This encourages collaboration by allowing teams to provide input on decisions that could affect their work, leading to better alignment and reducing the risk of silos.

6. Create Cross-Functional Architecture Working Groups

Establish working groups that bring together members from different teams to focus on specific architectural areas (e.g., microservices, security, data architecture). These groups can meet regularly to discuss improvements and standardisation efforts. This promotes ongoing collaboration between teams with different skill sets and knowledge, fostering innovation and improving architectural outcomes.

7. Encourage Knowledge Sharing and Mentorship

Create opportunities for senior architects or team leads to mentor and share their expertise with other teams. This could be done through knowledge-sharing sessions, internal tech talks, or brown-bag lunches. It encourages collaboration by spreading architectural knowledge and best practices across teams, enhancing overall technical alignment.

8. Implement a Collaborative Toolset for Architecture Development

Use collaborative architecture tools (e.g., Lucidchart, Draw.io, Miro, or ArchiMate) that allow multiple teams to contribute to and visualise architecture models in real-time. This enables teams to collaborate more effectively on architectural design, improving coordination and making it easier to align on shared goals.

9. Promote a Culture of Open Feedback and Collaboration

Foster a culture that values and encourages open feedback, where teams can freely share their opinions on architectural decisions and provide constructive input during EARB reviews. This builds trust and improves collaboration by creating an environment where team members feel valued and empowered to contribute to architectural decisions.

10. Align on Shared Architectural Goals and Vision

Develop a distinct architectural vision and communicate it to all teams. Ensure everyone understands the organisation's long-term goals and how their contributions fit the larger picture. This helps teams work towards the same goals, improving alignment and collaboration.

11. Rotate Team Members in EARB Roles

Rotate team members from different departments to serve as temporary EARB members or observers. This allows different teams to participate in decision-making and gain insights into architectural governance. This helps build stronger relationships across teams, promotes knowledge sharing, and helps break down silos by giving more people visibility into the EARB process.

12. Conduct Post-Mortem Reviews Across Teams

After major projects or architectural changes, hold cross-team post-mortem reviews to evaluate what worked well, the challenges faced, and how collaboration could be improved. This allows teams to learn from each other, improve collaboration practices, and strengthen alignment for future initiatives.

13. Celebrate Collaborative Wins

Recognise and reward successful collaboration efforts between teams, whether it's through formal awards, shout-outs during meetings, or internal communication channels. This encourages a culture of teamwork and collaboration by celebrating the positive outcomes that result from cross-team efforts.

14. Use Collaborative Agile Practices

Apply agile methodologies (e.g., Scrum of Scrums, cross-team retrospectives) that facilitate cross-team coordination and collaboration on projects that require

architectural decisions. It improves synchronisation between teams and enhances their ability to collaborate on shared architectural goals while maintaining agility in project delivery.

15. Provide Cross-Disciplinary Training and Learning Opportunities

Offer training programs that bring together developers, architects, business analysts, and other stakeholders to learn about critical architectural practices and innovations. This helps break down knowledge barriers between teams and helps them understand how their contributions affect the overall architecture, fostering a stronger sense of collaboration.

By implementing these strategies, Enterprises can create a collaborative environment where teams work together efficiently, share knowledge, and contribute to the organisation's architectural vision, driving better outcomes.

5.7 Rationalize & Optimize Use of Technology Resources

The objective is to ensure that technology resources (e.g., tools, platforms, systems) are used efficiently without duplication or redundancy. Eliminating redundant solutions helps reduce operational costs and improve resource utilisation.

To help Enterprises achieve this goal through the EARB, they must ensure that the organisation maximises the value of its technological investments, reduces waste, and aligns technology resources with business priorities. They can achieve this by:

1. Standardizing Technology Stack and Tools

Define and enforce a standardised technology stack (e.g., programming languages, frameworks, cloud platforms) that aligns with business needs. Limit the number of tools used for similar purposes to avoid fragmentation. Focusing on core technologies reduces redundancy, simplifies maintenance, and ensures

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efficient use of existing resources, not to mention reducing licensing costs and overheads.

2. Implement Capacity Planning and Resource Forecasting

Use capacity planning tools to predict and allocate the necessary resources (e.g., compute, storage, network bandwidth) for upcoming projects. Regularly review and adjust these forecasts based on project changes. This prevents resource over- or under-utilization, ensuring that projects have the right resources to meet their needs without unnecessary over-provisioning.

3. Ensure Efficient Cloud Resource Utilization

Optimise the use of cloud resources by leveraging features like auto-scaling, rightsizing instances, and using cost-saving tools (e.g., reserved instances, spot instances, or serverless computing). Regularly audit cloud usage for inefficiencies. This helps reduce cloud costs while maintaining application performance and scalability, making better use of cloud investments.

4. Adopt Virtualization and Containerization

Use virtualisation or containerisation technologies (e.g., Docker, Kubernetes) to improve server resource utilisation and reduce overhead. Consolidate workloads onto fewer servers where possible. This increases efficiency by allowing multiple applications to share resources on a single physical server, reducing hardware costs and improving deployment flexibility.

5. Promote Reuse of Existing Solutions

Establish guidelines for reusing existing technology components (e.g., microservices, libraries, APIs) and architectural patterns across different projects. Maintain a repository of reusable components. This reduces development time

and resource consumption by leveraging proven solutions, avoiding redundant efforts, and maximising the value of prior investments.

6. Consolidate Redundant Systems

Identify and consolidate redundant systems, tools, or platforms that serve the same purpose across different teams. Perform a technology audit to uncover overlap and eliminate unnecessary tools. This reduces licensing, maintenance, and support costs while simplifying the technology landscape and using organisational resources more effectively.

7. Monitor and Optimize Application Performance

Implement application performance monitoring (APM) tools to track resource utilisation (e.g., CPU, memory, network) and identify underperforming or over-utilized systems. Use the data to optimise applications for better performance and efficiency. This ensures that applications run efficiently, reducing resource waste and improving the overall user experience with minimal technology investment.

8. Adopt Automation for Resource Management

Use automation tools (e.g., Ansible, Terraform, Jenkins) to manage infrastructure as code (IaC), automatically provision resources, and streamline deployments. Implement automated shutdown for unused resources, especially in development or test environments. This increases efficiency by minimising manual intervention in resource management, reducing human error, and ensuring that resources are used only when necessary.

9. Leverage Data-Driven Decision Making

Collect and analyse data on resource utilisation, project performance, and costs. Use data analytics to drive decisions on where to allocate technology resources and identify areas for optimisation. This ensures that decisions on resource

allocation are based on actual usage patterns and business needs, improving the efficiency of resource distribution.

10. Align Resource Allocation with Business Priorities

Work closely with business stakeholders to prioritise projects based on their strategic importance. Allocate technology resources to projects with the highest business value and delay or de-prioritize lower-value initiatives. This ensures that technology resources are focused on delivering maximum business impact, avoiding wasted efforts on projects with lower returns.

11. Optimize Licensing and Subscription Costs

Regularly review software licensing, SaaS subscriptions, and other third-party technology services. Identify opportunities to renegotiate contracts, downgrade tiers, or eliminate unused licenses. This reduces ongoing technology costs and ensures that the organisation only pays for the licenses and services it needs.

12. Encourage the Use of Open-Source Solutions

Promote open-source technologies where appropriate to reduce licensing costs and increase flexibility. Establish policies for evaluating and integrating open-source software securely and efficiently. This reduces technology costs by leveraging community-driven solutions while maintaining flexibility in the technology stack.

13. Adopt Lean and Agile Practices

Implement lean and agile methodologies to improve efficiency in project delivery. Use iterative development, continuous feedback, and regular retrospectives to optimise technology resources throughout the project lifecycle. This increases the speed and efficiency of delivering technology solutions, ensuring that resources are utilised effectively at each stage of development.

14. Implement a Chargeback Model

Implement a chargeback model that allocates technology costs to the teams or departments using those resources. This can be used to track and optimise resource consumption across the organisation. It encourages teams to be more accountable and mindful of resource usage, leading to more efficient and cost-conscious decision-making.

15. Conduct Regular Architectural Reviews for Optimization

During EARB meetings, regularly review architecture designs for opportunities to optimise resource use. Look for areas to simplify systems, reduce technical debt, or improve performance. It ensures that projects are designed with resource efficiency, minimising waste and avoiding future scalability issues.

By incorporating these strategies, Enterprises can optimise the use of technology resources, reduce costs, and improve the overall efficiency of their technology operations while maintaining alignment with business goals.

5.8 Support Change Management and Flexibility

The objective is to provide a framework for evaluating and approving architectural standards and solutions changes in response to evolving business needs. This framework enables the organisation to adapt its technology landscape without sacrificing architectural integrity.

To help Enterprises achieve this goal through the EARB, they must implement processes that allow adaptability while maintaining architectural integrity and governance.

They can accomplish this by:

1. Establishing a Clear Change Management Framework

Create a structured framework for managing changes to architecture and technology, including steps for proposal, review, approval, and communication of changes. Ensure the EARB has well-defined processes for assessing and approving changes. This provides a standardised approach for handling changes, making the process predictable, transparent, and easier to manage while ensuring flexibility when responding to business or technical requirements.

2. Encourage Agile and Incremental Changes

Promote using agile methodologies within the EARB, encouraging teams to propose incremental changes rather than significant, monolithic updates. Allow for iterative review cycles to adapt architecture as business needs evolve. This increases flexibility by enabling small, manageable changes to be reviewed and implemented quickly, allowing the organisation to adapt to new opportunities and challenges rapidly.

3. Support Cross-Functional Collaboration on Changes

Foster cross-functional collaboration between business, technology, and operational teams when proposing or managing changes. Involve all relevant stakeholders in discussions to ensure changes meet technical and business needs. This encourages broader input and faster decision-making, ensuring that changes align with strategic and operational goals and that teams can quickly adapt to evolving requirements.

4. Implement Continuous Integration and Continuous Delivery (CI/CD)

CI/CD pipelines automate the deployment and testing of architectural changes. Ensure the EARB supports and integrates this automation into its governance processes to facilitate smooth rollouts. This speeds up the implementation of changes while reducing the risk of errors or disruptions, allowing for more flexible and dynamic responses to business needs.

5. Maintain Flexibility in Technology Selection

Adopt a flexible approach to technology selection by supporting diverse tools and platforms when justified. The EARB should evaluate new technologies for potential fit without enforcing rigid technology lock-ins. This ensures that the organisation can quickly adopt new technologies or pivot to more appropriate solutions as market conditions or technical requirements change while maintaining oversight to avoid fragmentation and duplications across the Enterprise.

6. Create a Feedback Loop for Change Evaluation

Establish a feedback loop where changes that have been implemented are reviewed for their effectiveness. This should include performance metrics, stakeholder feedback, and lessons learned to refine future change management processes. This promotes continuous improvement in managing changes, ensuring that flexibility is balanced with control and governance and that the organisation can learn and adapt over time.

7. Implement Flexible Architectural Guidelines

Create flexible enterprise architectural guidelines that define high-level principles rather than strict rules. Encourage using patterns and best practices adapted to specific contexts rather than rigid mandates. This provides enough structure to

ensure architectural integrity while allowing teams the flexibility to adapt solutions to meet particular needs, supporting innovation and reducing resistance to change.

8. Adopt a Modular and Scalable Architecture

Encourage the design of modular, loosely coupled systems (e.g., microservices architecture) that allow components to be updated or replaced without affecting the entire system. Ensure EARB reviews consider the architectural concerns of scalability and flexibility in system design. This increases adaptability by making it easier to implement changes or scale specific components without extensive rework, supporting rapid adaptation to new business or technical demands.

9. Incorporate Risk Assessment for Changes

Ensure the EARB assesses the risks associated with proposed changes, including potential impacts on security, performance, and compliance. Develop contingency plans for high-risk changes and allow for pilot or proof-of-concept implementations. This balances the need for flexibility with the requirement for stability and security, allowing the organisation to adapt while minimising risks associated with major architectural shifts.

10. Support Business-Driven Change Requests

Create a streamlined process for business units to submit change requests to the EARB. Ensure that business priorities are incorporated into the decision-making process and provide flexibility to address urgent changes when required. This ensures that the EARB remains responsive to business needs and priorities, helping the organisation stay agile in response to market opportunities or competitive pressures.

11. Empower Teams with Change Autonomy

Delegate decision-making authority to specific teams for minor or routine changes within predefined guardrails, allowing them to make adjustments without waiting for a full EARB review. This reduces bottlenecks and speeds up minor change processes, empowering teams to adapt quickly while ensuring major architectural decisions still undergo EARB oversight.

12. Implement Version Control for Architecture Changes

Use version control systems (e.g., Git) to manage architectural documentation, designs, and decisions. Ensure that all changes are tracked, documented, and reversible if necessary. This provides flexibility by allowing for easy rollbacks or adjustments to changes, reducing the risk of disruption while supporting a dynamic approach to architecture evolution.

13. Use KPIs and Metrics to Track the Impact of Changes

Develop key performance indicators (KPIs) to measure the success of architectural changes, such as system performance, time-to-market, user satisfaction, or cost savings. Use these metrics to adjust future change management practices. This ensures that changes are tracked and evaluated for their impact, providing data-driven insights that can improve the flexibility and responsiveness of future architectural updates.

14. Integrate DevOps Practices

Integrate DevOps practices into the EARB process to promote a culture of continuous delivery and operational flexibility. Infrastructure can be used as code (IaC) and automated deployments to support rapid changes while maintaining governance. This increases operational flexibility, allowing teams to adapt and implement changes faster without compromising governance or control.

15. Enable an Innovation Sandbox

Create an innovation sandbox or environment where teams can experiment with new technologies, tools, or processes without affecting production systems. The EARB should review successful experiments for broader implementation. This encourages innovation and experimentation, allowing teams to explore new ideas and adapt to emerging trends while minimising risk to the overall architecture.

16. Facilitate Open Communication About Changes

Foster a culture of open communication and transparency regarding changes. Make sure that all relevant stakeholders are informed about upcoming changes and have the opportunity to provide input. This reduces resistance to change by promoting buy-in and understanding across teams, ensuring everyone is aligned on the reasons for and benefits of proposed changes.

By applying these strategies, Enterprises can create a flexible yet structured approach to managing architectural changes. This allows for rapid adaptation to evolving business and technology needs without sacrificing governance or control.

5.8A The benefits of an EARB

- ✓ Assisted & Improved Decision-Making: The EARB ensures that critical technical decisions are made based on a comprehensive enterprise-level understanding of the organisation's needs, standards, and best practices. This leads to better long-term solutions.

- ✓ Systematic Reduction in Technical Debt: By enforcing standards and best practices, the EARB helps reduce the accumulation of technical debt, which can hinder future innovation and increase maintenance costs.

- ✓ Higher Project Success Rates: With consistent architectural oversight, projects are more likely to succeed by adhering to best practices, reducing risks, and maintaining alignment with the overall technology strategy.

- ✓ Increased Scalability and Flexibility: The EARB encourages the design of scalable and flexible solutions that can adapt to the organisation's growth and changing needs without costly rework.

- ✓ Enhanced Risk Mitigation: The EARB identifies potential architectural risks (e.g., security vulnerabilities, compliance gaps, scalability concerns) early, helping prevent issues before they escalate into more significant problems.

- ✓ Only Meaningful Innovation: By balancing adopting new technologies with the need for governance, the EARB fosters innovation while ensuring it aligns with the organisation's goals and technical standards.

- ✓ Improved Communication and Collaboration: The EARB brings together cross-functional teams and stakeholders, ensuring that everyone is aligned on architectural decisions and that there is open communication about challenges, opportunities, and solutions.

- ✓ Greater Efficiency and Cost Savings: The EARB reduces operational costs and improves project efficiency by standardising and eliminating redundant or non-compliant solutions.

- ✓ Documentation and Knowledge Sharing: The EARB provides formal documentation of decisions, standards, and lessons learned, which can be shared across the organisation to build institutional knowledge and guide future projects.

5.8B The roles & responsibilities of an EARB

1. Publish and update guiding principles and development standards

One critical duty of an enterprise architecture review board is to outline, communicate, and enforce a consistent set of policies and standards for IT development and architecture management.

Having a central leadership body take ownership of your cloud development standards helps maintain focus in cloud design and implementations. With one guiding source as a reference, your organisation can better create consistency in quality and application and align its cloud practices with the overall business strategy.

2. Develop architecture diagrams

Like the task above, architecture review boards are responsible for managing the creation and maintenance of accurate cloud architecture diagrams.

A clear diagram of your current cloud architecture will make it easier to plan any updates, changes, or future states. This essential visual representation of your cloud architecture will help stakeholders understand the current systems and processes, plan a path forward, and design clear, transparent, and consistent solutions.

3. Evaluate solution designs and provide recommendations

Another core responsibility for review boards is to assess significant development projects to ensure they meet the prescribed standards and provide recommendations if there are any issues or discrepancies. Your cloud architecture diagram will facilitate and expedite tracking down these issues.

In this way, architecture review boards act as quality assurance for cloud systems, keeping your IT development process efficient and ensuring your solutions align with your company objectives.

4. Uncover inconsistencies between sub-architectures and solutions

Similarly, review boards use their cloud architecture roadmaps and infrastructure diagrams to identify and uncover inconsistencies within the cloud architecture and evaluate new and existing IT solutions. This is essential because it helps reduce complexities within your processes and systems and improve efficiency across the organisation.

5. Identify reusable components and artefacts

As the board reviews your architecture, it can identify opportunities to reuse components and artefacts in your cloud systems, increasing efficiency and reducing development and operational costs.

6. Enforce architecture compliance

Maintaining compliance keeps everyone on the same page and prevents issues like competing or fractured solutions, inconsistent development procedures, and strategy misalignment. An accurate, up-to-date architecture diagram is critical to this process.

With standardised, centralised, and up-to-date cloud architecture diagrams, you can maintain and prove compliance when demonstrating your compliance during audits and certifications. Your diagrams are your primary source of evidence.

Collaborative architecture review boards make better decisions, drive strategic alignment, improve security, and increase stakeholder transparency. This positions organisations better to support and implement a strong cloud strategy.

In conclusion, the research survey reflects various responses emphasising the need for better enterprise architecture (EA) to support digital transformation. Some noted that initiatives often fail due to rapid technological changes and misaligned goals. In contrast, others suggested that EA frameworks and processes like EARB, TOGAF, and ESG (Environmental, Social, and Governance) could help develop sustainable transformation models.

Additionally, respondents favoured several approaches to mitigate digital transformation risks, such as:

- **Training and knowledge transfer**: Organizations should invest in training employees to align with enterprise digital transformation (EDT) objectives.

- **Leadership buy-in and governance**: A key strategy is ensuring leadership engagement and proper governance frameworks to oversee the transformation process, especially on EA.

- **Align business and technology goals**: Effective digital transformation requires aligning enterprise architecture, ESG and technology innovations with clear business goals.

5.9 Discussion on General Comments from Survey Respondents

This is a more detailed analysis of the survey responses regarding strategies to mitigate the risks of failure in digital transformation projects. The respondents shared various insights, but key themes emerged, reflecting a mix of organisational culture, strategic alignment, leadership, and operational execution.

1. Training and Employee Onboarding

- **Training Programs and Workshops**: Many respondents emphasised the need to design comprehensive training programs and workshops to onboard employees effectively into the digital transformation (DT) journey. These initiatives help employees understand the transformation process, build new competencies, and address potential skill gaps.

  - Example: Organizations can design trainings and workshops to onboard employees on the EDT journey.

- o Training is critical in mitigating failure by ensuring that all employees are adequately prepared for technological changes, processes, and roles.

- **Knowledge Transfer**: Continuous knowledge transfer is essential to support the transformation. Organisations must ensure that employees are regularly updated with new technologies and methodologies.
  - o Example: Training and knowledge transformation is the key.
  - o This focus on learning and development ensures that staff are equipped with current skills and capable of adapting to future changes.

2. Leadership and Governance

- **Leadership Buy-In**: Successful digital transformation requires strong leadership commitment. Respondents highlighted the need for leadership to participate and show intent toward transformation actively.
  - o Example: Leadership buy-in and sufficient investment.
  - o Leaders must champion the transformation and create a culture supporting risk-taking and innovation.

- **Non-hierarchical decision-making**: Organizations should adopt flexible, non-hierarchical decision-making processes. This approach allows for faster decision-making and reduces the risk of failure due to bureaucratic delays.
  - o Example: Willing to take minimal risk and not follow hierarchical decisions.
  - o Empowering cross-functional teams to make decisions quickly enables agile responses to challenges during transformation.

- **Strong Governance and Rigor**: EA Governance structures must be robust, with frequent reviews and an emphasis on implementation rigour. This helps monitor progress and ensures all stakeholders align with the transformation's goals.
  - Example: Strong governance, reviews, and implementation rigour.
  - Regular assessments and governance frameworks can help identify issues early and course-correct before they escalate into more significant problems.

3. Alignment with Business Goals

- **Business Goals Over Technical Goals**: Respondents stressed the need for digital transformation initiatives to align closely with business goals rather than being driven solely by technology.
  - Example: Commitment to business goals as opposed to technical goals.
  - The transformation should be seen as a strategic initiative that supports long-term business objectives like cost optimisation, revenue growth, and customer satisfaction.
- **Business and Technology Alignment**: A precise alignment between business objectives and technological innovation is necessary. This ensures that technology investments are purposeful and contribute to broader organisational goals.
  - Example: Business goals should align with technology innovations, which will ultimately meet digital transformation projects.
  - By connecting digital projects with measurable business outcomes, organisations can track progress and avoid investing in technology for technology's sake.

- **Integration of Cost Structures and Resource Optimization**: Aligning cost structures and resource allocation with business goals helps ensure that digital initiatives are sustainable and scalable.
    - o Example: Align business goals, cost structure, and resource optimisation as daily practices.
    - o Regular alignment between business and resource planning ensures that digital transformation efforts are financially viable and effectively managed.

4. Clear Documentation and Strategy

- **Enterprise Architecture and Documentation**: Clear and detailed documentation of enterprise architecture and process flows was highlighted as crucial. These blueprints provide a structured guide for implementing digital initiatives.
    - o Example: Clear enterprise architecture documentation & process flow blueprints.
    - o Proper documentation helps stakeholders understand the current state, identify gaps, and ensure a cohesive transition to the future state.
- **Cloud Adoption and Technology Infrastructure**: Organizations should have a clear cloud adoption strategy, ensuring their technology infrastructure aligns with their digital roadmap. This minimises the risk of adopting technologies that do not support the broader transformation goals.
    - o Example: Clear cloud adoption.
    - o Ensuring infrastructure, licensing, and data migration strategies align with the overall vision is critical to long-term success.

o Example: Infrastructure, licensing, data, and migration strategies should align with the roadmap and vision, which shouldn't evolve so much.

5. Change Management and Communication

- **Acceptance of Change**: One of the key elements mentioned is the need for widespread acceptance of change within the organisation, starting with management. Digital transformation projects often fail because they encounter resistance from employees or stakeholders who are not ready or willing to embrace change.

  o Example: Acceptance of change and support from management.
  o A robust change management plan can help ensure employees are engaged and motivated throughout the transformation process.

- **Effective Communication**: Ongoing communication is essential in managing expectations and reducing fear or uncertainty related to transformation. Regular updates and transparent communication keep teams aligned and reinforce the purpose behind the transformation.

  o Example: Change management and communication.
  o Clear messaging from leadership, coupled with two-way communication channels, helps ensure everyone understands their role in the transformation.

6. Innovation and Agility

- **Invest in Innovation**: Investing in innovative technologies and solutions is critical to staying competitive. Organisations should embrace a fail-fast mentality, encouraging experimentation and treating failures as learning opportunities.

- Example: Invest in innovation rather than looking at organisational goals. Catch up with the technology before it's too late. Try things, fail fast, and move on.
- This approach fosters a culture of continuous improvement and learning, reducing the likelihood of significant project failures through rapid iteration.

- **Empower People and Build a Bottom-Up Culture**: While top-down governance is essential, several respondents highlighted the importance of empowering employees from the bottom up. Encouraging employee input and fostering innovation across all levels of the organisation enhances engagement and accelerates transformation.
  - Example: Focus on empowering people and building a bottom-up culture in addition to top-down strategy and architecture governance.

7. Customer-Centric Approach

- **Start with the Customer**: Digital transformation projects should be driven by customer needs and expectations. Respondents emphasised that successful transformation starts by understanding customers' wants and aligning transformation initiatives with those expectations.
  - Example: Start with the customer. Clear-defined business goals are split into micro goals to validate if we are going in the right direction.
  - Organizations that fail to factor in customer expectations will likely miss the mark on their digital transformation efforts.

- **Iterative Approach**: Breaking down business goals into smaller, manageable micro-goals allows organisations to validate their progress iteratively. This

approach ensures that transformation stays aligned with the original vision and meets customer expectations.

- o Example: Set clear business goals, split into micro-goals to validate iteratively if we are going in the right direction.
- o This feedback loop helps ensure that organisations are agile and responsive to customer needs throughout the transformation process.

5.10 Conclusion of the discussions

Reiterating the key pillars of all enterprises—Enterprise Architecture (EA), Environment, Social, Governance (ESG), and Enterprise Digital Transformation (EDT)—we observe and conclude the following:

Enterprise Architecture (EA) (and related variables like EA Strategy, EA Discovery, ESG, EA Change Management, and Governance) are indeed crucial decision variables that impact the outcomes of Enterprise Digital Transformation (EDT). As reported by a Harvard study in 2018, EA negligence is likely a key contributor to the failure rate of EDT. This view has been further sustained through the survey responses and the analysis of the results.

Ethical ESG principles within Enterprise Architecture ensure that organisations are efficient, profitable, and socially and environmentally responsible. This alignment helps create a sustainable future while ensuring long-term business viability.

Enterprise Architecture Governance through the Enterprise Architecture Review Board (EARB) provides substantial benefits, including assisted and improved Decision-Making at the Enterprise level.

CHAPTER VI:

SUMMARY, IMPLICATIONS, AND RECOMMENDATIONS

6.1 Summary of Findings

The research survey captured insights from individuals worldwide with significant decision-making authority in digital transformation initiatives. Responses emphasised the importance of proper enterprise architecture interventions, including ESG, Discovery, Governance, Enterprise architecture tools and diagrams, and precise documentation. This suggests that visual clarity and high-level strategic alignment in enterprise architecture are crucial in ensuring success in enterprise digital transformations.

6.2 Implications

This research study was initiated with the question of why enterprise digital transformations had a high failure rate. The literature study identified 23 critical factors or variables as primary decision variables that impact EDT outcomes the most. The scope of this study was limited to understanding the effects of variables related to 'Enterprise Architecture'. The primary focus was enterprise strategy, discovery, governance & change management. The survey results further validated the findings. The respondents were asked about their view of the challenges that impacted the EDT initiative the most. To avoid any bias, the respondents were presented with various options. The results highlighted that Enterprise Architecture variables, Skills gap & talent availability significantly impacted EDT outcomes in their organisations.

Leadership across enterprises acknowledged that effective management of decision variables, especially Enterprise Architecture, is crucial for the success of EDT programs. Organisations that identify and address these factors early, through strategic

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and tactical planning, are better positioned to achieve their digital transformation objectives. The research implies acknowledging and governing decision variables to ensure a successful digital transformation.

6.3 Recommendations

The literature review, the survey and the analysis of the results indicate that the Enterprise Architecture-related decision variables need to be acknowledged as one of the key driving factors of EDT. It is recommended that Enterprises take a cue from this research study and introduce interventions that address these factors. The interventions need to be both strategic and tactical. Implementing just one or none of them can be a deterrent to the success of EDT.

6.4 Decision Support System (DSS) & Accelerator

Accelerator for EA Discovery is a tool for discovering and providing organizations with a comprehensive, real-time view of their Enterprise Architecture landscape. It aims to accelerate discovering, documenting, and analysing the enterprise architecture, visualizing the interactions between applications, data, and infrastructure and mapping them to business capabilities and processes.

This tool can be helpful for:

- organizations that are not convinced of the importance of EA and its impact on EDT.
- hence, organizations that allocate low/no budgets for Enterprise Architecture (EA) discovery.
- stakeholders focused on quick ROIs are not convinced about budgeting for EA discovery.

- organizations, where stakeholders' time availability can be challenging and flexibility is important.
- organizations aiming to transform their IT environments, improve business-IT alignment, and make informed strategic decisions.

Accelerator for EA Discovery will be ideal for organizations seeking:

- Enterprise-wide capability mapping
- Reduction in pockets of IT across businesses, departments, markets, and geographies
- Assess their EA maturity
- Enhance EA & IT visibility
- Cost optimises their technology portfolios
- Support transformation initiatives
- Get advice on potential interventions
- Rationalise, optimise & modernise their enterprise landscape
- Holistic view of the enterprise aiding better outcomes from enterprise-wide projects

Typical Use Case Scenario

The primary problem statement is that organizations may not be successful in their EDT journeys primarily because they have not allocated a budget for Enterprise Architecture Discovery. Typically, the focus is on achieving short-term ROIs. Enterprises also assume that Enterprise Architecture Discoveries are time-intensive and that only long-term ROIs can be achieved.

1. A Service Provider typically pitches for a new deal with a new client or an existing client.

2. They look for opportunities to engage with the client on specific projects while doing so. Understanding the client's Enterprise Architecture Landscape is important when executing projects to provide the best-fit solutions.

3. Typically, the client considers EA an overhead with a long-term ROI, hence may postpone initiative related to Enterprise Architecture discovery. This pattern can build up cost overheads and complexity in the Enterprise Landscape.

4. Enterprise Architects need to influence and encourage our clients to share information about their Enterprise Landscape. The introduction of an Accelerator for EA Discovery can enable this.

5. The tool website link will be shared with the client, and the stakeholders will have the opportunity to add as much information as possible regarding their EA landscape, stakeholders, and the other categories listed in the EA Discovery tool. The accelerator and decision support system link can be requested at http://perim.digital.

6. The Client will be onboarded to the EA Discovery Tool by creating a unique Client Account with the admin account.

7. The Client Stakeholders can log into their account and upload the enterprise details.

8. The intent is also to ease the process of EA discovery and make it more seamless, with fewer dependencies on the availability of stakeholders or the physical presence of technical teams to work on the Discovery.

9. The client would appreciate not allocating a specific budget for EA Discovery upfront.

10. For the Service Provider / Implementation Partner, it would give us an opportunity to obtain the EA information and assess the organization's EA maturity.

11. Additionally, the Service Provider / Implementation Partner teams will better understand the client's EA, which is essential for providing the best-fit solutions for our client.

12. The service provider/implementation partner can typically propose many interventions based on the clients' EA maturity.

13. The data visualisation and analysis of the client EA landscape will be accessible to the client and be beneficial in understanding the areas that need transformation.

14. Opportunities to modernise, rationalise and optimise are expected to emerge through this analysis.

15. The Service Provider / Implementation Partner / Enterprise Architect can then present strong business cases and potential interventions to the client stakeholders.

6.5 Suggestions for Future Research

- Focused exploration of other key decision variables listed in this research study.
- Detailed exploration of industry-specific EA frameworks and how they need to adapt and transform over time.
- Longitudinal studies to assess how the relationship between EA and EDT evolves.

- Comparative analysis of EA's impact across different digital transformation maturity stages, geographies, cultures, industries and other demographics.

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Ex: {Author, A. A., Author, B. B., & Author, C. C. (Year). Title of article. Title of Periodical, volume number(issue number), pages. http://dx.doi.org/xx.xxx/yyyyy}

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APPENDIX A

SURVEY COVER LETTER

Dear Leader,

My name is Anil Perim Fernandes. I am a doctorate student at the Swiss School of Business and Management in Geneva, and I am conducting a research study titled Exploring the Impact of Decision Variables on Enterprise Digital Transformation (EDT).

This research aims to critically examine and explore Enterprise Architecture as one of the critical decision variables impacting Digital Transformation outcomes.

The target audience for this survey is IT Leaders between the ages of 25 and 75 worldwide who have been key stakeholders in Digital Transformation programs.

Most questions are a combination of 5-point Likert scale questions, open-ended questions and multiple-choice questions.

This survey does not require you to share any personal or sensitive information. Your response will be treated as 'anonymous' and expected only to help Digital Transformation Leaders better understand the decision variable in scope for this research study.

The number of questions is limited to 30, with 8 being optional open-ended questions.

I would be thankful and greatly appreciate it if you could set aside 10 - 15 minutes for this survey and answer all the questions in one go, in the top-down order.

I assure you that you will receive access to the outcomes of this research study. It can contribute to your understanding and add value to your organisation's ongoing and future Digital Transformation journeys.

APPENDIX B

INFORMED CONSENT

I, <name of respondent>, agree to be interviewed for the research, which will be conducted by a doctorate student at the Swiss School of Business and Management, Geneva, Switzerland.

I certify that I have been told of the confidentiality of information collected for this research and the anonymity of my participation; that I have been given satisfactory answers to my inquiries concerning research procedures and other matters; and that I have been advised that I am free to withdraw my consent and to discontinue participation in the research or activity at any time without prejudice.

I agree to participate in one or more electronically recorded interviews for this research. I understand that such interviews and related materials will be kept completely anonymous and that the results of this study may be published in any form that best serves the purpose.

I agree that any information obtained from this research may be used in any way that is thought best for this study.

Signature of Interviewee   Date

APPENDIX C

INTERVIEW GUIDE

Purpose: This guide outlines the approach and criteria for conducting offline surveys to explore and analyse the impact of Enterprise Architecture related decision variables on Enterprise Digital Transformation.

Survey Distribution Methods: The survey was distributed via Google Forms and social media like LinkedIn.

Direct Meetings: Conducted informal and formal face-to-face interviews and discussions with leaders while networking at industry conferences and seminars.

Paper-Based Questionnaires: Paper-based questionnaires were avoided, keeping in mind sustainability objectives

Community Leaders and Influencers: Collaborate with Enterprise Digital Transformation's local and international leaders and influencers.

Ethical Considerations:

It was ensured that all participants were adequately informed about the research and shared their consent before participating in the survey.

Guaranteed confidentiality and anonymity of responses, ensuring no personal identifiers are linked to the survey data.

Clearly explain the purpose of the study and the importance of the participant's contribution to the research.

Participant Selection Criteria:

Leaders worldwide were selected based on their roles and involvement in one or more Enterprise Digital Transformations.

Experience with Digital Transformation: Targeted Leaders who have been part of the industry and have contributed to Enterprise Digital Transformation programs.

Geographic Location: Participants were from all across the globe.

Role in the Community: Prioritize individuals who play vital roles in their organisation and are critical stakeholders in Enterprise Digital Transformation journeys.

Availability and Willingness: Ensured that participants were available and willing to engage in the survey during the designated timeframe and were comfortable with the offline survey format.

Survey Conduct Guidelines:

Provide clear instructions on how to complete the survey.

Allow ample time for participants to answer each question, offering assistance if needed.

Collect completed surveys promptly and securely store the data for analysis.

Address any questions or concerns participants may have during or after the survey.