GOVERNANCE OF PROJECTS: A COMPARATIVE ANALYSIS OF PROJECT DELIVERY APPROACHES

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GOVERNANCE OF PROJECTS: A COMPARATIVE ANALYSIS OF PROJECT DELIVERY APPROACHES

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Abstract

Governance of digital-focused projects in central government has lacked detailed definition, resulting in misunderstanding, inconsistency and a perception of inflexibility by project professionals. Consequently, governance was deemed restrictive and inflexible, which impacted progress in the delivery of digital solutions. This research aimed to investigate the principles, practices and perceptions of governance in central government by conducting a comparative analysis across different project delivery approaches, viz. Waterfall, Agile and Hybrid. A mixed-methods research design critically examined central government project professionals' experiences of governance across the three delivery approaches: a quantitative survey established the perception of governance and identified themes to inform case studies across different central government departments; semi-structured interviews were conducted with individuals in various project roles; and, an analytical review of secondary data, supplied by central government project experts, supported triangulation of the findings.

The study confirmed the requirement for all central government projects, regardless of delivery approach, to have a governance framework encompassing the accountabilities, responsibilities, procedures, controls and escalation routes within hierarchical structures. Delegated authority was allocated within tolerances that allowed projects to make decisions more quickly, but particularly benefitted Agile and Hybrid approaches to maintain delivery momentum. Flexibility was encouraged, but an absence of central guidance on its application led to inconsistency in governance practices. Stakeholder involvement in decision-making was crucial, but the absence of formal governance training meant some did not fully comprehend the importance of their role. This empirical research and comparative analysis have contributed the following knowledge: identified new underlying project governance principles and practices for central government; added to the ascertained lack of literature on the governance required to support a Hybrid project delivery approach; and identified an opportunity for future research on the principles underpinning the classification, management, and tracking of business and financial benefits for Agile and Hybrid project delivery approaches.

Keywords: governance, project delivery, central government, Waterfall, Agile, Hybrid, stakeholder engagement, capabilities.

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Acknowledgements

As a project professional in a large central government department for nearly 25 years, I have significant experience of the governance principles and processes underpinning the management of projects. Undertaking an MSc in Project Management triggered a passion for academic learning and identified an opportunity to explore governance in more detail through a PhD.

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Author's declaration

DECLARATION

I declare that the work contained in this thesis has not been submitted for any other award and that it is all my own work. I also confirm that this work fully acknowledges opinions, ideas and contributions from the work of others. Any ethical clearance for the research presented in this thesis has been approved. Approval has been sought and granted by the Faculty Ethics Coordinator on 06/08/21.

I declare that the Word Count of this Thesis is 69070 words

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Chapter 1. Introduction

1.1 Background and context

In 2011, the Cabinet Office, a United Kingdom (UK) government department, launched a new unit within its organisation called the Government Digital Service (GDS). The primary purpose of the GDS was, and continues to be, one of supporting the implementation of the 'Digital by Default' strategy (Government Digital Service, no date-a). Part of this strategy was to encourage the use of Agile[1] methods as the preferred approach to developing new Information Technology (IT) services within central government. Agile methods can be defined as 'a way of incrementally delivering change… to get the earliest possible benefit, get feedback early on what works, and change direction accordingly' (Wernham, 2012, p. xxxvi). Two audits were conducted by the National Audit Office on early Agile use in government, which provided principles to adopt when following an Agile methodology and areas for consideration when developing governance for Agile (National Audit Office, 2012a; 2012b). The use of Agile increased and in 2014, was mandated across all central government departments (Scott, 2014). Guidance and standards for government departments were provided to support the development of IT services using this approach (Government Digital Service, no date-a; 2016a; no date-c). However, within UK central government (hereafter referred to as central government), these newly developed digital services had to be integrated in older departmental services, which had always been upgraded or amended following a Waterfall or Stage-Gate (hereafter referred to as Waterfall) project delivery approach. Waterfall is regarded as the traditional project delivery approach, which defines the changes upfront and delivers the changes sequentially (Royce, 1970; Cooper, 1990; Vinekar, Slinkman and Nerur, 2006). This approach was followed by all projects, regardless of what was being designed, developed and delivered, from policy to transformation changes. Consequently, many departments began to deliver

[1] Agile, Waterfall and Hybrid are capitalised throughout this thesis to ensure they remain distinct as project delivery approaches.

projects using a combination of both Waterfall and Agile project delivery approaches concurrently, often referred to as Hybrid (Karlstrom and Runeson, 2005). As Hybrid is recommended for use in more complex projects (Azenha, Reis and Fleury, 2021) or by larger more 'mature' organisations (Barlow *et al.*, 2011, p. 34), the fact that some central government projects follow this approach is not unexpected, as many projects delivered within central government have a degree of complexity (Kortantamer, 2019; Infrastructure and Projects Authority, 2020a). More detail on the three different project delivery approaches is presented in section 2.3.

Project methodology can influence the level, scale and approach to project governance (Cooper, 2006; Ambler, 2009; Müller, 2009; Barlow *et al.*, 2011; Biesenthal and Wilden, 2014). Within central government, project governance previously advocated following Projects IN Controlled Environments 2 (PRINCE2) methodology, specifically Stage-Gate reviews (Her Majesty's Treasury, 2007; Cabinet Office, 2011), as per a Waterfall delivery approach. PRINCE2 is used for all types of projects following a series of seven principles and processes to ensure project success (AXELOS, 2021). Aspects of the PRINCE2 approach can still be seen in the Infrastructure and Projects Authority (IPA) Government Functional Standard for Project Delivery, originally published in 2018 and updated in 2021 (hereafter known as the 'Functional Standard'), for both Waterfall and Agile projects (Infrastructure and Projects Authority, 2021a), suggesting little change in the central government approach to governance. No reference is made to a combination of delivery approaches, or Hybrid, in this Functional Standard. In fact, the only reference to Hybrid relates to solution design. In 2015, previous research undertaken by the researcher for an MSc in Project Management (Young, 2015), recommended that the implications of central government's use of a Hybrid project delivery approach be investigated further, particularly how it is governed.

As there are multiple definitions of governance (and further definitions for IT governance) throughout both academic and practitioner literature, it is not surprising that practitioners are confused about governance (McGrath and Whitty, 2020). For example, McGrath and Whitty (2015) and Webb, Pollard and

Ridley (2006) adopted a systematic review to develop their definitions of project governance and IT governance respectively. Both definitions contain 'control' as a common term, with the supporting descriptions referring to stakeholders. For central government, the Infrastructure and Projects Authority (IPA) describes governance as comprising 'prioritising, authorising, directing, empowering and overseeing management, and assuring and reviewing performance' (Infrastructure and Projects Authority, 2021a, p. 11), mandating a framework be put in place to support its management.

Governance frameworks are recommended to provide 'transparency and control' and clarify 'the role of the sponsor' (Klakegg *et al.*, 2008, p. 27), and the Functional Standard gives a clear instruction for all projects to have a governance framework that encompasses 'authority limits, decision-making roles and criteria, degree of autonomy, assurance needs, reporting structure, accountabilities and responsibilities' (Infrastructure and Projects Authority, 2021a, p. 11). In addition, the introduction of Agile as a delivery approach for IT projects also resulted in the provision of supplementary governance by the Cabinet Office (Government Digital Service, 2016a; 2016b). These quite specific governance conditions contradict the view of Williams and Samset (2010, p. 45), who state governance should be 'sufficiently versatile to enable projects to adapt, be flexible and avoid premature lock-in'. Perceptions captured during previous research indicate that governance arrangements in central government did not allow such flexibility (Young, 2015). As the original research was conducted six years ago, these perceptions may no longer exist and, although the Functional Standard appears quite prescriptive in its instructions on what a governance framework should contain, it also advises implementing governance that is 'proportionate' (Infrastructure and Projects Authority, 2021a, p. 23).

Central government projects are normally delivered by individual government departments (particularly major projects). In delivering projects, these departments usually follow the structures and processes of the bureaucratic, hierarchical controlled nature of central government as defined by Weber (1964), Handy (1985), and Buchanan and Huczynski (2010), which can be observed in the Functional Standard (Infrastructure and Projects Authority, 2021a). However,

both Agile and Hybrid enable a less restrictive, incremental and iterative approach to the delivery of projects (Karlstrom and Runeson, 2005; Wernham, 2012; Conforto and Amaral, 2016; Cooper, 2016; Belling, 2020), which does not align with the hierarchical nature of a typical central government department. One aspect of these hierarchical structures and layers relates to the individuals undertaking the work across each layer. As articulated in Klakegg *et al.* (2008) and by the IPA (2021a), governance frameworks should also contain details of the roles and responsibilities of those involved in the project and governance processes. Specifically, the governance framework should define the hierarchical accountabilities and responsibilities, in particular the role of the Senior Responsible Owner (SRO), who has overall accountability for successful delivery of a project as delegated to them by the Accounting Officer, who is usually the Permanent Secretary or Chief Executive of the central government department (Infrastructure and Projects Authority, 2019). Other organisational factors could also influence the governance of projects and the content and practical application of the governance framework, e.g. the delegation of controls, the authority given to those making decisions, and the prevailing risk appetite of the department (Weber, 1964; Henderson and Lee, 1992; Boehm and Turner, 2005; Vinekar, Slinkman and Nerur, 2006; Ahimbisibwe, Cavana and Daellenbach, 2015; Mahadevan, Kettinger and Meservy, 2015; Zwikael and Smyrk, 2015). Additionally, historical factors, such as the relative success or otherwise of previously delivered government projects, can influence how projects are governed between different central government departments (National Audit Office, 2004; 2011).

The hierarchical nature of central government is also observed in the ‘three lines of defence’ approach to assurance (Her Majesty's Treasury, 2012, p. 5). The ‘Three Lines of Defense [sic] model’ was first published by the Federation of European Risk Management Associations in 2010 (Federation of European Risk Management Associations, 2019) and was adopted across central government from 2012 after being included in Her Majesty’s Treasury (HMT) guidance to support departments in developing their Assurance Frameworks (Her Majesty's Treasury, 2012). The ‘three lines of defence’ as described by HMT are:

> **First line**: This comes direct from those responsible for delivering specific objectives or operations.
>
> **Second line**: This work is associated with oversight of management activity. It is separate from those responsible for delivery, but not independent of the organisation's management chain.
>
> **Third line**: This relates to independent and more objective assurance.
>
> (Her Majesty's Treasury, 2012, pp. 6-7)

These 'three lines of defence' continue to be applied and form part of the governance structures outlined in the Functional Standard, which defines the purpose of assurance as providing 'through a systematic set of actions, confidence to senior leaders and stakeholders that work is controlled and supports safe and successful delivery of policy, strategy and objectives' (Infrastructure and Projects Authority, 2021a, p. 11). This approach to assurance is seen throughout all projects, with the third line of defence – independent assurance – being a mandated requirement for all programmes and projects on the Government Major Projects Portfolio (GMPP) that are undertaken following a set of principles and procedures (Infrastructure and Projects Authority, 2011). The IPA has provided updated guidance to the project professionals conducting these independent reviews to recognise that some of these major projects will follow an Agile project delivery approach. Conversely, although not explicit, unlike the Functional Standard, this IPA assurance guidance does recognise that Agile might be used in conjunction with a Waterfall project delivery approach, stating it should be used 'where agile teams are part of a wider transformation programme alongside other projects and business changes' (Infrastructure and Projects Authority, 2017a, p. 5).

Regardless of the project delivery approach, governance also requires the development of a business case and benefits management framework to standards set by HMT in The Green Book and the IPA's Guide for effective benefits management in major projects (Infrastructure and Projects Authority, 2017b; Her Majesty's Treasury, 2020b). Both sets of guidance refer primarily to a Waterfall delivery approach. Additional guidance has also been provided by HMT to support business case development for Agile projects (Her Majesty's Treasury, 2020a). However, if projects are using a Hybrid approach, they will find

no guidance on the development of business cases. Business cases are a fundamental part of the overall project governance and approval process, and their purpose is to articulate returns in terms of benefits or value regardless of the project delivery approach (Her Majesty's Treasury, 2020a; 2020b). However, the practice of capturing benefits for Agile (and therefore Hybrid) is not fully defined in either the IPA guidance on managing benefits (Infrastructure and Projects Authority, 2017b) or academic literature (Williams *et al.*, 2020).

Stakeholder theory provides insight into the importance of stakeholders generally (Phillips, 2003), which Müller (2017a) has developed to include a project perspective. As stakeholder engagement is a critical part of project delivery (Eskerod and Jepsen, 2013; Eskerod, Huemann and Savage, 2015), different project delivery approaches could potentially shape stakeholder relationships (Müller and Lecoeuvre, 2014; Müller, 2017b). The introduction of Agile as a project delivery approach encouraged a change to the relationship project teams had with their stakeholders (Boehm and Turner, 2003; Wernham, 2012; Government Digital Service, 2016a). Fundamentally, at the centre of these relationships, is the need for transparency of project progress and decision-making (Müller *et al.*, 2017; Department for Culture, Media and Sport, 2019; Infrastructure and Projects Authority, 2021a), which, for central government, is traditionally provided through formal record keeping or board meetings (Simon, 1997; Infrastructure and Projects Authority, 2021a). Both Agile and Hybrid approaches advocate the use of structured, face-to-face engagement with stakeholders, which are referred to as ceremonies or events, (Winter, 2015), specifically the ‘sprint review’ (Sutherland, 2015, p. 237), as transparency is critical to its success (Wernham, 2012; Sutherland, 2015). Furthermore, formal documentation might not be a central tenet of an Agile approach (Beck *et al.*, 2001a; 2001b), but regardless of this, a lack of documentation has led to some customers not accepting the use of Agile and perceiving it to be ‘insufficient’ as a result (Wendler and Gräning, 2011, p. 825).

The introduction of Agile as a central government project delivery approach has brought challenges in terms of the evolution of governance and how it is practised. The development of Hybrid as an additional delivery approach to both

Waterfall and Agile has brought further challenge, exacerbated by a lack of formal acknowledgement in central government guidance of its regular use. These challenges and how they have influenced governance are central to the research.

1.2 Research aim and objectives

A previous study conducted by the researcher found the application of defined governance and approvals for digital projects had caused perceived issues in the successful use and application of Agile in central government. The research also established that the governance of digital-focused projects in central government lacked detailed definition, resulting in misunderstanding and inconsistency in its application by project professionals (Young, 2015). Garland states that before 'proposing any new project governance arrangements, it's necessary to have a clear understanding of the problem itself' (Garland, 2009, p. 7). Reflecting on these previous findings and Garland's statement, the research aim was:

> To investigate the principles, practices and perceptions of governance in central government by conducting a comparative analysis across different project delivery approaches.

To achieve this aim, the objectives were:

1. To explore the theoretical background to the three main project delivery approaches used in central government - Waterfall, Agile and Hybrid - to examine the context of their respective application in project delivery.
2. To explore and critically analyse the concept of project governance in central government across the three main project delivery approaches.
3. To formulate a definition of project governance, based on the findings from this empirical research, which embodies the approach and application of governance in central government projects.

The findings from this research will be used to inform the principles and practice of governance by project professionals across central government, and to identify

opportunities for further research on the future development of project governance.

1.3 Structure of thesis

This thesis comprises six chapters:

- Chapter 1: Introduction
- Chapter 2: Literature Review
- Chapter 3: Research Methodology
- Chapter 4: Research Findings and Analysis
- Chapter 5: Discussion
- Chapter 6: Conclusion

This chapter has provided the overarching background and context to the research, together with the research aim and objectives, and potential use of its outcomes. Chapter 2 presents a review of academic literature and practitioner guidance on project delivery approaches – specifically Waterfall, Agile and Hybrid - and perspectives on the definition of governance, and the influence organisational factors might have on its development and application. Chapter 3 presents the research methodology, which adopted a post-positivist stance, in the form of a conceptual framework covering each stage of the research from literature review, the application of a mixed-methods research. to data collection and analysis. It also outlines the ethical considerations and limitations.

Chapter 4 is extensive as it includes the findings and analysis of data collected from the three research methods utilised viz. a quantitative survey undertaken to establish project professionals' views of governance; case studies conducted across each of the project delivery approaches, including a cross-case analysis; and, an analysis of secondary data, which provided an opportunity to triangulate findings from the previous two research stages. Chapter 5, the discussion chapter, explores the research findings in the context of extant literature including, where necessary, additional literature not covered in Chapter 2. The final chapter, Chapter 6, includes a summary of the primary research outcomes against the aim and objectives, and the overall contribution to knowledge delivered by this research. It also provides an overview of the learning and

experience gained in conducting the research, and the next steps for utilising the research outcomes.

Chapter 2. Literature Review

2.1 Introduction to chapter

Both academic literature and practitioner guidance is reviewed in this chapter. As the scope of the research focused on the delivery of projects across central government, approximately 15% of all references are derived from central government department guidance, documents, standards or webpages. This chapter comprises four main sections: scope, project delivery approaches, governance and a summary. The section on project delivery approaches presents and analyses literature on Waterfall, Agile and Hybrid approaches. The governance section encompasses two main sub-sections: sub-section one captures and critically analyses different perspectives on the definition of governance from across both academic and practitioner literature; sub-section two explores the governance in central government and the influence of organisational factors on its development and application.

2.2 Scope of literature review

A narrative literature review narrowed the field of the subject matter and determined the research scope (Bryman, 2016). Although deemed less structured than a systematic review, the conceptual framework discussed in Chapter 3 (Figure 3.1) provided this structure and is recommended to limit the scope of the search (Gray, 2017; Creswell and Creswell, 2018). The literature review itself also provided an ‘analytic framework’ (Bryman, 2016, p. 95) or ‘benchmark’ for the study (Creswell and Creswell, 2018, p. 26).

Findings from previous research (Young, 2015) were used to inform the initial starting point for the literature review: the approach to the governance of projects, particularly those involving the development of digital services and specifically those following Agile and Hybrid project delivery approaches. An extended Google Scholar search of the terms: ‘project governance’, ‘Agile’ and ‘Hybrid’, produced a breadth of literature covering the definition, history and challenges associated with the practical application of each. Narrowing the search further to

include ‘public sector’ resulted in a reduced return. However, there was a risk that by restricting the scope of the literature review too early, the opportunity to identify research areas was reduced. The final approach focused the literature review in three areas: project delivery approaches, project governance and its impacts, and the organisational factors associated with, or influencing, project governance.

2.3 Project delivery approaches

Projects in central government are usually managed following two project delivery approaches: Waterfall or Agile (Infrastructure and Projects Authority, 2021a). However, a combination of both Waterfall and Agile has also emerged, which is often referred to as Hybrid (Karlstrom and Runeson, 2005; Conforto and Amaral, 2016; Cooper, 2016; Belling, 2020). Generally, the approach to project delivery can be determined by the scale and risk associated with the project (Müller and Lecoeuvre, 2014; Müller, 2017a; Infrastructure and Projects Authority, 2018d; 2020b; 2021a), which in turn can influence the approach to governance (Cooper, 2006; Ambler, 2009; Müller, 2009; Barlow *et al.*, 2011; Biesenthal and Wilden, 2014). Historical factors, including the relative success or otherwise of public sector projects, have resulted in the implementation of processes and procedures to reduce the risk of project failure through the management of lines of decision-making and accountability (Williams and Samset, 2010; National Audit Office, 2004; Department for Culture, Media and Sport, 2019).

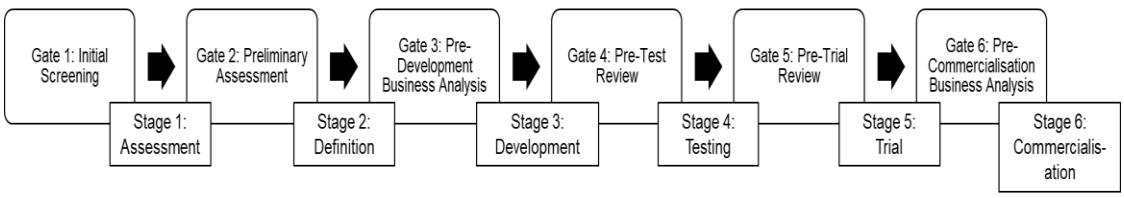
Before examining the governance of digital projects, the history of Agile, Waterfall (or Stage-Gate), and Hybrid approaches to project delivery was investigated. Hereafter, the term ‘Waterfall’ is used to refer to either Stage-Gate or Waterfall project approaches. Studies have already been done on the origins of software development and delivery (Larman and Basili, 2003; Rico, Sayani and Sone, 2009); the intention is not to duplicate full historical detail, but to present key points deemed necessary to provide context to the information captured during this research.

2.3.1 Waterfall project delivery approach

The Waterfall approach to project delivery focuses on defining requirements for change up front and relies on the adoption of 'process-management methodologies' (Cooper, 1990, p. 45) to support the development process. It tends to be heavily plan-centric (Highsmith, 2010) and is often regarded as the 'traditional' methodology (Vinekar, Slinkman and Nerur, 2006, p. 31), particularly in relation to the development of IT software. Waterfall methods are often perceived as bureaucratic, document-laden and inefficient, based on the assumption that user requirements are unlikely to be fully defined or documented up front, and that the business environment upon which the requirements are developed is rarely stable (Cobb, 2011). The step or plan-based approach to software development was first presented by Royce (1970) who proposed adopting a step process when managing the development of large IT programmes. The implementation steps are followed sequentially, and Royce suggested differing degrees of iteration and interface between the steps to mitigate risk during the development process (Royce, 1970). Nevertheless, there is a view that Royce's model was interpreted incorrectly (Larman and Basili, 2003), with suggestions that consecutive steps be followed with little iteration, although each step is actually presented as being revisited before progressing on to the next (Royce, 1970; Larman and Basili, 2003).

Cooper's 'Stage-Gate' process (Figure 2.1) suggests using a step method for managing the development of product processes, i.e. not just IT-focused delivery (Cooper, 1988; 1990; 2006).

Figure 2.1 Six Stage-Gate process (adapted from Cooper (1988, p. 252))



The purpose of these evaluation points or 'gates' is to allow a decision to be made on whether the project status is 'Go/Kill/Hold', to confirm the need for, and the quality of, the product being developed (Cooper, 1988, p. 244). Although regarded as a completely different digital delivery approach (Karlstrom and Runeson, 2005; Kisielnicki and Misiak, 2017), original descriptions of the Stage-Gate approach use what have now become common Agile terms and approaches. Specifically, the use of 'parallel processing' to describe a team-based approach to product development, and the term 'scrum' to refer to the way the project progresses and decisions are made, with an emphasis on the importance of the whole team contribution (Cooper, 1988, pp. 246-247).

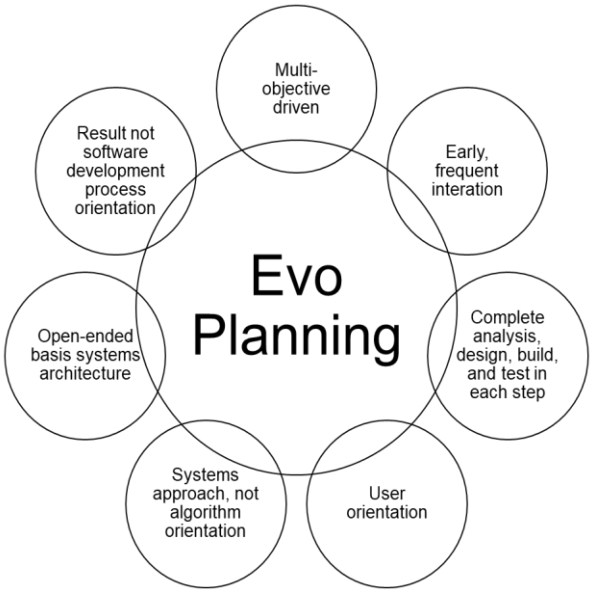
2.3.2 Agile project delivery approach

Agile is 'a way of incrementally delivering change so as to get the earliest possible benefit, get feedback on what works, and change direction accordingly' (Wernham, 2012, p. xxvii). If Agile is adopted to specifically develop IT software, it can be linked to different Agile techniques such as Extreme Programming (XP) or scrum (Boehm and Turner, 2003; Cobb, 2011). The type of Agile approach a project manager decides to follow, might be based on the 'challenges and obstacles' they expect to encounter when developing the solution (Gandomani *et al.*, 2013, p. 348), and could require a change in the way an organisation works and its style of management (Anderson, 2003). As the use of Agile methods became increasingly prevalent, a group of mainly software developers developed and published the Agile Manifesto (Beck *et al.*, 2001a). The Manifesto provides a set of principles supporting four primary values: focusing on a 'lightweight' approach to software development, advocating a user-focused, time-fixed or 'rapid' delivery schedule (Anderson, 2003, p. xxix). These values are provided by Beck *et al.* (2001a):

> 'We are uncovering better ways of developing software by doing it and helping others do it. Through this work, we have come to value:
>
> - Individuals and interactions over processes and tools
> - Working software over comprehensive documentation
> - Customer collaboration over contract negotiation
> - Responding to change over following a plan'.

Early Agile started as evolutionary software development and management, with Gilb (1981) being one of the original proponents of adopting an iterative approach rather than a traditional plan-based or Waterfall model to develop IT software (Wernham, 2012). Although not termed 'Agile', the methods, techniques and principles were being followed from the 1960s (Larman, 2004) in the form of evolutionary methods as an approach for management of IT development changes (Gilb, 1981). Gilb (1988, p. 85) outlines a number of concepts (Figure 2.2) to support the definition of what he describes as 'evo planning'.

Figure 2.2 Evo planning concepts (adapted from Gilb (1988, p. 51))



These concepts provide the grounding for typical Agile processes today and include the principle of:

> '*Deliver* something to a real end user.
> *Measure* the added-value to the user in all critical dimensions.
> *Adjust* both design and objectives based on observed realities.'
> (Gilb, 1988, p. 84)

Boehm (1988, p. 61) further developed an iterative approach to the development of software in the form of a spiral model. He stated the purpose of any software model is to guide the sequence of the 'major tasks' to be completed by a project, as without such order, 'many software projects… have come to grief'. There are

common steps throughout the Boehm spiral namely: risk analysis, planning, and validation/verification of the delivery (Boehm, 1988), which demonstrates the presence of close tracking and management of a project's progress and aligns with typical governance principles (APM, 2018a).

There are three primary areas regarded as priorities when adopting Agile as a method:

- Value (as releasable product);
- Quality (as reliable, adaptable product); and
- Constraints (through cost, schedule, scope).

(Highsmith, 2010, p. 45)

From a governance perspective, Highsmith (2010) suggests the focus should be on investment and any risk associated with the investment, which would increase depending on the environment. He stated that by following an Agile iterative delivery approach, there was a risk the perceived lack of visibility in terms of progress could cause 'friction' between the project and its investors (Highsmith, 2010, p. 308). This apparent lack of transparency contradicted one of the primary principles of Agile, which is to have user involvement throughout the lifecycle of the project (Boehm and Turner, 2003; Wernham, 2012). An alternative governance approach or framework could be introduced to manage this friction, which would still contain typical governance elements, such as 'planning, processes, practices and risks'. These are regarded as a critical part of any governance process, to ensure the tracking of any return on investment (Highsmith, 2010, p. 311). Highsmith's proposal of the use of a gated review, mirroring the Waterfall approach, echoes the concept of a Hybrid project delivery approach and is covered in more detail at 2.3.4.

2.3.3 Differences between Waterfall and Agile approaches

Project delivery approaches can be heavyweight or lightweight, depending on the scale of upfront planning required or completed before the project begins development (Meso and Jain, 2006). There are clear differences between the Agile and Waterfall project delivery approaches across several areas, which

could influence how governance might be managed. These are summarised in Table 2.1.

Table 2.1 Differences between traditional/Waterfall and Agile project delivery approaches (Adapted from Boehm, 2002; Boehm and Turner, 2005; Karlstrom and Runeson, 2005; Nerur, Mahapatra and Mangalaraj, 2005; Vinekar, Slinkman and Nerur, 2006; Siakas and Siakas, 2007; Highsmith, 2010; Kisielnicki and Misiak, 2017).

Area	Traditional/Waterfall	Agile
Controls/Measures	• Process-centric and disciplined • Progress measured • Pre-planned • Compliance driven	• People-centric • Progress assessed • Adaptable
Management Approach	• Command and control • Autonomous	• Leadership and collaboration • Co-operative • Flexible
Knowledge Management	• Explicit	• Tacit
Role Assignment/Definition	• Individual roles, usually specialists • Manager as planner	• Self-organising, multi-disciplinary teams with role interchangeability • Manager as facilitator
Communication	• Formal	• Informal
Customer's Role	• Important, but low involvement	• Critical, high involvement; regular product feedback to developer
Project Cycle	• Process-centric guided by tasks or activities • Unified project approach • Linear • Long durations	• People-centric guided by product features • Individual project approach • Iterative • Short durations
Organisational Structure	• Mechanistic: bureaucratic with high formalisation • Managerial decision-making • Large teams	• Organic: flexible, participative encouraging cooperative social action and collaborative working • Consultation • Pluralist decision-making • Small teams

The differences are significant and spread across the range of activities required to deliver projects and IT changes. After comparing the two delivery approaches,

Khoza and Marnewick (2020, p. 65) found there was no difference in 'business success' project outcomes between Agile and Waterfall, but projects following an Agile approach had better 'strategic success'. Nonetheless, combining Waterfall and Agile into a Hybrid approach is now frequently used to deliver both IT and non-IT projects (Belling, 2020; Bushuiev and Kozyr, 2020).

2.3.4 Development of a Hybrid approach

Both the Waterfall and Agile delivery approaches have evolved, giving rise to attempts being made to develop a 'middle ground' (Cobb, 2011, p. 8). The promotion of an integrated approach to project delivery was proposed as a way of joining the two methods together that drew upon the best principles of each (Karlstrom and Runeson, 2005; Vinekar, Slinkman and Nerur, 2006; Mahadevan, Kettinger and Meservy, 2015; Belling, 2020). In practical terms, this was recognised as being difficult to achieve and should be considered with some caution (Nerur, Mahapatra and Mangalaraj, 2005). However, although difficult, an integrated delivery approach was acknowledged as being necessary for some projects (Boehm, 2002; Vinekar, Slinkman and Nerur, 2006; Mahadevan, Kettinger and Meservy, 2015), albeit with its proposed use being applied across a 'continuum' (Belling, 2020, p. Ch.1). Karlstrom and Runeson (2005) suggested that the use of Agile alongside a Stage-Gate approach provided increased opportunity for planning, controls and reporting, but Boehm (2002, p. 69) believes the selection of a project delivery approach should be based on the outcomes of a 'risk analysis'. When deciding on a Hybrid approach, Belling (2020) recommends reviewing where your organisation sits on a defined 'continuum' before making a decision to proceed. Some projects might be best delivered with this combined approach, but it must be carefully planned (Gablas, Ruzicky and Ondrouchova, 2018). Furthermore, Hybrid is said to be unsuitable for small projects (Binfire, 2021). This was reiterated by Azenha, Reis and Fleury (2021, p. 105), who concluded that Hybrid would be best used for more complex projects as it allowed both 'flexibility' and 'control' depending on the project stage. As one of the earlier creators of a Waterfall (Stage-Gate) approach, Cooper (1988; 1990), also developed a proposal for linking Agile with Stage-Gate methods (2016) underlining the constraints around some aspects of the Agile approach.

Highsmith advocates still using a gated review approach for an iterative delivery, as he believes this allows risk-based decision-making to secure additional investment in design and development, supported by a four-phase governance model through typical Agile phases: Concept, Expansion, Extension, Deployment (Highsmith, 2010, p. 316). Each of these phases aligns with the standard staged use of Agile in government (Government Digital Service, no date-c) as seen in Figure 2.3.

Figure 2.3 Alignment of phases of Agile with Cabinet Office terminology

A similar view on investment control was submitted by Gablas, Ruzicky and Ondrouchova (2018, p. 47), who suggested that where a Hybrid approach was being followed, funding for the Agile element should remain 'independent' from other project investment, ensuring firm budgetary controls were in place to track spending.

In acknowledgement of the increased use of Hybrid methods, particularly by central government, guidance and training has been developed on how to manage such an approach by 'blending' Agile with the PRINCE2 Stage-Gate methodology (AXELOS, 2015, p. 20). Specific guidance on governance for those projects also using Agile has been developed and included in the GDS Service Manual, but this does not directly reference Hybrid methods (Government Digital Service, no date-c). There is also guidance on conducting the assurance review of projects where both Agile and Waterfall delivery approaches are being followed (Infrastructure and Projects Authority, 2017a), but again, this does not directly reference the term 'Hybrid'.

2.3.5 Benefits and challenges of using Agile

Approaches to Agile and Agile methods have become more developed. The previous notion, that their adoption led to a lack of discipline in the project domain, no longer holds true (Cobb, 2011; Mergel, Ganapati and Whitford, 2021), as its use has shown project delivery successes (Serrador and Pinto, 2015; Pace, 2019; Mergel, Ganapati and Whitford, 2021). Instead, the benefits attributed to increased ongoing input from user experts or collaborating with customers rather than upfront defined requirements, have resulted in the delivery of services that add value to businesses, business environments, stakeholders and users in the longer term (Cockburn and Highsmith, 2001; Cobb, 2011; Serrador and Pinto, 2015; Gemino, Horner Reich and Serrador, 2021). Previously, Agile was seen as a method for software development, but over time has developed into what can be perceived as a well-structured, development process (Cobb, 2011). It was believed, due to the nature of its methodology, that Agile would not prescribe itself to the 'higher-level planning' required for larger projects (Cobb, 2011, p. 18). Nonetheless, release planning 'is one of the most important and sometimes the most ignored of Agile project management practices' (Highsmith, 2010, p. 201).

Using Agile to develop and deliver projects brings certain challenges to (Cobb, 2011; Vacari and Prikladnicki, 2015; VersionOne, 2020; Mergel, Ganapati and Whitford, 2021). Cobb (2011) highlights one challenge relating to one of its fundamental tenets, i.e. the integration of the process for establishing requirements and developing the system, which can make lines of demarcation between typical project roles and responsibilities difficult to establish. The 'right' kind of environment or organisation, and the need to demonstrate flexibility in its application, is crucial to its success (Highsmith, 2010; Mergel, Ganapati and Whitford, 2021). For example, assumptions exist around the personalities of the project team members who are following Agile approaches, with speculation around their lack of skill and discipline levels, when in reality an Agile approach requires a 'much higher level of skill and self-discipline from everyone on the team' (Cobb, 2011, p. 14). Areas of potential issues and subsequent solutions in the form of good practices are identified on how best to approach the transition to adopting Agile. These include: the handling of people and communication

issues through acknowledging the need to change the attitude of managers, the colocation of teams, and the approach to autonomous decision-making (Cockburn and Highsmith, 2001; Boehm and Turner, 2005; Nerur, Mahapatra and Mangalaraj, 2005; Kajko-Mattsson, 2008; Highsmith, 2010; Cram, 2019). Regardless of the challenges, the use of Agile as a project delivery approach is necessary and encouraged, and is on the increase both within and outside of central government (Government Digital Service, 2016a; VersionOne, 2020). When used within central government, there remains a requirement for structured supporting processes to track and report progress, which includes governance, even when being used to develop IT projects (Government Digital Service, 2016b).

2.4 Project governance

The sensitive nature of government projects and the use of public money to design, develop, deliver and implement different types of change, drives the need for controls, which are supplemented with an appropriate level of governance and assurance, determined by the project's risk factors (Infrastructure and Projects Authority, 2021a). This section focuses on the definition of governance and its context within the project delivery area. It provides a high-level overview of governance principles, with a particular focus on governance in central government.

Governance should be 'sufficiently versatile to enable projects to adapt, be flexible and avoid premature lock-in' (Williams and Samset, 2010, p. 45). However, current arrangements in some areas of central government are perceived to not allow such flexibility (Young, 2015). As Garland (2009) suggests, the starting point must be establishing and identifying problems with the current governance before considering the development of new governance approaches. To identify such problems, research has examined how governance is defined, described and applied throughout the literature, for both digital and non-digital projects (Karlstrom and Runeson, 2005; Nerur, Mahapatra and Mangalaraj, 2005; Müller, 2009; Misra, Kumar and Kumar, 2010; Hoda, Noble and Marshall, 2012; Leybourne and Sainter, 2012), with a particular emphasis on

central government. The need for different approaches to governance appears to be driven by a number of factors. One such factor is the increasing development of IT, its supporting systems, and the consequent ease in the flow, availability and communication of information relating to these projects (Davies, 2011).

The approach to project delivery can influence the level, scale, and approach to project governance (Cooper, 2006; Ambler, 2009; Müller, 2009; Barlow *et al.*, 2011; Biesenthal and Wilden, 2014), of which the primary purpose is to 'enable efficient and effective project decision-making' (Garland, 2009, p. 8). Historical factors, including the relative success or otherwise of public sector projects, have resulted in the implementation of processes and procedures intended to reduce the risk of failure by managing the levels of decision-making and accountability (Williams and Samset, 2010; National Audit Office, 2004; Department for Culture, Media and Sport, 2019). Other factors, including the level of control in decision-making and risk-taking within an organisation, may also have some influence on the way projects are governed and approved (Weber, 1964; Henderson and Lee, 1992; Boehm and Turner, 2005; Vinekar, Slinkman and Nerur, 2006; Ahimbisibwe, Cavana and Daellenbach, 2015; Mahadevan, Kettinger and Meservy, 2015; Zwikael and Smyrk, 2015).

Project management in central government advocates application of the PRINCE2 methodology, governing and assuring projects using Stage-Gate reviews (Her Majesty's Treasury, 2007; Cabinet Office, 2011), and obtaining financial approval through the creation of business cases (Her Majesty's Treasury, 2020b). The Digital by Default service standards suggest use of Agile methods where possible for IT development projects (Government Digital Service, no date-a). To support the adoption of Agile methods, an audit on early Agile use in government (National Audit Office, 2012b) provided some principles to follow, supplemented by further guidance on the production of business cases (Her Majesty's Treasury, 2020a) to secure financial approval of Agile projects. However, these instructions provide no direct reference to a Hybrid project delivery approach, and a review of literature also found no governance guidance to support the use of Hybrid in central government.

2.4.1 Defining governance

Governance has been defined in a number of ways (Bevir, 2013). Nonetheless, the starting point was to focus on establishing a definition that best reflected the governance of projects in central government. A composite definition provides governance as being:

> 'the set of policies, regulations, functions, processes, procedures and responsibilities that define the establishment, management and control of projects, programmes and portfolios' (APM, 2012, p. 3) to ensure 'the effectiveness of projects… helping to ensure that the right projects are done well' (Her Majesty's Treasury, 2007, p. 7), with the 'primary objective' of enabling 'efficient and effective project decision making' (Garland, 2009, p. 8).

Governance relates to 'theories and issues of social coordination and the nature of all patterns of rule' (Bevir, 2013, p. 1). A multitude of books and journals offer a variety of definitions of governance (Her Majesty's Treasury, 2007; Garland, 2009; Müller, 2012; Bevir, 2013; Müller *et al.*, 2013; Ahola *et al.*, 2014; Biesenthal and Wilden, 2014; Müller and Lecoeuvre, 2014; Müller, Pemsel and Shao, 2014; Müller *et al.*, 2014; Too and Weaver, 2014; Müller *et al.*, 2016), but a systematic approach to develop a definition of project governance was applied by McGrath and Whitty, resulting in the final definition:

> 'the governance of a project = the system by which a project is directed and controlled' (McGrath and Whitty, 2015, p. 781).

Examination of the literature referencing IT governance found a number of alternative descriptions and definitions. Some of these focused more on the governance of IT itself and how it aligned with corporate objectives (Korac-Kakabadse and Kakabadse, 2001; Ebert, Vizcaino and Manjavacas, 2020); how IT performance should be measured in terms of security and risk (Meadows, 2003); or how decision-making and accountability for decisions is made (Weill, 2004; Bowen, Cheung and Rohde, 2007).

After reviewing 12 different definitions, Webb, Pollard and Ridley (2006, p. 7) concluded IT governance should be defined as the:

> ‘Strategic alignment of IT with the business such that maximum business value is achieved through the development and maintenance of effective IT control and accountability, performance management and risk management’.

Korac-Kakabadse and Kakabadse (2001, p. 10) propose that IT governance should be presented as either a ‘control’ or ‘stakeholder’ model, each with its particular set of roles and structures in terms of decision-making. Furthermore, procedures and structures to support decision-making are also referenced by Peterson (2004) in defining how to establish IT governance. However, Webb, Pollard and Ridley (2006, pp. 5-6) contradict these views and specifically exclude ‘control frameworks’, ‘policies and procedures’ and ‘structures’, suggesting these are ‘artificially created’ and in place to ‘assist and support’ how IT governance should operate. Therefore, although they are not believed to add value to the definition of IT governance, procedures and structures could be deemed a significant element of how it operates.

In terms of governance of IT projects, Meadows (2003, p. 3) submits shareholders are unwilling to accept project failure and these projects should actually be set-up as ‘business projects’, as ‘business commitment, buy-in and support are essential’. As with Korac-Kakabadse and Kakabadse (2001), Müller (2009) focused on stakeholders when developing four governance paradigms, concentrating on shareholder or stakeholder orientation, set against the control focus being either outcome or behaviour-driven, which he described as:

- Flexible Economist Paradigm (with an outcome control focus and shareholder orientation).
- Versatile Artist Paradigm (with an outcome control focus and stakeholder orientation).
- Conformist Paradigm (with a behaviour control focus and shareholder orientation).
- Agile Pragmatist Paradigm (with a behaviour control focus and stakeholder orientation).

The Agile pragmatist paradigm provides a ‘bottom-up’ (Müller, 2009, p. 63) governance approach, enabling a governance framework that is ‘more process and control orientated, stressing the need for planning and plan conformance, a process discipline and clear lines of responsibility’ (Müller, 2009, p. 65).

However, on further scrutiny this, proposed framework appears to refute two of the four statements of the Agile manifesto:

> ‘Individuals and interactions over processes and tools’; and
> ‘Responding to change over following a plan’.
> (Beck *et al.*, 2001a).

A comprehensive search of current literature for the exact phrase ‘Agile pragmatist paradigm’ found little development of this paradigm and its underpinning principles other than by Müller himself (Müller, 2009; Aubry, Müller and Glückler, 2011; Müller, 2012; Müller and Lecoeuvre, 2014; Müller, Pemsel and Shao, 2014). This offers an opportunity to reflect upon the relevance of this paradigm in the use of Agile in delivering central government IT projects.

When comparing descriptors, ‘control’ is the single common element between the definitions of project governance (as provided by McGrath and Whitty (2015)) and IT governance (as provided by Webb, Pollard and Ridley (2006)). It is also included in the overarching description of the Agile pragmatist paradigm. How control is considered throughout the administration of governance in central government was explored further throughout the primary research.

Governance to support Agile approaches should be ‘good enough’ (Luna *et al.*, 2014, p. 135), with the primary difference between Waterfall and an Agile/Hybrid governance approach being its ‘pace and frequency’ (Belling, 2020). There are, however, some common elements including assurance, allocation and tracking of funding, and the need for clear objectives, albeit these are approached in different ways (Lappi *et al.*, 2018). Structures and processes to support governance regardless of the project delivery approach are also a standard requirement, examined further in the following sections.

2.4.2 Organisational factors and governance

The structures and processes required to support governance feature strongly in the descriptions and defined principles of governance across academic and practitioner literature (Müller, 2009; Wernham, 2012; Müller, 2017a; Lappi *et al.*, 2018; APM, 2019a; Infrastructure and Projects Authority, 2021a). The following

subsections will focus on how these areas relate to the delivery of projects, particularly those in central government.

The Organisation for Economic Cooperation and Development (OECD) definition of governance states the elements underpinning governance should include ‘procedures and processes’ against which organisations are ‘directed and controlled’, and provide structures that detail how ‘rights and responsibilities’ are distributed throughout an organisation, along with the ‘rules and procedures for decision-making’ (OECD, 2005). This phrasing is similar to the definition provided by the British Standards Institution in their guidance on governance, which defines governance as ‘principles, policies and framework by which an organisation is directed and controlled’ (British Standards Institution, 2017, p. 1). Additionally, Biesenthal and Wilden (2014, p. 1302) state governance is a ‘multi-level phenomenon that facilitates interactions between organizational actors within and across organizations’. They extend this description and offer the view that the structures to support governance can be both formal and informal, allowing for the governance of ‘accountabilities and responsibilities across different organizational levels both internally and externally’ (Biesenthal and Wilden, 2014, p. 1303). Applying the definitions of the OECD (2005), the British Standards Institution (2017), and the assertion of Biesenthal and Wilden (2014), it became evident to the researcher that attempting to decouple the requirement for governance from the way organisations work was counterintuitive, particularly when reflecting the application of governance across the highly structured, hierarchical organisations of central government departments (Weber, 1964). Such features have been referred to as ‘organisational factors’ throughout the research.

Organisational factors, such as the level of control in decision-making and risk-taking, might also influence the way projects are managed, governed and approved (Weber, 1964; Henderson and Lee, 1992; Boehm and Turner, 2005; Vinekar, Slinkman and Nerur, 2006; Ahimbisibwe, Cavana and Daellenbach, 2015; Mahadevan, Kettinger and Meservy, 2015; Zwikael and Smyrk, 2015). To narrow the focus in this area, only organisational factors identified in the definition of governance, and words that appear in descriptions or definitions that also align

with the typical theories of how hierarchical organisations work, were explored, such as those presented by Weber (1964); Handy (1985) and Huczynski and Buchanan (2013).

Organisational factors identified during the review of literature, when establishing a definition of governance, included:

- Organisational structures and hierarchy
- Power and authority
- Decision-making
- Risk management
- Governance procedures, controls and reporting
- Stakeholder engagement

The above factors were all considered in terms of project delivery and its supporting governance.

2.4.2.1 Organisational structures and hierarchy

Structures of organisations are defined by Child (1972, p. 2) as the 'formal allocation of work roles and the administrative mechanisms to control and integrate work activities including those which cross organizational boundaries'. The public sector is perceived as bureaucratic, hierarchical and controlled (Weber, 1964; Handy, 1985; Buchanan and Huczynski, 2010), which does not align with the purported less restrictive incremental, iterative nature of Agile (Karlstrom and Runeson, 2005; Wernham, 2012), introduced across central government as the primary digital project delivery approach. Where a hierarchy exists, there may also be a requirement to further split the organisation into functional or specialist lines. This can sometimes cause conflict between the functional area and the levels of authority residing within the hierarchy (Simon, 1997). A similar view was offered by Child (1972, p. 3): 'different types of environmental conditions… require different types of organizational structure' to achieve a 'high performance', with Hobbs and Ménard (1993, p. 97) suggesting, projects that are strategically important to an organisation should be created as a 'separate unit'. Project delivery in central government has tended to sit as a

separate specialist area within government departments, with its own governance structures and functional standards (Infrastructure and Projects Authority, 2021a), and Capability Framework (Infrastructure and Projects Authority, 2018c), which aligns with these descriptions. Moreover, where uncertainty is present, for example in the management of change, the organisational structure should be more adaptive (Child, 1972). Using an Agile project delivery approach is believed to require a more adaptive organisation (Mishra and Mishra, 2011), because when Agile becomes more formal, it can become 'dysfunctional' and potentially lose its 'agility' (Iivari and Iivari, 2011, p. 517). Project success is said to be attributable to a series of project factors, as defined by Hobbs and Ménard (1993, p. 97), which can be either 'supportive' or 'detrimental'. The descriptions provided in the 'supportive' list align with the typical attributes of an Agile project delivery approach, as outlined in section 2.3.2, with the 'detrimental' descriptions having some similarity to the Waterfall approach defined in section 2.3.1, and the hierarchical, bureaucratic approach to governance in central government.

Within central government organisations, the hierarchical structures adopted for governance and the leadership accountability and responsibility for applying this governance is clearly defined (Infrastructure and Projects Authority, 2021a). Gomberg (1964) asserts a view that if the project manager is considered an innovator or entrepreneur, and is required to be more adaptive in their leadership approach, areas of conflict may arise. For example, he suggests conflict might arise between 'lower members of management hierarchy with a vested interest in the old way', which may be at the 'price of disrupting the bureaucracy' and could change the relationship a project leader might have in an organisation (Gomberg, 1964, pp. 54-55). Gomberg (1964, p. 66) concludes that an established hierarchy perpetuates its own behaviour as subordinates in these hierarchies would prefer to tell a superior what 'they assume they want to hear rather than what they should hear', and are reluctant to provide a challenge when formulating 'intelligent and pertinent problems'. Such behaviour can increase risk to project delivery (risk management is covered in more detail at section 2.3.2.4), in terms of what Pinto (2014, p. 377) describes as a 'tolerance of deviation'. Where a lack of challenge to deviant behaviours and decisions is reinforced by governance processes, this could increase project failure. However,

transparency in decision-making, can help prevent such failure (Pinto, 2014). Introducing Agile as a project delivery approach might be more difficult in organisations that are formal or bureaucratic, due to the nature of Agile and its underpinning principles (Nerur, Mahapatra and Mangalaraj, 2005; Hobbs and Petit, 2017). Agile encourages trust and transparency, which should be 'exercised in both directions' to succeed (Wernham, 2012), and a change in culture and behaviours, particularly with regards to decision-making, is required to ensure Agile and Hybrid approaches are successful (Stober and Hansmann, 2010; Hakim, 2019; Belling, 2020; Mergel, Ganapati and Whitford, 2021). Generally, project delivery success is likely to increase if they are set-up as 'separate units', to acknowledge the differences in the culture of projects and the wider organisation (Hobbs and Ménard, 1993, p. 96).

2.4.3.2 Power and authority

The hierarchical nature of public sector organisations can lead to roles that are given power through the position they hold in an organisation, described by Handy as 'legal' or 'legitimate' (Handy, 1985). Power is defined by Weber (1964, p. 152) as the 'probability' of a person within a 'social relationship' being able to complete what they desire regardless of the 'resistance' they encounter due to their position in an organisation. The concept of social power has been expressed by Youker (1993, p. 241) as 'the ability to get others to do the work (or actions) you want, regardless of their desires'. Yet, Handy (1985, p. 123) links power and influence, and describes influence as a 'process' by which one individual pursues the modification in 'attitudes or behaviour' of another, with power being the enabler.

In terms of governance in public sector projects, authority and accountability for delivery are clearly defined by guidelines provided to civil servants (usually the SRO in projects), which also gives guidance on providing evidence to Parliamentary Select Committees (Cabinet Office, 2014; Infrastructure and Projects Authority, 2019). Project managers are said to require power to improve the opportunity to deliver otherwise they could 'accomplish little' (Youker, 1993, p. 241). However, the increasing complexity of projects has resulted in project

managers potentially losing some of the 'formal authority' over stakeholders or partners who they need to deliver elements of the project on their behalf, which actually increases the need for 'social power' and the ability to sway the 'behaviour of others' (Youker, 1993, p. 241). Being able to control the level and type of support available is said to be a consequence of 'inter-organizational power' (Benson, 1975, p. 234), which aligns with a need for formal authority. In some organisations, the 'patterns of dominance' are clearly defined, allowing certain individuals to 'control others' (Benson, 1975, p. 239); this defines the typical hierarchical, bureaucratic structure of the public sector, its approach to governance and approvals, and the distribution of power (Weber, 1964; Buchanan and Huczynski, 2010). Implementing separate IT governance structures, such as IT steering groups, could provide such distribution of power (Ferguson *et al.*, 2013) and also be an important factor in achieving project excellence (Sirisomboonsuk *et al.*, 2018). In doing so, the risk of too much power existing in one part of the organisation could be reduced, thus preventing the need for avoidance or mitigation of 'dysfunctional consequences' (Simon, 1997, p. 207), to allow an organisation's tasks to be fully accomplished.

Authority has also been defined as the application of power and the making of decisions to 'guide the actions of another' (Simon, 1997, p. 179). By delegating such decision-making to a group, behaviours become 'coordinated', giving the group 'control' (Simon, 1997, p. 186) and securing decisions that are of 'a high quality of rationality and effectiveness' (Simon, 1997, p. 188). In delivering change using an Agile approach, there is a need to allow some level of autonomy or authority to be delegated to the project manager (Wernham, 2012). Gomberg's (1964, p. 55) suggestion of providing a degree of 'autonomous freedom' and defined purpose against which an individual can be measured, aligns with the delegated authority, tolerance and accountabilities allocated to both SROs and project managers by the Accounting Officer, who is usually the Permanent Secretary or Chief Executive of a department (Infrastructure and Projects Authority, 2017a; 2021a; Department for Culture, Media and Sport, 2019). Such accountabilities also include the need to ensure the project is delivered within the defined business case and achieves the benefits outlined in this business case (Zwikael and Smyrk, 2015; Infrastructure and Projects Authority, 2019).

To work most effectively, Agile and Hybrid encourage the delegation of decision-making within a set of constraints to individuals involved in the delivery of digital projects to become self-organising teams (Wernham, 2012; Belling, 2020). To benefit from 'expertise in decision-making', there is a need to 'go beyond the formal structure of authority', as the 'authority of ideas' is important and should 'coordinate with the authority of sanctions' (Simon, 1997, p. 189). Benson (1975, p. 232) submits, 'money and authority are interrelated', and defines authority as 'the legitimation of activities' and the 'right and responsibility' to complete activities to deal 'with a problem area or focus'. The link between money and authority is also relevant to projects, as one aspect of governance is the provision of assurance to stakeholders or those in authority to secure additional funding for future project expenditure (APM, 2018a). This type of control over expenditure is required regardless of project delivery approach, particularly in central government (Infrastructure and Projects Authority, 2011; 2017a; Her Majesty's Treasury, 2020a). Such links are further described by Benson (1975, p. 244) as an authoritative strategy comprising a type of network that controls resource allocation, both authority and money, to 'mandate precise activities… not merely… encourage or reward those activities'. This is usually determined by 'a particularly powerful participant'. The 'position power' outlined by Handy (1985, p. 128) similarly aligns with this description, again, when taking account of the hierarchical design of central government. Within central government, projects over a certain value or deemed to be novel and contentious (Infrastructure and Projects Authority, 2017a; 2017c) must follow additional 'inter-organisation' governance, i.e. that which involves a number of different organisations (Ahola *et al.*, 2014, p. 1330), namely the IPA and HMT. For projects with a technological solution, final approval must also be provided by GDS. The delegated authority and tolerances approach adopted by public sector projects (APM, 2018d), coupled with the IPA and HMT central government approvals and assurance routes for certain projects, support both Benson's and Handy's descriptions (Benson, 1975; Handy, 1985), as these routes must be navigated to obtain funding and approval to proceed to the next stage of the project (Infrastructure and Projects Authority, 2017a; 2021a). How decisions are made in terms of progressing project delivery is examined further in the next section.

2.4.3.3 Decision-making

A decision can be defined as a 'conclusion drawn from a set of premises… value… and [be] factual' (Simon, 1997, p. 177). When decisions have to be made within projects, they can be a 'complex undertaking' (Marques, Gourc and Lauras, 2011, p. 1057). The making of decisions is 'the process of making a choice from among a number of alternatives (Huczynski and Buchanan, 2013, p. 691), but conclusions can be reached in 'different ways' (Klakegg and Volden, 2017, p. 133). Within central government project delivery, project decisions 'should be made, and approvals and authorisation given, in a timely manner, in accordance with the organisation's governance and management framework… [and] should be made by assessing options against defined criteria' (Infrastructure and Projects Authority, 2021a, p. 12). Across each of these descriptions, the common factor is the ability to make decisions based on the fact that choices exist. However, Mintzberg (2011, p. 58) suggests that decision-making draws in elements of 'controlling', which reinforces the view that decision-makers can be regarded as the 'power-holding group' and within an organisation, identified though the presence of 'inequalities of power' or a 'dominant coalition' (Child, 1972, pp. 13-14). A central government steer on project decisions is that they should be made following consultation with 'stakeholders and subject matter experts' (Infrastructure and Projects Authority, 2021a, p. 12), which would remove some of these inequalities. For example, governance through networks is deemed as the development of an 'equitable, trust-based consensus' (Davies, 2011, p. 2). Focusing on trust, relationships and empowerment breaks with the tradition of hierarchical governance and structures (Lambright, Mischen and Laramee, 2010; Davies, 2011). When decisions are made in networks where all individuals are focused on the same goal, 'synergy' can arise, which can result in the generation of new ideas or solutions to problems that might not have been identified otherwise (Agranoff and McGuire, 2001). Garland (2009, p. 10) offers a contradictory view, suggesting that using a 'consensus approach' to making decisions does not 'suit projects', particularly in large organisations.

Decisions can be made following some form of hierarchical route, with escalation through each layer as required (Weber, 1964; Simon, 1997; Too and Weaver,

2014), particularly in a specialised role such as projects, where decision-making and escalation routes are clearly defined (Simon, 1997; Infrastructure and Projects Authority, 2021a). Escalation routes are useful where conflicts arise between stakeholders involved in making decisions (Simon, 1997). Decisions may also be delegated within policy constraints, called 'tolerances' in central government, the levels of which are usually determined by the accounting officer (Simon, 1997; Infrastructure and Projects Authority, 2019). The setting of formal tolerances for projects aligns with the controls described by Child (1972, p. 7) to manage 'sub-units', with Turner and Müller (2003, p. 7) proposing the need for delegated authority to be limited by the project manager within a set of 'options' that still ensures project 'objectives' are met. Allowing decisions to be made along such 'functional lines' should enable and simplify project decision-making (Simon, 1997, p. 271).

Regardless of the level of control, effective hierarchical, delegated decision-making must be supported by formal and informal communication channels, and 'systems of authority' to ensure individuals have the necessary information to be confident in the decisions they make (Simon, 1997, p. 112). This principle of having the right information at the right time, with everyone involved in the project understanding the lines of authority to support delegated decision-making, appears equally relevant across the different project delivery approaches (Boehm and Turner, 2003; Cooper, 2016; Infrastructure and Projects Authority, 2021a). Those involved in decision-making should have the knowledge of the subject matter and therefore the desire and capability to make the right decision (Simon, 1997; Garland, 2009; Too and Weaver, 2014). This is particularly important in projects where individuals across a range of roles within the hierarchical structure will need to make decisions at every stage of the project to allow it to progress to time (Simon, 1997; Boehm and Turner, 2003; Müller, 2009; Wernham, 2012; Cooper, 2016). Decisions relating to project delivery might usually be made by the project manager, yet, as with most organisational decision-making (Simon, 1997), they are rarely made in isolation by a single individual or person in a leadership role. For example, a governance board is usually appointed and is responsible for challenging and supporting decisions (Garland, 2009; Müller, 2009; Too and Weaver, 2014). However, there is a risk to the quality of decision-

making if these boards are allowed to increase their membership to accommodate multiple stakeholders who feel they have a stake in the project (Garland, 2009). To manage this risk, although formal decisions are not made by the group, as they remain with the SRO (Infrastructure and Projects Authority, 2019), each member knows their personal role and responsibility in terms of supporting decision-making (Garland, 2009; Infrastructure and Projects Authority, 2021a) and should understand the perspectives of others and their motivation as part of the group (Simon, 1997). The role of those making decisions is to ensure they align with the overarching goals, objectives or vision of the business (Simon, 1997; Müller, 2009). To support project delivery approvals in central government, the focus of the project is usually the business case, which provides an overview of its strategic intent (Her Majesty's Treasury, 2020b; Infrastructure and Projects Authority, 2021a), regardless of the project delivery approach. However, for Agile and Hybrid delivery approaches, a shared vision might take the place of, or supplement this strategic overview, and is usually outlined to everyone involved in the digital change from the start (Boehm and Turner, 2003; Government Digital Service, 2016b; Belling, 2020).

There are risks associated with a joint approach to decision-making, which is attributed to bounded rationality. Bounded rationality can lead to decisions being more expensive in terms of time, and an inability to effectively communicate all potential options could also result in decisions being made on potentially incomplete information (Williamson, 1975; Huczynski and Buchanan, 2013). One of the Agile manifesto commitments is to deliver something to users as early as possible in the development cycle, which involves making quick group decisions on whether to proceed to the next stage with the information available at that time (Boehm and Turner, 2003; Wernham, 2012; Government Digital Service, no date-c; Belling, 2020). This can be described as ‘the minimum functionality required to safely launch the service’ or the ‘minimum viable product’ (Infrastructure and Projects Authority, 2017a, p. 29). To some extent, bounded rationality aligns with the decision-making required to support the delivery of digital services in central government. Digital delivery and application of Agile advocates the regular demonstration of a solution to critical knowledgeable stakeholders and users (Wernham, 2012). Where the necessary knowledge does not exist, the

organisation must ensure this is gained prior to the individual being involved in any decision-making process (Simon, 1997). Although sometimes difficult to achieve, Wen, Qiang and Gloor (2018, p. 830) suggest continuity of stakeholders in decision-making should help increase or maintain the required knowledge. They state 'technical expertise' should not be the only factor when securing the right people to make these decisions, which are more effective when they are made by stakeholders who have previously worked together or collaborated to make decisions. Furthermore, the level of risk associated with all decisions should be taken into account, which might be influenced by previous experiences (Lawrence, 1986; Simon, 1997) or the level of risk appetite, i.e. 'the level of risk with which an organisation aims to operate' (Government Finance Function, 2020b, p. 4). How these risks are identified and managed is covered in more detail in section 2.4.3.4.

2.4.3.4 Risk management

An organisation must take risks in order to be successful in delivering its defined strategies (Government Finance Function, 2020a). Without taking some risks, 'unhealthy behaviour' can materialise within the governance of projects (Garland, 2009, p. 10). Risks are found within and across all organisations, and their management is a crucial part of good governance processes (Biesenthal and Wilden, 2014; Too and Weaver, 2014; Government Finance Function, 2020a; Infrastructure and Projects Authority, 2021a). A risk can be defined as an uncertain event or set of events that, if it did happen, would impact positively or negatively the objectives of a project (Best Management Practice, 2010; Project Management Institute, 2017). The level of risk appetite an organisation has will depend on its culture (Garland, 2009), with Mayer, Davis and Schoorman (1995, pp. 726-727) proposing, 'the level of trust is compared to the level of risk in a situation'. They suggest the 'context in which the risk is to be taken' can also influence 'risk-taking behaviour', and provide examples of this: 'the stakes involved, the balance of power in the relationship, the perception of the level of risk, and the alternatives available'. Where risk appetite is low, the likelihood of what could be perceived as risk-laden decisions would be reduced (Simon, 1997; Government Finance Function, 2020b). All projects must be ready to deal with

'major risks' (APM, 2019b, p. 28) and should be managed to reduce their impact (Government Finance Function, 2020a). The Association for Project Management (APM) (2018c) website defines risk analysis and management as:

> 'a process that allows individual risk events and overall risk to be understood and managed proactively, optimising success by minimising threats and maximising opportunities and outcomes'.

Central government has its own guidance, 'The Orange Book', developed by the Government Finance Function – part of HMT – which fully outlines how risks should be characterised and managed by following a set of five principles sat within a risk framework, summarised as:

- Governance and leadership
- Integration
- Collaboration and best information
- Risk management processes
- Continual improvement

(Government Finance Function, 2020a)

HMT also provides central government departments with supplementary guidance on risk appetite, defined as 'the level of risk with which an organisation aims to operate', and risk tolerance as 'the level of risk with which an organisation is willing to operate' (Government Finance Function, 2020b, p. 4). Within a project environment, it is accepted that critical decisions cannot be made without a degree of risk taking. Nonetheless, clearly defined processes and disciplines are in place to ensure these risks are documented, mitigated, and monitored throughout the lifecycle of the project (Boehm and Turner, 2003; Flyvbjerg, 2003; APM, 2019a; Government Finance Function, 2020a; 2020b). Boehm and Turner propose three categories of risks associated with both Waterfall and Agile delivery approaches: overarching project environmental risks; Agile risks; and plan-driven (Waterfall) risks (Boehm and Turner, 2003, p. 102). Some projects involving a digital element can be said to be more risky due to their size and scale (Flyvbjerg and Budzier, 2011), and decisions must be made taking account of such risk (Gablas, Ruzicky and Ondrouchova, 2018). However, the reason behind the introduction of an Agile approach to develop new technologies in central government was to reduce the level of risk by iterating solutions and failing

fast (Government Digital Service, 2016a; 2016b). Application of a Hybrid project delivery approach can also reduce this level of risk (Azenha, Reis and Fleury, 2021), including risk associated with technical decisions made to allow projects to progress (Belling, 2020). When using Agile in central government, risks are still closely managed, but the advice from GDS is to only spend time on management of the risks nearer the date they could impact the delivery of the digital solution being developed (Government Digital Service, 2016b). Such advice contradicts that in The Orange Book, which advocates 'ongoing and continuous monitoring' of risks as they will be used to inform decision-making (Government Finance Function, 2020a, p. 20), and the guidance provided to project professionals conducting assurance reviews of projects following an Agile delivery approach (Infrastructure and Projects Authority, 2017a). Stakeholders should always be involved in the risk management processes, from identification through to management, as their views are crucial to understanding the scale of the risk, and what actions might need to be taken to mitigate the risk or enhance opportunities (Best Management Practice, 2010; Project Management Institute, 2017; APM, 2019a; Government Finance Function, 2020a; Qazi, Dikmen and Birgonul, 2020). As with all governance procedures and processes, management of risk provides the opportunity for a level of control and reporting as part of an overarching central government governance framework (Government Finance Function, 2020a; Infrastructure and Projects Authority, 2021a).

2.4.3.5 Governance procedures, controls and reporting

Governance procedures

Governance must be supported by a framework that clearly defines the procedures to be followed, and the roles and responsibilities of those administering the processes to ensure consistency in application across all projects (Klakegg *et al.*, 2008; Garland, 2009; Müller, 2009; Ahola *et al.*, 2014; Biesenthal and Wilden, 2014; Müller *et al.*, 2017; APM, 2019a). Having 'good' governance in place is said to be related to good project performance and can sometimes 'improve' this performance (Turner, 2020, p. 10). Within central government, governance is overseen by trained specialists, given the authority for administering the processes laid out in the framework (Weber, 1964); for

projects, this is usually a Programme Management Office (PMO), which completes these fundamental activities on behalf of the project owner and provides an internal independent view of project status across all areas for the owner (Müller, 2009; Too and Weaver, 2014; Müller *et al.*, 2017; Infrastructure and Projects Authority, 2021a). A PMO has been defined by the APM (2016b) on its website as:

> 'a group or department within a business, agency or enterprise that defines and maintains standards for project management within the organisation. The PMO strives to standardise and introduce economies of repetition in the execution of projects.'

The PMO will be unsuccessful if they act as 'policemen or control freaks' by overlaying 'bureaucracy' instead of providing the support needed by the programme and project managers (Turner *et al.*, 2010, p. 128). There is, however, a view that those projects adopting an Agile or Hybrid delivery approach do not require a PMO, as it is perceived as being 'bureaucratic' and 'not compatible with Agile' (Binfire, 2021). If a PMO is thought to be necessary, some reorganisation is likely to be required to support Agile and Hybrid delivery approaches (Belling, 2020).

Governance processes should have some flexibility to support project managers in making decisions (Müller *et al.*, 2013; Biesenthal and Wilden, 2014) and, where the project lifecycle is long, the structures underpinning governance must be adaptable enough to accommodate 'unforeseen events' or conditions that sit outside the control of the projects, e.g. general elections and/or a change of Ministers. Having flexibility, particularly for larger more complex projects, allows issues to be managed more easily (Miller and Hobbs, 2005, p. 47). To achieve this flexibility, the organisational culture must advocate a 'tolerance for risk' to encourage individuals to adopt innovative ways of working (Deal and Kennedy, 1988, p. 43), and challenge the standard processes found in a bureaucratic organisation (Weber, 1964). Typically, the overarching responsibility for the application of governance lies with the project owner and members of the board overseeing the projects (Too and Weaver, 2014; Infrastructure and Projects Authority, 2019; Infrastructure and Projects Authority, 2021a). While guidance on the governance of central government projects has been clearly defined

(Infrastructure and Projects Authority, 2019; 2021a), project owners and leaders are still granted delegated authority, albeit within constraints, to apply some flexibility in the way they manage and govern projects. Such flexibility is also encouraged when following Agile and this, coupled with guidance on risk appetite, could support the development of innovative ways of working while governing and delivering projects (Highsmith, 2010; Wernham, 2012; Government Digital Service, 2016b; Government Finance Function, 2020b; Infrastructure and Projects Authority, 2020b; 2021a). Regardless of the governance approach, some control is necessary for competent decision-making, such as ensuring decisions are based around the development and delivery of an objective to a certain standard and, critically, having the outcome reviewed by someone experienced, confident and capable of confirming successful delivery of the defined requirement (Simon, 1997).

Controls

Controls are an important part of the governance framework and are defined by the APM (2019a, p. 211) as 'tracking performance against agreed plans and taking the corrective action required to meet defined objectives'. These controls can also encompass assurance activities that assess and report on project status to stakeholders.

The way of managing controls might differ depending on the project delivery approach (Klakegg *et al.*, 2008; Too and Weaver, 2014; APM, 2019a; Belling, 2020; Azenha, Reis and Fleury, 2021; Infrastructure and Projects Authority, 2021a). When following a Waterfall project delivery approach, controls should be defined in an overarching document that also provides set tolerances and details of the plan for delivery of the project within these tolerances (Gablas, Ruzicky and Ondrouchova, 2018). The definition of a 'versatile artist paradigm' provided by Müller (2009, p. 11) somewhat aligns with tolerance-led controls overseen by stakeholders outlined in the Functional Standard, which must be followed by central government projects (Infrastructure and Projects Authority, 2021a). For Agile, Lappi and Aaltonen (2017, p. 289) found 'bureaucratic elements' typical of

government projects in terms of controls, but suggest these should be adjusted to ‘take account the requirements and characteristics of Agile’. Conversely, the central government Functional Standard provides only similar, structured controls to those specified for Waterfall (Infrastructure and Projects Authority, 2021a).

In central government, implementation of a ‘three lines of defence’ approach has provided the assurance and controls required for project delivery, which also encompasses the management of risk. A fuller definition of the ‘three lines of defence’ is provided by HMT and the IPA (Her Majesty's Treasury, 2012; Infrastructure and Projects Authority, 2018b) as:

> **First line:** Usually takes place within the ‘front-line’ or business operational areas using already established arrangements to obtain the necessary assurance, e.g. risk registers, reporting. Regarded as potentially lacking independence and objectivity. For projects, this is undertaken at a lower hierarchical reporting level, e.g. checkpoint meetings.
>
> **Second line:** Normally associated with oversight of management activity and is separate from those responsible for delivery, but not independent of the organisation’s management chain. For projects, this would be completed at a project or programme board level, chaired by the SRO with senior stakeholders in attendance to provide a coordinated, strategic approach to assurance.
>
> **Third line:** Relates to independent and more objective assurance, and focuses on the role of internal audit to provide an independent and objective opinion on the framework of governance, risk management and control. For projects, this could also involve the completion of assurance reviews coordinated by the IPA.

Implementing controls in the form of assurance reviews undertaken by experienced project professionals ensures the governance framework is being applied and followed by projects, regardless of the project delivery approach (Too and Weaver, 2014; Infrastructure and Projects Authority, 2011; Infrastructure and Projects Authority, 2017a; Azenha, Reis and Fleury, 2021). Although the purpose of the third line of defence is to provide an independent review, the scope of these IPA assurance reviews is usually determined by the SRO, who might also decide to not implement the recommendations provided as outcomes from the review (Kirkham *et al.*, 2021). As public sector projects must be supported by a business case developed to HMT ‘Green Book’ standards (Her Majesty's Treasury, 2020b), controls are based around these business cases, as they must include clear

project objectives, expenditure, benefits and a timeline for delivery (Infrastructure and Projects Authority, 2020b). Irrespective of this, a review of assurance reviews and their recommendations found that most focused on the successful overall delivery of the project rather than assuring the defined benefits were on track for being realised (Kirkham *et al.*, 2021). When projects contain some form of IT solution, assurance forms a fundamental part of the independent testing of a digital solution before it is released for public use. This assurance process is referred to as a service assessment and is usually coordinated by GDS (Wernham, 2012; Government Digital Service, no date-b). The reporting and tracking of progress are vital throughout each of the 'three lines of defence'.

Controls can also be found in the need for plans, change control, and configuration management, which are usually tracked and managed through the use of regular reporting (APM, 2019a; Infrastructure and Projects Authority, 2021a). This is covered in more detail in the next section.

Reporting

Most organisations have a requirement to share information through some form of report or record (Simon, 1997). Project status reports will provide stakeholders with an up-to-date view of how the project is performing against project objectives and can also be used to support decision-making (Marques, Gourc and Lauras, 2011). Projects following an Agile approach still provide regular status reports, and although they do not directly resemble those of a Waterfall project, they are visible to fellow team members and stakeholders, and will show progress against planned activity and the primary delivery risks (Cohn and Ford, 2003; Sharp, Robinson and Petre, 2009). Notwithstanding this requirement, Garland (2009, p. 9) suggests there can be too much emphasis on project reporting rather than 'effective decision-making'. Having a plan and a 'tracking system' in place will allow key project personnel to monitor progress and make revisions where necessary (Graham, 1993, p. 315). Project reporting also ensures 'transparency' of project status to stakeholders (Müller *et al.*, 2017, p. 54), which for central government projects, aligns with the need to demonstrate clear transparency of decision-making for all decisions made by departments (Department for Culture,

Media, and Sport, 2019; Infrastructure and Projects Authority, 2021a). There is always a risk that projects might not report their status accurately, which could be due to 'cultural norms' (Keil *et al.*, 2014, p. 59). Furthermore, conducting a third line of defence, independent assurance, as outlined above, does not necessarily mean project teams will be open and honest in their reporting, particularly if there is a lack of trust between the senior project leader and the project team (Keil *et al.*, 2014). In central government, reporting can be more complicated, particularly for those projects which are high profile, complex or of interest to Ministers. This complication could be attributed to the fact they are publicly funded and, as a result, rigid tolerances can mean it is easier to be reported as a 'failure' if these tolerances are breached (Kortantamer, 2019, p. 773).

Formal record keeping and documentation might not be a central tenet of delivering digital projects using an Agile approach (Beck *et al.*, 2001a; Boehm and Turner, 2003; Wernham, 2012), though it is recognised some documentation might be useful, providing it adds value and 'makes sense' (Stober and Hansmann, 2010, p. 100). Nonetheless, transparency is at the core of its successful application (Stober and Hansmann, 2010; Wernham, 2012; Sutherland, 2015). Planning is still undertaken by projects following an Agile approach, but this focuses on tasks allocated to team members, which must usually be completed within timescales agreed by the whole team. When tasks are at risk of not being fully completed, the full team agrees the way forward (Stober and Hansmann, 2010). Furthermore, some more senior managers used to traditional project delivery approaches, such as Waterfall, might continue to put pressure on Agile teams for a formal plan (Cohn and Ford, 2003). The role of effective stakeholder engagement throughout all aspects of governance to secure project success is explored further in the next section.

2.4.3.6 Stakeholder engagement

Groups of stakeholders have been described by Freeman (2010, p. 25) as those who have a 'stake in the modern corporation'. Projects might be regarded as temporary organisations or 'structures' (APM, 2019a, p. 46), but they cannot be delivered without stakeholder input and understanding how best to engage them

is an important part of project delivery (Eskerod and Jepsen, 2013; Huemann, Eskerod and Ringhofer, 2016; APM, 2019a). Stakeholder engagement should be a 'core task of project management' (Huemann, Eskerod and Ringhofer, 2016, Ch.11) as it is critical to a project's success (Garland, 2009). Stakeholder theory is said to be a 'theory of organizational management and ethics', with the central belief being the need to attend to the 'interests and well-being' of individuals who are able to 'assist or hinder' organisational objectives (Phillips, 2003, pp. 16-17). Müller (2017b) reiterated this view and suggested all stakeholder needs must be balanced, including where there are conflicts between stakeholders. Conflicts are typical within projects and arise due to differences in perspectives on areas such as tasks, processes and roles, and there is a need for the project manager to focus on developing the relationships between stakeholders rather than trying to resolve the dispute itself (Mele, 2011). Stakeholder and project relationships can be described as 'a series of exchange processes in which the stakeholder and the project give and take' (Eskerod and Jepsen, 2013, p. 17). Part of the stakeholder role is to have some influence on project decision-making (Trentim, 2015), which could be impacted by their belief that they have some 'claim' on a project (Winch, 2004, p. 322), Who exactly to involve in the decision-making is also important, as allowing the 'wrong' people to be involved could result in project failure (Garland, 2009, p. 17). Furthermore, how stakeholders perceive the project might be based on previous experience of being involved with project delivery or the company managing the project itself (Eskerod and Jepsen, 2013; Huemann, Eskerod and Ringhofer, 2016; Scoleze Ferrer, Araújo Galvão and Monteiro de Carvalho, 2021). Being transparent and honest with project stakeholders will improve these perceptions and align with the ethical element of the overarching stakeholder theory (Müller *et al.*, 2014; Department for Culture, Media and Sport, 2019).

There are different ways of engaging and managing stakeholders (Eskerod and Jepsen, 2013; Trentim, 2015; Huemann, Eskerod and Ringhofer, 2016) but an essential first stage is to ensure they are all identified, as those that remain 'hidden' could be the 'most dangerous' by becoming known at later critical stages of the project, thereby potentially increasing project cost through late intervention (Trentim, 2015, section 2.8). Stakeholders have differing needs and the

approach to their engagement will be determined by these needs. Following a 'multimethod' approach might be necessary to manage the relationship (Huemann, Eskerod and Ringhofer, 2016, section 10.6), and identifying and analysing each stakeholder requirement will support the planning of how best to undertake and manage the engagement (Müller, 2009; Huemann, Eskerod and Ringhofer, 2016; APM, 2019a).

Stakeholder engagement can be planned in different ways. One method is through the use of a Power/Influence and Interest matrix, i.e. the power of the stakeholder to be able to influence the project and the level of interest they might show in the initiative (Trentim, 2015; APM, 2019a). Further analysis can also be conducted to consider the 'likelihood' that the stakeholder will support the project (APM, 2019a, p. 106). As the project progresses through the lifecycle, these relationships must be continually reviewed to ensure the priority given to each stakeholder remains appropriate (Eskerod and Jepsen, 2013) and that the analysis remains 'dynamic' (APM, 2019a, p. 106). Involving the whole project team in this review provides a holistic view of all stakeholder relationships across the breadth of the project (Eskerod and Jepsen, 2013).

Differences in organisational focus and project delivery approaches might also determine the processes required to develop and maintain stakeholder engagement (Müller and Lecoeuvre, 2014; Müller, 2017b). Stakeholder engagement is said to have been improved when following either Agile or Hybrid project delivery approaches (Gemino, Horner Reich and Serrador, 2021). Without regular direct engagement of stakeholders (sometimes referred to as users or customers), there is a real risk the project will fail and not deliver its objectives (Boehm and Turner, 2003; Wernham, 2012; Schmitz, Mahapatra and Nerur, 2019; Belling, 2020), as buy-in is critical to project success (Mergel, Ganapati and Whitford, 2021). Cooper's (1988, p. 249) original description of the Waterfall (Stage-Gate) approach also provides for regular, staged input to project outcomes from users or customers and is seen as a time-saving investment, with the focus of 'doing it right first time'.

The primary responsibility of stakeholders across all project delivery approaches is to provide the confirmation that what is being designed and delivered meets the objectives of the project. The level of authority given to stakeholders as part of these confirmatory stages would usually be encompassed in an end-to-end governance framework.

2.5 Summary

A review of both academic and practitioner literature on the history and application of the three project delivery approaches - Waterfall, Agile and Hybrid - has highlighted some differences both in general terms and in their use across central government. Differences between the underpinning principles of each, particularly within central government, appear to be concerned with structures, authority, decision-making, controls, capability and stakeholder engagement. Use of a Hybrid approach to deliver projects may have become more prevalent to manage down project risk, but there is no acknowledgement of its existence in central government guidance and literature. Where it is referenced, this is only to reflect the possibility that IPA assurance reviewers might encounter the situation as part of a 'three lines of defence' project assurance review, rather than formal use of the term 'Hybrid' as a delivery approach.

Reviewing the definition and descriptions of project and IT governance provided the opportunity to understand in more detail the application of governance across the delivery approaches. There is a requirement for central government projects to have a governance framework in place that follows established functional standards, outlining procedures, roles and responsibilities, irrespective of the project delivery approach. These standards appear to contradict the need for flexibilities in the use of governance required for Agile and Hybrid. In keeping with the descriptors ascertained for the three project delivery approaches, the governance definitions also referenced controls and stakeholder engagement. The additional characteristic, provided in the more detailed descriptions of governance, was the commitment to deliver the project within a set funding limit alongside achieving the objectives and benefits. These objectives and benefits

were determined upfront as part of the strategic overview or vision/roadmap of the project, and are included in an overarching business case.

Several organisational factors were identified based on the various definitions of both project and IT governance. Reviewing these factors found that the typical hierarchical organisational structure of a central government department remained in place across all approaches. The provision of a governance framework was suggested that outlined the overarching structures, procedures, processes, roles, and responsibilities. This framework should include the governance hierarchies, delegated decision-making, and escalation routes with the primary purpose of presenting the controls and assurance in place to track delivery progress, expenditure, and benefits.

Differences were highlighted in the management and level of delegated authority between delivery approaches, but accountability for successful delivery of project objectives usually resided with the SRO in central government. Agile and Hybrid require a more adaptive leadership style, achieved through the use of delegated authority, albeit with some risk, which could be managed by setting and communicating clear tolerances/constraints. The delegation of authority for the making of some decisions within an Agile and Hybrid delivery approach brought with it a degree of power, with escalation routes remaining in situ to progress issues and concerns encountered from the delegated authority. For more complex projects, the concept of social power also described the need for stakeholders to deliver important elements of the project, influenced and controlled by the project leaders. However, the delegated power and control allocated to a group to make decisions removes the risk of such power being held by a single individual, improves the quality of decision-making, and aligns with the central government steer that stakeholders should be consulted prior to decisions being made. Agile and Hybrid encourage such consultation and input throughout the project delivery lifecycle, whereas in a Waterfall approach, stakeholder views are sought at specific gated-review points. Stakeholder engagement and participation were crucial and had an additional aim of ensuring transparency of project status, which aligned with the description of stakeholder theory. Stakeholder input is also vital to the risk management process, as their

support is needed to identify and mitigate risks to achievement of successful project delivery. The extent of a stakeholder's risk appetite can usually be attributed to previous experience and is likely to differ depending on the project delivery approach, with Agile and Hybrid deemed as less risky than Waterfall due to the iterative nature of delivery and outcomes.

The level and types of control in central government are ordinarily prescribed by the Cabinet Office and HMT, with the 'three lines of defence' approach being adopted across all organisations as the basis for governance processes. For projects, additional requirements are put in place by the IPA and GDS, with assurance reviews and service assessments in place to offer some control to the design and delivery of projects and IT services respectively. Some of these controls can be influenced by the SRO but these are usually within set parameters.

The examination of literature provided a foundation for the primary research and identified areas requiring more detailed study through empirical research, to test the application of the theories across the three different project delivery approaches. Specific areas to be investigated further include:

- The application of each of the delivery approaches as defined by theory
- Perceptions of governance against definitions and descriptions provided in academic and practitioner literature
- The approach taken to the development and implementation of a project delivery governance framework, and the impact defined central controls have on this framework
- Obtaining views on decision-making to establish whether differences exist between project delivery approaches
- Capturing observations of how stakeholders are engaged and the expectations and reality of their role in project delivery

The research methodology conceptual framework (Figure 3.1) provided a structure for the research and analysis, and guided the focus of the final discussion and conclusions.

Chapter 3. Research Methodology

3.1 Introduction to chapter

This chapter describes the methodology used to establish the research methods and provides details of how the post-positivist research position was selected. As a mixed-methods approach was used, a conceptual framework was developed to depict an end-to-end view of the research and to provide some structure to each stage. The conceptual framework shows the links between each stage and how the empirical data advanced the research through to final discussion and conclusion. The final sections of the chapter review the validity, reliability, and limitations of the research, and also provide details of the ethics approach and approvals.

3.2 Background to research methodology

An exploration into different research approaches was undertaken to establish the optimum approach. A concept map (Maxwell, 2005) was used to develop the research strategy, which was then developed into a more detailed conceptual framework, showing how each stage of the research was undertaken. The conceptual framework is described in more detail at section 3.4. Creating a conceptual framework to depict the research strategy provided an opportunity to organise the thinking behind the areas to be researched (Ravitch and Riggan, 2012), and also highlighted the sequencing and relationships between all areas (Miles and Huberman, 1994). The framework was developed by applying a variety of the techniques proposed by Miles and Huberman (1994), Maxwell (2005), and Ravitch and Riggan (2012), and distilled the research into smaller elements to explore the meaning and implications of each aspect of the study's aim and objectives.

3.3 Research position

Before considering the research design, the ontological, epistemological and methodical position of the research was established. Ontology can be defined

as being of ‘reality and what constitutes reality’ (Gray, 2014, p. 19) and assumptions can be made about the ‘nature of reality’ (Saunders, Lewis and Thornhill, 2019, p. 133). In social research, ontology examines the fundamental nature of ‘social entities’ (Bryman, 2016, p. 693). Such ontological considerations can be illustrated in the values, behaviour, and culture of the individuals within an organisation, with any observations and relationships likely to be dependent on the time and context in which they are observed (Lincoln and Guba, 1985; Bryman, 2016). The research design focussed on investigating three different project delivery approaches used in central government and the application of the governance required to support the approaches. It examined the organisational factors underpinning the delivery of projects using each of the three delivery approaches, with particular focus on how governance processes were followed in the day-to-day management of the projects. A further determinant in establishing the research approach is the epistemological position.

Epistemology concerns itself with the philosophy and the way knowledge is theorised and legitimised, the criteria developed to support it (Raadschelders, 2011; Gray, 2014; Bryman, 2016; Gray, 2017), and what makes the knowledge acceptable and valid when communicating the outcomes to others (Bryman, 2016; Saunders, Lewis and Thornhill, 2019). This research required an element of ‘critical realism’ (Lincoln and Guba, 2000, p. 168), as it was completed in a real working environment to capture what were likely to be imperfect observations, perceptions and experiences of a ‘community’ (Lincoln, Lynham and Guba, 2018, p. 111) of specialist, central government project practitioners. To establish the organisational norms and values and capture the experiences of the central government project practitioner community, a mix of both quantitative and qualitative research methods were used to gather, analyse and triangulate the findings (Lincoln and Guba, 2000). An initial quantitative survey identified themes on which to base subsequent interviews, to allow knowledge to be developed as the research progressed. The interviewees were experienced project professionals who provided their views and observations of the individual and organisational influence on the application of governance. Analysis of secondary data enabled validation of findings from the earlier stages of the research. The final analysis conducted across all research approaches, provided some

understanding of the causes behind the principles and processes that underpinned project governance. A more detailed overview of the research methods is provided at section 3.5.

To ensure the experience and background of the researcher did not result in any bias throughout the study, use of quantitative and qualitative methods, bolstered by a narrative literature review, provided different perspectives to minimise such potential bias and allowed triangulation of outcomes. As the need for objectivity cannot be achieved by quantitative data alone, as per a positivist focus, the research position and mixed-methods approach align with the post-positivist philosophy.

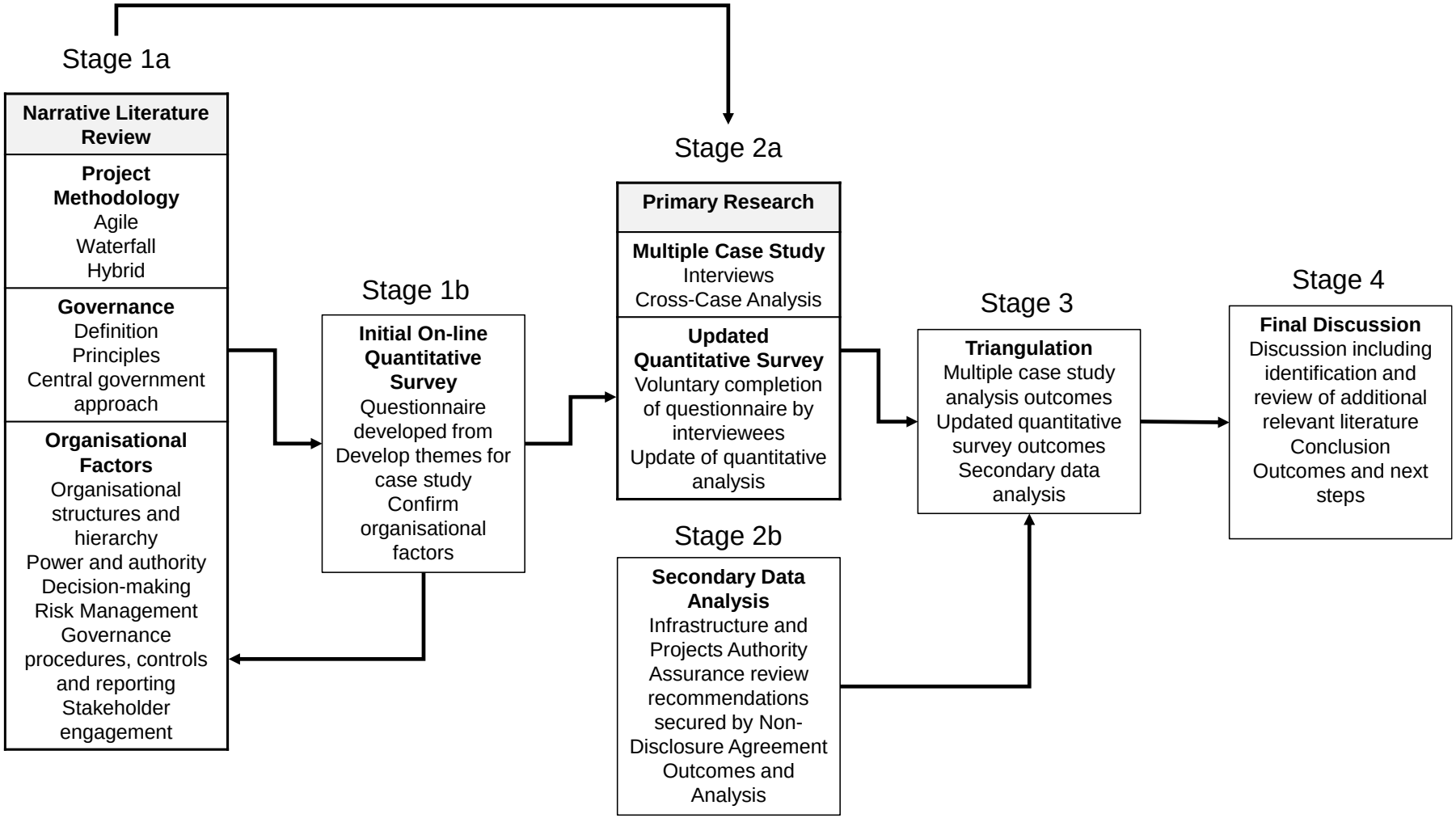
When following a post-positivist philosophy, 'theory and practice cannot be kept separate' (Ryan, 2006, p. 12). The 'objective reality' is observed and measured, and the 'causes that influence outcomes' are identified and assessed (Creswell, 2014, p. 7). The focus of post-positivism is on 'understanding' the cause rather than trying to obtain an 'explanation' for it (Fox, 2008, p. 660). Throughout the research, assumptions around the central government departments and their processes were not made, as a post-positivist approach 'rejects the view that knowledge is erected on absolutely secure foundations', and views it as 'conjectural' (Phillips and Burbules, 2000, p. 29). Participants in a post-positivist study – in this case, project professionals – are likely to have experience of the area being researched and can be described as 'active subjects' (Fox, 2008, p. 660), or 'active, mindful, aware of what is going on and able to make choices' (Al-Hamdan and Anthony, 2010, pp. 46-47). The development of a series of themes from both the literature review and the quantitative analysis focussed the qualitative case study research and allowed an element of restriction to the research scenario, as described by Robson and McCartan (2016). These themes were examined during the research process, albeit without a requirement to say whether each was absolutely true, firmly proven or otherwise, which also aligned with the post-positivist stance (Phillips and Burbules, 2000). Although post-positivist research usually relies on examining theories through quantitative processes, to get as close as possible to the reality, qualitative themes were identified and adopted (Ford-Gilboe, Campbell and Berman, 1995; Phillips and

Burbules, 2000; Robson and McCartan, 2016; Lincoln, Lynham and Guba, 2018). Furthermore, the quantitative secondary data analysis provided some opportunity to validate findings from the data capture, but still recognised that post-positivism outcomes rely on attributing probabilities and speculation (Lincoln and Guba, 1985; Gray, 2014) rather than certainty, as reality can only be approximated (Lincoln, Lynham and Guba, 2018). The final outcomes will be shared with project practitioners, who will decide on how they will be progressed. This aligns with a post-positivist approach, which advocates acting on any outcomes as being the responsibility of the practitioners rather than the researcher (Lincoln and Guba, 2000).

3.4 Research approach as a conceptual framework

The research required the collation of data and information from a number of disparate areas within public sector organisations. Capturing a range of different views and integrating research methods to gather these perspectives ensured outcomes and insights were focused and balanced but also comprehensive (Robson and McCartan, 2016; Gray, 2017; Creswell and Creswell, 2018). In collecting such a broad range of data, the research approach became complex and difficult to track, and it was important to follow a ‘clear methodological path’ (Yin, 2018, p. 3). Creating a conceptual framework focused and simplified the complex research problem and strategy (Bordage, 2009). A framework encouraged the outline of the research topics, any exclusions, and showed how they linked together (Gray, 2017). By presenting it on one page (Figure 3.1), the end-to-end picture and the relationships between each aspect of the research could be seen more easily (Robson and McCartan, 2016). Displaying the research approach in a unified way also aligned with the nature of a post-positivist study (Lincoln, Lynham and Guba, 2018).

Figure 3.1 Research methods conceptual framework



Conceptual frameworks are ‘closely linked’ to the research approach in that the development of one supports the development of the other (Ravitch and Riggan, 2012, p. 47). Completing the conceptual framework confirmed, simplified and clarified (Ravitch and Riggan, 2012) the approaches and methods, providing the necessary links between the outcomes of each of the techniques adopted in gathering the research information and data.

In identifying the different elements of the research, its ontology, epistemology and post-positivist paradigm, an ‘explanatory sequential mixed methods’ (Creswell, 2014, p. 15) approach was identified as the most effective way of achieving the aim of the research. Application of sequential quantitative and qualitative data capture and analysis, triangulated by secondary data analysis, as presented in the conceptual framework (Figure 3.1), allowed refinement and clarification of the research problem (Creswell and Creswell, 2018; Creswell and Plano-Clark, 2018), and determined the research question(s) or themes that using a case study method could help resolve (Yin, 2018; Creswell and Creswell, 2018).

3.5 Research methods

Using a mixed-methods approach allowed the refinement of the research problem and provided the opportunity to link, compare, and triangulate the data captured (Fielding and Fielding, 1986). The methods adopted are outlined in the conceptual framework at Figure 3.1 and are presented as Stages 1-4. Each method provided the opportunity to revisit and challenge the findings and themes generated at each stage of the research. The following sections show how each stage links together.

3.5.1 Literature review

A narrative literature review (Stage 1a in the conceptual framework) helped narrow the subject matter and determine the research scope (Bryman, 2016). Although a narrative review is deemed less structured than a systematic review, some process (Gray, 2017) or map (Creswell and Creswell, 2018) is recommended to add an element of control to the search. The conceptual

framework provided such structure. While exploring the literature during phase one of the review, a number of key areas were identified, which drove forward the next stage of the research:

- Project delivery approaches: an investigation into the different approaches to managing projects in central government organisations.
- Governance: establishment of the definitions of Project and IT governance to ascertain the final area to be explored, for example, links between governance and a variety of organisational factors.
- Organisational factors: an examination of the factors that may underpin application of governance, e.g. decision-making, stakeholders.

To further refine the scope of the literature review, a quantitative survey was completed (Stage 1b), based on the definition of governance presented by McGrath and Whitty (2015), and previous research undertaken by the researcher (Young, 2015). The outcomes were also used to inform the themes for the topics to be discussed during the case studies (Stage 2a).

3.5.2 Quantitative research

One research area required determining an appropriate context for the governance of public sector projects based on the views of project practitioners. The definition of project governance provided by McGrath and Whitty (2015) was used as the basis for a quantitative survey. From feedback provided during previous qualitative research, project governance in central government was perceived as being primarily associated with the approval and decision-making required to allow a project to proceed (Young, 2015). However, 'decision-making' was deliberately excluded from the project governance definition offered by McGrath and Whitty (2015, p. 768), as they believe it related to organisational governance only. To explore the perception of project governance and establish what this might mean in central government, a questionnaire was developed and issued to a sample of public sector employees using words either identified and/or excluded by McGrath and Whitty (2015), and/or referenced by interviewees during previous research (Young, 2015).

3.5.2.1 Developing a questionnaire

While developing the questionnaire to undertake quantitative analysis, it was important to establish common issues and principles associated with its overarching purpose. This included consideration of:

- Question formulation, i.e. whether they were: open- or closed-ended; appropriate to the target audience; and secured responses that gave adequate data for the next phase of the research;
- Clarity of instructions for completion to ensure it could be easily understood by respondents; and
- Optimisation of questionnaire length to increase potential response rate (Flick, 2015; Bryman, 2016).

To increase respondent completion rate, only six questions were asked (Deutskens *et al.*, 2004). This number was reduced to five when issued to case study interviewees. The questionnaire also comprised questions relating to the respondents' background, to support cross-tabulation and analysis:

- Organisation
- Personal role
- Length of time in role
- Project management methodology used in the organisation

These questions established if there were significant differences in perceptions of governance that might be linked to the background and experience of the respondent. The final two questions provided the respondents with a selection of words from which they were requested to choose six that 'best described' the application of governance in their organisation and six that 'least described' it, based on their personal experience and viewpoints.

A pilot questionnaire tested the effectiveness of the questions to ensure they achieved their purpose (Bryman, 2016) and to confirm if they were appropriate and easy to follow. Feedback from 37.5% people completing the pilot questionnaire suggested a reduction in the number of options. As a result, any

option selected less than twice from the ‘best describes’ and ‘least describes’ list (i.e. 25% selection rate) were removed. However, some terms that met this 25% level were left as a test against findings from previous research (Young, 2015) and the definition provided in the McGrath and Whitty (2015) paper. The terms left in the questionnaire were:

- Direct/Steer/Influence
- Authority/Power
- Bureaucracy/‘Red tape’/Rules/Regulations/Legality
- Processes/Procedures/Systems/Policies

Following a further review of the paper and earlier research, other options were removed even where over one third of the pilot group selected these particular words. The words ‘hurdle’ and ‘strategy’ were originally presented as selections within the pilot questionnaire to test the parameters of the definition. The review established that they were not relevant to the governance definition, and rather were synonyms or principles presented during McGrath and Whitty’s (2015) analysis or within the earlier research (Young, 2015). Consequently, the final list was reduced to 18 words, having an ‘other’ option added for individuals completing the questionnaire to submit their own alternatives.

3.5.2.2 Survey sampling

Following the survey pilot, the questions were refined with the final multiple-choice questionnaire developed using SurveyMonkey (an online survey development product). The link to the questionnaire was distributed as a new chat entry through an online government networking site known as Knowledge Hub (https://khub.net) on the Project Delivery Group network page. The final questionnaire is presented at Appendix 1 and full detailed analysis and discussion of outcomes is at Chapter 4. Using a web-based approach meant the sample group was easily accessible, but there was little influence over the respondents and numbers completing the questionnaire, forcing a non-probability sampling method (Bryman, 2016). As the questionnaire was posted in a specific Project Delivery Group page, primarily visited by project delivery professionals, it could be described as purposive (Bryman, 2016).

Analysis of quantitative data obtained through this questionnaire provided a more focused set of ideas, subsequently examined during the case study research. Developing themes in this way aligned with the post-positivist stance (Creswell and Plano-Clark, 2018). These ideas included the opportunity to support the establishment of organisational attributes selected for investigation during the more detailed final stage of the research process. Further, those interviewed as part of the case studies were also asked to complete a pre-interview questionnaire on a voluntary basis. The responses received from interviewees were then included in the analysis as part of the primary research at Stage 2a.

3.5.3 Case study approach

A series of case studies were conducted as part of the primary research approach (Stage 2a). A case study research design involves the detailed, in depth, intensive study and analysis of a particularly complex case or contemporary phenomenon, where there may be some uncertainty or ambiguity in a real world context or situation (Stake, 1995; Bryman, 2016; Gray, 2017; Yin, 2018). There are a number of strengths and weaknesses to using case studies, as shown in Table 3.1 below.

Table 3.1 Strengths and weaknesses of case study methods (adapted from Simons (2009, pp. 23-24)).

Strengths	Weaknesses
Allows in depth study of the socio-political context into which policies and programmes are implemented	Generates a lot of information that can be difficult to process and analyse
Captures and documents multiple perspectives	Challenges in ensuring the researcher remains objective and uninvolved
Provides an opportunity to explore the effects of the introduction of change from a 'real-life' viewpoint	If only using one case, risk to validity and usefulness of outcomes in drawing inferences from the single case
A flexible approach in terms of focus, timescales, methods and reporting of outcomes	
Accessible to non-academics	
Potential to involve contributors in the research process	

A case can specifically include 'various kinds of groups, organizations, and cultures' (Strauss, 1987, p. 218) or provide the opportunity for research where

'boundaries between the case and the context may not be evident' (Yin, 2018, p. 15). Using a case study method allowed research of events or situations to answer 'how' or 'why' questions or theories (Gray, 2017, p. 263), which were identified up front as the starting point for the case study design (Yin, 2018). Moreover, in creating the case studies, the development of theory was 'around a core category or categories' (Strauss, 1987, p. 219).

The research included more than one case, so is therefore described as 'multiple' (Bryman, 2016, p. 688) or 'collective' (Stake, 1995, p. 4). The case study approach was outlined up front to establish as far as possible the research goals to be achieved (Yin, 2018). Doing so also ensures the right cases are selected, particularly when multiple cases are being developed and analysed (Stake, 1995). Yin (2018) suggests multiple case studies provide stronger outcomes than single cases due to the degree of analysis that needs to be undertaken. In using multiple cases, there was an opportunity to identify exemplar outcomes from similar scenarios and to consider a 'two-tail' design, where investigation could be made into two completely opposing situations, for example, good or bad (Yin, 2018, p. 60). Due to the nature of this research, although multiple cases were involved, the approach could also be described as 'instrumental' (Stake, 1995, p. 3), i.e. focusing on an outcome or a scenario rather than necessarily the individuals themselves. As per Ragin (2014), only three cases were selected, which allowed separate positive and negative cases to be identified, relevant comparisons to be made, and analysis to be manageable (Ragin, 2014).

To manage the level of empirical data being captured and to focus the interviews, information was used from previous research stages (Eisenhardt, 1989). One important aspect was to ensure the context and background to governance, and the projects or programmes it supported, was clear. Applying this approach ensured the context was fully defined (Stake, 1995) before case studies commenced.

3.5.3.1 Case study selection

Although Yin (2018) advises against using the phrase 'sampling' when referring to case study selection, to remove any misunderstanding or mixing of terminology

between methods, it was necessary to use this term due to the importance of selecting the right cases. A non-probability, purposive convenience sample (Bryman, 2016) of central government organisations was selected as case studies. One primary criterion for case selection was to maximise learning, however, this sat alongside ensuring the studies were easily accessible, and research objectives could be achieved within the timeframe of the investigation (Stake, 1995; Davies and Hughes, 2014; Yin, 2018). Finally, any sample had to be as good as possible, i.e. constraints were managed to ensure the sample had optimum effectiveness and outcomes for analysis (Davies and Hughes, 2014). The original intention was to select case studies focusing on the governance of a single project using a particular project delivery approach within a single government department. However, the criteria introduced unhelpful constraints on the number of people available for interview who had been directly involved in the day-to-day management of the projects being investigated. By adjusting the selection criteria and broadening participation to include professionals involved in departmental-wide project delivery, the risk of having insufficient data for analysis was mitigated and the opportunity to learn was maximised (Stake, 1995; Yin, 2018).

3.5.3.2 Sampling within case study organisations

Within the organisations selected for the case studies, a non-probability, purposive sampling method ensured the individuals selected for interview were ‘strategic’ (Bryman, 2016, p. 408). They were ‘hand-picked’ based on their ‘relevance’ and ‘knowledge’ of the subject matter under investigation (Denscombe, 2014, p. 41), and represented the population they were meant to generalise (Lincoln and Guba, 1985). Using people not fully knowledgeable of the research reduced the risk of an ineffective selection process (Biernacki and Waldorf, 1981) and the final sample not being representative (Flick, 2015). To counter this risk, when seeking candidates, it was important to ensure the right amount and level of detail regarding the eligibility criteria was made available to those supporting the selection, i.e. they had sufficient strategic and recent relevant knowledge, to manage and balance issues relating to screening and volume of participants (Biernacki and Waldorf, 1981).

The research focussed on project management professionals' personal experiences within central government departments. To achieve this, the people selected for the case study were supplied with a research overview beforehand to ensure they could use their judgment as to whether they felt they could fully participate in the interviews and therefore contribute to the research (Stake, 1995; Yin, 2018; Simons, 2009). Selecting and using sampling or eligibility criteria or schemes was imperative, to ensure individuals were identified who would provide 'comparability' of their views across a particular subject area (Gray, 2014, p. 217). By verifying those scheduled to be interviewed were eligible (Biernacki and Waldorf, 1981), it ensured those involved in the research added some knowledgeable value to the data being gathered. Criterion sampling ensured those interviewed met a set of pre-defined criteria to secure rich findings and an effective final outcome, and continuous review of the criteria reduced the risk of bias in the selection (Bryman, 2016).

The interviewees were found through contacts in central government departments. These primary contacts were interviewed informally to confirm the suitability of the department and to ensure the project methodology adopted by the department aligned with the type of case study being developed. Contacts were then formally interviewed due to their knowledge and experience. They then handpicked further interviewees based on their knowledge and experience. Such an approach to generating interviewees can be referred to as snowball or chain referral sampling (Biernacki and Waldorf, 1981). Selection bias from the researcher's perspective would be minimal because, other than the initial contact, the choice of the subsequent interviewees was out of the control of the researcher.

As the number of interviewees available was also not under the direct control of the researcher, there was some concern around whether those people available would provide rich enough information on which to develop a sufficiently detailed case study. Saturation point was reached when additional information sources neglected to offer any 'useful reinforcement' and a level of 'diminishing returns' was reached (Guba, 1978, p. 60). This was attributed to the fact similar questions are being asked of the participants (Guest, Bunce and Johnson, 2006) to limit the

level of detail in the information gathered. In considering consensus theory, using 'structured questions' and interviewees who had sufficient knowledge (Guest, Bunce and Johnson, 2006, p. 75), or were of sufficient expertise or 'competence' meant that even a few individuals provided enough of a consensus (Romney, Weller and Batchelder, 1986, p. 327) on which to draw some conclusions. This was substantiated during the process of capturing case study data, which is explored further during the case study analyses in Chapter 4.

3.5.3.3 Interview approach

Interviews across all departments were completed either face-to-face or by telephone and were digitally recorded and transcribed prior to analysis. Due to Covid-19 travel restrictions, all the interviews for Case Study 3b were conducted by telephone. All participants consented to be interviewed by completing a consent sheet (Appendix 4). Once similar themes emerged from each interview, the researcher felt no further interviews were necessary. Each interviewee was encouraged to complete a pre-interview questionnaire (Appendix 5), which supplemented the quantitative research completed as part of the development of the interview topics. The first question for each interviewee asked about their current role and position in the organisation, which gave some context to the responses. A list of indicative questions (Appendix 6) was provided to all interviews, along with a copy of the case study information sheet (Appendix 3), which gave those interviewed an opportunity to consider their experience of their departmental approach to the governance of projects and programmes.

3.5.3.4 Data collection and coding

Following transcription, interview scripts were loaded into NVivo, a qualitative data analysis computer software package, and reviewed line by line with data being coded through two cycles (Miles, Huberman and Saldaña, 2014). Following a two-cycle approach allowed further refinement of the larger 'chunks' (Miles, Huberman and Saldaña, 2014, p. 73) of data, coded through the first-cycle, into more refined categories using a pattern coding approach (Miles, Huberman and Saldaña, 2014). Occasionally, a reference was appropriate to two different codes and a process of simultaneous coding (Saldaña, 2013) was

initially followed at the first-cycle. The approach allowed longer statements, reflecting two different coding categories to be kept together to maintain a level of understanding of the context and scenario from which the opinion was offered. This approach differed to the negative connotation usually associated with the use of simultaneous coding, where it might be used to capture 'multiple meanings' (Saldaña, 2013, p. 80).

Each node developed in the NVivo package was a descriptive code, i.e. one that used 'a word or short phrase' (Miles, Huberman and Saldaña, 2014, p. 74) to identify and support categorisation of the primary themes indicated through interviews. Developing the nodes in this way underpinned the coding completed through the second cycle (Saldaña, 2013). Second cycle pattern coding involved turning single words or short phrases into themes to reduce and remove any duplication, and refine interviewees' ideas and principles (Saldaña, 2013; Miles, Huberman and Saldaña, 2014). Pattern coding supported the overarching analysis across all cases and all data collected through the mixed-methods approach (Miles, Huberman and Saldaña, 2014).

3.6 Secondary data analysis

Availability of, and access to, secondary data provided an opportunity to corroborate the themes obtained from both the quantitative research and analysis, and the case study investigation (Robson and McCartan, 2016) (Stage 2b). The data supplied by the Cabinet Office had been gathered by the IPA during the completion of independent assurance reviews of programmes and projects on the government major project portfolio. They were presented as a series of over 10000 recommendations made over a 14 year period, covering a number of different areas of governance.

The secondary data, captured by others over a broader range of subject areas, groups, and timeframes (Bryman, 2016; Gray, 2017), were convenient and of high-quality. However, there was a risk that some of the information could have been complex, poor quality, potentially biased, incomplete or out of date (Bryman, 2016; Gray, 2017). Provided as a basic spreadsheet, the data required analysis

to extract the necessary information from which some of the more detailed conclusions of the investigation could be drawn. As the available data were in an unanalysed state, this removed the risk of the objectives and questions being unaligned or only matching a specific set of variables unrelated to the research topic (Gray, 2017). Detailed analysis of the data is presented at Chapter 4. The intention was to use the secondary data analysis to further inform the themes to develop the case study interviews. However, the delay in obtaining the data resulted in it being used differently. The analysis of the secondary data was therefore used to support and triangulate findings from both the quantitative (survey) and qualitative (case study) research and, alongside these outcomes, provided a focus for the final discussion in chapter 5.

3.7 Analytical approach

The next stage (Stage 3) of the research approach reflected in the conceptual framework (Figure 3.1) pulled together the findings of the case studies alongside information derived from the literature review, the quantitative survey, and secondary data analysis. The basis of the analysis was typological (Glaser and Strauss, 2017; Lincoln and Guba, 1985). The typological themes were developed from the specific areas identified during the literature review and the exploration of the definition of governance for central government through analysis of the quantitative data. Collating multiple cases provided the opportunity to reach some ‘general conclusions’ (Strauss, 1987, p. 220) about the area being studied and also supported the strengthening of theories, identification of negatives, and building of similarities (Miles and Huberman, 1994). The identification and examination of similar elements within the findings supported the capturing and confirmation of potential theories and/or themes, and provided the opportunity to highlight those inconsistencies or ‘invariances’ of equal importance (Ragin, 2014, p. 51).

Adopting a strategy that focused on variables and kept statistical analysis to a minimum, allowed research efforts to remain on emerging ‘dominant patterns’ (Ragin, 2014, p. 56). Using a conceptual framework supported analysis of all the data gathered during investigations in ‘direct, meaningful, transparent ways’

(Ravitch and Riggan, 2012, p. 81). When focusing on data or outcomes, account was taken of the social structures or relationships, as they could be permanent and impact any analysis (Ragin, 2014). These were also explored further during the final discussion. Primary conclusions were drawn at the end of each stage and reflected the fact 'data analysis and theory development' had 'an iterative and dynamic relationship', as reflected in the framework (Ravitch and Riggan, 2012, p. 105). Analysing outcomes at each of the stages mapped in the conceptual framework (Figure 3.1) helped refine any conclusions arising from the case studies and supported the discussion, identification of additional literature and final conclusions, presented at Stage 4.

3.8 Validity and reliability

The adopted research methods and subsequent findings were examined, assessed, and challenged to ensure they were reliable, valid, trustworthy and authentic (Lincoln and Guba, 1985; Bryman, 2016). It was imperative the research and its outcomes remained as objective as possible, rather than the researcher bringing some element of 'subjectivity' to the inquiry (Lincoln and Guba, 2000, p. 181). To achieve this, applying the reflective elements of reflexivity allowed the researcher to regularly reconsider the research approach, the consequences of the generated knowledge (Bryman, 2016), and how this influenced (or otherwise) the course of interviews or outcomes (Yin, 2018). Doing so allowed the identification and acknowledgement of potential personal bias or contradictions (Lincoln and Guba, 2000), and recognised the possibility of never having a 'complete objective understanding… of our own thinking', and of being 'unaware of… some of our own beliefs, values and intentions' (Maxwell, 2012, p. 72). When taking axiological considerations in account (Saunders, Lewis and Thornhill, 2019), it was accepted the researcher would bring their 'value-ideas' to the research, as without them 'there would be no principle of selection of subject matter' (Weber, 1949, p. 38), albeit increasing the risk of separation from the 'insights, questions, and practical guidance in conducting the research and analysing the data' (Maxwell, 2012, p. 82).

Linking and triangulating data through combining methods using a sequential mixed-methods approach (Creswell and Plano-Clark, 2018) increased confidence in the findings and reduced the potential overuse of such personal knowledge or 'assertion of privileged insight' (Fielding and Fielding, 1986, p. 25). Using a variety of data sources and multiple case studies to capture a number of different views at different times from different government departments, provided the opportunity to confirm connections between ideas and themes (Hammersley and Atkinson, 1983; Fielding and Fielding, 1986).

By reflecting on the research methodology presented throughout the conceptual framework and the various elements of the case study tactics identified by Yin (2018), validity and reliability were ensured in a variety of ways. Construct validity was obtained through the literature review, quantitative research and review of the secondary data. By cross-referencing literature review findings with analysis of the quantitative survey and of the secondary data, i.e. triangulating all information, internal validity was achieved (Lincoln and Guba, 1985; Denzin, 1989; Flick, 1992). External validity was met by using themes and outcomes, and the analytical data identified during each of the research approaches was cross-referenced. The use of multiple case studies also allowed for replication of testing of the themes. Reliability was achieved by adopting a formal protocol to log data within a database obtained throughout the case study research.

Throughout this research, questions and challenges continued to be raised against the findings as part of the ongoing iteration of the conceptual framework (Ravitch and Riggan, 2012).

3.9 Limitations and constraints

The research had some constraints, including the potential for restrictions to be placed on the use of attributable sensitive information relating to specific central government departments. This was managed by not referencing the government departments anywhere in the findings. There was also the risk of restrictions arising from General Data Protection Regulations and/or Freedom of Information Act which has been managed by only using information and guidance on

governance, business case, benefits management, and risk management available through the UK government website, GOV.UK, or available to purchase from UK government approved suppliers.

Information was supplied from the IPA, which was used to complete the secondary data analysis. A non-disclosure agreement was signed between the researcher, the university and the Cabinet Office contact who provided the information before access to the information was granted. The data was restricted in how it could be received, stored, presented and published, and these details were clearly specified in the non-disclosure agreement. All necessary actions were followed, and the final presentation of the data and analysis was provided to the Cabinet Office contact who approved its inclusion and publication in the thesis.

There was also the risk of unconscious bias when presenting information or analysing data or outcomes, as the researcher has over 20 years' experience of managing public sector projects. Continuing to reflect throughout the analysis and refer back to the post-positivist research strategy managed down this risk.

3.10 Ethics approach and approval

Northumbria University ethics and governance approval processes have been followed (Northumbria University, 2019). An initial application for ethics approval was submitted at project approval and an amended submission was made prior to interviews commencing in June 2019. A final amendment to the ethics application was made regarding access and use of highly 'official – sensitive' IPA secondary data, which is not in the public domain. Access and use of this sensitive secondary data were subject to a non-disclosure agreement signed by a Cabinet Office IPA representative, the University and the researcher.

3.11 Summary

Combining research methods enabled cross-checking for potential bias (Ragin, 2014) and allowed the collection of a stronger, richer breadth of evidence (Yin, 2018). The post-positivist strategy adopted advocates plurality in research

methods, with the fundamental focus being on the outcomes and support for any conclusions drawn (Phillips and Burbules, 2000).

Advantages of the conceptual framework were observed during the development of the methodology: the organisation of thinking, the alignment of theory and practice, the structured sequencing and linking of the processes, and flows between each stage (Miles and Huberman, 1994; Maxwell, 2005; Ravitch and Riggan, 2012). Using the conceptual framework provided a logical, stepwise approach and overview of the research methodology. Presentation in a single view (Figure 3.1) served as a simple, supportive reference tool to ensure continued focus at each stage of the research.

Chapter 4. Research Findings and Analysis

4.1 Introduction to chapter

Chapter 4 is extensive as it includes the findings and analysis of data collected from all three research methods used viz. a quantitative survey, case studies, and secondary data analysis. Section 4.2 contains the quantitative survey and analysis, conducted to establish project professionals' views of governance and to support the development of themes on which to focus the case study interviews. Section 4.3 encompasses the case study data and analysis conducted across each of the project delivery approaches, including a cross-case analysis. Section 4.4 includes an analysis of secondary data, which provided an opportunity to triangulate some of the findings from the previous two research stages. The outcomes of each research stage are linked directly to the next, as presented in the conceptual framework, so the findings and analysis have been maintained in a single chapter.

4.2 Quantitative Research Analysis

The first stage of the research was the development and distribution of a quantitative survey, and its analysis. Following a pilot of the questionnaire, the final version was initially published for a four-week period on a social media website called 'Knowledge Hub', primarily aimed at the cross-government project professional community, with the headline 'What does governance mean to you?' Reminder messages and a reposting of the link to the questionnaire were issued every week over the four-week period, which resulted in 26 completed questionnaires being received. Further to this, all those interviewed for the case studies were also asked to complete the questionnaire, yielding an additional 10 questionnaires being received. This information was added to the original survey results and the analysis was updated to reflect these new submissions. The amalgamated findings are presented and discussed below.

The question regarding 'organisation' (Appendix 1) was asked in the original questionnaire to establish if there were variations between the types of responses from respondents working in different government departments. After completing

an initial review and analysis of the responses to this question, the outcomes were deemed to be too ambiguous from which to draw any firm conclusions. As a result, detailed analysis was not completed on the data and the question was removed from the questionnaire issued to the case study participants. Therefore, the first area analysed encompassed the respondent characteristics. Table 4.1 below shows the percentage response rate for each job role as defined by respondents selected from a list of 12 roles provided in the questionnaire. A free text 'Other' option was also provided if the respondent did not believe their role was listed. As a consequence, an additional eight roles were given under 'other'. These were specified as: Project Support, Project Officer, Regulation, Programme and Project Management (PPM) Improvement, Policy, Assurance Manager, Portfolio Manager, and Portfolio Director. Similar roles were merged in the analysis. Had they not been merged, there would have been a total of 17 roles across the 36 responses, which would have made deriving conclusions from the findings difficult to achieve.

Table 4.1 Response rate for each job role

Respondent Characteristics: Job Role	**% response**
Programme/Project Management Office (includes Project Support and Project Officer)	38.89%
Portfolio Director/Manager	11.11%
Project Manager	8.33%
Programme Director/Manager	8.33%
IT Strand	5.56%
Implementation	5.56%
Communications	5.56%
Regulation	2.78%
PPM Improvement	2.78%
Policy	2.78%
Business Design	2.78%
Business Case	2.78%
Assurance Manager	2.78%

Most responses were received from people who worked in the PMO area, which often oversees the governance of projects and their activities, such as obtaining approvals, assurance, and undertaking the management of primary programme/project stakeholders (APM, 2016b; 2018a). As such, a higher

number of responses from this area would be expected. The next highest level of responses was received from Portfolio Directors/Managers, Programme Directors/Managers and Project Managers. As these project leaders tend to rely upon governance to support them through the project delivery processes (APM, 2018a), they are also more likely to take the time to offer their views on governance. The remaining responses were spread across a range of project disciplines.

The length of time in projects was explored to establish if there were significant differences in the perception of governance depending on a person's experience. Table 4.2 shows the response rates across the different lengths of time respondents had worked in projects.

Table 4.2 Response rate for length of time in projects

Respondent Characteristics: Length of time in projects	**% response**
Between 11-20 years	36.11%
Between 5-10 years	30.56%
Less than 5 years	13.89%
More than 21 years	13.89%
I do not work in projects	5.56%

Over 80% of respondents had at least five years of project delivery experience, with the highest proportion working within a project area for between 11 and 20 years. Two respondents (one completed online and the other a case study participant), stated they did not work in projects. Although the intention of the study was to focus on the views of project professionals, the decision was made to include these responses in the findings to note any differences in opinions.

The type of project delivery approach (defined in Chapter 2) provided an opportunity to understand if the approach to project delivery resulted in different views of governance. The original questionnaire presented these options as 'methodology', but to remain consistent with the literature review and research, this has been amended for presentation purposes to 'project delivery approach'.

Table 4.3 Response rate for project delivery approach

Respondent Characteristics: Project Delivery Approach	% response
Both Waterfall/Stage-Gate and Agile Methods (Hybrid)	57.78%
Waterfall or Stage-Gate method	36.11%
Agile methods	8.33%
Other: Treasury Approval Points	2.78%

Most respondents indicated their projects were delivered using a Hybrid approach, reflecting the fact that public sector projects, although not necessarily technologically focused (Infrastructure and Projects Authority, 2018a), might still use some elements of an Agile approach to deliver change.

A list of 17 descriptors was offered, plus an 'other' option. Those completing the questionnaire were asked to select six options that best described governance in the organisation they worked. Participants were not asked to prioritise these selections. All descriptors were selected at least once (Table 4.4), with only one respondent providing an 'other' descriptor, given as 'lessons learned'.

The six most popular descriptors were: 'reporting', 'risk management', 'controls', 'accountability', 'decision-making' and 'finance'. As every descriptor was selected at least once, this could indicate there is no primary, consistent view on what governance means to project professionals in central government. The response ranged from the highest, 'reporting/tracking', at 12.5%, to the lowest 'lessons learned', at 0.46%. Only four descriptors were selected by over 9% of respondents. In relation to project governance, McGrath and Whitty (2015) specifically reference 'directed and controlled and held to account' (McGrath and Whitty, 2015, p. 778). Although not selected by the majority of respondents, these terms do feature in the top third of the descriptors selected by central government project professionals and go some way to affirming the definition provided by McGrath and Whitty (2015).

Table 4.4 Responses to question relating to best description of governance

Descriptor	Number of times selected	Best describes governance where you work %
Reporting/Tracking	27	12.50%
Risk Management	21	9.72%
Controls	20	9.26%
Accountability/Responsibility/ Legitimacy	20	9.26%
Decision-Making	19	8.80%
Finance/budget drawdown/ allocation	19	8.80%
Direct/Steer/Influence	16	7.41%
Hierarchy/Structures	15	6.94%
Processes/Procedures/Systems/ Policies	14	6.48%
Relationships/Stakeholder Management	12	5.56%
Bureaucracy/'Red tape'/Rules/ Regulations/Legality	8	3.70%
Behaviours/Culture	6	2.78%
Authority/Power	5	2.31%
Delegated Authority	5	2.31%
Time Delay	4	1.85%
Flexibility	2	0.93%
Conflict	2	0.93%
Other: Lessons Learned	1	0.46%

In response to 'please select 6 of the following that *least* describe the governance of projects in your organisation', each of the 17 potential descriptors (excluding 'other') was selected at least once (Table 4.5). The terms 'behaviours/culture'; 'conflict'; 'flexibility'; 'time delay'; and 'authority' were the five highest options selected. 'Flexibility' was selected by 21 of the 36 respondents, which aligns with Buchanan and Huczynski's (2010) assessment that central government is inflexible. However, although the public sector can be perceived as having a culture of bureaucracy (Handy, 1985), only 17 respondents (less than 50%) submitted this as one of the terms that least described governance in their organisation. Taking account of some of the organisational factors identified as potential drivers for central government governance approach and styles, there may be an expectation of higher response rates for 'best' descriptions in

'hierarchy', 'behaviours' or 'time delay', yet these feature in the top half of the 'least' describes list.

Although not a direct match, the higher values against the descriptors for 'best describes' do align with the lower values for 'least', demonstrating a degree of reliability and consistency in the responses. However, the mid-range descriptions differ, indicating some inconsistency in project professionals' experiences of governance.

Table 4.5 Responses to question relating to least describes governance

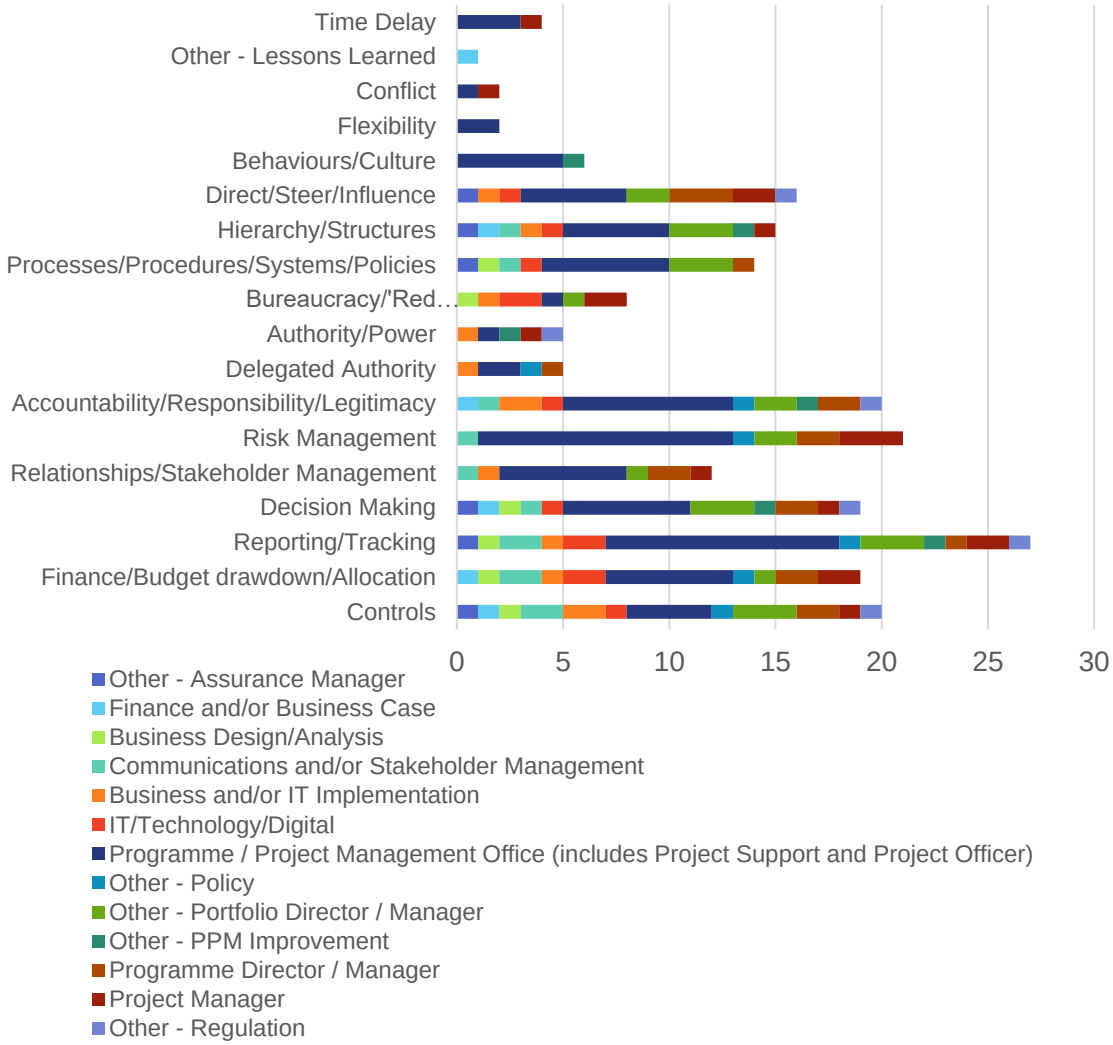
Descriptor	Number of times selected	Least describes governance where you work %
Behaviours/Culture	28	12.96%
Conflict	22	10.19%
Flexibility	21	9.72%
Time Delay	20	9.26%
Authority/Power	18	8.33%
Bureaucracy/'Red tape'/Rules/ Regulations/Legality	17	7.87%
Hierarchy/Structures	15	6.94%
Relationships/Stakeholder Management	14	6.48%
Delegated Authority	14	6.48%
Finance/budget drawdown/allocation	11	5.09%
Processes/Procedures/ Systems/Policies	9	4.17%
Direct/Steer/Influence	8	3.70%
Accountability/Responsibility/ Legitimacy	6	2.78%
Risk Management	5	2.31%
Decision-Making	4	1.85%
Reporting/Tracking	3	1.39%
Controls	1	0.46%

4.2.1 Comparison of selection by job role

Figure 4.1 presents the selections made for 'best describes' for each job role. It clearly shows that those working in a PMO area see governance as a means of reporting progress or managing risk associated with project delivery. 'Risk

management' was also selected the most by Project Managers, along with reporting, as with those working in the PMO area. For Project Managers 'finance/budget drawdown' was one of their most selected descriptors. This could be a result of the way projects are managed and financed in central government, reflecting the approval route required to proceed to the next stage of the project (Infrastructure and Projects Authority, 2021a). Those working in a PMO also selected 'accountability' as one of the highest descriptors, which aligns with the McGrath and Whitty (2015) definition of governance.

Figure 4.1 Responses for 'best describes' governance by job role

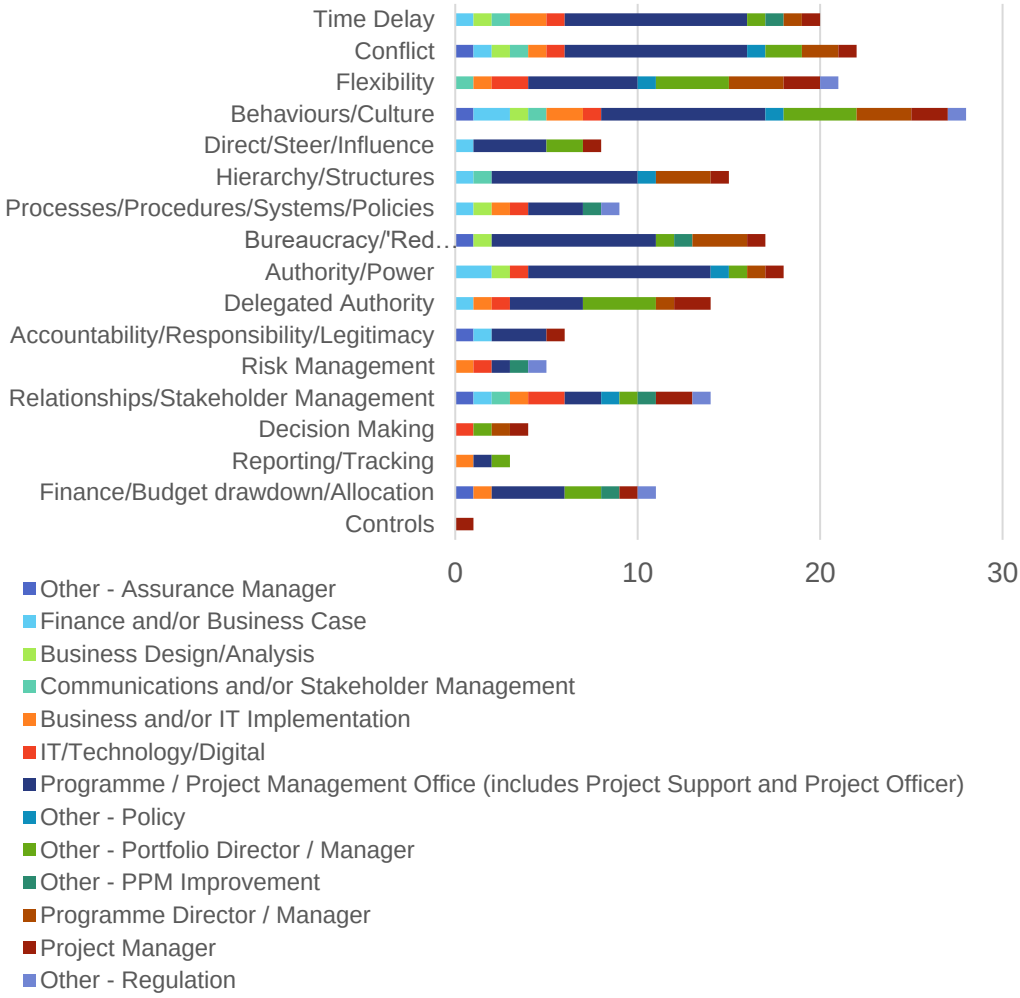


The IPA define governance as being 'where accountability lies' (Infrastructure and Projects Authority, 2018b, p. 32). However, 'accountability' was not chosen by any project managers, which contrasted with the views of two thirds of the more senior project professionals - Portfolio Director/Manager and Programme

Director/Manager – who selected this descriptor. Such a result is unsurprising, as these senior-level project and programme managers usually work directly to the SROs of major programmes and will be more aware that SROs are issued letters stipulating their roles, responsibilities and accountability for delivery at the start of their tenure (Cabinet Office, 2014). The fact that 'bureaucracy/red tape' was selected by IT Strand, Business Design, Implementation and Project Managers could reflect perceptions of the 'directed and controlled' aspect of governance as specified by McGrath and Whitty (2015, p. 781). Although 'reporting/tracking' was one of the descriptors most selected, the number of respondents who chose 'relationship/stakeholder management' was low, with just one third allocating this as one of their descriptors. Such a contrast is noteworthy, as reporting is usually regarded as a way of communicating progress with stakeholders, who can be critical to ensuring progression through the approvals and governance processes (APM, 2018b; Infrastructure and Projects Authority, 2021a).

Figure 4.2 shows the responses selected by job role for what respondents felt least described governance in their business area. Those working in PMO did not perceive governance to be bureaucratic, or to relate to 'hierarchy/structures' or 'behaviours/culture'. Such a view could be attributed to the role PMOs usually play in the management of governance in public sector projects, i.e. governance is usually administered within that area of the programme/project (Infrastructure and Projects Authority, 2021a). Equally, PMO respondents also selected 'conflict' and 'time delay' as two of their 'least describes' descriptors, which again may be attributed to their role in overseeing the governance processes. One very clear view is that governance is not seen as relating to 'behaviours/culture', 'conflict' or 'time delay' but is regarded by over half of all respondents as lacking 'flexibility', which contradicts the IPA's recommendation for governance to be supportive and appropriate, not restrictive (Infrastructure and Projects Authority, 2021a).

Figure 4.2 Responses for ‘least describes’ governance by job role

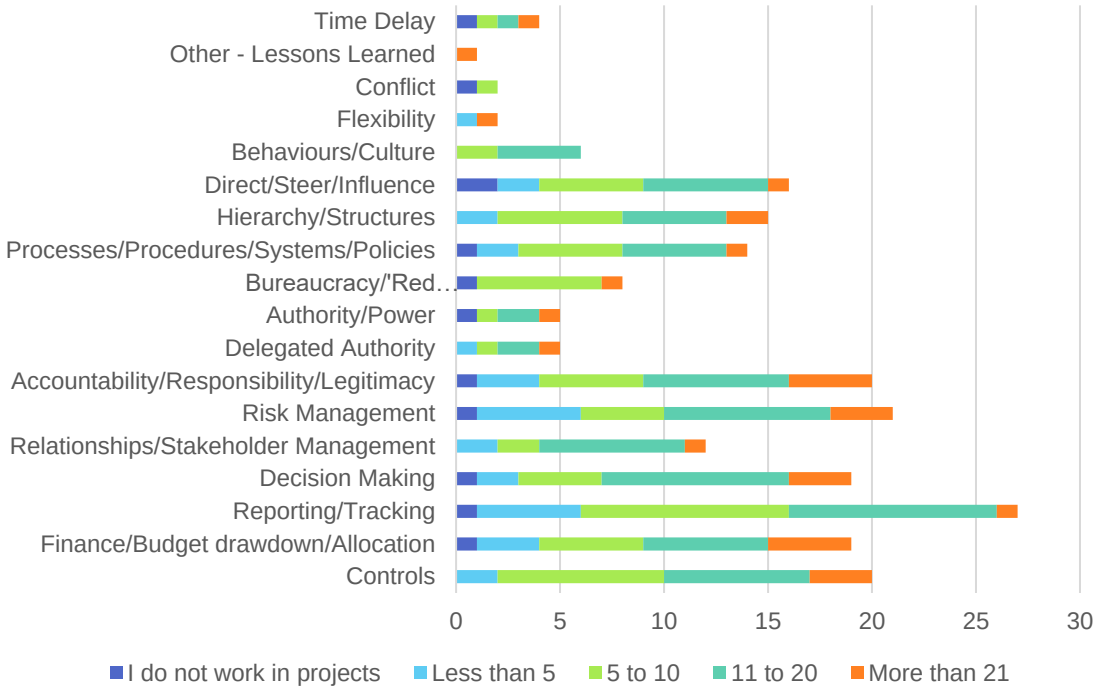


4.2.2 Comparison of selection by length of time in projects

Over 80% of respondents had worked in a project environment for more than five years and as such, it is reasonable to assume they had experienced various levels and types of governance (Figure 4.3). The most frequent response - ‘reporting and tracking’ - was only selected by one of the two people who did not work in projects, and only one of the four individuals who had more than 20 years project experience. Risk management was selected by all levels of experience, perhaps reflecting the emphasis placed on the importance of good project risk management (Infrastructure and Projects Authority, 2021a). For those with more than five years of project experience, the governance process was seen as

providing control and a route for securing decisions. Accountability was also one of the most frequent descriptors chosen across the range of levels of experience.

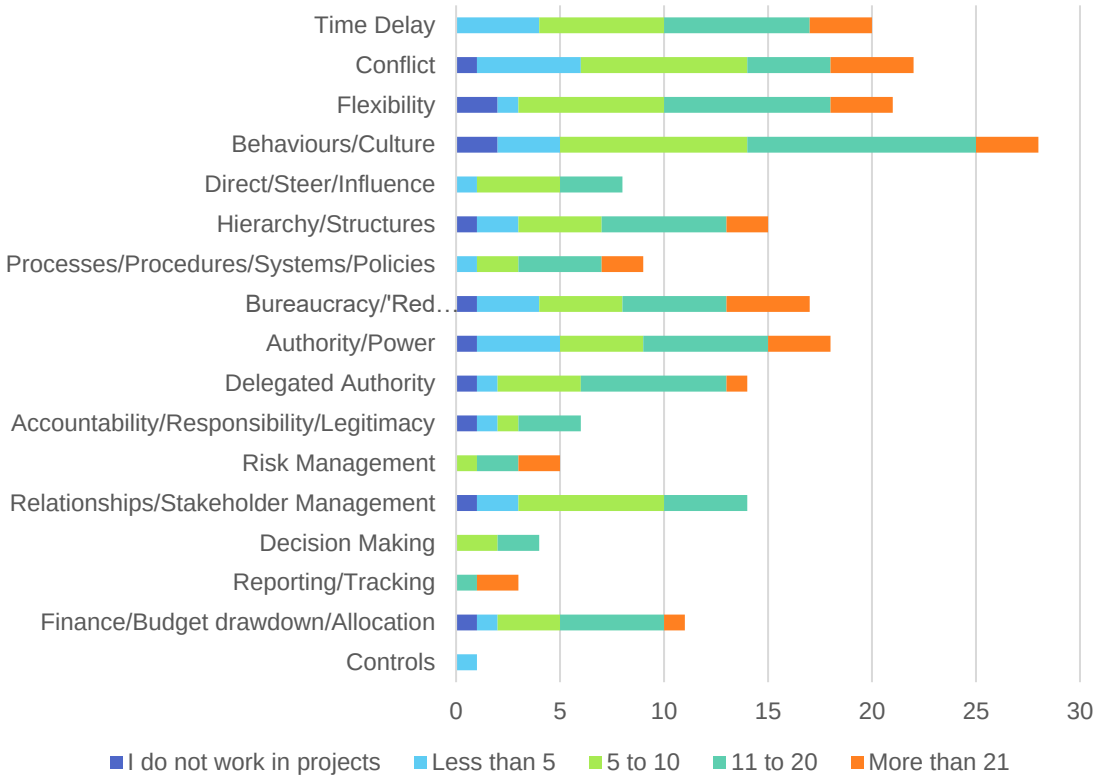
Figure 4.3 Responses for 'best describes' governance by length of time in projects



All respondents selected at least one of the following eight descriptors for 'least describes governance': 'behaviours/culture', 'conflict', 'flexibility', 'hierarchy', 'authority/power', 'bureaucracy', 'delegated authority' and 'finance' (Figure 4.4). Two of these descriptors - 'behaviours/culture' and 'conflict' - were chosen more often by the more experienced project professionals. This may be attributable to the fact they are more likely to have become used to the need for governance and would see have seen a range of different behaviours and attitudes toward its application over their career. The two respondents who did not work in projects selected 'behaviours/culture' and 'flexibility' as least describing governance in their organisation, contrasting with half of those who had worked in projects for over 20 years. Again, these views could be attributed to the longer-term exposure to, and experience of, standard governance processes and protocols required to support project delivery. Similarly, 'conflict' was selected by three quarters of those having worked in projects for less than five years or not at all, compared to

less than half of those working in projects for 11 years or more, which again could align with levels of experience.

Figure 4.4 Responses for 'least describes governance' by length of time in projects



One noteworthy finding is that 11 respondents (around 30%) selected the descriptor 'finance' as 'least describes governance'. This was to some extent unexpected, as most projects in central government use governance processes to secure additional funding to proceed throughout all stages of the project (Infrastructure and Projects Authority, 2021a).

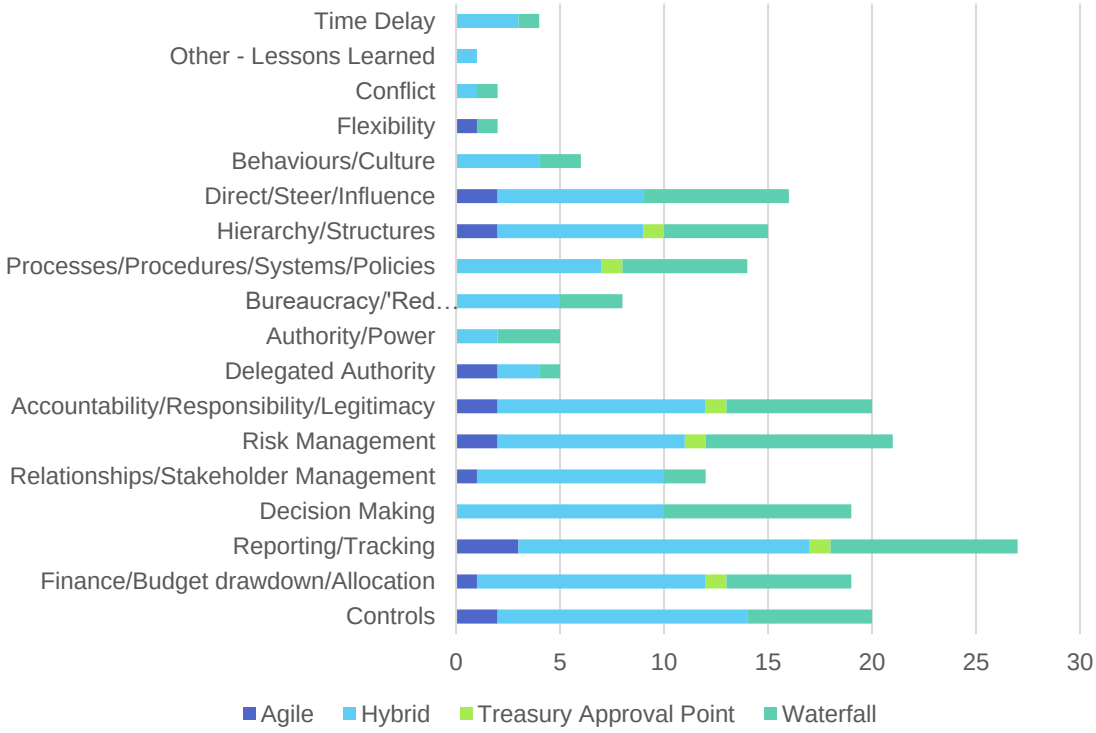
4.2.3 Comparison of selection by project delivery approach

Figures 4.5 and 4.6 show the responses according to the project delivery approach being followed in the respondents' organisations. Of the 36 individuals completing the questionnaire, 19 followed a Hybrid approach, 13 used Waterfall, three used pure Agile and one managed delivery of their programme through Treasury Approval Points. Treasury Approval Points are put in place to 'scrutinise

and approve spending projects and programmes from the perspective of delivery of optimum public value for money' usually put in place for very high-value projects or programmes (Her Majesty's Treasury, 2016, p. 5).

Regardless of the project delivery approach, five areas were selected by all respondents as best describing governance in their organisation: 'reporting/tracking', 'finance', 'accountability', 'risk management' and 'hierarchy/structures' (Figure 4.5).

Figure 4.5 Responses for 'best describes governance' by project delivery approach

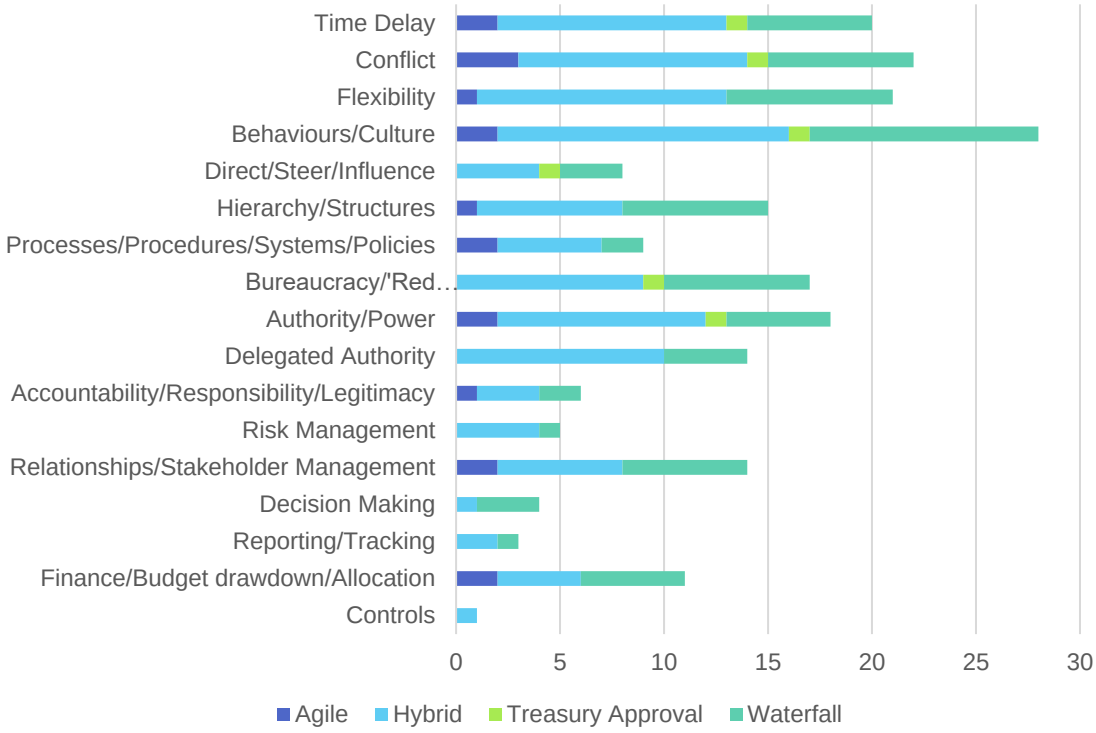


'Flexibility' was selected by only two individuals: one who used Agile methods and the other Waterfall, which by definition are two very different project delivery approaches (see Chapter 2). The descriptor selected most frequently was 'reporting/tracking', which was selected by all three respondents following Agile and 14 of the 17 respondents using a Hybrid approach. One of the notable governance processes in following Agile and Hybrid project delivery approaches is the use of 'Agile ceremonies', as one element of the reporting and tracking process to update stakeholders on progress. This was similarly reflected in the number who chose relationships/stakeholder management, where 10 individuals

selected this as best describing governance working in Agile/Hybrid projects, compared to only two following Waterfall delivery approaches. The descriptor 'decision-making' was not selected by any participants following an Agile approach, whereas 19 out of 36 other respondents did select this descriptor. As Agile uses governance to obtain the necessary decisions to proceed to the next stage of the development or implementation of the project (Infrastructure and Projects Authority, 2021a), this raises questions as to where and how decisions are made for some of those projects following Agile.

Figure 4.6 shows only four areas were selected by all respondents as 'least describes governance in your organisation': 'time delay', 'behaviours/culture', 'conflict', and 'authority'.

Figure 4.6 Responses for 'least describes governance' by project delivery approach



The most frequent selection was 'behaviours/culture', chosen by 11 of the 13 respondents following a Waterfall project delivery approach and 14 of the 19 following Hybrid. The term 'bureaucracy' was not selected by any of those following an Agile project delivery approach to either best or least describe governance. 'Time delay' was also left unselected by Agile approach participants

(Figure 4.6), contradicting the findings in previous research, where governance was regarded as delaying decisions to proceed to the next stage of the project (Young, 2015).

4.2.4 Summary

The survey was completed using an online web package and was also issued to case study participants to complete on a voluntary basis prior to interviews being conducted. The view of project professionals confirmed that McGrath and Whitty's (2015) definition of project management governance was somewhat relevant for central government. The findings also confirmed the relevance of the definition of IT governance as provided by Webb, Pollard and Ridley (2006), i.e. control, accountability and risk management. The initial survey outcomes also supported development of the case study interview themes.

As 'reporting and tracking' featured frequently in the selections across the range of experience and regardless of project delivery approach, the role of reporting in the governance process was investigated. Accountability was also examined further to establish more specific views on its application and role in project delivery governance processes. Decision-making is one of the primary purposes of governance in a Waterfall project delivery approach, although how decisions were made across all project delivery approaches was also explored. The opportunity was taken to establish if the perception of governance differed by job role and, due to the differences in views regarding 'behaviours/culture' and 'controls', these areas were also tested. Due to the frequency in use of the terms 'flexibility', 'controls' and 'finance' when defining governance, these were added to the topics for discussion.

The above areas were developed into a series of themes around which the case study questions were based, forming the starting point for the discussions across all three case studies.

4.3 Case Study Analysis and Outcomes

4.3.1 Introduction

The selection of the case studies was instrumental (Stake, 1995) in establishing the approach, application and impact of governance (the phenomenon) across three primary project delivery styles: Waterfall (or Stage-Gate), Agile and Hybrid. Using three case studies of different project delivery styles, coupled with a mixed-methods research design, allowed triangulation of data and findings to ensure that similar credible conclusions could be drawn (Denzin, 1989; Flick, 1992; Stake, 1995; Lincoln and Guba, 1985). After drawing conclusions from the literature review and the primary quantitative research, the case studies focused on investigating the following research questions (Stake, 1995):

- How does the approach to governance used by central government organisations support delivery of its projects?
- What effect has the introduction of digital (or IT solution delivery) through Agile reduced/increased, or made little or no difference to the governance approach used by central government organisations?
- What are the strengths to the current governance approach(es) followed by central government organisations?
- Does the application of governance differ depending on the project delivery approach and has it been influenced by the organisational factors as identified in the literature review?

The case studies were selected based on the primary project delivery approach in the respective departments to support design, development, and implementation of change projects, viz. Waterfall, Agile, and Hybrid. The focus was to identify similarities and differences between the governance applied across the three different project delivery approaches by capturing real-world views and experiences of project professionals to test against academic and practitioner literature. Information on each department has been kept deliberately high-level to prevent easy identification. Case Studies 1 and 2 gathered data from two separate government departments covering Waterfall and Agile methods respectively. Case Study 3 comprised two departments and captured

experiences of the governance being followed to support a Hybrid project delivery approach.

A total of 24 people were interviewed. Each set of case study interview questions was based on themes identified in advance through the literature review and quantitative analysis. A thematic analysis was developed for each case study and a final cross-case analysis was conducted, synthesising findings from all three studies. Final conclusions were then used for both the final discussion and triangulation against findings from the secondary data analysis.

4.3.2 Case Study 1

Case Study 1 was conducted in a large central government department. All projects within the department primarily follow a Waterfall project delivery approach. The people interviewed had a broad range of project experience and worked in a variety of projects (not necessarily digital) and project roles including a Programme Director, Programme Manager, and PMO Manager. One person interviewed had overarching responsibility for the development of, and adherence to, the governance and assurance approach at a departmental level [$C1P_7$]. Another interviewee stated she 'did not work in projects' [$C1P_4$] and did not consider herself to be a project expert, as her responsibility for overseeing delivery of a programme sat alongside her day job.

The following references are used throughout the analysis (Table 4.6):

Table 4.6 Case Study 1 reference and job role

Reference	Job Role
$C1P_1$	Project Manager
$C1P_2$	Portfolio Director
$C1P_3$	Programme Manager/PMO Manager
$C1P_4$	Senior Business Representative
$C1P_5$	Programme Director
$C1P_6$	Programme Manager
$C1P_7$	Departmental Assurance Manager
$C1P_8$	Programme Manager/PMO Manager

4.3.2.1 Thematic analysis

Governance structures

All interviews featured a brief discussion on the initiation of change in the department to encourage interviewees to reflect on the wider change portfolio in their organisation. The discussion also informed a view of the governance structures in place to support decisions on acceptance of new projects on to the portfolio. Most interviewees were unfamiliar with the decision-making process behind the launch of new projects, but they did share experiences of the structures underpinning these decisions.

Two interviewees offered a detailed overview of the different stages of governance and the supporting structures, both describing these as 'hierarchical' [$C1P_{3;}$ $C1P_6$], with one suggesting it could be used as a route for escalating issues [$C1P_3$]. One reason offered for the design and driver for governance structures was the level of political interest in the project: 'the more Ministerial interest, the more senior the governance tends to be' [$C1P_6$]. There were regular references to Programme and Project Boards by all interviewees. Each Programme Board had terms of reference that defined the way members of a board could 'challenge and support the project's Senior Responsible Owner as necessary' [$C1P_3$]. Programme and Project Boards were used as a focal point for making decisions [$C1P_1$, $C1P_3$, $C1P_5$]. The composition and structure of the boards were critical to ensure the 'right decision makers' were present [$C1P_6$]. Using the membership and 'power' of the board to 'hold people to account' for their delivery [$C1P_5$] provided 'genuine responsibility and accountability' [$C1P_2$] for the change. One Programme Manager offered the view that some boards either failed or were reluctant to make the decisions needed to allow the project to proceed [$C1P_6$].

Senior leaders' level and type of input to governance was influenced by their personal accountability for delivery of the project, which led to them wanting to be 'close to everything that's going on' [$C1P_6$]. The clear structures and accountabilities supporting delegated authority were key to its success with the defined principles being 'extremely important', alongside ensuring empowered individuals had the 'right departmental support' [$C1P_5$]. One Project Manager

provided a summary of how important it was to have both the correct structures and individuals in place:

> 'It's having the right governance in terms of stakeholders in the room, so the governance is twofold – you've got to have those layers of approval, but actually you've got the make sure the right people are on those boards to make that approval' [$C1P_1$].

Having the right attendees at boards when decisions were being made was referenced by three interviewees [$C1P_3$; $C1P_7$; $C1P_8$]. It was acknowledged securing the right people was sometimes a 'challenge' [$C1P_3$] and there was even a risk of using the board to 'abdicate' responsibility for making decisions [$C1P_7$]. The Portfolio Director stated the board needed to comprise 'a mix of people doing the work', i.e. those impacted by, or involved in, delivery of the change. They should also have some input to the design of governance, which would make them more likely to understand the reasons behind the processes so they 'want to be a part of it' and ensure they 'behave as owners of the work' [$C1P_2$]. The same interviewee concluded that securing the right people with this attitude, ownership and focus was difficult, and encouraging such behaviours was 'really quite a difficult thing to land with people'. Having the right attendees was more important than other governance elements: 'it's not about decision-making, it's not about risks, it's about who should sit on the board' [$C1P_3$]. One Portfolio Director encouraged challenge to decisions by asking external parties, such as the 'Infrastructure and Projects Authority, internal audit and external experts' to join her boards to strengthen governance and reduce the risk of 'groupthink' [$C1P_2$].

Although two of the Programme Managers interviewed felt governance structures could benefit from flexibility [$C1P_3$; $C1P_8$], the third stated hierarchy was 'essential' and that 'structure helps', concluding:

> 'We've got a standardised set of terms of reference with clear escalation routes… the hierarchy is clear; roles and responsibilities are clear' [$C1P_3$].

<u>Delegated authority, decision-making and the impact on governance structures</u>

A significant and important aspect of the role of governance design surrounded the delegation of authority and decision-making to support the approval of project actions and activities. It was through this delegated authority that progress could

be made by setting 'parameters' to 'let other boards get on with it' [C1P$_2$]. However, having a defined standard governance design did not prevent some senior leaders from adding further controls and additional layers or tiers of governance, which was thought to impact on the way projects operate and prevented them 'get[ting] on with what they are doing' [C1P$_7$]. The Portfolio Director raised concerns about the additional layers of governance, specifically the impact on decision-making responsibilities, reduction of empowerment and the impact on the pace of reaching decisions, suggesting there were opportunities available to streamline and remove some of these layers [C1P$_2$]. A further impact of the introduction of additional governance was the requirement for some senior leaders to attend multiple decision-making boards for different aspects of the project, which had resulted in duplication of time and effort without adding value to the project [C1P$_2$, C1P$_5$]. One Programme Director believed this duplication had resulted in a negative perception of governance, and felt opinion would be improved by streamlining the process through removal of some of these layers [C1P$_5$]. The Departmental Assurance Manager also recognised these negative perceptions and had reminded people of the 'official lines of governance' in an attempt to streamline the layers. He further suggested that governance outside these official lines should be 'abolished', as the defined approach should provide people with the confidence they needed without introducing additional steps in the processes [C1P$_7$]. Others proposed the need for alternative governance requirements depending on the change being introduced, particularly where different organisational functions or professions were involved in the delivery of the change [C1P$_1$, C1P$_5$]. However, having the correct board composition and membership might remove the requirement for multiple tiers of governance to make discussions, decisions and assurance work more effectively, but this could only be achieved if leaders, i.e. project leads and SROs, ensured these principles and processes were adopted [C1P$_2$, C1P$_7$].

Using governance, including project and Programme Boards, to make collaborative decisions and remove barriers to progress was beneficial [C1P$_1$, C1P$_2$, C1P$_4$], but 'clear guidelines' were required on the types of decisions to be escalated, especially as there was a 'need to take all of these decisions through whatever board in a formal nature' [C1P$_6$]. However, one Programme Manager

who also led a PMO team, expressed the counter view that projects should lead the ‘decision-making process’, not boards [C1P3].

A lack of understanding of governance roles and responsibilities was thought to have led to insufficient awareness of the level and type of authority, or the role of individuals attending boards or going through the decision-making process, as ‘people are not always aware of the power they have got on a board’ [C1P5]. Alternatively, they might have believed their role was to act ‘as a barrier’ [C1P2], or even use their given authority to negative effect, which was attributed to an individual’s ‘desire for control that they might wish to exert’ [C1P3]. Where decisions were not believed to be being made effectively, there was a need to introduce more frequent reporting or board meetings and increase the ‘level of governance’ [C1P6]. However, a degree of flexibility and freedom in governance was a key factor in supporting decision-making and was seen by a Programme Manager as ‘one of the things I like and don’t like’, suggesting some ambivalence in terms of the opportunity to apply flexibility, since alignment with governance principles was ‘important’ to ensure they remained successful [C1P8].

The types of decisions that should be made through boards as part of the governance process was also discussed. There were some differences in views on whether financial control was a primary factor in driving governance [C1P6], or that alternatively, governance controls for financial spend were ‘standard’, as there was a need to ‘attest to what the money has been spent on’ [C1P4]. A view was also expressed by a different Project Manager that, even if funding had been previously allocated for a project, there was a need to obtain approval to ensure ‘strategically it’s the right thing to do’ [C1P1]. To encourage successful delegated authority, the use of tolerances in the governance of projects had been adopted. Tolerances were described as a way of ensuring people knew what was ‘within their remit’ and what was not in terms of decision-making [C1P2], with their successful use being reliant on ‘a better understanding of tolerances, which would aid the decision-making process’ [C1P3]. Tolerances were also presented as ‘thresholds’ and used to ensure all Project Managers were ‘treated as equals’ by applying a common, standard approach to tolerance setting for quality, finance and time, to ensure project progress was maintained and to remove the need for escalation through the governance hierarchy [C1P3].

Governance processes

Regardless of the purpose for the governance, the view was that the approach should be standardised as much as possible using a framework to ensure equality of treatment for all projects [C1P3]. Having the right people develop the process from beginning to end using a 'non-siloed approach' was important, as having 'standards that are clearly defined and built-up with the project delivery community is invaluable' [C1P7]. One view was that standards should be designed to include 'harmonised job titles and expectations' [C1P7]. The approach to developing these standards appeared to focus on the reporting and presentation of information, with both project and Programme Managers referencing specific, clearly defined processes, principles and criteria, to ensure decisions were supported by a better informed set of recommendations [C1P1, C1P3, C1P6]. One perception offered by a Programme Director was that, regardless of a defined process existing, additional steps were often added to the governance process by the centre, which felt very last minute and 'were not very helpful' in terms of the project delivery timescales [C1P5].

Although standard, consistent processes were central to successful governance, one Programme Manager believed there were projects or programmes that needed to be handled differently and 'where it became complex, you had quite a rigorous approach' [C1P6]. Conversely, two of the experienced Programme Managers felt flexibility was critical in applying governance standards, to take account of the needs of different people and audiences for those involved in the change [C1P3, C1P8], to ensure governance did not 'derail the programme', as it should be an 'enabler' [C1P3]. Such flexibility had to carefully managed, as additional layers could cause overlaps across the governance structures and lead to negative perceptions of governance, as provided by the Senior Business Representative:

> 'When people say, "it's overly bureaucratic, it's slow moving, there's overlap between the different governance structures", I think that's a fair comment. I don't think we have things that are well thought through or aligned across governance structures, then people are just going to see it as a waste of time and disengage with it' [C1P4].

The Project Manager interviewed used their time waiting for governance decisions to plan for the next phase, engage with stakeholders or team build, rather than pausing programme or project delivery activity altogether [$C1P_1$].

Governance was said by the Programme Director to add value to the quality of delivery as it helped 'improve your product', although they stated there was a 'little bit of over-governance and not much clarity about the steps you needed to go through, and too many changes along the way, which had led to 'quite a bit of frustration' [$C1P_5$]. The Departmental Assurance Manager acknowledged this frustration, which had manifested in poor leadership behaviours by 'leading to almost petulance towards the wrong people' [$C1P_7$].

Involving the SRO and stakeholders in the design of governance processes and approaches was thought to help with ownership. Where senior stakeholders had their own business governance processes and boards, it was necessary to work 'in conjunction with them' throughout the design process, to ensure meeting timings aligned [$C1P_8$]. The Project Manager stated a good SRO was critical to the governance process:

> 'I do think governance will work if you've got a SRO who understands the governance they are working with, as they are decision-makers and will make those tough decisions [$C1P_1$].

The SRO might also, in conjunction with the Project Manager, adjust or develop further steps to standard or prescribed governance routes, to provide additional controls [$C1P_5$]. Regardless, the Project Manager still had overarching responsibility for designing the governance to ensure 'the project deliver[ed] on time' and should continue to review the final design with stakeholders to remove perceived complexity [$C1P_3$]. The Programme Director also referenced more central governance controls, such as HMT, that had to be managed alongside those implemented by the Project Manager and SRO [$C1P_5$].

<u>Tracking and reporting</u>

A further aspect to governance related to its use for tracking and reporting, to keep the project on course by emphasising the need to 'deliver on time', rather than taking longer to complete, which could require experienced project

personnel for longer and increase final costs [C1P$_1$]. Where governance was used to regularly track and report progress, this followed a standard approach, including documenting risks and raising points of concern or escalation, which were then presented through a dashboard report that supported discussions and decisions at boards [C1P$_3$, C1P$_8$]. One Programme Manager believed having the right information available was as important as having the right people in place to make decisions [C1P$_8$]. However, an alternative view, provided by the Departmental Assurance Manager, was that some people:

> '… see governance as being about reporting and solely about reporting, and people see them as just talking shops to bandy around some ideas and just update SROs when it's a project board. I don't think they see them as providing that effective challenge, because they don't' [C1P$_7$].

Capability and attitude

The capability of board members and stakeholders was said to be critical to the success of a project and the functioning of the board, with one Programme Manager suggesting boards could be 'hindered' or delivered 'on the force of a personality' and going on to say, 'everyone should come to the board as equals' to ensure its effectiveness [C1P$_3$]. The attitude of people involved in the project delivery was regarded as vital by one Programme Director, who stated, 'I much prefer people with a can-do attitude' [C1P$_5$]. A different Programme Manager suggested that people involved in projects needed to have a 'respect for everybody's role' [C1P$_6$]. There was also a need to ensure those making decisions could understand the consequences and impacts if the decisions did not happen [C1P$_2$] or were capable and confident to make decisions when needed [C1P$_5$]. Governance was perceived as causing delays, which placed risk on the successful, timely delivery of projects. This view was described by the Departmental Assurance Manager as a 'systemic cultural problem because people are immediately quite tense and combative about governance layers' and as a result, had unhelpfully tried to take out some of the more important layers he needed to have in place to complete his central assurance activities [C1P$_7$]. The personal 'desire for control' and to 'know what's going on and have a say in it' was a reason offered as to why some leaders introduced additional governance or insisted on being involved in making all decisions [C1P$_2$].

Several interviewees raised the issue of the number, type and capability of people available to support project delivery and processes, and this was not just in relation to governance [$C1P_1$, $C1P_2$, $C1P_4$, $C1P_7$]. The Project Manager shared her experiences of how work priorities were impacted by the staff available in other business areas to support the project at a given time. Where competing priorities had to be managed, she ensured sufficient people were available, and mitigation or contingency plans were in place to secure completion of critical activities. She noted that if 'you are throwing responsibilities to somebody, but they don't have the people, work's not going to get done', which often then resulted in asking these business areas 'who can help?' [$C1P_1$]. The Portfolio Director expressed concern about the lack of knowledge across the department on the need for specialist resource to manage the project and ensure they were in place at the right time, specifically referencing how 'tricky' it was to 'match resources in time to meet the schedule' [$C1P_2$]. One Programme Manager stated 'open and honest' discussions had to be held to obtain the project people, 'outlining the risk' where necessary, to stress the importance of having the right support [$C1P_8$]. One Programme Director further emphasised these views by suggesting the lack of the right, specialist resource in the 'right place, at the right time' could generate 'tension in the relationships even if they were good before.' She concluded that there was a need to get 'the relationships and the people right up front' [$C1P_5$].

Having a well-resourced PMO was necessary to operate the end-to-end governance process successfully being described by one Programme Manager as 'fundamental to our delivery' and 'the engine room of the programme' [$C1P_3$]. The PMO also provided a level of integration between the project and its governance structures and ensured maintenance of a 'level of independency and challenge' [$C1P_8$].

The type of organisation was said to have influenced the success of the control provided by governance, with one Programme Manager sharing their experience of how governance was more effective in a 'very structured, hierarchical command and control organisation', and attributing success (or otherwise) to organisational culture. He suggested, as governance could be linked to the culture of an organisation, issues were 'really difficult to fix and some of it is

systemic, and that's because of the nature of the day-to-day organisation, as the project is delivering into a command and control organisation' [C1P$_3$].

Risk management

The department was described as 'risk averse' [C1P$_1$], which led to the senior leaders 'checking absolutely everything before they agreed to anything' [C1P$_5$]. Specific reference was made to the negative impact this had on effective decision-making by the Senior Business Representative, who offered a view on how to improve the perception of governance:

> 'I think speeding up processes, reducing bureaucracy, are those kinds of things that we need to do to get people to look at [governance] differently.' [C1P$_4$]

The reason given for the perceived risk averse nature of the department was due to previous 'very public failures' and the desire to 'not replicate mistakes from the past' [C1P$_4$]. This was further explained as 'the amount of reputational risk' that might be experienced as a result of 'something going wrong' [C1P$_6$]. The concept of risk and risk management featured strongly throughout the interviews, with one Programme Manager managing risk aversion by bringing any risk discussion to the forefront of the governance and decision-making process [C1P$_3$]. Governance processes were said to support decision-makers and the wider department 'in terms of risk identification, mitigation, issue management, that kind of thing' [C1P$_4$]. A similar view was shared by the Departmental Assurance Manager, who stated that governance was an important part of decision-making and risk management, and should be fully embedded into governance to ensure conversations took place about 'risk and appetite for risk', to support decisions being made [C1P$_7$]. In situations where risks were used to support decision-making and an area of concern was flagged or marked 'red', there could still be a requirement to proceed, albeit with 'eyes wide open' [C1P$_1$]. However, these good practices were not necessarily commonplace throughout governance processes, as on occasion boards 'aren't discussing their risks properly' while making decisions, meaning 'there is not adequate challenge' being made [C1P$_7$].

Stakeholder engagement

A large part of the discussion across all interviews related to stakeholders and stakeholder engagement, and focused on two main areas. The first related to the need for good communications through direct interaction to show how governance principles work in practice [$C1P_2$, $C1P_7$, $C1P_8$]. The second was a wish to ensure those impacted by the change either committed to its introduction or had some involvement in the decision-making [$C1P_2$, $C1P_3$, $C1P_4$, $C1P_6$]. The communications approach was vital to ensuring senior stakeholder buy-in to governance principles and was referenced by several different interviewees, particularly the use of communications to provide reassurance that each step of the process was necessary, to secure the success of the change being developed and implemented [$C1P_1$]. The need for clarity across each of the governance layers and processes was also seen as crucial by four interviewees [$C1P_2$, $C1P_3$, $C1P_4$, $C1P_6$], with one stressing the need for transparency as part of the communication process [$C1P_4$]. Communicating the governance process as soon as possible ensured early understanding of the department's 'fairly complex governance route' [$C1P_7$]. The Portfolio Director echoed these views on communication and suggested that 'extra engagement' with individuals involved in the project reduced the reliance and focus on process, and removed the risk of governance becoming 'a paper exercise rather than a reality' [$C1P_2$]. However, one Project Manager stated that taking time to provide these explanations or hold discussions was not enough to convince senior leaders of the difference between stakeholder engagement and governance [$C1P_1$]. Communicating and engaging with stakeholders outside of the official governance routes was deemed crucial to develop and maintain good relationships and to secure buy-in to decisions before formal presentation at boards [$C1P_1$, $C1P_2$, $C1P_6$].

Approval outside of direct departmental control was referenced by two interviewees, specifically the reliance on other government departments, e.g. the Cabinet Office and HMT, to provide the final green light to continue with the project or programme through the submission of business cases for final approval [$C1P_1$, $C1P_4$, $C1P_7$]. The need for these external approvals was determined by either the size of the spend [$C1P_1$] or how contentious the project being delivered was [$C1P_2$, $C1P_7$]. To ensure these approvals were straightforward, it was

advantageous to make a point of meeting these external departments early, to share information about the project and its business case in advance of the formal approval timeline [C1P$_1$].

Communication of board outcomes, and transparency of discussions and decisions arising from the governance processes were considered important, particularly when managing the needs of interested stakeholders [C1P$_1$, C1P$_6$], with the Project Manager suggesting openness would 'improve governance and I think the more open you get about what you are doing, the more people will respond to what you are doing' [C1P$_1$]. The lack of such openness or information sharing was seen by a Programme Manager as 'leading to some quite difficult and sometimes quite destructive behaviour; people not sharing decisions until pressed and going off and doing things, and not letting other people know what's going on, which causes difficulties in relationships' [C1P$_6$]. Generally, good communications and relationships with stakeholders were seen as vital to the successful delivery of projects, summarised by a Programme Manager who stated, 'if you are not managing your stakeholders, you're not going to deliver a thing' [C1P$_3$].

The Senior Business Representative believed stakeholder engagement and good communication were not one of the department's strengths when in 'programme or project mode' and on some occasions could be 'the first thing to fall off the agenda' [C1P$_4$]. However, to ensure stakeholders were kept involved, there was a need to develop 'good and clear stakeholder engagement approaches' to identify and put in place communication practices, particularly to manage 'more challenging stakeholders' [C1P$_6$].

Involving business areas in the delivery of the project, particularly in relation to decision-making, would ensure commitment to and ownership of the change being introduced, by encouraging input at key project delivery stages [C1P$_1$, C1P$_2$, C1P$_4$], as sometimes there was a need to rely on others 'to take forward amounts of the delivery' [C1P$_6$]. There was a view the department was not 'good at taking people along with [them] when... managing change' [C1P$_4$], with one Project Manager summarising the need to strengthen this engagement as:

> ‘The more that you bring people on the journey with you, the more likely you are to succeed’ [C1P$_1$].

The Portfolio Director stated there was a need to ‘engage people outside of governance so they are aware of what’s going on and are able to brigade that’ [C1P$_2$]. Others expressed similar views on the need to build and maintain relationships through regular communication [C1P$_1$, C1P$_5$, C1P$_6$, C1P$_7$], with one Programme Manager suggesting that using a ‘standardised approach in the way stakeholders are engaged’ was ‘integral’ to good engagement [C1P$_6$]. Alongside this view of the engagement approach, the Portfolio Director proposed that stakeholder engagement did not need to be driven by the governance process, as not everyone impacted by the changes would attend the governance boards [C1P$_2$]. Engagement outside of board meetings was also thought to accelerate the decision-making process within meetings, particularly as attendees usually held ‘different perspective[s]’ [C1P$_3$], and to ensure project stakeholders understand ‘the changes you are trying to achieve’ [C1P$_4$].

The attitude of stakeholders was referenced by one Programme Manager, with some stakeholders generating a ‘culture of fear’ and had a ‘desire for control that they might wish to exert’ rather than operating with ‘openness, honesty and were collaborative and supportive’ [C1P$_3$].

4.3.2.2 Summary

All Case Study 1 interviewees were open and honest throughout, enabling the opportunity to capture a range of views across the main themes. There were some differences in perceptions, which were usually between the more senior and junior programme/project roles or those who led PMO teams.

Initial discussions on portfolio and programme management often referred to the supporting structures and controls underpinning the governance process. The political pressures faced by the department, attributed to previous high-profile project failures, had resulted in a perceived need for increased governance controls and the hierarchical nature of these structures. These controls were believed to increase confidence that decisions being made were appropriate.

The use of delegated authority led to some leaders introducing additional governance layers for their programmes, rather than keeping the governance approach proportionate, which created the perception by both programme leaders and stakeholders of wasted time and effort to meet these extra steps. Introducing additional layers was regarded as being non-compliant with departmental protocols and should be abolished. It had also resulted in a negative perception of governance. However, there were contrary views that the need for flexibility was required in certain situations. It was suggested there was a need for board members to have the right mindset and attitude to their role on the board, although securing the correct membership was sometimes problematic, with the more effective members likely to be in demand to sit on multiple boards. The right governance board membership, supported by clear guidelines and parameters, was regarded as crucial to effective decision-making, though this was seen as challenging to achieve. A general lack of understanding of responsibilities as a board member was offered as the reason for flexing the governance approach and introducing levels or layers to provide reassurance the right decisions were being made. The use and clear communication of tolerances was deemed the best way to maintain standards across the governance process by defining parameters and ensuring clarity of responsibility to achieve the standards and consistency vital for good governance. Expenditure levels and associated controls were also determined by these tolerances, in particular where projects were over a certain value and had to provide business cases to the Cabinet Office and HMT for final approval before proceeding to the next delivery stage. The Portfolio Programme Director involved the IPA and auditors (usually a third line of defence) in her boards as a matter of course to obtain their views as soon as possible in the governance processes.

Throughout the detailed discussions on governance process, standardisation was fundamental to ensuring the consistency needed for decision-making, and defining clear roles and responsibilities was a primary element of this. Although flexibility was recommended as necessary in some situations, thereby contradicting the principle of defined standards, having a common governance approach was believed to add value and improve the quality of programme and project delivery.

The development of the governance processes and approach was felt to benefit from early input from both the SRO and project stakeholders, which then transitioned into ongoing consultation, collaboration and communication to secure successful implementation. Such a view was attributed to the belief that involvement in designing and implementing governance would lead to increased acceptance and commitment to any underpinning procedures. Tracking and reporting of progress was standardised as much as possible and was regularly used to inform decision-making, with an emphasis on ensuring this information was accurate and appropriate, but there was a risk of it being used as an excuse for extending decision timescales.

An exploration of the attitudes to governance was linked to the capability of the individuals involved and was also deemed to influence the successful application of governance processes. Governance was used as a reason as to why programmes/projects did not deliver to time and was linked to the introduction of additional governance layers in the supporting hierarchical decision-making structures. Respecting the supportive governance roles and responsibilities, and being an advocate of the project being introduced throughout the decision-making process, contributed to the overall delivery success of the programme/project. Competing priorities within the organisation for individuals who had the right project knowledge, skills and experience meant sometimes projects were under-resourced, which could also risk successful delivery of the project.

Some of those interviewed described their department as risk averse, which impacted on the speed of the decision-making process, as risk management and awareness formed a significant part of the governance approach. Those using risk management embedded in their decision-making process appeared to have more confidence in the decisions being taken by board members. Nonetheless, such good practices were not regarded as commonplace, which had reduced the level of challenge to some decisions.

The importance of good stakeholder management and communications generally, not just as part of the development of the overarching governance approach, was referenced the most. The general consensus was that without

strong, well-developed relationships from across the wider department and beyond, such as HMT and IPA, governance and good decision-making could falter and lead to delays (experienced previously), impacting on programme/project timescales. Transparency of decision-making and clarity in communications was seen as essential across all aspects of the governance process to secure the buy-in needed, to realise the benefits gained from the defined approach.

The knowledge gained from the interviews across the themes was used to inform the format and structure of Case Study 2, recognising that the Agile approach to managing projects would itself likely lead to a different focus in the questions asked.

4.3.3 Case Study 2

Case Study 2 was conducted in a department responsible for the ongoing design and development of a digital service, following Agile methodology. Interviews were completed with the senior leadership team responsible for the design, development, implementation and ongoing maintenance of the digital service. The participants had a broad range of project delivery experience, with one interviewee's role primarily focused on policy development.

Table 4.7 provides the references are used for individuals throughout the analysis.

Table 4.7 Case Study 2 reference and job role

Reference	Job role
$C2P_1$	Service Owner
$C2P_2$	Head of Business Change Programme
$C2P_3$	Head of Digital Service
$C2P_4$	Service Development and Delivery PMO Manager
$C2P_5$	Service Manager
$C2P_6$	Head of Policy Implementation (Policy Specialist)

4.3.3.1 Thematic Analysis

The programme vision

When asked about the approach to adding or introducing new projects across the department, nearly all interviewees referred to the 'vision' or 'roadmap' [C2P$_2$, C2P$_4$, C2P$_5$, C2P$_6$], which was published 'externally' [C2P$_4$]. It was also referred to as having the 'identity of a North Star, a consensus on the direction of travel', which was said to allow stakeholders to have a 'common view of the end game' [C2P$_1$]. Having a 'delivery model' that was completely understood was important, as this vision influenced long-term 'ambition' [C2P$_2$] and impacted decisions on change proposals or priorities [C2P$_5$]. The existence of a 'service blueprint design' as a programme 'key artefact' helped with the delivery focus in terms of providing a detailed vision of the future service [C2P$_4$]. A fundamental part of maintaining the vision was through the structures, processes and decision-making approach which, coupled with a 'technology plan and strategy', supported the innovative development approach [C2P$_4$]. Involving stakeholders also helped with the strategic thinking behind the development of the vision [C2P$_3$]. Assessments on adding new change to 'pipeline' priorities took place at the Senior Management Team meetings and decisions on the change development approach included feeding into an 'existing team backlog… continuous improvement… or small discovery' [C2P$_5$]. Liaising regularly with policy teams guaranteed early sight of potential new projects, which also optimised opportunities for getting projects 'into the pipeline and into delivery space' [C2P$_4$], as policy was seen as a 'key part of what we're doing', with the roadmaps providing a 'bigger picture' view of future aims [C2P$_6$].

The Service Manager felt having a vision, supplemented by clear objectives, could be regarded as the 'governance policy'. However, he pointed out that delivering a service using Agile sometimes meant:

> 'Where you end up is not necessarily where you start out. And so you know that vision is to help stimulate and give us the momentum to progress forward, but not to restrain us to behave in a particular way' [C2P$_5$].

Governance framework and decision-making

A governance framework was required to support the end-to-end development and deployment of a digital solution, including the safety of data and the management of risk [$C2P_3$]. The team using the Agile delivery approach was supported by processes that ensured what was designed and delivered fell within the defined approvals. However, it was felt there was a lack of clarity on the processes that had to be followed to meet this alternative governance requirement [$C2P_6$]. Within the wider team, there were clearly defined roles and responsibilities, including product owners and delivery managers all situated in teams known as 'clans', where work was allocated for design and delivery [$C2P_3$], but 'conflicting priorities' could still exist where there may be different views of the team priorities [$C2P_4$]. Conversations were held regularly throughout the day to ensure issues were quickly resolved; an approach deemed successful by the Delivery PMO Manager, who also stressed this alignment was achieved without a 'heavy duty portfolio function' [$C2P_4$].

The process for decision-making was clearly defined and determined by roles and responsibilities; for example, the Product Owner could make decisions on 'predetermined' activities covered by approved business cases. Design leads then subsequently managed these activities and did not have to progress through formal governance other than 'through the product teams' [$C2P_1$]. Accountability was thought to be a key component of any governance process, to ensure the person making decisions was known to everyone and there was clarity of roles in supporting the decision-making process [$C2P_6$].

The Head of Business Change believed only a few supportive roles were required, e.g. delivery manager and business analyst, to provide discipline through a:

> '… core coordination overview to make sure they are able to pick up any blockers that could impact the team and make sure the teams are all operating on time and on schedule, and have an overarching vision of what we are trying to get to and when' [$C2P_2$].

The programme was observed to have a 'habit of reorganising' and did not have a 'preferred model', but it was accepted that was the nature of Agile and worked for the programme generally and, as a matter of principle, it encouraged continuous improvement [$C2P_4$]. Having the right roles and responsibilities in

place allowed progress to be made, and when different views existed, there was a need for 'an ultimate decision maker' to support this process:

> 'Agile doesn't take you away from civil service principles; you are there to put the evidence, you are there to make recommendations' and if a 'single position' cannot be agreed, a 'balanced position' was provided to the decision maker to reflect both views [$C2P_2$].

Levels and scope of authority were clear, but there was still reliance on other areas of the department to provide funding for different parts of the service being developed. Stringent financial controls were in place to ensure that approvals, and design and build decisions aligned, as without such alignment funding would not be released [$C2P_1$]. A 'service level of governance' was followed to delegate management of ongoing service changes, such as system improvements, to the delivery teams within controlled constraints, defined through the 'suite of business cases' and previously specified parameters [$C2P_1$]. This approach was also referenced by the Policy Specialist, who stated there was a 'very clear structure around governance' [$C2P_6$]. Prioritisation of the items and activities in the 'single backlog' were agreed within the team before development commenced [$C2P_5$]. Activities were 'funded and resourced around that forecasting model to support the building of particular outcomes on particular days', with progress and consistency being managed by following a Scrum Agile approach [$C2P_1$]. Awareness of the business cases and their importance was evident across the team [$C2P_4$; $C2P_6$], with the Policy Specialist having enough knowledge and experience to share in detail how the business case and budgets influenced the activities of the team [$C2P_6$].

The approach to service development and decision-making appeared to follow typical Agile processes, and the structures still relied on different types and levels of information to make the decisions, e.g. 'the right data' [C_2P_6]. The Head of Business Change described this in more detail:

> '… a fairly robust business case, you've got broad costs, broad budgets and you might have an approval point. At that point, we've got a vision, we know roughly where we want to get to, planning on how we get there, and how much that's going to cost' [$C2P_2$].

Overarching delivery of projects related to 'timescales, objectives and business outcomes', driven by the need for time-bound activities and reflected plans [$C2P_1$]. The Agile approach being followed was not a 'blank piece of paper Agile',

but was managed within a 'wider context of the end game' and used two-weekly 'sprint-planned outcomes' that fitted into the programme's defined 'framework' [$C2P_1$]. From a sequencing perspective, business case approval was sought at the end of the 'alpha' stage to reduce the need for multiple governance steps and to allow for a single gateway [$C2P_2$]. The learning gathered from the approach to both governance and spending for change prioritisation in delivering and maintaining the service had been applied across the whole programme [$C2P_1$].

Process

The iterative nature of Agile as a project delivery method was defined as: learning, or segmenting change into 'smaller chunks', which allowed for speedier implementation of a solution to 'test and learn', and encourage progress as long it added value to the solution [$C2P_2$]. An advantage of developing and delivering a service using Agile over Waterfall was thought to be due to the fact that changes did not have to be submitted on a plan months in advance of the change taking place [$C2P_5$]. Not having detailed plans, referred to as the 'unknown', was perceived as 'acceptable', with only a broad view of final outcomes being sufficient to start design and delivery. It was also emphasised that the different culture meant users benefitted from early deliverables [$C2P_2$]. However, the general culture of the civil service was referenced in relation to the need to know '100% of stuff' before progressing with design. Clear demarcation lines of responsibility between policy and development in 'that very old school way' were also referenced, which now overlapped in the new Agile service design and delivery area [$C2P_2$]. The Policy Specialist appeared to have fully embraced the new Agile ways of working versus the Waterfall approach, and extoled the 'benefits of user research' and 'listening' to service users to ensure their requirements were met, rather than being 'shut' in a room and not emerging for 'two years or a year later with something' that was not correct or did not meet user needs [$C2P_6$]. There was some caution expressed in using Agile methods for all change, as 'people think the Agile methodology can be used for everything, but it probably can't'. Therefore, establishing the correct methodology to use at the 'right point in time' and applying flexibility rather than following a 'standard way of working' benefited change management overall [$C2P_2$].

The governance process was based on ‘user need, programme outcomes, approval to spend and funding’, and the right behaviour was critical to achieving a successful governance approach to ensure it was not just about process but managing ‘great outcomes’ [C2P$_1$]. However, the approach was also described as a ‘culture’ rather than a process dependent on the need to get ‘consensus’, with clear daily outcomes rather than specific plans, which relied on having the right organisation and ability to achieve this. The need for documentation was sometimes required as part of the governance process, but was not kept in a typical project manner, with a software package being used to capture details of all planned and completed activities. This overall approach was described by the Service Owner as ‘qualitative governance… human governance, not just process governance’, although they acknowledged such a definition could be difficult to explain [C2P$_1$]. There was a view the governance process was quite ‘structured’, which the Head of Digital Service tried to divert away from the delivery team to reduce the risk of it ‘hampering’ the team’s progress and preventing them from responding quickly to both user and policy needs in an Agile way [C2P$_3$]. The Service Manager agreed with this view, stating, ‘Agile teams do not want to be hampered by governance’ and there was a need to ‘balance’ governance in an Agile environment [C2P$_5$]. It was recognised, as each build team worked differently (believed to be typical in an Agile environment), the approach and application of governance, and the ‘definition of done’ had to be consistent and applied equally across the programme. However, the inherent differences between the teams made this difficult [C2P$_5$].

Contrary to the above views, the Head of the Digital Service believed the governance approach supported delivery by being flexible and facilitated ‘multiple changes’ by securing quick responses to decisions on proposed changes to policy or user needs. Having a set of ‘collective common goals’ helped with this flexibility [C2P$_3$]. Processes were in place to manage risks as per typical project delivery practices [C2P$_4$], and the decision-making approach was said to support risk management and similar standard governance processes. However, difficulties were encountered when working with non-Agile teams and there was a need for a ‘Hybrid’ approach or ‘happy medium’ to achieve delivery [C2P$_3$]. Even when following Agile methods, there was a view of an ‘inevitable bureaucracy’ around some processes, albeit with an acknowledgement of

attempts to remove unnecessary delays in approvals to accelerate progress and make these 'more fluid'. However, some wider approval processes, particularly of business cases, were perceived to be costly in terms of 'time and effort', and opportunities were still felt to be available to remove such overheads to speed up delivery at less cost [C2P$_6$].

Reporting structures

New governance reporting structures had been introduced alongside the Programme Board to support specific elements of one ongoing service, as it was 'so different' [C2P$_1$]. The Programme Board was an opportunity for the Service Owner to report progress, but more importantly to take 'other directors and stakeholders on the journey' [C2P$_2$]. These structures appeared to be hierarchical and were also referenced by the Delivery PMO Manager, who described the existence of 'sub-boards', separate meetings involving stakeholders, 'operational checkpoints', and the more senior 'operations' board, where management of funds and commercial activity were discussed, allowing the other meetings to focus on delivery priorities [C2P$_4$]. The structure was also welcomed by the Policy Specialist, who stated that although she was 'very comfortable with Agile ways of working', it was necessary to have a 'framework' that clearly defined processes, accountabilities and delegated responsibilities to support expenditure decisions [C2P$_6$].

Weekly checkpoints were used to ensure services were being 'delivered to time' [C2P$_1$], with their usefulness being reiterated by the Service Manager for allowing ongoing communications, and visibility on changes and plans going forward [C2P$_5$]. Regular daily meetings were used to review performance metrics, figures, incidents and resolve issues, i.e. 'day to day operational stuff', and weekly checkpoints were used to collate and report this information across the wider team [C2P$_4$]. Further, the structures and checkpoints allowed service functionality to be delivered more quickly by tracking problems and metrics, which also required significant planning as 'although we're very, very Agile in our approach, we are also very structured' [C2P$_3$].

A portfolio role in the form of a Delivery PMO team administered changes to the previously defined roadmap [C2P$_1$]. The Delivery PMO Manager suggested the volume of amendments meant maintaining the overview was a challenge, but accepted this was necessary to allow progress reporting [C2P$_4$]. Tracking progress through conversation was deemed sufficient to identify risk and manage governance by reducing the 'number of interventions', to ensure delivery was being 'managed, monitored, tracked and reported' [C2P$_5$]. The Delivery PMO team was said to 'shield the [delivery] team' from multiple enquiries, ranging from content of design to progress against plans and, by providing the regular updates, they could complete reports and 'coordinate feature teams' to allow stakeholders to understand the amalgamated programme and service plans for delivery [C2P$_2$]. The Head of Digital Service suggested he supported this approach by providing the 'airspace' needed by the teams designing and delivering the service, and service improvements by unblocking issues preventing progress, tracking risks, and completing reports, which he stated he spent a lot of time doing [C2P$_3$]. Coordination was key to providing 'confidence' in delivery [C2P$_2$]. One example of this was through the provision of regular updates and contributions to the Delivery PMO team for reporting. However, the most effective way of keeping control, closely tracking progress, interdependencies, and identifying and managing risks and blockers, was considered to be through the adoption of frequent Agile ceremonies [C2P$_5$].

Generally, the Agile ceremonies encouraged transparency of 'key pieces of work', and exposed 'challenges and issues' to stakeholders to encourage discussion and support for resolution [C2P$_6$]. Such ceremonies included a 'scrum of scrums' to review forward activities across all build teams [C2P$_5$]. Sprint reviews were used to communicate progress and future plans to stakeholders in a less formal setting. These were deemed necessary to provide the 'right level of visibility and the right governance', to invite questions and challenge, and to provide direction and focus for the project on whether what was being designed and developed was still a priority from the perspective of a user, or continued to meet 'policy ambitions', securing decisions as needed [C2P$_2$]. 'Show and tells' were described as a 'really key ceremony' by ensuring 'the right thing is being delivered at the right time' [C2P$_1$].

Alongside the Agile ceremonies, a number of other hierarchical boards were in place to track and communicate progress with a range of stakeholders, from live operations to those responsible for managing change [$C2P_1$]. More than one interviewee referenced the number and different types of boards [$C2P_1$, $C2P_3$], with the Service Owner being required to attend monthly boards outside of the programme to provide 'wider visibility at senior levels' of progress [$C2P_2$].

Approvals, delegated authority and decision-making

Two interviewees referenced the requirement for increased 'scrutiny' in terms of the size and scale of the approval being requested [$C2P_5$, $C2P_6$]. Scrutiny caused some frustration, particularly where approval had previously been received from 'wider organisations', e.g. HMT, but it did not truly reflect the central government principle of delegated authority to spend, as it still had to be followed up with a request for final approval [$C2P_6$].

The focus of expenditure decisions was said to be linked to the original reason for which funding had been allocated, forecast expenditure, and approved business cases [$C2P_1$]. Approvals for business cases were dependent on the value and length of time of change delivery. For example, those of high-value, over five years delivery, or regarded as 'novel and contentious' still had to receive final expenditure approval from HMT [$C2P_2$]. The approval challenge from HMT and the Cabinet Office was observed as being 'detailed and thorough and robust', and impacted on the speed of design and delivery, which could not commence until such approvals were received. However, this was seen as 'inevitable', as the process was recognised as being part of one of the governance frameworks that must be followed [$C2P_6$]. There was a view offered that the Service Owner already had 'delegation to spend money in discovery and alpha', which suggests that approval of some aspects of expenditure did not always have to be confirmed externally once delegated authority had been given [$C2P_2$]. However, different approval and governance processes were followed depending on a series of levels (described as levels one to four), with levels one to three requiring formal 'governance sign-off' before going into 'live' [$C2P_5$]. To maintain team productivity in an Agile working environment, decisions had to be made and recorded quickly. Where there had been a push for decisions to be made within

the usual monthly board structures, this had been 'heavily challenge[d]' to sustain momentum [C2P$_2$]. The 'multi-layered' governance meant 'decisions were made where they're supposed to be made' [C2P$_1$]. This was regarded as a 'governance pattern at the highest level', which allowed senior leaders to make decisions on the 'future direction of [the] programme' [C2P$_2$]. However, some frustrations were expressed with the lack of consistency in the attitude and approach to delegated decision-making, and governance structures across the different areas of the department. One example involved a senior stakeholder having the authority to stop the final implementation of what was described as 'transformational new technology and new ways of working', even after it had received approval from numerous other governance structures in the department [C2P$_1$]. The Service Manager had also experienced similar 'conflict' when seeking approval of larger changes from the 'wider organisation' [C2P$_5$].

Regular conversations were held with stakeholders responsible for making approval decisions to ensure they fully understood what was to be achieved, taking account of policy intent, with priorities and deadlines forming a key part of these meetings, and the need to reconcile challenge and 'conflicting priorities' [C2P$_4$]. However, the Policy Specialist believed government set these priorities, and when something had to be delivered more quickly than originally planned, there might be a need to 'de-prioritise'. They went on to say:

> 'That's the beauty of working in an Agile way. We are able to be able to make those kinds of decisions if and when we need, to be able to support government priority, which is really, ultimately, what we're here to do' [C2P$_6$].

There was an acknowledgement of the existence of different types of decisions referred to as 'two extremes', with some decisions having to be made by the SRO, Ministers and Treasury. Other decisions defined as 'smaller items with lower impact, lower volume' followed a 'more slick' and 'dynamic' decision-making approach. These were described as being made 'at the right point of the organisation and prioritised at the right time, so we can get on with delivery' [C2P$_2$].

Delegated decisions included the numbers and type of resources necessary to design, develop and deliver the service, with the Head of Business Change being empowered and accountable for making such decisions within the funding allocated for the team structure [C2P$_2$]. This view was substantiated by the Head of Digital Service, who advised that the speed of delivery was increased by the delegated authority to recruit, describing it as supporting a 'very fluid… route to market' [C2P$_3$]. Once the team organisation was in place, further decisions were delegated to product owners leading the delivery teams, with any intervention and challenge limited to ensuring the 'right people and stakeholders' were involved in decision-making [C2P$_2$]. Empowerment was a 'key part' of making the delegated authority work but there had to be 'clarity' on the type of decisions that could be made:

> 'We don't need a director, deputy director/minister to understand what that part of the service needs to look and feel like. They are so far removed; we've got an empowered product owner who is working off actual user needs. So, I think that is really important' [C2P$_2$].

The support for empowerment as a way of managing teams and governance was common throughout a number of interviews [C2P$_2$, C2P$_3$, C2P$_4$], with the Head of Digital Service stating he had become 'reliant' on teams taking forward prioritisation of their work, including 'backlogs', while also ensuring teams work to a 'strategic vision' [C2P$_3$]. This view was further emphasised by the Delivery PMO Manager, who stated one of the senior leaders' key tasks was to ensure they were clear about the future of the service and 'aligned around the vision' [C2P$_4$]. The Head of Business Change felt such empowerment and delegated authority was not common throughout the department and that greater responsibility should be given for making decisions, as some were being made 'quite high up in the organisational structure'. He also suggested the 'right principles' were in place to make decisions, but these were not always made using 'formal structure, governance arrangements' [C2P$_2$]. There was a view the Agile environment sometimes felt 'quite fragile' and needed protecting to ensure teams remained 'empowered' to deliver their goals within the approved finances [C2P$_4$]. A similar opinion was expressed by the Head of Business Change who stated, by working together, the Product Owners were regarded as 'protectors' of the Agile approach and prevented a movement back to Waterfall methods [C2P$_2$].

The Service Owner clarified that delegated decision-making took some time to achieve, with decisions previously being 'made all over the place' and attaining personal control of funding had helped introduce delegated authority across the teams [$C2P_1$]. The 'level of delegation' was regarded as crucial to maintaining delivery impetus but was reliant on funding, commercial arrangements and delivery teams all being in place and, if disrupted, the balance and service delivery could be impacted [$C2P_4$]. Teams used a set of criteria to decide if an issue required escalation, although this was managed as much as possible between the team and team leaders. The process had been so successful, the Service Manager stated issues rarely got 'beyond myself and my peers', but sometimes 'an element of compromise' to reach agreement to resolve issues was required to maintain delivery [$C2P_5$]. Routes were available to escalate issues to senior leaders or receive feedback on changes to priorities, made easier as a result of using Agile [$C2P_2$].

Occasionally, decisions made at user-focused sessions were escalated to a senior level before the change could be progressed. However, to secure a positive outcome, activity focused on how best to identify and engage with the decision makers to achieve 'evidence-based' decisions by presenting impacts and user perspectives [$C2P_2$]. The primary difference with decision-making for Agile was the movement away from only allowing decisions to be made at particular times of the year or in specific meetings, which could negatively impact the 'velocity' and 'speed' of delivery. It was acknowledged some decisions may not always be correct, but 'you learned something', which was acceptable 'as long as you learn fast' [$C2P_2$]. As the service and programme had developed, the level of trust in the Agile approach to development and delivery of IT services appeared to have grown across stakeholders, which had accelerated decision-making and approvals [$C2P_2$, $C2P_3$, $C2P_6$]. Nonetheless, there existed a lack of 'immediate control' over some decisions, for example, where a Ministerial decision was required, which was thought to impact on the team's ability to deliver. This was managed by escalating the risk and highlighting key milestones and deliverables to ensure a full understanding of the implications of not meeting these timescales [$C2P_6$].

Ways of working

The Agile approach was believed to have changed ways of working and the general atmosphere of the programme organisation, as it did not 'feel like the typical civil service offer'. This was attributed to the fact progress was visible to anyone who walks around the floor [C2P$_2$]. Where challenging behaviours were experienced, these were attributed to 'people's fear' in moving from Waterfall project managed change, with upfront requirements, to Agile, where delivery was shared with stakeholders using an iterative 'show the thing' approach, allowing people to see regular development and delivery. There was felt to be a lack of a 'standard understanding' of Agile, which had resulted in a reduction in its use, attributed to the perception that only 'digital people' worked in Agile and, as it adopted a 'different language', it felt like a 'different world' to people not working in that environment [C2P$_2$]. Such a move was recognised as beneficial to the management and delivery of change, but transforming people's views was a 'journey' and would take some time to achieve [C2P$_6$]. There was an acknowledgement that such cultural and behavioural change would be difficult to achieve, but stakeholder concerns were being managed through 'storytelling' and 'arming people with the right information' rather than governance, to provide stakeholders with the reassurance needed to commit to change being developed and delivered in the new way [C2P$_1$]. A shift in attitude had been experienced from several senior-level stakeholders, who had observed the benefit of both rapid delivery and response to proposed changes. Nonetheless, some policy stakeholders continued to develop policy in isolation, rather than embracing the joint working Agile delivery approach and instead, 'chuck' the policy 'over the fence' to the digital team, to develop a solution. This was felt to be a difficult culture to break through [C2P$_3$]. Such a view was also offered by the Delivery PMO Manager who described it in similar terms: 'policy over here and delivery over here' [C2P$_4$].

The acceptance of change generated by projects and change culture was discussed. A view was offered that the creation and embedding of a 'minimal viable service' into the business area would change culture to some degree, but this was caveated with the statement: 'that'll only go so far' [C2P$_3$]. To ensure the business understood the evolving service and how new roles might emerge or current roles develop, it was important that the organisation was brought into the design and development process [C2P$_5$]. A similar perspective was given by

the Delivery PMO Manager who stated the best way to manage resistance to change and challenge to transformation was by obtaining support from the business areas, as this was crucial to achieving benefits from the introduction of change [C2P$_4$].

One element of behaviour highlighted was the way risk was perceived in the programme. The service was managed using a 'risk-based approach', with prioritised change designed and implemented alongside the maintenance of the live service. However, when it came to decision-making and expenditure, a 'lot of risk aversion' had been experienced, which was attributed to the innovative approach to developing, delivering and maintaining the service. This attitude to risk, and the need for additional information before making decisions, did not 'support Agile methodology' and had resulted in occasional delays or rescheduling of some changes, placing pressure on the team to deliver more in a shorter timeframe [C2P$_5$].

Skills, knowledge and capability

The development of a solution through to the 'discovery and alpha' stages was achieved by having an effective team in place with a particular set of skills, who had to be able to work flexibly, generate ideas and understand user needs, which were then retested once developed [C2P$_2$]. Having a 'vision' [C2P$_2$] or 'story' [C2P$_4$] was necessary to ensure people understood their roles and to underline the importance of the 'new ways of working', to encourage commitment to the role and 'grow Agile capability' to meet future demand [C2P$_4$]. Having a 'cross-cutting' team working as a 'collective' to co-ordinate the building and launching of the service was said to be a fundamental part of successful delivery [C2P$_2$], regarded by the Service Manager as being a 'team of equals' that could influence prioritisation decisions [C2P$_5$]. Including policy experts as part of this team had proved to be beneficial in ensuring policy development, and operational delivery did not 'happen in isolation', as working jointly secured 'a better result' [C2P$_2$]. Further, clear processes and understanding of roles was said to have helped with the confidence of those using Agile, specifically in relation to approvals and governance processes, as 'having the right people with the right knowledge' of

the ‘vast’ end-to-end process meant conversations took place to secure approvals rather than the completion of ‘swathes of paperwork’ [C2P$_6$].

It was imperative that the resources and skills of the team were used to develop and deliver changes that would be of the ‘highest value’, which in turn would increase confidence in the team’s ability and experience to manage emerging ‘bigger issues’. However, the lack of visibility of the ‘complete backlog’ meant prioritisation decisions were more difficult to make [C2P$_4$]. A similar view was expressed by the Service Manager, who said there was a need to manage resource to ‘facilitate’ requests for change [C2P$_5$]. Good organisation and a team that understood its roles and responsibilities, supported by an evolving series of processes, were attributed to the team’s delivery success. Furthermore, a number of other government departments wishing to build similar capability had asked the programme to share their approach and experience [C2P$_1$]. However, it also provided an opportunity to obtain an ‘external view’ from these departments on programme activities [C2P$_5$].

Stakeholder engagement

Agile ceremonies were used to engage stakeholders rather than for governance, but still tracked and communicated progress, dependencies and delivery. Product owners were empowered to lead these sessions using a ‘feature wall’ to focus the meetings [C2P$_2$]. When communicating with stakeholders unfamiliar with Agile terminology, effort was made to ‘term things slightly differently’ to ensure stakeholders fully understood what was being delivered [C2P$_2$], the process and ‘everybody’s role in that process’, as it was thought stakeholders were less likely to find alternative ways of delivering the solution, and it provided a degree of confidence that the service was being correctly managed [C2P$_6$]. The regular show and tell ceremonies were used to communicate progress to all stakeholders with an interest in the service and allowed teams to demonstrate the ‘value’ of the new changes or developments, providing the opportunity for stakeholders to grasp the ‘concepts’ in a visual way [C2P$_2$] and letting them see the service was delivering what was agreed within the set timescales [C2P$_1$].

Early stakeholder engagement was necessary to obtain faster approval of decisions, which meant potential issues and concerns raised by users or stakeholders were captured, and responses or solutions developed prior to the decision-making meetings. Undertaking this preparation ensured the right people were kept satisfied and provided the necessary approvals to critical timescales [$C2P_5$, $C2P_6$]. It was accepted that there was a need to work through solutions, but equally on some occasions, a point may be reached where stakeholders may have 'different views for valid reasons' [$C2P_2$]. Nonetheless, continuing to have challenging conversations on priorities increased the confidence of business stakeholders [$C2P_4$]. To ensure key dates were met and 'go/no' decision points were easier, some of discussions needed to be 'robust' [$C2P_5$] and held with the right people at the right time, albeit not through 'formal old school project meetings' [$C2P_2$]. The level of stakeholder resistance was reduced through 'inclusion', holding regular conversations and emphasising to stakeholders that their views were being taken into account. It was important that project stakeholders fully appreciated the impacts on both themselves and their stakeholders, to ensure they realised there might be a need to make changes in their area to support any new projects [$C2P_2$]. Although the conversational approach to stakeholder management was 'challenging', it was regarded as a 'strength' of the programme [$C2P_4$].

A 'storytelling' communication approach was followed and 'open conversation[s]' encouraged, allowing stakeholders to see more easily how they would benefit from the changes. It was accepted that achieving complete consensus was difficult [$C2P_1$], as the change was a 'journey' and providing the opportunity to visualise the service as it was developed [$C2P_6$] could help them see its potential.

4.3.3.2 Summary

The use of Agile as a method to design, develop and deliver a live service was fully embraced by all those interviewed, with only one slight difference in opinion regarding the governance approach expressed by the Head of Digital Service. Interviewees were enthusiastic, and the discussions and interviews became very conversational and a little less structured than those conducted in the first case study. Throughout the interviews, regular references were made to the concept

of a vision or roadmap as a way of governing and communicating the strategic aims of the programme and service. Although the vision/roadmap did undergo frequent changes, the principles and processes underpinning its development and ongoing maintenance appeared to drive the prioritisation of change, and provided structure to the submission of business cases and subsequent approvals.

There appeared to be a framework in place that defined governance processes, and the roles and responsibilities of those who were accountable in some way for ensuring the various steps were followed to necessary timescales. Described as ‘qualitative governance’ or ‘human governance’, it was recognised that certain types of information were required to support decision-making, such as budgets and plans, which seemed to be more consistent with Waterfall project methods and provided a level of reassurance for some stakeholders. The governance in place was said to have some flexibility and where possible, the need to provide this level of information was diverted away from the development teams so as not to ‘hamper’ their progress, as the team resource was carefully planned using a forecasting model.

The need for speedier decision-making was deemed crucial to allow Agile methods to be followed successfully, and a significant factor in achieving success was through empowerment and clear delegated authority within defined tolerances. Levels and scope of any delegated authority were clear and appeared to be restricted to day-to-day prioritisation decisions within a set of parameters defined through the business case value and funding approval process. Where funding was provided by other parts of the wider department, approvals also had to be sought through their hierarchical governance routes. The use of Agile had allowed the project to move away from the restricted timings usually associated with traditional governance, as most decisions were made when they needed to be, rather than being directly linked to board meetings. However, approvals for projects above a certain value required final sign-off by the Cabinet Office and HMT. These projects were usually supported by an internally agreed business case and this additional approval route was said to cause delays in making progress, as it sat outside of the department and could not be directly controlled by the programme.

The use of skilled Agile people was also delegated but this had caused some concerns, as there appeared to be little consultation or communication in terms of the impact on business benefits when it was decided to move these skilled people to alternative project activities. The reasons given for the refocusing of effort appeared to be driven by two primary factors: policy changes and/or feedback from service users. Inevitably, a shift in policy focus to meet Ministerial intent seemed to always take priority. Having a well-defined, flexible organisation structure in place was said to manage the impact of reprioritisation decisions.

Arrangements were in place to report regularly to stakeholders, both external and internal to the department and, as Agile methodology follows an iterative approach to delivery, Agile ceremonies such as ‘sprint reviews’ and ‘show and tells’ facilitated the reporting and tracking of progress. However, these ceremonies had not removed the need for more standard programme management processes and structures. For example, there was still a Programme Board in place as well as the need to report formally to senior level boards in a more traditional manner. The team had their own internal daily meetings, and plans were also provided but these were not fully defined at the start of the project or to the same level of detail usually available when following a Waterfall delivery approach. These processes had required a change in stakeholder culture to become accustomed to the Agile approach to planning. Delivering part of the solution regularly, helped with this cultural change, but it was still a challenge, as it was so different from typical central government ways of working. The Delivery PMO was in place to manage these more traditional hierarchical processes, by managing the project risks and gathering the information needed for status reports through regular conversations, which allowed the Agile teams to focus on development and delivery of the service and maintain momentum. Where other parts of the department were not following Agile, they did not understand the approach to delegated decision-making and were less flexible in accepting the decisions made. One situation referenced had resulted in a stakeholder from a different part of the department being able to stop the launch of a new service, as they had not accepted the decision made elsewhere by other senior leaders.

The capability of the team was also regarded as a strength, and ongoing development of the skills required to develop and deliver change using Agile methods was recognised as a requirement, including using external contractors or providers to supplement and exchange knowledge and skills. Working collaboratively with specialists and stakeholders, and ensuring those involved from other parts of the department had developed a level of capability and understanding of Agile methods, was instrumental in delivering a high-quality service.

The shift from managing change following a Waterfall approach to using Agile had been met with differing attitudes and behaviours depending on the direct level of involvement in the delivery of the service. All senior leaders in the programme said that the scale and extent of stakeholder engagement had helped with the fear and resistance to this new project delivery approach and was one of the strengths of the Agile approach. Early and frequent stakeholder engagement and having good communications in place through the use of Agile ceremonies, delivery of a 'minimum viable product' or initial solution, and regular reporting, was a fundamental part of this approach, as well as proactively identifying and managing issues and concerns prior to critical service delivery decision points. However, the stakeholder management effort was not always successful in preventing resistance from areas outside of the programme, and was perceived as attributable to stakeholders being risk averse or lacking understanding of Agile methods. It was suggested that there was a need to continue to advocate Agile as a project delivery approach as long as its use remained inconsistent across the department.

4.3.4 Case Study 3

Case Study 3 was conducted across two government departments and focused on the delivery of digital projects using both Waterfall and Agile project delivery approaches – often referred to as a Hybrid method. Thematic analysis of both departments compared the difference in the application and perception of Hybrid methods.

4.3.5 Case Study 3a

The participants had a broad range of project delivery experience and worked in either the project or digital delivery areas. The following references are used throughout the analysis (Table 4.8):

Table 4.8 Case Study 3a reference and job role

Reference	Job Role
$C3aP_1$	Live Digital Service Business Owner (referred to as Digital Service Business Owner throughout analysis)
$C3aP_2$	Lead Product Manager
$C3aP_3$	PMO Lead
$C3aP_4$	Senior Delivery Manager

4.3.5.1 Case Study 3a Thematic Analysis

<u>Prioritisation</u>

The prioritisation of change at a departmental level was determined by policy, availability of funding to undertake a change [$C3aP_1$] or timescales set by legislation [$C3aP_2$]. Changes were presented in a 'vision' or 'road map' developed by the product manager as part of an ongoing discussion or negotiation with the project manager [$C3aP_2$]. These were categorised according to complexity, with the majority of decisions on change priority not requiring a formal process or board [$C3aP_4$]. The Lead Product Manager explained:

> 'We will produce the product road map, which would say in what order we're going to deliver stuff. But generally, no dates are aligned to that. The IT leads take that plan and they convert that into a project plan, which they share with the project team. It creates a little friction if things don't go to plan in digital and things move, but the way that we work in digital is about the conversations' [$C3aP_2$].

She further explained, these conversations allowed expectations to be managed from a digital delivery and timescales perspective, and supported the need to be more flexible in establishing 'priority' through the presentation of 'evidence' to justify the change [$C3aP_2$].

Agile methods were also used to establish a 'problem statement' by working with stakeholders through a 'pre-discovery' to understand the requirement for change,

to establish if a digital solution was appropriate in all instances, before then deciding the priority level of the change [C3aP$_1$]. A similar view was expressed by the Senior Delivery Manager, who also suggested a 'gated system' was used to influence the changes to be funded and either decide the need for a 'digital front end' or 'terminate' the project. He also referenced the need to realise benefits, in particular the difficulty in reconciling the need for customer service improvements against a reduction in the overarching cost of delivering a service [C3aP$_4$].

Governance framework and decision-making

The PMO Lead suggested having a governance framework kept 'everything in one place' and ensured all proposed change was filtered through a 'central entry process.' She stated following a 'four-gate process' was the recommended approach for decision-making, which outlined at which board decisions had to be made. However, this did depend on the programme of change being delivered [C3aP$_3$]. Decisions to proceed with a change or digital solution still required a 'normal gated process' alongside a technical decision point, to ensure the business was prepared and ready to receive the change [C3aP$_2$]. One significant part of the decision-making process included the need for business areas to commit to the benefits to be realised from the project. This was achieved by holding 'early conversations' with the areas directly impacted by the project outcomes. These conversations ensured the 'assumptions' against which the project was designed continued to be accurate throughout the delivery of the project [C3aP$_1$].

The need for a degree of delegated decision-making was deemed crucial in allowing creation and ownership of solutions by the digital team. Previously, the business team determining solutions in advance had resulted in 'friction' between the two areas [C3aP$_4$]. The opportunity to take decisions at the right time using an Agile approach and confirming with users the approach or design to be implemented was also seen as important, rather than being driven by the fixed gated review process, which did not allow 'fluidity' in the governance process [C3aP$_4$]. The Lead Product Manager also referenced the need for decisions to be made at the right time in the development process, but provided examples of

situations where decisions were made by senior leaders to proceed with the development without the user requirement for the digital solution. These were then said to be subsequently underused or stopped at a late stage in the development process due to a lack of funding [C3aP$_2$].

Process

Having the 'right governance' in place in the business was important to secure successful delivery [C3aP$_3$]. The governance process was followed in the development and delivery of IT solutions [C3aP$_2$] and it was accepted such a process was required but should be 'fluid' and 'appropriate', to allow rapid decisions or approvals on changes to a design or solution without needing to go through a multiple gated review process over prolonged timescales [C3aP$_4$].

Within the digital development community, the Senior Delivery Manager stated his preference would be for all project management areas to work in the same way. That is, when an iterative Agile method is being followed by the IT solution development teams, close collaboration is needed to ensure the timescales for completion of a solution are clearly known and understood by everyone involved in the project. He provided an example of this situation:

> 'We've had some real good success in some of those collaborative projects. In fact, some of the most successful projects we've had with our systems are where we've co-located the more traditional, legacy application team with the digital front-end team, and they've worked on minimum viable products together, so they've been incredibly successful projects' [C3aP$_4$].

Digital team input into the governance and the 'extensive' gated review process had been limited other than during the implementation phase of the project or when offering advice to business case developers. Once a service was 'live' or 'in the real world', the digital teams experienced 'less bureaucracy', as there was a need for frequent deployment of updates and improvements to ensure the service was fixed or enhanced as soon as possible [C3aP$_4$].

The Digital Service Manager shared his experiences of the governance surrounding Agile and Waterfall project delivery approaches, and the difficulties he faced where colleagues had attempted to create a 'Hybrid' approach by

combining the governance approaches for both. His view was 'some people know the old way; some people know about Agile' and he found himself 'defending Agile or defending Waterfall, and then explaining [to stakeholders] the two can complement each other'. He concluded, 'something in governance or guidance or processes' on using a Hybrid approach would be helpful [C3aP$_1$].

The Lead Product Manager stated her role used an Agile approach, which she found:

> 'Rewarding in terms of being able to deliver end to end, so seeing it from the very beginning where we're really trying to discover what it is we're wanting to do and then delivering some benefit for both the user, who is using the digital service and the business, who need to reap those benefits for the money that they've paid [C3aP$_2$].

Conflict did exist between Waterfall and Agile approaches to development within the IT delivery areas, with some developers leaving full testing until near the end of the full solution as per a Waterfall approach. As a result, where development was completed 'in tandem' and two different parts of the solution needed to integrate at a future point, they would be at different stages in their development, which caused delays and impacted project timescales [C3aP$_2$].

External approvals processes had to be navigated for some digital changes. The Lead Product Manager advised there was a 'gated process' for digital, particularly where a digital service was being deployed for first time, supported by an 'assessment' completed by digital experts before the service could be 'published to the platform', i.e. made visible to external users. These digital experts, the GDS, had developed service standards that were fully supportive and helpful to larger digital projects. There was an acceptance that these standards and the principle underpinning them was 'absolutely sound' and was not regarded as a formal part of governance [C3aP$_2$]. The Cabinet Office had a role in authorising expenditure and was therefore part of the governance process. However, the timing of these funding requests was critical to ensure the right level of funding was requested for the full solution following a discovery phase; if completed too soon, insufficient funds would be requested [C3aP$_2$]. There was a need to liaise with others to 'corral' the necessary information for approval to spend, with a need to work with 'finance' colleagues as part of this activity. Following the composition of the funding request, the ascent through the various hierarchical stages and

boards began including an ‘investment board’ before going ‘higher up the chain’ and finally through to the Cabinet Office who provided the final agreement to spend on the proposed digital solution [C3aP$_3$].

A ‘mixed model’ was referenced by the Digital Service Manager in relation to delivering projects, with the standard project and programme management processes being followed alongside Agile. However, he stated it was ‘clear’ which type of governance needed to be applied. He went on to say, there was a need for flexibility in the way projects were managed as some project delivery principles and structures were ‘fundamental’, and were still required alongside the Agile ways of working. A ‘gatekeeper’ role was in place to introduce new change to the programme of work, which was described as:

> ‘A bit more light touch. But this is part and parcel of making sure that you've got all the relevant people involved at the various stages, and more importantly, as you go from one stage to another’ [C3aP$_1$].

Technological change projects were co-ordinated and decided upon by a central change board, described as ‘lightweight’, which comprised senior digital delivery ‘peers’ who confirmed that the proposed solution would not impact on current systems or future planned changes [C3aP$_4$].

The Senior Delivery Manager advised that the approach to project delivery within the IT area was believed to have changed over time, with the focus very much being on digital delivery rather than end-to-end project management. He had observed that if there was a risk of delay, there was a reversion to a traditional ‘project management’ approach. Furthermore, although there had been a lot of activity by the Agile digital teams to gain ‘trust with the larger organisation’, he acknowledged ‘grade-ism’ still existed in terms of structures and hierarchy in some parts of the department [C3aP$_4$].

The Lead Product Manager believed using Agile had:

> ‘So many benefits of being able to work out that you’re actually doing things correctly right from the very beginning rather than doing lots and lots of things, then working out something has gone wrong, and then have to unpick everything. It just doesn’t make sense to me. Since I started working in this way, it makes so much more sense’ [C3aP$_2$].

Reporting and structures

Governance was described as a ‘wrapper’ and was recognised as being particularly helpful in ensuring progress tracking was in place to allow reporting outside of the digital delivery team ‘at least once a month’, supported by the Agile ‘high-level delivery plan’ [C3aP$_1$]. The PMO Lead stated, although ‘not prescriptive’, there were ‘minimum expectations’ in terms of the governance structures that had to be in place, for example a Programme Board. Projects were supported through the provision of information and reports to the ‘senior stakeholder groups’, which the PMO team organised and co-ordinated on behalf of the projects. The introduction of ‘extra layers’ of governance provided some stakeholders with the assurance they required regarding delivery, and had provided the ‘confidence’ needed by some areas impacted by the change through these layers [C3aP$_3$]. The PMO team oversaw management of how projects and programmes were progressing, including showing achievement of benefits against investment and how these linked to commitments outlined in the ‘overarching business plan’. To achieve this, ‘regular conversations’ were held with finance specialists using the project team as a conduit for some of these discussions, where the opportunity was taken to review what was expected to be delivered and how this ‘align[ed]’ with the ‘finance forecast’ against the plan [C3aP$_1$]. Reporting on progress and the approach to collating project status, including identification of any risk to delivery, was raised by the PMO Lead. She had accepted that although they had put processes in place to manage regular updates and information flows in real time, there were occasions when requests for updates were sometimes outside their control. The knowledge within the PMO team of the technical aspects of some of the updates meant there was a need to consult with the IT experts to ‘translate’ the information provided. However, she felt they had reduced the ‘bureaucracy’ of the reporting process as much as they could, accepting there were times when this was not possible, which was always ‘for the right reasons’ [C3aP$_3$].

The project lead allocated to manage the change was expected to oversee spending and reporting, and liaise with stakeholders who might need to support the digital delivery [C3aP$_4$]. This was confirmed by the Lead Product Manager, who stated the digital team did not get that involved in the governance as this

was left to the Product Managers, who liaised with representatives from the IT community to complete the necessary activities [C3aP$_2$]. One approach to sharing information was through 'retrospectives' (an Agile ceremony), however, these were usually only held with the teams involved in the development of the digital solution [C3aP$_4$]. The Lead Product Manager stated Agile ceremonies, such as the 'show and tell review sessions', allowed stakeholders to reflect on progress made in the digital area and they:

> 'Share the roadmap with them so they can see the longer-term future and the vision of what we think the product is going to look like' [C3aP$_2$].

Although the Lead Product Manager did not report specifically against plans, she provided the project with enough information to allow them to track progress against plans they might have developed and give them the 'confidence' the digital solution was on 'track for delivery' [C3aP$_2$]. Transparency and openness aided the development of stakeholder relationships, particularly when reporting on project and digital delivery status. Stakeholder expectations were managed through the coordination and collation of delivery updates in the form of a 'position paper', which also helped develop ongoing 'honest relationships' [C3aP$_3$]. Transparency and openness were also referenced by the Digital Service Manager, who ensured a clear plan and financial status was communicated alongside ongoing progress and 'challenges' to project delivery. Such reporting was usually linked to a 'monthly Project or Programme-type Board', and had improved stakeholder behaviours and reduced statements pertaining to a lack of awareness of project and digital delivery status [C3aP$_1$].

Although there was a need to report on progress and an expectation by some project managers that a project plan showing the delivery timescales of the solution would be provided by the digital team, the Senior Delivery Manager stressed:

> 'I'm not going to give them a project plan for my teams; I'm not going to lie to them, basically, is what we're asking them to do if we give them a Gantt chart, I'm not going to lie to them about that. I will give them road maps; I will give them potentials, and I'll give them probabilities of things actually happening' [C3aP$_4$].

Reporting was kept 'as lightweight' as possible and only provided 'things that are valuable to people'. He stated he was 'challenging the process', not the people,

by refusing to follow reporting approaches that had been in place for some time and producing reports that he thought 'no one look[ed] at', and was prepared to 'defend' such an approach by having a 'really open conversation' [C3aP$_4$]. He provided an example of a situation where he had been asked for 'burndown charts', which he deemed should only be used to track progress within the team. Instead, he agreed to provide a report that he believed would show more effectively how the solution was progressing, and reflected on the fact he felt the continual need to produce status reports slowed the team down. To manage these requests, he had conversations with the project managers early in the project to establish what their reporting requirements might be, and to show them what could be easily generated and useful in tracking progress [C3aP$_4$].

The Digital Service Business Owner suggested there was a need for some learning within his team in 'standard' project processes, including the 'right governance', to ensure tracking is completed across certain parts of the delivery. He continued by providing specifics:

> 'One would definitely be finance; two, where we're at with scope; what's the delivery plan; risks and issues; next steps, and all that type of stuff. So, we'll get that to a bit of a regular rhythm' [C3aP$_1$].

<u>Approvals, decision-making and delegated authority</u>

As part of her responsibilities on behalf of the Programme Director, the PMO Lead stated she was responsible for reviewing the reported status of the digital delivery, would challenge the content of these reports and identify issues, and in doing so:

> 'We are protecting the programme and the project areas because we have asked the question first' [C3aP$_3$].

The PMO Lead also provided an overview of the decision-making hierarchy and 'board structure' supporting projects and programmes, advising the structure was 'very much based on the programme at the time'. Programme Boards were used to ratify rather than escalate decisions, but were rarely used to discuss risks and issues other than as an escalation point. The programme also 'link[ed] into' other 'governance forums' as necessary [C3aP$_3$]. The Digital Service Business Owner stated he did not get that involved in the decision-making process as it was 'normally a specialism' within his organisational area. Challenges to delivery

tended to be on ‘how’ the solution was being delivered rather than ‘what’, with particular emphasis on ‘timelines.’ He went on to refer to the ‘quite bureaucratic’ or ‘archaic’ way of thinking when it came to looking at the way change benefits were managed and calculated, and the need to present at a number of different ‘senior boards’ to obtain approvals. However, this was as an ‘ongoing frustration’ rather than a ‘barrier’ to delivering the change [C3aP$_1$].

The Lead Product Manager provided details of her involvement in governance stages, which included an approvals board that reviewed in detail the end-to-end proposed design (known as ‘features’), the benefit to the customer, plans for implementation, and regression or withdrawal of the new digital service if it was found to not work as expected. This approach was deemed particularly important when new services had to integrate with older systems, and a ‘readiness assessment’ assurance step was in place from both a technology and business perspective to reduce the risk of potential issues or loss of service [C3aP$_2$]. The approach to design and development of new digital solutions had changed since following Agile methods. The Lead Product Manager stated:

> ‘Now we’re introducing almost a checker safeguard at the beginning of the digital journey before the digital team even gets started on it. We’ve had some really good successes where we’ve changed direction of projects in order to get better value for money for [the department] and it’s worked really well. We’re not there altogether. It doesn’t work in all cases’ [C3aP$_2$].

In terms of approvals, the Senior Delivery Manager stated:

> ‘Approval, even itself, is lightweight; it’s just a question, with me normally, and it goes to somebody else, where we say, “Are you sure you need to do this now? Is it something that could wait?” That’s it, and we leave the team autonomous to decide whether or not they should be doing those things, and if they really want to deploy it, they can deploy it’ [C3aP$_4$].

The Senior Delivery Manager explained that in allowing the development team this autonomy, they were then responsible for ensuring the implementation was a success by being available at all times of the day and night to fix anything that went wrong, to remove the risk of ‘reputational damage’. He concluded ‘the ownership is in the teams on their actual piece of code’ [C3aP$_4$]. However, empowering teams from programme start-up was deemed important to allow the people within these teams to take forward the change and by having ‘the relevant

finance controls in place to give assurance that month on month we've got a handle on the project' [C3aP$_1$].

The Digital Service Business Owner explained: once through the approval process, the project would be 'devolved' to him and he would then be responsible for delivering the change 'end-to-end', using his team. These responsibilities included ensuring finances were in place and that the benefits of the new service continued to be achievable. He did this by putting the 'necessary structures' in place to support his accountabilities, following standard programme and project management processes.

When discussing governance specifically, the Digital Service Business Owner stated governance was set:

> '…at a high level PMO, and then it's devolved to me in terms of actually delivering the project. There's some internal governance, which supports some of the project principles about making sure we have a project board in place; we've got all the stakeholders engaged, we've got regular reporting, we're visible. Then we've got regular conversations going with finance teams, for example, to review forecasts. The same goes with the IT teams to make sure that we've got a high-level plan and we've got a set of deliverables' [C3aP$_1$].

A 'gated process' was followed to ensure the system or service was at the required standard before being launched for the first time. For subsequent releases, 'rigorous testing' was in place as part of the decision-making on whether to go 'live' [C3aP$_2$]. Although delegated authority was in place, final 'decisions on deployment' of services were made by the 'business change manager' [C3aP$_3$]. To support Agile development and delivery, there had been a review of the 'eight-gate structure', which halved the number of gates projects had to go through. The 'entry' and 'closure' gates were only ever used once, but the two 'middle' gates did sometimes have to be gone through more than once depending on the change. It was believed some programmes determined their own approach to governance based around these four gates, depending on the programme's specific governance requirements [C3aP$_3$].

Funding

A ‘pre-discovery’ stage did not commence until the application for funding and scrutiny of potential benefits arising from the proposed digital change was complete. A digital team was then ‘assigned’ to the project once the funding has been approved. As the digital project progressed, funding was applied for at each stage of the development and there was always an option to stop the project or ‘kill it’ as early as possible if it was felt the project had no ‘identifiable user need’ or was unlikely to ‘add any value’, to ensure funds were not spent unnecessarily. There was an awareness by the digital teams ‘that a lot of money was spent in digital’ and as such, the focus was on ensuring ‘that we should stop building stuff that isn’t worth it, and we should build the right thing, and we should build it right’ [C3aP$_4$].

In using Agile, the opportunity to influence the solution early in its design had resulted in the development of the roadmap and a more successful solution. However, this had not necessarily aligned with the approach taken by some projects in applying for funding. The example offered referred to the project securing a sum of money and expecting the digital team to know whether they could design and deliver a solution within this funding without going through the initial ‘discovery’ or start the ‘alpha’ stages. Good communications were important in ensuring this process did not become a ‘blocker’ to solution development. The requirement to know the full value of the solution up front was also part of the Cabinet Office approval process. However, this could cause ‘big problems’ as the solution was rarely known up-front, which placed significant pressure on the IT design team to ensure the solution was delivered within the allocated funding [C3aP$_2$].

To demonstrate the need for a solution of service, a ‘sort-of’ business case would be developed that would be shared with stakeholders across several parts of the business to either secure funding or determine the priority of such a change. Where funding was not available, but the solution was seen to have some merit, it would be added to a ‘backlog’ for future consideration [C3aP$_1$]. Financial specialists were thought to follow a more traditional way of calculating project benefits and were seen as ‘risk averse’ and often felt they had to ‘protect the

business'. The Digital Service Business Owner believed it was a 'challenge to get them to think differently', and working 'more positively or proactively with projects' would likely lead to more benefits being identified for the investment and would support the project 'ambition' [C3aP$_1$]. The Senior Delivery Manager would prefer the project managers to manage the financial side of the delivery rather than involve the team to allow them to focus on building the solution [C3aP$_4$].

Risk management

There was a risk process in place, with the PMO Manager describing each project as having their own 'project level risks', managed through regular risk meetings and boards, with the opportunity to escalate for management or support at monthly Programme Boards for both digital and 'transformation'. Risk information, including dependencies and delivery issues, were provided to a 'range of stakeholders' at these boards [C3aP$_3$]. The Senior Delivery Manager expressed the view the 'risk nature' of the technical aspects of delivery were 'very, very limited' compared to project and programme-level risks. This was attributed to the Agile approach to digital development, particularly with the use of a discovery phase to establish 'user need' and 'drive the direction of the project' [C3aP$_4$].

Behaviours

The demographic of the 'heads of duty' was said to be potentially negatively impacting on the introduction of new ways of working including governance [C3aP$_2$]. This view was contradicted by the Digital Service Business Owner, who suggested the new Agile approach was thought to have been accepted 'at a senior level', but when conversations were held with 'people on the ground' responsible for 'planning resources', acceptance had been more challenging. As a result, he had to 'steer and support the team', and involve senior leaders to try and 'win people over' into accepting the new approach [C3aP$_1$].

To improve the governance process, there was a need to identify and establish the benefits arising from such improvements up front. It was also felt the digital teams responsible for designing and developing systems needed to change to

look at benefits in a different way, to focus on 'driving a better customer and advisor experience'. The Digital Service Business Owner stated:

> 'I want to have an early conversation in the early stages of a project that gives me some confidence of the high-level work that we've done in sculpting and securing the project starting to stack up. We start to explore there a bit more and also give a lot more assurance that the assumptions that we made early on in the project are the right ones going forward, if not better' [C3aP$_1$].

Adverse behaviours had been observed by the Senior Delivery Manager by one of the digital teams developing a service using an Agile approach, due to the increased daily scrutiny of the 'project management function'. He described the situation:

> 'That level of micro-management has led to some really interesting behaviours inside the team, in that they've made some really questionable technical implementation decisions. They've made them because their horizon is two weeks long, and it's only two weeks long because that's what they're being measured on and that's what they're being assessed on and being pressured on' [C3aP$_4$].

He explained, due to this focus, the project had adopted a 'command and control hierarchy', which had resulted in the Agile team being in 'crisis mode all the time' and behaving like there was:

> '… never any impetus for them or nothing's pushing them to stop, look up at the horizon' [C3aP$_4$].

Honest communications between peers were important to maintain relationships, particularly when behaviours being observed did not align with the need to 'all be working together to achieve a common outcome or a common goal' [C3aP$_1$].

Capability

Project managers tended to focus on ensuring the 'business element' was correct and would usually leave the experienced digital team to develop the service. However, this meant that when technical problems arose, these were not tackled 'head on' or proactively [C3aP$_2$]. The Senior Delivery Manager stated, teams involved in digital solution development did not 'get involved in business cases', but they may:

> '… lend expertise to business cases when they're coming into portfolio areas, so we may lend technical expertise, product expertise, some delivery expertise sometimes and design, to help influence high-level

> estimation or analysis of whether or not this thing is actually feasible' [C3aP4].

He further suggested that the whole Agile delivery team added value to the delivery processes, listing these specific roles as: 'user researcher or business analyst, a scrum master, a product owner, a user experience person, and a designer', but digital solutions could be built without these individual roles, albeit not as well. All the digital team were allocated to a project and 'rotated in and out' of the team as the solution progressed through the development timeline [C3aP4]. It was important to ensure the 'right people' were available at the right time to support the project, and accurately forecasting when skilled people were needed was vital to ensure they joined on time.

The PMO Lead also discussed the issue of having the right people in place to support the governance activity:

> 'Fundamentally, it is making sure you have got the right resources in place to be able to operate a governance framework, because we often just go delivery, delivery, delivery, delivery, and the people at the back end doing the governance don't have that level of support, that level of resource.' [C3aP3].

The Senior Delivery Manager advised that scrum was the primary Agile approach adopted by the digital delivery teams. However, they were able and capable of using any other project delivery methods if necessary, such as 'Hybrid Agile' or 'Waterfall'. The teams had increased their capability to such an extent that when the digital solution they had developed went wrong (referred to as a 'high priority incident'), they could 'fix stuff within minutes'. He also added the following view:

> 'We're getting the brilliant, good practices about ownership, alerting, understanding what a good service looks like, what a failing service looks like when it's in production. We're getting that into the service teams because the service teams probably don't see that until they run in beta. We don't want them to be scared of it' [C3aP4].

When development teams encountered capability weaknesses, 'high-performing people' were allocated to the team to 'raise the bar', which might result in an initial slowing of delivery, but as these individuals came from 'incredibly successful teams with incredibly successful processes', the expectation was the change would improve and accelerate the development processes [C3aP4].

Agile was perceived to be successful by the leaders in the department due to the level of governance in place, but the Senior Delivery Manager attributed this to the fact that:

> 'We're all better at our jobs now. We know what we're doing; we have ownership over stuff, and we know how it works and we know we're responsible, and we're professionals' [C3aP$_4$].

As a result of this experience, they had 'gradually pick[ed] apart' the process in place to manage change and challenged for removal of stages in the process where they no longer added 'value', resulting in no adverse consequences [C3aP$_4$]. A similar opinion was offered by the Lead Product Manager, who believed their 'skills and the experience' could be attributed to the fact they had worked on some 'big, complicated services' [C3aP$_2$].

The Digital Service Business Owner held the view there was a lack of understanding by teams of the different approaches to digital development, who baulked at the requirement for governance, and that those who were used to 'Waterfall' methods did not fully 'appreciate the benefits' of Agile. He went on to say 'having a full knowledge of end-to-end delivery' helped with understanding governance and where a team included people who were experienced in a variety of project disciplines; this allowed 'best practice' to be applied. Where 'basic project management' skills were lacking, this added to the challenge in aiding and developing an understanding of governance [C3aP$_1$].

<u>Stakeholder engagement</u>

Stakeholder engagement was said to be best done face-to-face, as failure to capture 'non-verbal communication' was said to be responsible for 'some of the problems' being faced by the digital teams, although this had started to change as more face-to-face meetings took place [C3aP$_2$]. To identify the stakeholders who might wish to be involved in delivering the digital projects, weekly meetings were held, where proposals were reviewed and, although 'tedious' it meant stakeholders were made aware of potential change leading to the start of 'conversation' and 'collaboration' [C3aP$_3$]. Without good stakeholder management and collaboration, the PMO Lead suggested they 'wouldn't be able to deliver' the programme. The development of stakeholder networks within the

'assurance and transformation' communities had improved relationships and was regarded as a 'bit of a success' [C3aP$_3$]. Managing stakeholders well was not thought to take 'skill and experience' but required people to have 'role modelling, support, and direction' to help them manage similar situations going forward [C3aP$_1$]. As a leader, the Digital Service Business Owner said it was important to identify and build key stakeholder relationships as soon as possible in the change lifecycle, in terms of 'setting the direction and through interaction' with these stakeholders. These relationships would help when:

> 'a project does encounter difficulties, it should be a shared challenge, or a common challenge and not be seen as there is a particular stakeholder issue back to the project. There should be a collective' [C3aP$_1$].

A similar view was offered by the Senior Delivery Manager, who stated project managers could use an 'escalation point' to raise and resolve issues, although this was not a preferred approach and 'working together' to manage concerns was seen to be more effective [C3aP$_4$].

Some challenges with stakeholders were attributed to a lack of understanding of the 'bigger picture', which was alleviated through 'articulation and explanation' of the approach to solution development [C3aP$_1$]. Hiding issues preventing progress from stakeholders was perceived as a 'blocker', attributed to a lack of confidence with 'business partners', who it was felt would 'support you to get through' such issues if shared with them [C3aP$_3$]. This view was echoed by the Digital Service Business Owner, who suggested these perceptions could also be built on 'historical' experience of an individual or team:

> 'If you come from a particular area, they might be renowned for either not delivering in the past, or for never delivering on the promises and stuff like that. That can be a barrier going forward. Sometimes you've got to overcome and spend a bit more time with stakeholders to win them over, and also provide them with more reassurance. And it can be done. We refer to that as corporate baggage. Some people carry that corporate baggage with them' [C3aP$_1$].

People who had recently joined these areas were regarded as 'enablers', and provided the stakeholder support required to make progress in the project and build strong relationships without continually 'referring to the past' [C3aP$_1$].

Developing change following Agile processes was ‘very different’, as the focus was on ‘working for the end customer rather than the internal customer’ [C3aP$_3$]. There was a view offered by the Lead Product Manager that sometimes digital solutions were designed in isolation without obtaining business input to ‘influence and steer’ the design at a Discovery phase, but this approach was lessening. Involving stakeholders in the design and development process allowed ‘expertise and advice’ to be factored into the design early in the process, ensuring the developed product brought ‘value and met policy intent’. Nevertheless, early engagement did not mean there was a common understanding of what was being developed; the product manager sharing their experience of one project being provided with an overview of the proposed digital service being delivered, then still requiring a similar discussion a couple of months later [C3aP$_2$]. One of the roles of the Product Manager in Agile development was said to be ensuring a balance between the needs of the ‘users and the business’, and by putting ‘the users first’, the ‘outcome’ would also be ‘positive’ [C3aP$_2$].

The Lead Product Manager stated there were three main groups of stakeholders involved in digital delivery: the digital team, an IT delivery lead, and a project manager. These stakeholders worked ‘really, really closely together’ with the project area, being primarily focused on the ‘delivery’ side of the digital solution rather than the ‘Agile’ and ‘iterative development’ approach. There had been some attempt to ‘introduce stakeholders to the Agile ways of working and its benefits’, but:

> ‘They are still very much plan-driven, which is where the governance works against the way that the digital teams work. We’ve put in quite a lot of different ways of working in order to help that’ [C3aP$_2$].

The Senior Delivery Manager stated the approach to development, testing and delivery was often determined early though face-to-face discussion with the team who would be completing the development. Once this approach had been agreed, the ‘scrum masters, product managers and product owners’ would continue developing relationships on a day-to-day basis, to ensure the planned activities were completed to timescales. Working collaboratively had been successful for those projects where the ‘more traditional’ teams responsible for maintaining the older digital systems, had co-located with the Agile digital delivery teams to allow joint working [C3aP$_4$].

There was a hierarchy in place that ensured individuals were identified who were ultimately accountable for delivery of the change, usually determined by the type of change being introduced. For a 'policy-driven' change, for example, the project manager who oversaw it, including ensuring the digital solution was right, would come from the policy area [C3aP$_2$]. Having the 'right stakeholders' at boards was seen as important, with the Digital Service Business Owner advising he only usually attended the first few meetings to gain confidence that the 'right players and areas' were in attendance, and then would 'step away' and allow the project manager to continue with the ongoing management of the Project Boards [C3aP$_1$]. As the activity of other teams was not under the direct control of the Senior Delivery Manager, working closely with those other teams allowed him to understand where 'problems' might arise and identify potential solutions, so 'issues' were not encountered with the delivery [C3aP$_4$]. To manage difficult stakeholder relationships, the Lead Product Owner found sharing the 'work with them early' in the process meant she now captured and respected 'their opinion and by 'working together', they had achieved 'a lot' [C3aP$_3$]. The Digital Service Business Owner believed a stakeholder's role was to be proactive rather than attending board meetings without participating. If stakeholders did need to challenge, it was important that this happened as soon as possible in the development and delivery process to allow counterchallenge by the project or digital team. In some boards, it had been necessary for the digital teams to 'drive some of the decision-making and the conversation' to make sure what was being developed was right. Being 'honest' and trying to understand the 'views of your stakeholders' was an important part of this process. Ensuring the right stakeholders were represented at boards was part of the governance process and ensured vital opportunities to provide those views was not missed [C3aP$_1$].

It was felt having a governance process that 'encouraged people to get together as early as possible' to discuss impacts in a 'no blame' way, rather than completing the process using emails, would be welcomed [C3aP$_4$]. For governance to work successfully, it was imperative the 'right stakeholders' should be involved 'end-to-end', and include representatives from the business areas, finance and planning. These stakeholders were said to be 'some of the most challenging' and understanding who these 'more contentious' stakeholders are would better support governance processes [C3aP$_1$].

The Digital Service Business Owner shared his experience of the lack of acceptance of an Agile delivery approach, where:

> ‘Those stakeholders who aren't a fan of Agile and don't fully understand it, when you deliver a minimum viable product, for example, will blame Agile. Or they will blame the whole concept of a minimum viable product as the root cause of project failure, and that's not right’ [C3aP$_1$].

He thought stakeholders had to be in the ‘mind space’ of understanding how the project would be managed, i.e. following an Agile approach, ‘the delivery elements and the governance required to support it [C3aP$_1$]. The level of governance in place was dependent on the ‘level’ or grade of the stakeholders, the project dealt with and, when using Agile methods to deliver change:

> ‘It's just about making sure that the two of them aren't working in isolation. And also, in terms of having a high-level delivery plan in the Agile sense compliments your more formal governance that you're tracking at a project and programme level’ [C3aP$_1$].

Part of this was ensuring everyone could follow the ‘terminology’ used in relation to the ‘different governance or delivery models’ and could ‘fully understand the roadmap’ being followed. For example, stakeholders who were ‘new to the world of Agile’ had time invested in them to allow them to become educated in Agile. For some stakeholders, any suggestion that the ‘whole project and governance’ should be delivered following ‘an Agile methodology’ would not be appropriate [C3aP$_1$].

4.3.5.2 Case Study 3a summary

Most of the four interviewees held similar views on the Hybrid approach, with few contradictions. There were alternative accounts of the Hybrid processes but these did not necessarily contradict each other. The only difference specifically referenced related to the acceptance of Agile and the demographic/seniority of individual stakeholders. The prioritisation of change involved developing a future vision or roadmap to focus discussions with the project manager on the need for a digital solution. One aspect of these discussions was to balance user need with the requirement to generate savings through the investment in new digital services and solutions. In some instances, the final decision to proceed was determined by a commitment to make savings through benefits realisation, which

were closely tracked through development of the digital solution to ensure they could be achieved.

Although Agile methods were used for digital service development, this sat alongside the need to follow Waterfall-style gated review processes to obtain approval to move to the next stage in the project. Empowerment or delegated authority was a fundamental part of the Agile approach, as this allowed the digital team to own the solutions they developed without interference from the business areas until user input was sought at appropriate times in the development process. The need for a business case remained, to justify spending on digital solutions and secure funding when it was felt investing in the change was the right thing to do.

Governance was required as part of the approval process in making decisions surrounding the development and delivery of digital solutions, and should be flexible and fluid enough to allow rapid decisions to be made. Some projects developed their own governance approach based on a four-gate process. Where it was possible for project teams to follow the same project methodology, particularly the approach to decision-making, this allowed effective collaboration and understanding of the timescales by all stakeholders. Across Agile, Waterfall and Hybrid approaches, gated review processes were followed, with the digital teams having little involvement in the governance approach up to the project implementation stage. Once the new digital service was in operation and accessible to users, the approval process was said to become less bureaucratic, with decisions on how to make improvements or changes left to the digital team using feedback from users. The project delivery approach was inconsistent, with Agile not always being used for digital projects. Adopting a Hybrid approach was said to be difficult, as people did not understand the development and governance principles underpinning both methods. There were contradictory views on whether both approaches could work successfully together: one view being that they did complement each other; the other being that, although Agile had the advantage of providing an end-to-end view of the proposed change, conflict existed between the two methodologies. This was particularly evident when it came to testing and integrating the new with older digital systems, as these older systems followed a predominantly Waterfall development and

delivery approach, making the overall development more complicated. There was said to be a constant need to advocate the benefits of Agile as a delivery approach, as there was an ongoing risk of some digital teams defaulting to the more familiar Waterfall approach.

When a digital service was first made available to the public, an external approval assessment had to be undertaken by GDS to ensure it met a defined set of standards and to provide final approval prior to the service being launched into 'live' and available for use by the general public. GDS is part of the Cabinet Office, who approve expenditure on any digital development and form part of the end-to-end governance process. Timing was critical; applying for funding too soon in the development process could mean insufficient money was requested, which could delay the delivery timescales. A hierarchy of governance boards was in place, with the GDS approval being the final stage of the process. Even with a mixed or Hybrid delivery approach being followed, the governance method was said to be clear, even with the separate digital approval boards that had to be navigated, to ensure the new solution would not adversely impact services currently being used or those being planned. There was significant support for following Agile to develop digital solutions, as it was felt the iterative approach provided opportunities to confirm what was being developed right from the start of the project.

A minimum level of written reporting and planning was completed, albeit not to the usual Waterfall detailed format, to allow progress to be tracked. Some requests were challenged by the digital leads to remove superfluous information that they felt would not add value to the tracking and reporting processes. Where extra reporting or additional governance steps were required by stakeholders, the PMO team endeavoured to do this on behalf of the project or working with the project manager. However, there were occasions where the technical detail required meant the team delivering the digital solution still had to complete these reports. Agile ceremonies were used as part of the information sharing and reporting process, including retrospectives, show and tells and sprint reviews. Stakeholders were invited to these ceremonies to receive updates on progress. Transparency and openness in reporting and communications were said to be important in the development of relationships with stakeholders. The PMO team

also tracked the level of planned benefits against the investments and the business plan to ensure they were on target, holding regular conversations to complete the review. There was a view that some of the digital teams were unfamiliar with standard governance processes and required some learning in this area to be able to support the provision of information and updates as part of the reporting process. This is not surprising, as it was said there was a definitive steer to discourage their input to governance activities, to allow them to focus on the development and delivery of the digital solutions.

Challenge on digital project status was carried out by the PMO Team on behalf of the programme directors, with issues identified and highlighted as required before coming to the attention of the senior stakeholders. There was a decision-making hierarchy in place, which was said to be determined by the programme or project, though the boards were used more for ratification of decisions rather than making them. The hierarchical approach to decision-making, and benefits management and calculation, were described as bureaucratic, but this was said to be more of a frustration rather than impacting or impeding project progress.

The introduction of Agile methods had led to changes to the way digital solutions were developed, which had resulted in what was described as more checks and movement in the decisions on whether to proceed to the next stage of the project. Empowering the digital team to decide whether to proceed with switching the service on, meant they demonstrated their confidence in what they had designed, developed and tested. A gated review process was still in place to provide the final approval to proceed, coupled with the assurances given from the digital teams. The number of gates had reduced and most only had to be visited once, though for some projects, some gated reviews were completed more than once.

Some financial specialists were regarded as risk averse and had not reflected Agile methods in the way they requested funding or calculated project benefits. It was said this could be alleviated by working more closely with the project and digital teams. Initial funding had to be secured for digital and change projects before being allowed to proceed, with the benefits to be achieved being clearly defined as part of the application for funding. The digital teams were aware of the importance of ensuring value was always gained from their solutions and

made sure this was the case by influencing the design and ensuring the application for funding was made at the right time. It was recognised this was difficult to achieve, but timing was crucial to ensure sufficient funding was requested. As high-value digital spend had to receive Cabinet Office approval, following an Agile iterative approach to design and delivery sometimes made the submission and justification difficult to develop. Good communication throughout was imperative to reduce the risk of requesting an incorrect funding limit to cover the whole value of the solution.

Traditional risk management processes were in place and followed, however, the nature of Agile methods as a way of developing and delivering digital solutions was said to have reduced the level of risk by establishing user need and the way the project should proceed during a discovery phase. Good communications were important to effectively manage risks by involving a range of senior stakeholders throughout the project lifecycle.

The view on whether Agile had been accepted as a way of managing change at a senior level differed between two interviewees. Project managers were also said to overscrutinise the digital delivery, insisting on detailed progress tracking, which had resulted in adverse behaviours by removing some of the delegated authority given to the Agile teams and reintroducing what was described as more control. Again, honest communications were said to be important to maintain these relationships and the level of trust required to agree and understand the project goals.

Differences were flagged between the levels of knowledge and capability of project managers and digital teams, which meant when technical issues arose these were not proactively managed. Input to the project management elements from the digital teams was limited to providing technical expertise and estimating cost for business case submissions. The number and type of roles within the project and digital teams varied depending on the status of the project and solution, with a particular reference to the need for the right people to be in place at the right time to support the governance framework. There was said to be a lack of understanding of the different approaches to developing digital solutions, i.e. using Agile or Waterfall methods. The digital teams following the Agile

approach having some basic project management skills, and knowledge of the end-to-end project delivery process would help increase this understanding. The digital teams were said to have developed their capability to be able to use different Agile methods and, by taking ownership of the service as it developed, had further increased this knowledge and experience and were regarded as professionals. Their skills had grown to such an extent that they could identify areas of a proposed process or solution that would not add value to the final outcomes.

All interviewees referenced good communications and stakeholder engagement, without which the projects would not have been successfully delivered. Stakeholder relationships were said to help with the development of the solution, and the management and resolution of issues and concerns. Having joint ownership of these issues and concerns was thought to result in them being resolved more swiftly. Where there had been some challenges, these were attributed to a lack of strategic understanding. Being open and honest was important to ensure stakeholders provided support when needed, particularly when there had been historical negative experiences of working with individuals. Such experiences had generated a preconceived idea of how successful a project may be and required more time to be spent with these stakeholders to gain the trust and support needed to make progress. As Agile processes required focusing on the end customer, it had started becoming more normal for stakeholder (or user) input to be gathered, which ensured the outcome added value and met the original intention of the change. Although discussions were held, some compromise was required between the requirements of the business and the needs of the user. However, it was the user whose views were usually considered. Regular meetings were held with stakeholders from the early stages of the definition and development of the digital solution, ensuring they could be involved from the start of the project. Some stakeholders had still not accepted the use of Agile and were said to attribute project failure to some of the Agile methods and approaches to digital development. One aspect of governance was to ensure stakeholders were familiar with the terminology of all project delivery approaches including Agile, about which some stakeholders were not quite as knowledgeable. However, some elements of governance were said to work against Agile, with some stakeholders not accepting the different approaches and

mechanisms arising from the use of Agile methods. Ongoing conversations, collaboration and communications were important in increasing acceptance of the approach, and encouraged challenge of the solution being developed by stakeholders. The right stakeholders being brought together at the right time would always ensure governance worked successfully.

4.3.6 Case Study 3b

The participants interviewed for Case Study 3b also had a broad range of project delivery experience. The following references are used (Table 4.9):

Table 4.9 Case Study 3b reference and job role

Reference	Job Role
$C3bP_1$	Implementation Strand Manager
$C3bP_2$	Project Manager
$C3bP_3$	Project Manager
$C3bP_4$	Programme Director
$C3bP_5$	Business Case Manager
$C3bP_6$	PMO Manager

4.3.6.1 Thematic Analysis

<u>Prioritisation</u>

The prioritisation of change and supporting funding and people resource was coordinated by a central change portfolio office [$C3bP_5$]. Potential changes were navigated through an impact assessment and 'feasibility' process before presentation to a committee as part of a hierarchical governance structure and process to obtain agreement to finance the change. Projects were formally established at this stage [$C3bP_3$, $C3bP_6$]. The governance approach for approval on to the change portfolio took the same route regardless of whether the change was being developed and delivered using Agile or Waterfall methods. One Project Manager suggested improvements could be made to how change was prioritised across the 'whole portfolio', to allow effort to be focused on delivering change, which was 'for the greater good' of the department [$C3bP_2$].

Part of the impact assessment process was to 'understand the rationale' behind the project proposal, including costs, benefits, savings, delivery timescales and the 'capacity' of the department to support the project. If accepted, the change would be allocated to one of the larger programmes in the department to deliver alongside the projects they were already undertaking, unless the 'nature' of the project led to it being managed on its own outside of a programme [C3bP$_2$]. Presenting the return on investment in terms of 'benefits' was a crucial part of the approval process, however, the focus on benefits reduced when the change was regarded as an 'enabler' project, i.e. one required to support the delivery of other high priority changes [C3bP$_6$].

The Programme Director stated that the principles underpinning the approval process determine whether a project will need to feature on the Cabinet Office major change portfolio, to be governed by those processes alongside those of the department. He explained:

> 'The principles fit with IPA standards around the need to have the right kind of rigor and business cases. They need to decide, using IPA standards against risk potential assessments, what the size and scale of projects are. So, by risk potential assessment, I mean the criteria we use around impact and consequence and complexity, which determines the size of risk of projects. In terms of their complexity and in terms of their impact' [C3bP$_4$].

Governance process

The approach to governance was referred to as 'historical', with the PRINCE2 project management methods being the primary way of managing departmental projects [C3bP$_3$]. The Programme Director explained what he thought was behind the governance process and made it a success:

> 'I think the three-line defence model absolutely drives it. From a process perspective, that is what drives it. The success of project delivery, the success of good leadership, and the success of good governance comes down to, I think, ultimately, the leadership of the SRO, and indeed the programme director, and indeed every member of the board, in working in a collaborative way in governance. So, I think we would fall into a trap if we think that good governance is determined by adherence to good process and is all about good rigour. It, as ever, is about good and great leadership, and using the mechanisms in the right way. So, the best boards that I have been in are ones that have really good conversations about what it takes to be a board member, about collaboration' [C3bP$_4$].

He went on to say that governance structures should support decision-making, particularly in terms of ensuring that project outcomes and benefits were realised with ‘dependencies, overlaps and risk’ being discussed, to support the creation of ‘action orientated risk management plans’, to ensure the project made progress. He concluded that governance should not be seen as a ‘blocker’ [C3bP$_4$].

One Project Manager described the governance approach as mainly following a ‘gated review process’, before progressing on to the next stage of work. The process was said to be determined by:

> ‘Understanding each phase of the project, breaking the project down into phases and then ensuring that we are making really good decisions at regular, sensible points along that lifecycle, usually to close down big phases of activity’ [C3bP$_2$].

The PMO team provided guidance to project managers on how to ‘navigate’ through the different project stages to ensure they followed the right approach to secure funding, track progress, and obtain the ‘right decisions at the right times’ [C3bP$_2$].

The Business Case Manager offered an explanation of the different perceptions of governance and how to manage these:

> ‘Ultimately, I think people who understand governance I think appreciate its value and why it's needed. People perhaps find it a bit frustrating because it is a fairly structured process; it's not that agile, you have to follow the process and do the right thing at the right time. Fill in the right pieces of paper and some people maybe feel it's a bit bureaucratic. But still, unless you're patient and can explain things, some stakeholders, they may find it a bit frustrating’ [C3bP$_5$].

The PMO Manager described his team’s role as assisting projects through the established governance structures and escalation routes within the defined organisational ‘hierarchy’, using ‘guidance documents or frameworks’ to do so. These frameworks also supported the project manager in establishing if the project should have ‘an Agile approach, a digitally-led Agile approach, a Waterfall approach or a Hybrid of the two’ [C3bP$_6$]. The Business Case Manager stated the PMO team could be a ‘bit bureaucratic’, with ‘lots of forms and documents to fill in or report against’, but then said it ‘added value and provided a useful

function' in terms of monitoring progress, managing the programme business case and arranging governance boards' [C3bP$_5$].

One Project Manager described how he had to flex some of the decision-making processes and governance structures to fit the digital development approach they followed. Due to the nature of the project, governance became quite complex and there was a need to 'interpret' the 'decision points' where certain activities would be expected to happen to ensure approval was given to spend at the right time, to allow the project to proceed [C3bP$_3$]. The Implementation Strand Manager discussed her role in terms of governance and stated, as she could oversee every 'stage of the delivery', she had a 'clear line of sight as to why decisions were made', which helped her with the implementation process across 'each of the phases' [C3bP$_1$].

Most projects following Agile methods adopted a similar governance approach to those using Waterfall, but the Implementation Strand Manager said this depended on project [C3bP$_1$]. One of the Project Managers believed the introduction of Agile delivery methods had changed 'some of the terminology' but not necessarily the governance processes, and described them as 'not particularly different' for both Agile and Waterfall digital projects, stating they merely used 'different words for the same thing'. For example:

> 'We stopped talking about gated reviews and started talking about decision points, but actually there was not a whole lot of difference between what we used to do as part of a gated review and what we now do as part of a decision point. Although we are trying to deliver Agile projects, we do have quite lengthy phases of activity that lead up to a big decision, what feels very much like a gated review that you would expect to see in a Waterfall project. I think that the idea was that we would do things in a different way. It would be a slicker process, it would be different, you would not have these huge decision points and gates, but actually I do not think we have ever really successfully moved to that' [C3bP$_2$].

This was attributed to the fact the 'well-trodden governance path was well understood', which had made it more challenging to 'shift' away from it [C3bP$_2$].

Similar views were expressed by the other Project Manager, who specified that flexibility in project approaches was important as 'it can be difficult if you are very dogmatic'. New approaches were tried, such as Agile, but the view was, as a

department, ‘we get ourselves into a bit of a rut with these things’. Having flexibility and an ‘element of common sense’ allowed projects to get to the ‘right place in the right way’, as the ‘world changes’ and sometimes the approach did not have to always ‘fit the mould’ if stakeholders were ‘comfortable’ with applying such flexibilities. [C3bP$_3$]. Flexibility was also referenced by the PMO Manager in the way a project might be governed, especially when considering the use of a ‘Hybrid approach’. Some negotiation was necessary, and clearance or ‘permission’ was required to apply such ‘proportionality’ (a term used by some interviewees interchangeably with flexibility), to the governance approach, which was sought from Programme Boards and the SRO. Determining the level and scale of ‘proportionate governance’ was driven by the size, priority and cost of the project, and the expected benefits arising from the change. Nevertheless, the PMO Manager felt there was not ‘one single factor that influenced’ how governance and controls might be applied. He stated that although flexibility was possible, ‘fundamentally, governance still functioned within an established hierarchy’ and any proportionality could only really be applied to the more ‘optional components’ of governance, rather than those that were regarded as ‘mandatory’. The experienced PMO team helped identify these opportunities, as they had the knowledge to recommend a governance based on the available departmental ‘methodologies and frameworks’, and made adjustments to these frameworks as necessary. Applying ‘justified proportionality’ where appropriate was helped by having an SRO prepared to support flexibility in the governance of projects and also helped in developing alternative governance approaches [C3bP$_6$]. The Business Case Manager accepted that governance structures were in place to ‘monitor and manage projects’, and ensure funding was ‘properly allocated and managed’ using these hierarchical structures from the project up to ‘departmental level’. However, he thought these governance structures could be ‘disproportionate’, particularly where decisions were sought from boards for ‘relatively small things’ [C3bP$_5$].

The departmental project governance framework was not updated until 12-18 months after Agile methods were first introduced to develop digital solutions. This resulted in a lack of understanding within the PMO community of the new methods, and the impact on the standard PRINCE2 and central government governance approaches already in place. The lack of clarity drove ‘behaviours’

that did not align with the 'new, wonderful way of working that was being extolled' and was said to imply this 'new methodology would do away with governance'. Following the distribution of guidance, a 'Hybrid approach' to digital development was introduced, which sought to 'complement the principles behind Agile without removing all manner of governance and controls'. The introduction of Agile provided an opportunity to change the way projects were managed and governed, however, the PMO Manager stated:

> 'What we do not actually have at the moment is something on paper that defines what the hybrid approach is. And if there is an opportunity to address something, to somehow capture the essence of proportional governance in a world where we're applying Waterfall, Agile and Hybrid, if we could define and capture the essence of that in some kind of guidance, I think that's where the opportunity lies' [C3bP$_6$].

Governance structures and decision-making

All programme and projects were allocated an SRO who would chair a Programme Board, which was used as the 'decision-making authority' to move through the governance stages [C3bP$_3$]. The Programme Director stated responsibility for decision-making always lay with the SRO and the Programme Board, which had not always been understood fully by senior stakeholders and had resulted in discussion and 'compromise' [C3bP$_4$].

Governance was regarded by one Project Manager as providing 'control' and could also be a 'real enabler', with the senior leaders and stakeholders involved in the various governance forums being able to support projects through removal of issues and problems to secure successful delivery [C3bP$_2$]. The PMO Team was said by the Implementation Strand Manager to schedule and align governance forums, meaning all decisions were made when they were needed, which also helped project progress. Her experience of governance in these circumstances was 'largely positive' and she used these governance processes to support her in removing 'barriers' and 'delays' [C3bP$_1$]. One Project Manager also described the governance structure as being the opportunity to 'get help' when the project encountered problems, and he used the 'escalation' route and the individuals available through that route to 'unblock' issues. As such, he regarded governance as an:

> ‘enabler for delivery, rather than something that we have to do because that is the way our process says we do stuff, and it then becomes potentially a box ticking exercise’ [C3bP$_2$].

The Implementation Strand Manager confirmed there was still a clear hierarchical escalation route in place, even when using Agile methods for the digital development:

> ‘We had a very clear governance structure in place. Although it was, very much, a digital agile project in terms of the methodology for the build side, we also had a lot of wraparound in place. We had structured checkpoint meetings with stakeholders, and timing and duration of those would be changed and adapted dependent on where we were in the cycle of activity. The checkpoints were targeted to engage with stakeholders from specific business areas and job roles. Sitting above the checkpoint meetings, we then have a project steering committee where we had monthly meetings. Anything that needed further escalation or a bit more discussion, or support or decision-making or influencing, I would take through to project steering committee. Being really clear, if it didn’t get resolved there, there’s another level. That’s not the end, I’m not going to be left to try to resolve something. You know, a very clear structure, very clear lines of authority that I would be able to seek that help with. Above that, we then had the programme board as well. We had clear line of sight in terms of where we needed to go if we did need to seek further support outside of those individual meetings’ [C3bP$_1$].

One Project Manager stated that regardless of the different governance structures, the primary purpose remained the same: ‘making sure that the right group of people come round the information and challenge it in a constructive way, to help the right decisions to be made’. He said the ‘lines of defence’ were there to ‘protect’ both the SRO and project managers by providing ‘due diligence’ on all decision-making. The same Project Manager thought governance at a more senior board level focused more on ‘resources’, compared to the governance of individual projects, which:

> ‘Is very much about finances, business cases, results and protecting the SRO, and making sure that you have got the right implementation decisions impacting, and that you have the right quality of product so you do not land something in an operational area that, quite frankly, does not do the job it was supposed to do’ [C3bP$_3$].

Timing was regarded as important in terms of governance and decision-making, with the view offered that decisions should only be sought from governance boards when ‘you are ready’, rather than being driven by previously set dates. Decisions made at these boards should also be more of a ‘rubber stamp’, as

engagement with senior stakeholders or their representatives prior to these boards taking place should mean decisions 'feel like a *fait accompli*'. By undertaking such engagement, one Project Manager stated that he had successfully achieved decisions in what could have been 'contentious' areas [C3bP$_3$].

The use of Agile to develop and deliver digital solutions was not thought to 'interact with how... decisions' were made in 'moving from one phase of the project to another'. Although Agile ceremonies were in place to monitor progress, one Project Manager stated the governance and controls approach meant Agile teams were continually asked:

> 'When will you get to the end of this next big phase of activity? When can we have that next big decision point about whether we have done what we are expected to do?' [C3bP$_2$].

This had resulted in some 'tension', as it drew the Agile Team's focus away from working through the 'backlog in priority order' [C3bP$_2$].

The Business Case Manager expressed the view that in using Agile processes to develop digital services, which were 'generally quicker, more flexible, and more adaptable', there might be a view 'governance is suddenly not needed or can be reduced to a much lower extent than is still applied'. As a result, the view of governance was that it was 'Waterfall-y and too structured'. It was acknowledged, however, that there was still a need for approval to spend, to be obtained 'at the right level' in the organisational hierarchy, and confirmation this funding was being spent 'appropriately' by supplying the necessary evidence to support expenditure decisions [C3bP$_5$].

The governance structures in place reflected the 'three lines of defence' and were used for both 'Waterfall and Agile' approaches. All lines of defence were said to be 'important' and 'applied' in the programme setting [C3bP$_6$]. The 'three lines of defence' approach to project assurance and controls was seen as:

> 'More of a help than a hindrance to be honest. I understand the model, the reason behind having that model there, and I think it has got real value and I think it works. I do not think it directly influences the way we govern, I think the influence really is on more, historically it is how we have always done it' [C3bP$_2$].

The same Project Manager also felt the governance surrounding projects in the department could sometimes be:

> 'Too cumbersome in terms of the reporting. We rely heavily on things like gated reviews or big decision points that I think we could do in a much more streamlined way, by having more regular and smaller, I guess, conversations' [C3bP$_2$].

Conversely, the PMO Manager believed decision-making was part of the 'controls' of the project, and 'documentation' formed part of those controls to support decision-making activity. The business case was one document needed for the 'key decision point' regardless of whether the project was managed using Waterfall or Agile methods. The business case would usually contain details of the project 'hierarchy structures, finance and budgets, and other aspects of project management' to inform those decisions as part of the 'chunked up' end-to-end governance process [C3bP$_6$].

The Implementation Strand Manager provided an overview of the approach to decision-making. As decision-making boards were only scheduled to take place monthly, opportunities were sometimes missed to progress the project and, as such, the right 'scheduling and timing' was an important part of the governance process. Having a detailed project delivery plan available, which showed all scheduled governance meetings, including those specifically in place for digital focused decisions, supported clear 'communications and messaging' about the change. Further, *ad hoc* meetings for decisions or to obtain 'clarity' from senior stakeholders were arranged where necessary, albeit rarely, to allow progress to be made outside the usual sequencing of the governance boards. Having these governance structures in place meant a project had to 'plan ahead', with one view offered that encouraging a 'mind-set' of 'governance being there to 'help not hinder' could only be 'a real positive' [C3bP$_1$]. One Project Manager suggested governance would 'move over time' and served different purposes and provided examples of this view. Governance could be in the form of a gated review when 'the most important thing is getting that decision' or alternatively, when the project had already secured funding and it might just be required 'in terms of monitoring, demonstrating progress, and keeping confidence' the project was on track. It also provided the opportunity for stakeholder support where a 'contentious decision' was required or there was a 'movement off plan' [C3bP$_3$].

The Programme Director suggested there was a form of ‘double governance’ in place when Agile was being used. Agile ceremonies were followed in terms of ‘show and tells’ but ‘full decision-making accountability’ was not given to attendees at these meetings, even with selected Programme Board members being in attendance to ‘approve progress’. As a result, a more formal governance was put in place, in parallel with ‘formal Programme Board sign-off', still required alongside Agile ceremonies. He further proposed that decision-making and governance should support ‘delivery of the outcome’ and there was a risk that ‘plans and governance’ were often built sequentially from ‘A to B’, and that focusing on working back from the final outcome would reduce this risk. To reach project outcomes, ‘compromise is part of good governance and achieving a delivery date was as important as getting the right solution’. He felt there was ‘a lack of understanding’ of the need to make a decision and then ‘move on’, rather than continuing to ‘refine and refine’ a solution and not achieving the planned delivery date [C3bP$_4$].

Within the department, as some of the digital and process design could be ‘complicated’, many Agile projects had taken as long as a project following Waterfall methods. Although the Agile stages could be ‘shorter or a little bit different’, they were described as being ‘similar’ in terms of ‘approval of stages and moving from one stage to another’. For some digital designs and solutions, a ‘design authority’ might be used to obtain agreement to the design prior to development, which began with stakeholders being advised of progress through Agile ceremonies [C3bP$_5$]. One Project Manager shared his experience of governance where, in some instances, it was the ‘be all and end all of the project’ regardless of whether the project being delivered was successful or otherwise. He offered a view that ‘governance does not actually help delivery’ and as such, it could reinforce the view that it was ‘a waste of time’. He echoed the view of the Business Case Manager and suggested the focus should be on putting a ‘design authority’ in place rather than implementing numerous governance boards [C3bP$_3$].

Reporting

One Project Manager advised the approach to governance was 'historical', with the PRINCE2 or APM project methods followed as the primary way of managing departmental projects. The level of reporting to support the tracking of progress was referred to as 'demanding' and did not necessarily prevent project failure:

> 'I have seen, even with those controls, a project in that area just fail entirely because I do not think we got to the heart of the forensic work or forensic governance, which is asking the right questions and having the right conversations, rather than blindly following a process' [C3bP$_3$].

A similar view was also expressed by the other Project Manager with regards to the production of board reports:

> 'At times it drives the wrong behaviours. I think we should be having quality conversations rather than quality reports, if you know what I mean. I think we focus on the quality of the paperwork sometimes and do not end up having the right conversation' [C3bP$_2$].

The approach to the development of reports had progressed over time as the experience and knowledge of the PMO team grew, with reports eventually being produced collaboratively using information the PMO team gleaned from their direct relationship with the Project Managers [C3bP$_3$]. Governance structures were used to determine the reporting timetable, which avoided 'misalignment or miscommunication' between the different governance routes used by the project. As these reports included the status in digital solution development, there would likely be differences in the level of detail being presented, for example, 'one might be a little bit more technical focused' [C3bP$_1$].

Although monthly reports or 'dashboards' were developed, projects using Agile followed typical Agile ceremonies and provided updates at the end of the 'two-weekly sprint cycles', which allowed the team to review and assess 'priorities' for the following two weeks in terms of digital development. The Implementation Strand Manager worked closely with these teams to ensure she provided feedback from 'users' on the design into the planning sessions, and represented users in prioritising changes needed to make the service work more effectively [C3bP$_1$].

Accountability and delegated authority

The Programme Board was allocated a ‘set of tolerances around scope, funding and timescales for delivery.’ The programme was accountable for delivering the change within these tolerances and, as long as they remained within them, they would continue to have the ‘authority to determine and manage’ project delivery progress. Other senior boards, above the Programme Board, provided higher level support if required [C3bP4]. The Business Case Manager stated that delegated authority tended to be used for ‘smaller scale things’. However, most projects could involve ‘millions of pounds’ and would be ‘directed at the proper, more formal governance levels’. As a result, it:

> ‘Gives assurance to the people that there's nothing being hidden. You're saying what the costs are, what the risks are, what would happen if the thing's delayed or doesn't quite meet the requirement. You know, what's the impact? All that is sort of generally discussed and made visible, isn't it, along with the risks that you're having to manage. So, yes, probably some people say "Well, I'd rather do without it" but, you know, equally you need to have the assurances, don't you, that things are being spent in an appropriate way. It's making it visible to people to challenge or question whether or not something is a sensible way forward’ [C3bP5].

While setting up Programme Boards to provide the governance for projects, it was made ‘very clear’ who had ‘delivery accountability and who is a partner at the board’, which was regarded as important for decision-making in relation to project delivery. Terms of reference were defined and agreed by the board to ensure every board member understood their responsibilities, following the lines of defence model, and that they knew they had to work ‘collaboratively’ to achieve the programme aims outlined in the terms of reference. On some occasions, decisions had been taken to a ‘vote’ and, where this had happened, the level of responsibility allocated to individual members was crucial in ensuring only those eligible to vote were actually counted [C3bP4].

In situations where ‘funding drawdown’ or approval to proceed to the next stage was requested, a supporting presentation, which is neither ‘complicated nor too wordy’ and clearly sets out the decisions needed, is usually presented to the stakeholders making the approval, along with the ‘assurance’ the project is ready to progress to the next stage [C3bP5].

Agile was said to be ‘great for software development’ but usually formed part of a larger project or programme and, as a result, knowing whether it would ‘deliver on time or within budget, or deliver the right outcome to achieve the benefits’ was important. However, Agile did not always provide the ‘long-term planning view’ that might be needed as part of the overall project controls [C3bP$_2$]. Furthermore, for projects involving digital change, ‘a mirror set of governance in the digital world to get approval on that side of the department’ was in place. Described as ‘cumbersome’ by the Business Case Manager, these processes were managed in ‘parallel’ to those used for projects, which added to the ‘complexity’ of the governance. It had led to some project teams not fully understanding whether the right approvals had been obtained and, although an attempt had been made to ‘streamline’ the processes, some stages remained in place [C3bP$_5$]. An alternative view offered by one Project Manager, was that the ‘pure Agile’ aspects of the digital solution came under ‘slightly less scrutiny’ by the governance boards, as it was accepted the final approval lay with GDS. Where these other approvals were required for digital solutions, the aspiration was that these were all completed and approved in advance of the Programme Board, to put the project ‘in a very good position’ in terms of ‘formal governance’. However, he did express frustration at the occasional need to revisit previously approved spending to satisfy new stakeholders becoming involved in the project [C3bP$_3$].

One Project Manager stated governance worked well ‘but in a way that is quite challenging’, as governance groups, who might be risk averse, preferred to have more assurance before committing to the next development or delivery stage. An example given was an occasion when the governance board asked for recommendations arising from an IPA assurance review to be addressed before progressing further with the project. Although his initial reaction was one of frustration, the Project Manager reflected upon this Board decision and realised he had perhaps not ‘seen all the angles’ or understood the ‘gravity of the SRO’s position in having that delegated financial authority’ for the project’s expenditure [C3bP$_3$].

Governance focused on ‘controlling stages of projects and the spend associated with those stages of the project’ was achieved by ensuring there was a view of the ‘overall cost of the project and the savings’ it expected to generate as a result

of introducing the change. Being a government department, having control and being 'absolutely clear' on expenditure and why the change was being done was essential. The 'financial controls, the type of planning and the timescales' all needed to be supported by governance [C3bP$_2$]. The governance process was said to not differ between types of project and usually related to the level of 'investment and funding, and providing the SRO with the assurance' the project was proceeding in the 'right way and the right things are in place' to ensure the project was not making an 'inappropriate investment' [C3bP$_3$]. A similar view was offered by the PMO Manager, who stated the level of funding in place to deliver the project or programme tended to drive an increased hierarchy of governance, which also sometimes required HMT approval, particularly where high value contracts were in place [C3bP$_5$].

Risk management and attitude to risk

Governance was also driven by the 'level of risk', particularly where a project might involve 'new software', and whether this would 'meet the business needs.' There was a 'lot of interest in technical solutions', and assurance was required to establish if the 'risk was worth taking' and justified the expenditure [C3bP$_5$]. The PMO Manager suggested governance was about providing the 'SRO and Project Manager' with the 'assurance that the necessary controls are in place'. He further explained, in terms of governance, he believed the view would be different for someone who 'worked in the private sector, where risk appetite is greater', rather than working for government, which required 'protecting the public purse', which was achieved by applying 'demonstrable governance and controls' [C3bP$_6$]. Such a view was confirmed by the Programme Director, who stated he saw 'governance as an enabler' that provided him with 'assurance.' He further stated he had seen Project Managers 'take risks that they shouldn't be taking' because they 'don't really understand governance or the implications of the decisions they are making' [C3bP$_4$].

The Programme Director stated management of risk was 'really important', the components of which should be about 'outcomes and benefit realisation', and in the 'planning and delivery of projects'. In making governance decisions, there was a need to 'talk about outcomes' and the risk to those outcomes, including

how project plans 'build' towards these [C3bP$_4$]. Such a view was endorsed by one Project Manager, who stated that although risk discussions were often pushed to the 'end of the agenda' of board meetings, they should be the 'first agenda item', after identifying the 'top risks or issues' that were challenging the Project Manager's delivery success [C3bP$_2$].

Capability

The perception of governance was said to be dependent on the level of experience people had, particularly if they were a 'senior leader fairly new to projects.' The Business Case Manager thought some senior leaders 'might find it a little bit frustrating, bureaucratic, and a bit of a blocker' to getting things done. He believed 'education' might be required to get people new to projects to 'appreciate why these things are needed'. Part of this education was knowing governance could be applied in a 'proportionate way', which was usually determined by the value of the project being delivered. He went on to say he thought 'more formal training in governance itself' would help, as he believed 'some people might not do some of the things they should', as they were unaware of the expected 'standards' [C3bP$_5$]. This view was also offered by one of the Project Managers, who said the lack of understanding of governance could be attributed to a need for 'education' in this area. He also suggested the historical experience of 'poorly run governance' in the past had resulted in some Project Managers seeing governance as a 'blocker', with education and positive experience providing a way of improving this perception and making governance work for them [C3bP$_3$]. Where a PMO professional had been embedded into the project team, this had helped with understanding and management of governance requirements. It also provided the opportunity to check or confirm the approach to follow and gave 'real clarity on the timeline' for approvals or decision-making, and the governance boards that should be attended to achieve these decisions and approvals. Additionally, one function of the PMO that had been beneficial to the Implementation Strand Manager, was the ability to facilitate the establishment of 'mutually beneficial relationships' between departmental projects that had encountered similar issues in the past, from whom she could learn and increase her personal capability [C3bP$_1$].

One Project Manager offered a view on how capability impacts the success of relationships and the delivery of projects:

> 'There are different capability levels. It is a massive range, whether it is about your interpersonal skills, how people come across, whether it is just about their knowledge, whether it is their individual levels of engagement, how enthusiastic they are, how much effort they put into things. This massive range of different things, which you can use to judge people's skill levels. You work with some people and it can be very challenging but ultimately get to the right place. You might not like it at the time but ultimately it gets the right results because they have that level of skill' [C3bP$_3$].

There had been a move in the department away from managing projects following PRINCE2 to the principles outlined by the APM, which were described as 'more focused on leadership than process' [C3bP$_3$]. In terms of leadership capability, the PMO Manager believed this was 'driven more by an individual's own persona and behaviours'. In his experience, while working for a 'proper leader,' he could offer 'ideas and provide alternate points of view' and was given the opportunity to work with the wider team and stakeholders to develop and agree solutions to implement. He said he 'felt very fortunate' he had been given the chance to do so [C3bP$_6$]. He also submitted the view that the successful management of the Programme Boards could be attributed to 'behaviours and the personality and qualities' of the SROs, who would usually chair the meetings. Leaders who were 'inclusive' listened to 'alternate views' and could 'cut through all of the noise and really get to the point', and were prepared to ask the 'pointed questions' of those requiring approvals or decisions. Where this had been less successful, the focus had been 'very much about process'. It was acknowledged that the qualities and behaviours were 'very difficult to train people in' [C3bP$_6$]. The Programme Director held a similar view. He stated 'governance only gets you so far' in terms of project delivery. He felt leadership was required for successful delivery, as it was necessary to 'be challenging of yourself and others', as 'you need other people to help you sometimes'. He achieved this by using the department's internal audit team to obtain such challenge and offer 'a different view' [C3bP$_4$].

Where different approaches to governance were adopted, such as the 'Hybrid approach', which was described as having no 'formal governance framework', there had been a need for an experienced PMO leader to support the team and Project Managers through the processes. The consequence was said to be

governance 'outcomes' not being achieved [C3bP$_6$]. The Implementation Strand Manager believed having a good 'supportive' relationship with an experienced PMO team was important, and could add value to the project delivery process by providing the 'line of sight' required to manage the various governance forums and meetings. She added, the 'help and experience' of the PMO was 'invaluable', as they 'unblocked' issues being experienced by the project and provided a different perspective and a broader view of the programme as a whole [C3bP$_1$]. The Programme Director stated he often worried 'about the perception of governance' and said he had been advised to always put his 'best people on the PMO team'. Doing so would ensure it is a 'thinking PMO' and not one that purely focuses on the 'nuts and bolts of reporting'. He went on to say 'governance is integral' as there is a need to understand 'how decision-making should happen, as 'smooth collaborative decision-making' is imperative to project delivery [C3bP$_4$].

Stakeholder engagement

The Business Case Manager believed projects must make sure the 'right stakeholders are engaged and involved in decisions' to ensure whatever is being developed and implemented meets 'the needs of the business'. In using Agile methods, some stakeholders may not fully understand how the digital solution is being developed, especially where a 'minimum viable product' is part of the first stage of the implementation and the 'level of functionality' to be introduced. He further explained, to ensure stakeholders did have this understanding, it was important they were engaged throughout the project [C3bP$_5$]. Checkpoint meetings were held to obtain a 'wider stakeholder view' as some changes impacted a 'diverse range' of areas within the department, and holding separate meetings allowed discussions to focus on the 'risks and needs' of these different areas, and 'drill down and target' impacts arising from the change [C3bP$_1$]. Due to the 'size and hierarchical structure' of the civil service, one Project Manager felt there was a 'bigger challenge' in getting the people and relationships right for the project than perhaps 'other organisations' might encounter [C3bP$_3$].

The Business Case Manager suggested that a process was needed to identify the 'right people' and stakeholders who needed to be involved in decision-

making, otherwise decisions could be ‘weakened’, and there might be a risk of the project needing to ‘backtrack’. Additionally, increasing stakeholder engagement before Programme Board attendance would ensure the ‘request for approval’ was not being heard for the first time by board members and senior stakeholders, which allowed ‘almost a rubber-stamping' of the approval at the meeting itself [C3bP5]. Both Project Managers held similar views; one having had the experience of stakeholders in meetings coming ‘out of left field’ with new ideas, or having ‘taken exception’ to what is being presented. He suggested ‘pre-engagement’ would have helped avoid such situations. This was also said to be the case with board members’ representatives, who might attend other project meetings, and with ensuring the conversations being held outside of the meetings were relayed to the appropriate board member to reduce the risk of unhelpful challenge. He further stated:

> ‘It is the people and the relationships that are the most difficult thing. There is something about having people on board, taking them with you, having everyone sighted on what is going on that creates the confidence, and I think that is one of the key things as a Project Manager; if you have the confidence of those stakeholders because you have engaged them, that means you - I am tempted to say it is the wrong way - you get an easier ride in the governance, because there is trust that you have gone through the right process and it is not just you when you are putting something forward, it is those key stakeholders’ [C3bP3].

The other Project Manager had engaged people in the lead up to stakeholder reviews or governance forums, which meant discussions were therefore ‘fairly straightforward’, as key stakeholders had been more likely to be ‘comfortable’ with the progress being made. Where problems had been encountered, this had usually been due to something ‘falling down in the engagement beforehand’. Furthermore, continuing to talk to people throughout the project lifecycle and leading up to the governance decisions or discussions, would reduce the likelihood of getting ‘tied up in complicated conversations’, and provided the opportunity for these conversations to be ‘much healthier and more productive.’ Such discussions allowed him to be ‘really transparent’ about issues and resolve them before the meetings [C3bP2].

The PMO Manager stated governance, controls and the PMO function were sometimes seen as a ‘blocker’ by stakeholders across the project management network. Such stakeholders included the digital delivery specialists who, along

with others, viewed governance requirements and the need for formal decision-making to be blockers they wanted to 'break down' [C3bP$_6$]. The Implementation Strand Manager suggested that by making the formal governance approaches 'clear from the outset' to stakeholders, it allowed them to understand the project's 'direction of travel', including the 'timeline of activity'. This was said to be particularly helpful when managing a project with a digital element, to ensure 'the digital side of the project was 'joined up and aligned.' Bringing the 'Product Owner from the digital team into the implementation discussions' and developing a 'close relationship' with them, had helped ensure what was being developed and built was prioritised correctly and met the needs of the 'end user' [C3bP$_1$].

Although Agile ceremonies were followed, these focussed on the digital build itself and the standard governance boards were still required [C3bP$_5$]. Adopting Agile methods had made a difference to behaviours or attitudes. This was said by one Project Manager to not be 'as much as we would like'. Prior to the introduction of Agile, there was a need to provide a plan up to the end of the project, but there had started to be an acceptance of the provision of only a 'fairly firm estimate' of what would happen in digital development over the following 'two to three months'. He went on to say:

> 'People are getting more and more comfortable with that conversation, whereas in the past, we have tended to be on the hook for providing the plan that takes us right to the end of the project in quite a lot of detail, so I think people are getting more and more comfortable with seeing less of that. I still think there is a nervousness around it, a sense of maybe lack of control because we cannot see beyond the short-term plan. We cannot see what the absolute date is when we hit the delivery. It is like a slow process isn't it? I think there are some signs that people are getting more comfortable with that conversation, but ultimately I think people in the business areas waiting for this thing to land, they want to know: what am I getting and when. It still can mean a difficult conversation' [C3bP$_2$].

Using regular Agile methods and ceremonies had increased 'people's knowledge and understanding' of the project deliverables and was 'culturally a slightly different way of operating' than that used previously, when customer input was only captured at 'certain intervals' throughout the project lifecycle. This approach allowed people to better 'understand the Agile delivery methods', as they could 'see it happening and be part of it'. It also provided an opportunity to explain the deficit of information at particular project stages. The 'culture of show and tell

and closer stakeholder engagement' was said to be a 'real benefit' of Agile, as it allowed more people to be engaged and 'closer to the project' [C3bP$_2$].

One of the Project Managers interviewed stated, he felt projects could help themselves by being 'transparent, open and honest' about progress with stakeholders, which then allowed 'quality conversations that focused on risks and issues'. He did say, however, that he felt a 'culture change' would be needed, as there was a 'tendency' for projects to sometimes try to 'convince themselves and others' that a "yes" decision was required, which 'drives the behaviour' of not being 'open, honest and transparent' [C3bP$_2$].

4.3.6.2 Case Study 3b summary

Generally, there was a consensus in the views and perceptions of the governance processes supporting the Hybrid project delivery approach. Only two scenarios generated different views. One Project Manager and the PMO Manager had differing opinions on the role governance plays in decision-making. Similarly, a Business Case Manager and another Project Manager had different perceptions of the additional governance steps required to support the approval of digital solutions.

Regardless of the project delivery approach, the prioritisation of change was determined by submitting proposals through a central point, using a hierarchical governance structure to co-ordinate views on impacts and secure funding for the proposed change. Fundamental to this was the need to show the project would demonstrate real benefits and support the department in terms of adding value, being a critical enabler for other projects, and showing a return on investment over a set timeframe. Where the level of funding required was significant or the project was deemed risky or complex, there was also a need to involve the Cabinet Office in the approval process.

Governance was structured around a 'three lines of defence' model and, although the approach to governance used different terminology for Agile and Waterfall projects, i.e. 'decision points' rather than 'gated reviews', the essence of the approaches appeared to be the same. Hybrid projects also followed clearly

defined governance processes. Where decisions were needed from the various governance stages, ensuring these were requested at the right time was important to obtain commitment to the change from stakeholders with little challenge. Processes were regarded by some as being bureaucratic or time consuming, with too much emphasis on the provision of reports or paperwork to support decisions, again regardless of the project delivery approach. It was also said that such reports did not necessarily stop a project from failing. However, the requirement for a business case was regarded as a necessary part of the governance stages.

Agile ceremonies were followed as part of the governance framework but these had not removed the requirement for formal decision-making by senior stakeholders. This formal decision-making processes ran parallel to the Agile ceremonies – referred to as 'double governance', but ultimately, the final decision always lay with the SRO. Although the flexibility of the governance approach was also referenced, particularly in terms of securing stakeholder buy-in to the project, the governance processes were described as 'historical', with gates and formal reviews a part of this approach. Ensuring projects navigated these stages effectively and at the right time was the role of the PMO team. This team also took responsibility for ensuring the reason and value behind the governance processes were fully understood and appreciated by both project teams and stakeholders, to reduce the perception of these processes being bureaucratic. Although support was offered by the PMO team, Project Managers also found themselves challenging elements of the standard governance approaches they still thought to be bureaucratic. They attempted to adopt a more flexible decision-making approach, where digital solutions were being developed to reduce the risk of time delays. A clear view of the end-to-end delivery and governance stages also helped when implementing the change and supporting digital solutions, but using Agile to deliver these solutions had not necessarily resulted in shorter delivery timescales.

Although the department followed a predominantly Hybrid approach, the introduction of Agile was thought to have had the intention of streamlining governance processes, but again, the embedded approaches made the shift to new ways of working difficult to attain. A lack of clear governance guidance to

support Hybrid project delivery had not helped acceptance of these new ways of working. Adopting flexibility in the way projects were both delivered and governed would help change the mindset of stakeholders, especially if fully supported by the SRO. However, introducing proportionality in governance was driven by the size, scale and complexity of the project, and still had to operate within the governance hierarchy.

Reporting on project progress was completed through dashboards and in conjunction with the PMO team, who had knowledge of Agile. Where a Hybrid delivery approach was being used, Agile ceremonies were still followed as part of the reporting approach, supported by the necessary governance structures to ensure timings of the updates aligned with standard overall programme reporting. This was referred to as 'double governance'. It was usual for requests for decisions from senior stakeholders to form part of the reporting and update processes at Programme Boards, again following hierarchical structures as required. The 'three lines of defence' and standard governance processes adopted by the department were perceived as timewasting and not necessarily complementing Agile development and delivery. However, this did not appear to have prevented progress being made. Part of the governance process was to manage the level of risk associated with delivery of the project, which can also inform decision-making, particularly important when new technological solutions were being developed and delivered. Governance was regarded as supporting or enabling projects, by providing opportunities for senior stakeholders to give the necessary support to allow projects to proceed. Again, timing and authority of the decisions being made by the SRO, Programme Board and senior stakeholders were seen as crucial to ensuring project success.

Timing of decisions was critical, with a view that decisions should only be made when the project is ready, rather than being driven by dates defined in a plan. Requesting funding or obtaining approval to proceed from one project stage to the next for digital changes and solutions, required stakeholders to ensure they could make decisions with confidence, through the provision of assurance by the Project Manager and with an additional step of approval being given by the digital leadership community. Additional internal and external scrutiny and approval was also in place for digital projects. Internally, these were departmental digital

boards and externally, when a digital solution was due to be used by the public, it would also usually be subject to assessment and approval by GDS. Both of these approval requirements added additional layers on to governance processes, which sat outside of the defined and delegated authority of the Programme Boards. Where financial approvals were sought, the Programme Board had agreed tolerances within which they could approve expenditure on progressing the solutions, with any departure from these tolerances being escalated up the governance hierarchy to senior boards. Following this approach provided stakeholders with the visibility of the end-to-end assurance and control processes, and allowed the opportunity to challenge as necessary at relevant decision points or gated reviews. This approach was also supported by documentation in the form of reports or dashboards. The provision of such assurance and controls also gave the SRO and more 'risk averse' stakeholders the confidence to approve spend, and allowed a project and digital solution to proceed to the next stage of their development and delivery. Where significant levels of funding were required, additional external steps in approvals from HMT were also sometimes required.

The capability of those involved in the project was said to make a difference to the perception of governance and understanding of why it was a fundamental part to project delivery. Good leaders were also imperative to project success. Although there was training in the different aspects of project delivery, specific learning around governance was said to be required to improve views on its requirement. General project delivery skills were also lacking in some areas, which could cause challenges for the project, with more time and effort being needed to support the less experienced stakeholders and senior leaders in decision-making. Having stakeholders demonstrating the right behaviours and personal qualities in terms of leadership capability also helped secure the decisions needed at the right time, particularly where there was a historical, negative perception of governance. Where new governance processes were introduced, including those implemented to support Hybrid project delivery, having an experienced PMO team in place was important to help the project team and stakeholders understand them, to ensure the project maintained momentum while becoming used to the new approach.

Having the right stakeholders involved in decision-making throughout the end-to-end design and delivery of the project was vital to its success. Where Agile processes were being followed, stakeholders were even more crucial, as they were more involved in the Agile ceremonies and therefore needed to understand the importance of their role as part of the decision-making processes. Engaging and communicating with stakeholders as early as possible in the design and delivery of the change resulted in greater commitment from these people during the different stages of the project lifecycle, making the decision-making more effective and less challenging when needed. Some stakeholders were regarded as 'risk averse', so more conversations were needed to ensure they were reassured about the decisions being made. The hierarchy of stakeholders and its consequent impact on stakeholder relationships also needed to be recognised. An example given was a time when insufficient early engagement had resulted in stakeholders challenging in unexpected or unanticipated ways. It was thought communications and ongoing discussions with stakeholders should include the role they should provide at different times throughout the governance approach. A fundamental part of successful communications and stakeholder engagement started with the Project Manager being open, honest and transparent about project status, which required a change in culture from some Project Managers.

4.3.7 Case Study 3a and 3b cross-case comparison

Although many common themes emerged between the departments around the use of Hybrid as a project delivery approach, specifically for the development of digital services, there were some differences in the establishment of governance approaches, structures and hierarchies, which appear to be dependent on each department's standard approval and assurance processes.

Prior to the project being accepted on to the change portfolio, both departments required evidence it would provide real benefits and a return on investment, with initial funding agreed upfront before any commitment to major spend was made. However, the way benefits were presented or calculated in Case Study 3a was said to be risk averse and had not changed to reflect Agile development.

A decision-making hierarchy existed in both departments, with clearly defined roles and responsibilities, sometimes in the form of a governance framework. In Case Study 3a, the project determined the decision-making hierarchy and the digital team were empowered to make the final decision to switch on a service. However, in Case Study 3b, a 'three lines of defence' approach was followed, which prescribed a hierarchical governance structure supported by PMO Teams to reduce the perception of bureaucracy.

Regardless of the project delivery approach and method used, gated reviews were still completed as part of the project assurance process in both departments. However, these were referred to and applied differently. Case Study 3b described the alternative gate approach as 'decision points', with Case Study 3a having implemented a reduced number of Waterfall-style gated reviews. Governance proportionality was only referenced by Case Study 3b in terms of applying flexibility to governance processes, determined by the scale and complexity of the project being managed, although flexibility in governance was still raised in Case Study 3a.

There was a consensus between departments that the introduction of Agile had changed and improved the management and development of digital services, but contradictory views were expressed on whether Hybrid methods were effective in delivering digital projects. One view offered in Case Study 3a perceived Agile to be the cause behind some project failures. Interviewees across both departments suggested that elements of governance processes were bureaucratic or time consuming when using with Agile within a Hybrid approach, but these processes did not impact on decision-making in Case Study 3b projects. When governance had been introduced to support use of a Hybrid approach, it was said by both departments to have been clearly defined but not necessarily fully understood by everyone.

A standard reporting format was not always used by digital teams: Case Study 3a usually negotiated the approach to reporting, with Case Study 3b following a dashboard style format which, it was suggested, placed too much emphasis on paperwork. Using typical Agile ceremonies to provide regular updates to stakeholders was regarded as encouraging transparency and openness in

project status, but these ceremonies did not necessarily replace the need for gated reviews, as used in standard Waterfall processes, referred to in Case Study 3b as ‘double governance.’ Across both departments, the lack of flexibility and streamlining in governance processes was said to reflect the fact there had been little change in the mindset needed to support Hybrid methods.

Risk management processes were adhered to and viewed as an essential part of the governance process, with good communications being used to reduce the level of risk associated with the changes across both departments. Communications were referenced frequently, and used to collaborate, develop and maintain open and honest stakeholder relationships, with Hybrid methods encouraging early input and engagement, which was said to add value to the project and allow for easier and speedier decision-making. Early stakeholder engagement was vital to both, to prevent the risk of stakeholders disrupting progress, as seen in Case Study 3b. However, there was also a view from Case Study 3b, that being open and honest in these relationships and communications might require a culture change. The overarching view from both departments was: holding regular conversations ensured stakeholders were familiar with Agile and the terminology associated with its use. However, Case Study 3b identified the need for more knowledge of both general and Hybrid governance processes, and principles which had been provided by the experienced PMO team for all stakeholders. A more coordinated training programme was proposed to fill this knowledge gap.

The digital teams in Case Study 3a, regarded as experts in Agile, were said to still lack basic project management knowledge and strategic understanding of the need for some of the changes being developed and delivered, which could impact project delivery. One Case Study 3b interviewee said, having the right people in place with the right skills at the right time, would improve project delivery success regardless of the methods being followed.

4.3.8 Cross-case analysis

In all three case studies, comprising four departments and three different types of project delivery approach, supporting governance structures, frameworks, and/or processes were prevalent.

Decision-making on prioritisation and whether to proceed with a project in Case Study 2 and Case Study 3a ensured changes were usually linked to a longer-term strategy for change in the form of either a vision or roadmap. Delegated authority was in place in all case studies within clear parameters, but the approach, scale and extent of the empowerment to make decisions varied and were controlled in different ways. For example, the types of restrictions were represented as tolerances in terms of time, value, funding or the scope of the design. The levels of restrictions and tolerances were usually communicated or agreed with senior level stakeholders and those involved with the project or programme as part of the approval and decision-making processes. Flexibility in the development and application of governance principles was important to ensure approval to proceed to the next stage could be made quickly, particularly where Agile or Hybrid was being followed, as delays in making decisions could impact the iterative design and delivery approach. However, such flexibility was not always in place and in the Case Study 1, where Agile was not used to support project delivery, the use of delegated authority had resulted in additional layers of governance being implemented, which was attributed to political pressure arising from historical project delivery performance. The need for flexibility was also referenced in this case study, alongside the requirement for consistency and standardisation in the development and application of effective and efficient governance processes. Nonetheless, the concern expressed by one interviewee in this case study, around how implementation of additional governance layers did not comply with departmental protocols, appeared to contradict the wish for such flexibility. The view that a common governance approach also added value and improved quality seemed to dispute the preference for flexibility in governance. An alternative description of governance flexibility used by interviewees in Case Study 3b was ‘proportionate’ or ‘proportionality’, which was driven by the size, scale and complexity of the project. Even with flexibilities in place, there were views that some governance processes worked against Agile

and Hybrid approaches, and could delay decision-making, but this opinion was not offered across all case studies.

Across all case studies and delivery approaches, there was an expressed need for business cases to support expenditure and prove the benefits arising from the spend. Few differences were apparent in the processes followed to obtain approval of these business cases and securing the consent needed to progress on to the next phase of the project was an important part of these business case processes. The standard approach to securing funding tended to be up front, i.e. in the very early stages of the project. This approach was difficult when using Agile, as the final design was not known that early in the project lifecycle, which increased the risk of requesting insufficient funds to complete the project. Although there was some opportunity to apply flexibility and proportionality to the governance processes, all departments referenced the time spent developing effective business cases. Close working was also deemed essential when securing approvals from HMT for higher value expenditure, and/or from GDS for the final assessment of new and amended digital services accessible by the public.

Risk management processes were in place across all departments to supplement and support governance. Good communications were presented as the way to reduce delivery risk perceived to arise from governance and the iterative nature of Agile.

A significant aspect of good governance was to ensure the ‘right’ stakeholders, with the right mindset and attitude were involved in the project and decision-making. However, for some case studies, these individuals were highly regarded and therefore in high demand. As a result, they usually had limited availability and struggled to commit to attending important decision-making meetings. Regardless of the change being developed and delivered, and the project delivery approach being followed, there was a need to communicate clearly the roles and responsibilities of people involved in all aspects of the project and its supporting governance. Where possible, involving stakeholders in the development of the project’s governance processes could help with acceptance, understanding and commitment to the underpinning principles. For example, in one department,

where additional governance layers had been introduced, a lack of understanding of roles was also given as justification for the practice.

In terms of tracking and reporting progress, two primary ways of communicating were in place: formal paper reports, such as dashboards or, where Agile or Hybrid project delivery approaches were followed, Agile ceremonies, such as 'show and tells' or 'sprint reviews'. In Case Studies 3a and 3b, where a Hybrid approach was being followed, formal Waterfall style gates were still required alongside Agile ceremonies for approval to proceed to the next phase of the project. In most case studies where technical solutions were undergoing development, the PMO teams would liaise with both the project and digital managers to capture and agree how progress would be reported to stakeholders. The PMO in Case Study 2 completed these 'traditional' activities to allow the Agile team to focus on delivery and, in Case Study 3a, the PMO not only worked with the project to provide an update but also took responsibility for challenging the reported status. Although challenging project status was not specifically referenced by other interviewees, the need for openness, honesty, and transparency throughout the reporting process was regarded as essential to maintain the confidence of project stakeholders. Case Study 3a ascribed the lack of confidence to historical relationships, and one interviewee in Case Study 3b suggested achieving this honesty and openness would require a change in culture. Early development of relationships and the involvement of stakeholders from project start-up including, where appropriate, the design and development of the solution (digital or otherwise), had improved the quality of the project outcomes and the attitude and behaviour of people in terms of governance practices. Through regular conversations and collaboration with all stakeholders, there was a reduction in the level of resistance to the change being introduced by the project, which had resulted in streamlined decision-making and reduced the risk of non-delivery of outcomes.

The use of Agile and Hybrid approaches generated contradictory views between the case studies. Interviewees stated some stakeholders credited the approaches with improving the development and delivery of digital services. Others thought they were not as effective (Hybrid), or believed it to be a reason for project failure (Agile). Some of the reasons given for these views were: a lack

of understanding of the methods overall, or an incorrect perception that using Agile or Hybrid methods would remove the need for governance altogether. Across the case studies using Agile in some form (2, 3a and 3b), it was made clear that formal governance was still required alongside Agile ceremonies, either through the use of the usual Waterfall gated reviews, or presentations at hierarchical senior-level meetings for either endorsement or approval to proceed or spend.

Obtaining the right skilled people resource at the right time was crucial to project success, regardless of the project delivery approach being followed. Projects often had to compete for experienced project and digital experts, which had resulted in part of the project team being allocated to a different project with little or no notice given. Projects were also reprioritised, again resulting in the skilled teams or individuals being moved on to a different project. Agile capability in case studies that used it regularly for digital development was said to have increased over time, as more technical solutions had been delivered. Case Study 2 had brought in external contractors to supplement and build upon the internal digital team's knowledge of Agile methods. The capability of those involved in the delivery of projects, either as stakeholders, within the project teams, or as experts in developing and delivering digital solutions, was raised consistently throughout all interviews. Different views were offered on the skills and knowledge lacking, ranging from basic project management and senior leadership capability, to the use and application of governance. Regular conversations were held between the projects, stakeholders involved in the approval process and, where appropriate, the digital teams using Agile, to provide an overview of Agile, Hybrid, and the approach to governance and controls. However, one interviewee expressed that there was a complete lack of training in governance principles for anyone involved in projects regardless of their role. Having this training available might also increase respect for governance roles and responsibilities, and improve behaviour and attitudes towards governance by everyone involved in the project. A summary of the similarities and differences between the cases in terms of the original organisational factors, with an additional 'capability' theme, is presented in Table 4.10.

Table 4.100 Summary of similarities and differences between cases

	Project Delivery Approach		
Organisational Factors and Themes	**Waterfall**	**Agile**	**Hybrid**
Organisational structures and hierarchy	Additional hierarchical layers in place alongside those mandated centrally by the organisation.	Typical intra and inter-organisational structures with limited impact on project.	Embedded intra and inter-organisational structures with limited impact on project.
Power and Authority	Delegated authority is given within clearly defined tolerances. SRO in place with accountability for delivery within finances.	Delegated authority within tolerances, including prioritisation of design decisions. Service manager accountable for delivery.	Delegated authority within clearly defined tolerances, including limited design decisions. SRO in place with accountability for delivery within finances.
Decision-making	Decision-making at formal governance boards with 'right' stakeholders	Most decisions made within senior team with limited decisions escalated to formal boards. Agile ceremonies followed.	Agile ceremonies in place, but decision-making is made concurrently or sequentially at formal boards with 'right stakeholders'.
Governance frameworks and procedures	Clear, centrally defined governance framework in place. Limited flexibility.	Bespoke governance framework in place agreed with PMO. Some flexibility.	Bespoke governance framework in place determined between project and PMO. Limited flexibility.
Governance controls	Clearly defined controls and processes in place, including gated reviews.	Defined controls and processes in place within delegated authority and tolerances (finance and scope).	Clearly defined bespoke controls and processes in place, including gated reviews. No central guidance.
Governance reporting	Standard dashboards common across projects.	Limited reporting completed by PMO, including through Agile ceremonies.	Standard dashboard reporting alongside Agile ceremonies.
Stakeholder engagement	Throughout project usually in formal board setting.	Throughout including attendance at Agile ceremonies.	Throughout including attendance at Agile ceremonies and formal board setting.
Capability	High standard of project delivery capability. Stakeholder knowledge of governance is limited.	Agile capability is high. Stakeholders have some knowledge of Agile, which continues to be developed.	High standard of project delivery and Agile capability, but not interchangeable. Stakeholder knowledge of Hybrid approach is limited. Finance professionals limited/no understanding of Agile differences.

4.3.9 Summary of cross-case analysis

It is apparent from the combined analysis that common themes emerged from discussions on governance regardless of the project delivery approaches, as seen in Table 4.10. These themes can be summarised as:

- Flexibility of process and structures
- Governance guidance
- Business case and benefits realisation
- Stakeholder engagement and communications
- Reporting and tracking
- Capability

In terms of flexibility, there was a desire to be able to adjust and amend approaches to governance according to the different needs of the change being managed, notwithstanding the need to comply with the constraints and controls expected of government departments and the hierarchical decision-making structures. Without the timely development of good relationships and communication routes with stakeholders, project progress would not be made. The extent of the opportunities for flexibility are discussed in the next chapter.

Interviewees referenced the lack of clear governance guidance for a Hybrid delivery approach. As a result, the procedures already available to support Waterfall and Agile project delivery approaches were being applied concurrently rather than undergoing redevelopment to support a Hybrid approach.

Across all approaches, funding approvals had to be supported by strong, well-written business cases that demonstrated benefits and value in the investment being made in the projects being delivered. For projects above a certain value, risk, or those regarded as contentious, additional controls were in place, which required further approval of the proposed change and business case by both the Cabinet Office and HMT. Use of Agile and Hybrid had meant a different approach to identifying benefits was needed, but this was not adopted or understood by some critical stakeholders.

There was strong reliance on stakeholders to maintain a high level of support for a project, to demonstrate a positive attitude to the change being introduced and, where necessary, being an advocate with others outside the immediate project stakeholder group. There were differences in stakeholder roles depending on the project delivery approach being followed. Tracking and reporting are a significant feature of project controls, and allow assurance of project progress by stakeholders. It is imperative projects demonstrate transparency and openness, which is usually provided through regular reporting of the project status. The practice of reporting also appeared to be the primary way of communicating and engaging with stakeholders. The approach to stakeholder engagement, reporting and communications differed depending on the project delivery approach.

The capability of everyone involved in the project end-to-end, including stakeholders, project team specialists and senior leaders supporting decisions, was also referenced, and was said to make a significant difference to the successful delivery of a project. It was expressed that there was a general lack of knowledge and understanding of governance from a range of stakeholders – both internal and external. The implications and opportunities relating to potential skills gaps are explored in the next chapter, again taking account of the differences in requirements arising from the project delivery approach.

Where there were differences in views between interviewees, these were nuanced and could potentially be attributed to constraints relating to the hierarchical structures in place to support project delivery across central government, rather than project delivery approach. Such constraints are discussed in Chapter 5.

4.4 Analysis of secondary data

4.4.1 Background

The data used in the secondary analysis was received from the UK government IPA in the form of an excel spreadsheet. Due to the sensitive nature of some of the information, a non-disclosure agreement was signed before the data was transferred to the researcher. A non-disclosure agreement is ‘a legal contract…

[that] sets out how you share information or ideas in confidence' (Intellectual Property Office, 2015). The data comprised a list of detailed recommendations arising from assurance reviews conducted by the IPA between 2005 and 2019, for projects and programmes within the GMPP. Assurance reviews are conducted by the IPA and are completed against those central government's projects and programmes in the GMPP that are regarded as 'complex and high-risk' (Infrastructure and Projects Authority, 2011). The main purpose of the assurance review is to support HMT and/or business case approvals, and 'provide support and constructive challenge to senior responsible owners' (Infrastructure and Projects Authority, 2011).

Initial analysis established there were 10,268 recommendations in total. Each recommendation had previously been classified by experienced IPA project professional analysts, who also categorised them by programme or project type, e.g. transformational, infrastructure, or Information and Communication Technology (ICT) programmes. By filtering all entries to identify only ICT programmes and projects, i.e. those with a digital or technology-based focus, the number of entries to be analysed in more detail reduced to 2623. The 97 entries that had not already been classified in this way were excluded from further analysis, as the approach taken by the IPA project professionals was not provided and there was insufficient information available to allow the researcher to undertake similar classification.

Each recommendation was categorised into 12 major themes by the IPA, following the current guidance on classifying recommendations (Infrastructure and Projects Authority, 2017c). They were then sub-categorised into at least one minor theme. The descriptions for each major and minor theme are provided in more detail in Appendices 7 and 8. The 12 major themes were given as:

1. Governance
2. Stakeholder Management
3. Programme and Project Management
4. Change Management and Transition
5. Financial Planning and Management
6. Benefits Management and Realisation

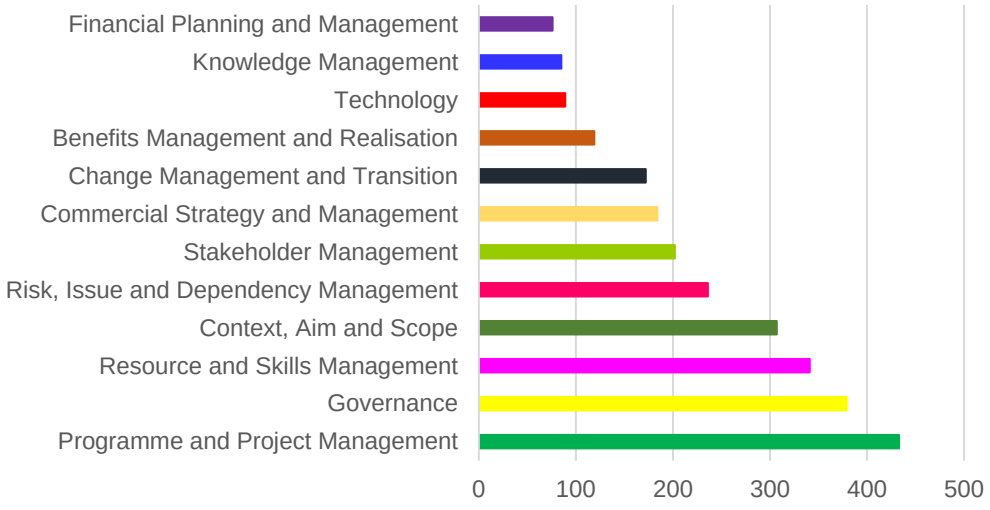
7. Commercial Strategy and Management
8. Context, Aim and Scope
9. Risk, Issues and Dependency Management
10. Resource and Skills Management
11. Knowledge Management
12. Technology

Rather than duplicating the categorisation work already undertaken by the IPA project professionals, the researcher completed a detailed review of approximately 30% of the recommendations by reading through each entry on the spreadsheet to confirm the IPA's thematic categorisation. This established that the categorisation aligned with the researcher's views, so that any further analysis completed by the researcher focused on the themed data provided by the IPA.

4.4.2 Major and minor theme analysis

Figure 4.7 shows each of the major themes by volume, colour coded to make comparison across the analysis of the minor themes easier to track. Exact values for each theme are in Appendix 9. Presenting the number of recommendations across each of the 12 major categories in graph form showed the differences in numbers across each theme.

Figure 4.7 Number of recommendations by Major Theme



Six themes were identified as common areas for improvement, each with over 200 recommendations identified during assurance reviews across the GMPP. The six areas were:

- Programme and Project Management
- Governance
- Resource and Skills Management
- Context, Aim and Scope
- Risk, Issue and Dependency Management
- Stakeholder Management

These top six areas comprised 72% of all recommendations. The largest number of recommendations was in the ‘programme and project management’ theme at 16.5%, which focused on processes and procedures. The combined process or procedural related themes, i.e. ‘programme and project management’, ‘governance’, and ‘risk, issue and dependency management’ constitute 27% of all recommendations.

Recommendations that could be regarded as having a human or people focus made up just over 20% of all recommendations, specifically those categorised as ‘resource and skills management’, and ‘stakeholder management’. However, if those relating to ‘communications’ categorised within the ‘programme and project management’ theme, they add an additional 3% to the number of recommendations in this grouping.

The number of ‘technology’ related recommendations was one of the lowest, comprising just over 3% of recommendations, which could be regarded as unexpected across a range of digital-focused programmes and projects, but may reflect the good management of digital programmes and projects across the GMPP over the period data were gathered. The sharing of knowledge also appeared to attract a low number of recommendations, again suggesting good practices were in already in place in most programmes and projects. Recommendations relating to ‘financial management’ practices were less than 3%, suggesting the presence of strong principles and systems in the management of government funding.

A review of the minor themes was also completed, to understand the specific areas against which recommendations were made. Within each of the six highest major categories, the minor themes are provided in Table 4.11.

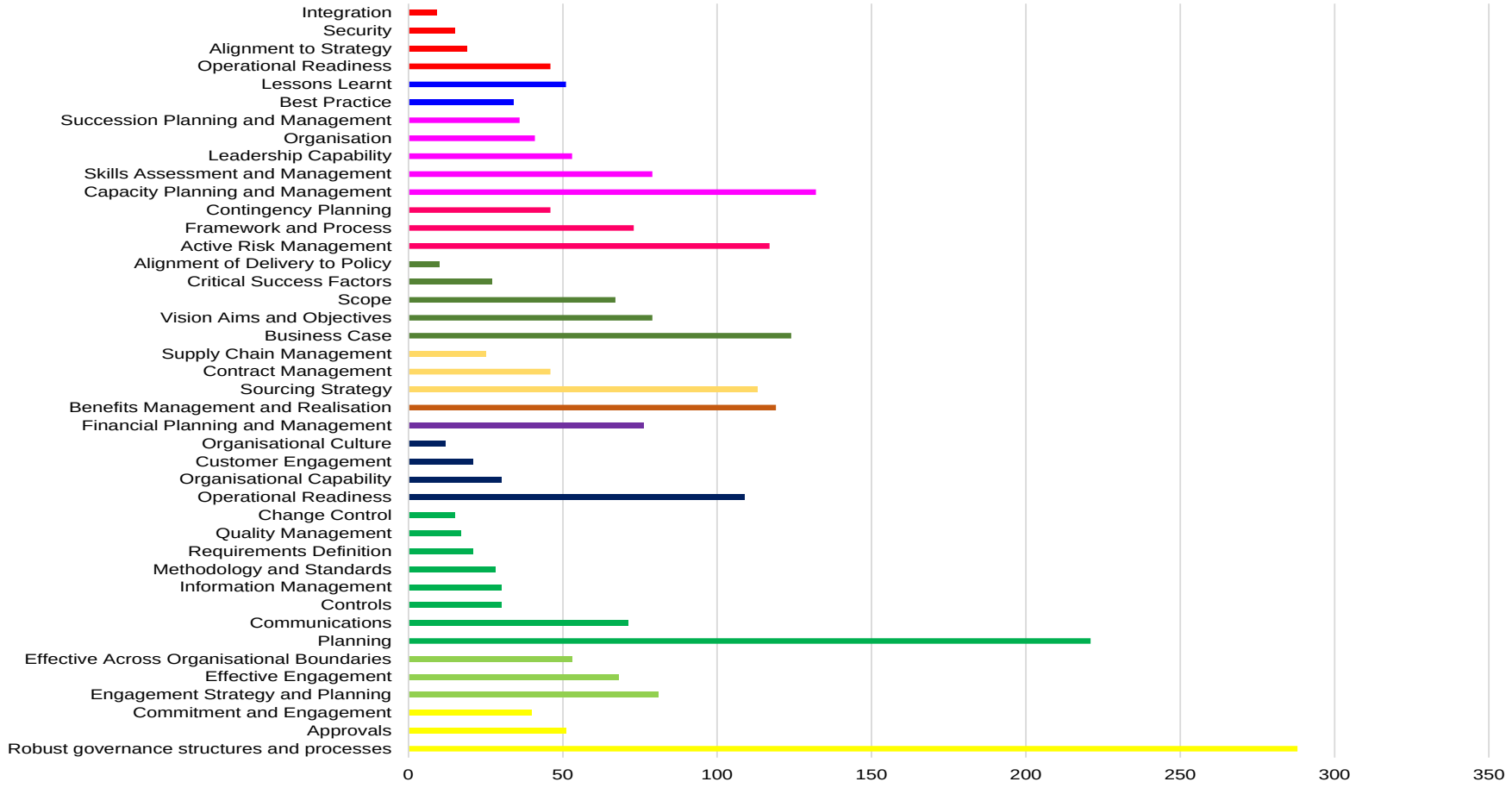
Table 4.111 Top 6 major themes with related minor themes

Major Theme	Minor Theme
Programme and Project Management	Planning
	Communications
	Controls
	Information Management
	Methodology and Standards
	Requirements Definition
	Quality Management
	Change Control
Governance	Robust governance structures and processes
	Approvals
	Commitment and Engagement
Resource and Skills Management	Capacity Planning and Management
	Skills Assessment and Management
	Leadership Capability
	Organisation
	Succession Planning and Management
Context, Aim and Scope	Business Case
	Vision Aims and Objectives
	Scope
	Critical Success Factors
	Alignment of Delivery to Policy
Risk, Issues and Dependency Management	Active Risk Management
	Framework and Process
	Contingency Planning
Stakeholder Management	Engagement Strategy and Planning
	Effective Engagement
	Effective Across Organisational Boundaries

Figure 4.8 provides details of the minor themes. It should be noted the minor theme of 'operational readiness' features in the major themes of 'change management and transition' and 'technology', but each has a distinctive definition, as provided in Appendix 8. The number of minor categories within each major theme varied, leading to a dispersed spread of the overall number of

recommendations across the themes, and providing a more detailed perspective which compared differently to the highest major theme in the recommendations.

Figure 4.7 Number of recommendations by Minor Theme colour coded by major theme

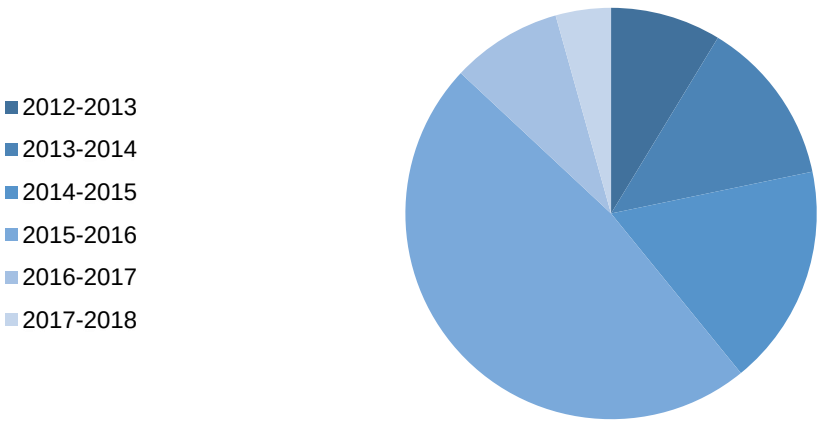


The largest number of recommendations was in the minor theme area of ‘robust governance structures and processes’, which fell within the major category of ‘governance’ and made up nearly 11% of all recommendations. The second largest was ‘planning’, which sat within the ‘programme and project management’ major theme at just over 8% of all recommendations. Both areas can be said to be critical to the successful delivery of programmes and projects, and the fact these two themes jointly make up 19% of all recommendations is not unexpected. The lowest number of recommendations in the minor themes were for ‘integration’ and ‘alignment of delivery to policy’, with nine and 10 recommendations respectively, suggesting joint working and collaboration do not appear to be areas of weakness. However, recommendations referencing ‘engagement’ and ‘communications’ comprise just over 10% of recommendations, suggesting that successful joint working is not as strong in some projects and programmes.

4.4.3 Recommendations referencing Agile methods

One step in the analysis was to establish when the term ‘Agile’ began to appear in the recommendations, the frequency, and the categorisation within the major and minor themes. Figure 4.9 shows the frequency of Agile recommendations from being first referenced in the business year 2012-2013. Only 23 Agile recommendations were made, of which 48% were made in the business year 2015-2016.

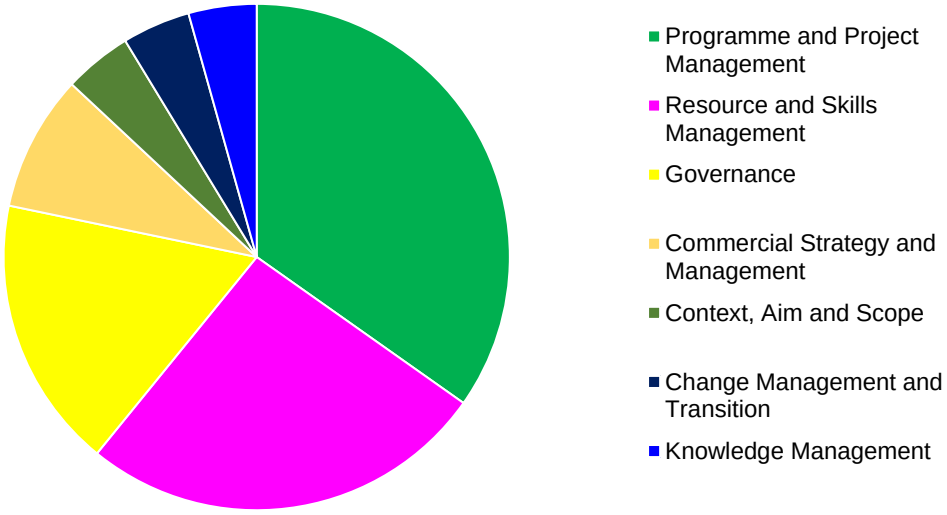
Figure 4.8 Recommendations referencing Agile by year



It was around 2012-2013, that the use of Agile was first mandated in the development of digital projects and programmes (Government Digital Service, 2016a), and most government departments were following Agile methods for the first time. Hence, an increase in the number of recommendations relating to Agile is to be expected.

When reviewing the major themes within the Agile recommendations (Figure 4.10), over one third were categorised as 'programme and project management', and just over one quarter referred to 'resource and skills management'.

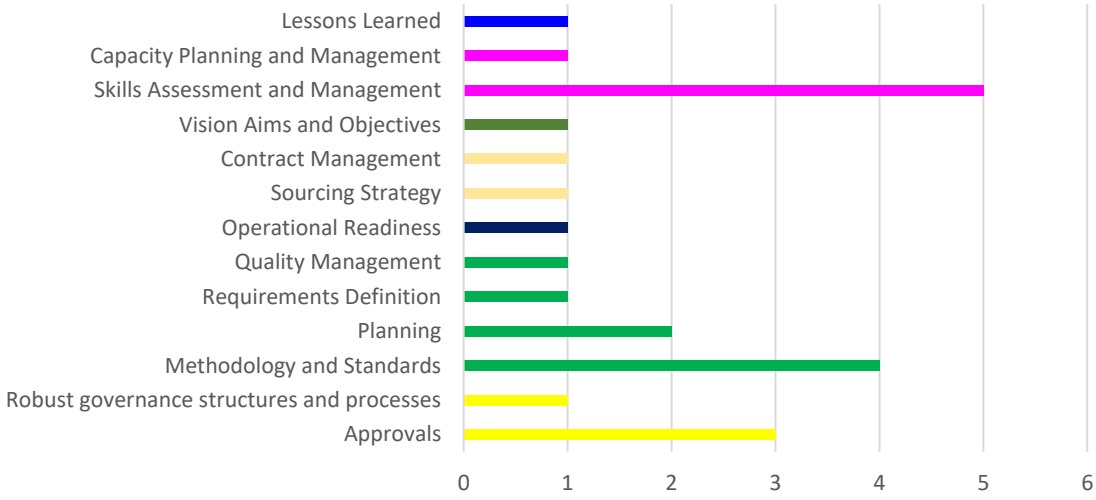
Figure 4.9 Agile recommendations by Major Theme



At the time many of these recommendations were made, Agile was relatively new, and the fact that 26% of recommendations refer to skills resource should be expected (Government Digital Service, no date-d). The 'governance' theme accounts for only 18% of the Agile recommendations. As the approach to governance for Agile delivery was still being defined (Government Digital Service, 2016b), the number of recommendations in this group seems low. However, if this is joined with the largest theme ('programme and project management'), which relates more broadly to the need to make improvements across supporting processes and procedures, over 50% of recommendations in some way refer to how Agile methods should be managed.

By splitting each major theme into its minor category, the recommendations show a spread across some, but not all categories. The largest percentage of Agile recommendations refers to 'skills assessment and management', followed by 'methodology and standards', and 'approvals'. The breakdown of the major themes into minor categories reflects the detail behind the major groupings (Figure 4.11), reaffirming the conclusions drawn as part of the analysis of the major themes.

Figure 4.10 Number of Agile recommendations by minor theme colour coded by major theme



4.5.4 Triangulation using secondary data analysis

By reviewing the IPA assurance review recommendations, the researcher was able to triangulate findings from the quantitative analysis outcomes and cross-case study conclusions, to identify areas to inform the discussion and the review of extant literature.

Regardless of the project delivery methodology, the six major themes identified in the recommendations were referenced throughout the quantitative analysis and the case studies. Under 'programme and project management' and 'governance', interviewees deemed the need for clear, consistent processes, and a governance framework or procedures essential, with the term 'processes' being

selected by less than 50% of those completing the questionnaire. However, 'controls' was chosen by over 50%, which could align to the principle of having clearly defined procedures in place. Counter to this were the multiple proposals by interviewees for flexibility in the governance processes, which was reflected in the third highest selection in the questionnaire to 'least describe' governance. 'Risk management', a key aspect of good project delivery, featured as one of the top five recommendations, and was selected by nearly 60% of participants and referenced throughout all case studies. Interviewees following Agile or Hybrid approaches referred to the need for a clear vision or strategy, which aligned with the fourth highest series of recommendations relating to 'context, aim and scope'.

The capability, skills and availability of individuals able to support projects and programmes were raised several times throughout interviews. Again, the project delivery methodology had little impact on these views. The IPA data showed that a third of recommendations related to skills and resource management, which includes the identification of the right people for the project and ensuring they were available at the right time.

One major theme that emerged during interviews was the need for strong, effective stakeholder management. However, of those completing the questionnaire, stakeholder engagement was selected more times by those following Hybrid or Agile methods. Surprisingly, this only accounted for the sixth-highest number of IPA recommendations, but was seen as critical by those interviewed across all case studies regardless of the project delivery approach.

Analysis of the secondary data provided the opportunity to triangulate the findings from both the quantitative survey and the case study interviews, in terms of those areas deemed critical to major programme delivery and requiring additional effort and scrutiny through clearance of recommendations.

4.5 Summary of findings and analysis

A critical analysis of quantitative survey findings established that there was some alignment with the definitions of IT governance and governance developed by Webb, Pollard and Ridley (2006) and McGrath and Whitty (2015), and

respectively. However, the findings also exposed that some descriptors selected by those completing the questionnaires had been excluded from the definitions. These excluded descriptors were used to further develop the scope of the literature review, specifically in defining organisational factors for additional examination in the review, and to identify themes to inform the questions asked at case study interviews.

The themes identified included the organisational structures and hierarchies underpinning the way governance was managed, the power and authority granted to those who were involved in projects, and the approach to decision-making. Additional themes of particular note in the survey outcomes included the need for risk management, the supporting governance procedures and controls, and how project progress was reported. The final significant area requiring further detailed investigation was stakeholder engagement. All these themes formed the basis of the case study interviews across the three project delivery approaches.

Three case studies were conducted across four different central government departments to critically examine how governance was practiced in each of the project delivery approaches, focusing on the themes outlined above. The interviewees had a range of project skills and experience, and included Programme Directors, Programme Managers, Service Delivery Managers and those with PMO experience. Extensive feedback was gathered across all themes and the transcribed interviews were coded to allow detailed critical analysis across each case and across all three cases. The summary findings included: the flexibility of governance process and structures; the guidance in place to support its application; and the management of the business case and defined benefits. Final outcomes also identified the importance of stakeholder engagement and good communications, linking these to how projects tracked and reported progress to their stakeholders as part of the governance approach. The capability of both stakeholders and project team members was also identified as one of the final themes.

Secondary data was obtained from the IPA, which provided details of recommendations arising from IPA assurance reviews. After initially sorting the

data to focus on the IT recommendations, the remainder was analysed, and the results used to triangulate findings from both the quantitative survey and the case studies. The combined research outcomes resulted in a series of final emergent themes, which are discussed in relation to extant literature in the next chapter.

Chapter 5. Discussion

5.1 Introduction to chapter

The findings from the primary research (survey and case studies) and the secondary data analysis are discussed in this chapter, in relation to extant literature across the following emergent themes:

- Governance frameworks and organisational structures
- Flexibility in governance
- Business cases and benefits management
- Stakeholder engagement and their role in the project
- Capability of both stakeholders and project professionals
- Delegated authority, tolerances and controls

The links and differences in governance across project delivery approaches that have been identified from findings are presented at Figure 5.1 at the end of this chapter.

5.2 Governance frameworks and organisational structures

The general perception of governance drawn from this research was that it provided control, which aligns with the systematically developed IT and project governance definitions offered by Webb, Pollard and Ridley (2006) and McGrath and Whitty (2015). Although procedures, structures and frameworks were specifically excluded from both definitions, these were regarded as fundamental to governance in central government. Regardless of the project delivery approach, governance was accepted as being required in some form in central government, albeit without a formal description or acknowledgement of Hybrid as one of these delivery approaches. The strength of opinion differed depending on the project delivery approach and the interviewee. However, the essence was that governance was required even when Agile was being followed, as recognised by Qumer and Henderson-Sellers (2008), and should be supported by a framework for how to enact governance regardless of the project delivery approach. The governance steps as described by Qumer and Henderson-Sellars

were primarily the same across project delivery approaches and referenced the hierarchical structures and routes for escalation and decision-making within and outside of the organisation. The requirement for a governance framework aligns with the IPA Government Functional Standard for Project Delivery (Infrastructure and Projects Authority, 2021a) which, although not specifically referenced by interviewees, might account for the consistent views in the requirement for the provision of a framework. Stakeholder roles and responsibilities were clearly defined in the central government governance frameworks, as per Klakegg *et al.* (2008), and aligned with stakeholder theory as defined by Müller (2009) and Biesenthal and Wilden (2014). However, the research found that clearly defining these roles and responsibilities did not necessarily mean stakeholders had the experience, skills and capability to fully understand what was required of them throughout the end-to-end governance process.

Governance was generally administered and supported by specialists, such as an experienced PMO, who provided advice and guidance to project stakeholders on the governance processes, as described by Too and Weaver (2014), Müller *et al.* (2017), and the IPA (2018c). The need for specialism for certain activities aligns with Weber (1964), who suggests specialisation is developed by ongoing experience and aligns with the Association for Project Management suggestion for the PMO to provide a 'centre of excellence' service to project teams (APM, 2019a, p. 70). The existence of PMOs in providing this 'centre of excellence' role also aligns with the need for all central government projects to ensure project delivery functional standards are met. This requirement, as outlined by the IPA, specify governance as one important element regardless of the project delivery approach (Infrastructure and Projects Authority, 2021a). An alternative view, offered by Binfire (2021), is that having a PMO team in place is unnecessary and introduces bureaucracy when using Agile or Hybrid as a project delivery approach. Despite this view, PMO teams, in a specialist, 'centre of excellence' role (as defined by the APM (2019a)), had supported project managers where gaps existed in the central government guidance on how to develop a governance framework for a Hybrid approach. The lack of such clear guidance was one of the primary reasons given for duplication in governance stages. As Hybrid approaches were usually non-standardised, also described by Azenha, Reis and Fleury (2021), a bespoke governance framework for each project was necessary

to fill this gap. This research has identified a gap in both academic and practitioner literature on the development of such a framework, which makes it difficult to achieve consistency in using a Hybrid project delivery approach throughout central government departments. Furthermore, as the organisation and funding of these PMOs depended on the project or programme management organisation within which the PMO sits (APM, 2019a; Infrastructure and Projects Authority, 2021a), experienced PMO support might not be available.

Organisational structures influenced the governance approach and, from descriptions provided in primary research, aligned with the controlled, hierarchical, bureaucratic nature usually associated with central government as defined by Weber (1964), Handy (1985), and Buchanan and Huczynski (2010). These hierarchical structures were also in place to govern the Agile project delivery approach, which veers away from the main Agile principles, first developed by Beck *et al.* (2001b). These principles advocate having the ability to respond and react quickly to changes in user requirements, as there is a need to control expenditure and ensure what is being delivered meets organisational objectives, as prescribed by HMT (Her Majesty's Treasury, 2020a). Some inconsistency between the case studies was observed of the hierarchical governance structures and escalation routes implemented to support decision-making. Simon (1997) stated such structures and governance routes were necessary in administrative organisations, which would equally apply to central government departments. The requirement is for all governance structures to meet the ‘three lines of defence’ requirements of both HMT and the IPA, (Her Majesty's Treasury, 2016; Infrastructure and Projects Authority, 2017a; 2018b). Any inconsistencies appeared to be attributable to the allocation of power and delegated authority linked to the organisational culture of each department, as described by Weber (1964) and Handy (1985). For both Agile and Hybrid approaches, governance was usually managed away from the development of IT services, but this did not mean they were completely removed from the hierarchical governance structures altogether. Instead, both approaches also had separate internal IT governance stages in place, which supported the approval of digital solutions being developed, as recommended by Ferguson *et al.* (2013). Implementing these separate IT governance structures and ensuring their integration into the overarching governance approach, as advocated by Too

and Weaver (2014), provided the specific knowledge and expertise required to confirm the solution was of a high standard before undergoing a final GDS service assessment and being launched to users (Government Digital Service, no date-b). Within the Waterfall case study, the requisite specific knowledge and expertise related primarily to management of contracts and commercial arrangements, with the additional boards in place providing approval of any proposed commercial arrangements. Nonetheless, although these steps were in place to approve the IT solution or the commercial and contractual arrangements, the final approval to 'go-live' remained with the project or programme board and the SRO, who had overall accountability for successful delivery of the project. The accountability and responsibilities of the SRO are clearly outlined in 'The role of the SRO' guide developed by the IPA (Infrastructure and Projects Authority, 2019).

5.3 Flexibility in governance

Williams and Samset (2010) advise that governance for projects should be flexible, an opinion reiterated by Müller *et al.* (2013), and Biesenthal and Wilden (2014), who state a lack of flexibility will cause problems, especially in terms of decision-making. However, an alternative view offered in an APM (2019b, p. 28) collaborative research paper is that 'a balance of flexibility and process' provides projects with the opportunity to 'develop and grow' as the project develops, but still adhere to 'institutional rules'. This balanced approach was apparent throughout the research. Previous research had also identified perceptions of a lack of flexibility in the governance of IT projects following an Agile approach (Young, 2015). Providing someone with the delegated authority to adapt governance was seen across all case studies, and aligns with the distribution of hierarchical or organisational power allocated to SROs, as described by Weber (1964), Benson (1975), and Buchanan and Huczynski (2010), and is presented as a form of project control by the IPA (Infrastructure and Projects Authority, 2019; 2021a).

Flexibility was referred to by several interviewees as a requirement for successful governance. Surprisingly, however, over 58% of project professionals completing the quantitative survey selected flexibility as 'least describes

governance' in their central government organisation. These views appear to contradict the Functional Standard, which recommends using a proportionate approach to governance and controls (Infrastructure and Projects Authority, 2021a). This infers an acceptance and encouragement of flexibility within the governance framework, albeit alongside a detailed description of what the framework should contain. Interviewees had attempted to introduce more flexible governance processes, but this had not been implemented in an efficient or consistent manner. For example, having frameworks in place had not prevented the introduction of additional tiers or duplication of governance stages in the Waterfall and Hybrid case studies. This demonstrated that the provision of an opportunity or the ability to apply flexibility in governance was not necessarily an advantage, and had contradicted the principle of proportionality. It also confirms that the perceptions of the inflexibility of governance captured in research six years ago, remain valid (Young, 2015). The existence of such confusion and the ongoing perception of inflexibility suggests clarification is needed on those aspects of governance that are able to become more flexible or proportionate.

5.4 Business cases and benefits management

All projects within central government must be linked to a business case, and have fully defined benefits and outcomes, as mandated by both the IPA and HMT (Infrastructure and Projects Authority, 2017b; 2021a; Her Majesty's Treasury, 2020b). The requirement for a business case that outlines clear benefits and outcomes was referenced throughout all findings and was regarded as the principal way to secure finance for the project. One of the case study departments following a Hybrid approach (specifically the Agile element of Hybrid), stated that finance experts failed to understand the need to approach business case development and benefits differently, as they had become so accustomed to following a Waterfall approach. Using an Agile delivery approach often meant the final cost of delivering a project was not known in the early stages, a concept the finance specialist found difficult to understand, but nonetheless aligns with research conducted by Lappi and Aaltonen (2017). This lack of understanding suggests that training is required in this area for these specialists. Furthermore, although there is HMT guidance available for central government departments on business case development and approvals for Agile

projects (Her Majesty's Treasury, 2020a), there are no references in this guidance to the development of business cases or the management of benefits for projects being delivered following a Hybrid approach. In addition, the IPA guide on effective benefits management in major projects also does not specifically provide instructions on how to identify and realise benefits for Agile projects, but it does stipulate:

> 'This document contains good practice and universal principles that can be applied at project, programme and portfolio level, regardless of the delivery approach taken, whether waterfall, agile or other specialist method' (Infrastructure and Projects Authority, 2017b, p. 10).

This guide is available to both project managers and finance specialists, but it cannot be assumed that they sufficiently understand the implications of either Agile or Hybrid project delivery approaches to allow them to apply these 'universal principles' to their finance activity (Infrastructure and Projects Authority, 2017b). The absence of specific guidance on benefits management for projects using Agile, either in a pure form or as a Hybrid delivery approach, might also account for the lack of understanding by central government finance specialists. Research undertaken by Holgeid and Jørgensen (2020) into the identification and management of benefits when following Agile, presented good practices in terms of business case development, and benefits identification and tracking. This is supported by Williams *et al.* (2020, p. 649), who established that some research participants felt Agile was 'particularly suited to benefits realization'. Nevertheless, the deficiency in central government guidance on identification, management and tracking of benefits for projects following an Agile approach, could result in inconsistencies in practice between central government departments, placing such benefits at risk. As this study did not explore benefits management and benefits realisation in detail, this finding has exposed an opportunity for further research in this area.

5.5 Stakeholder engagement and their role in the project

Trentim (2015) notes that identification and engagement of the right stakeholders is an important part of the project delivery processes, as those that remain unidentified or unengaged can cause problems later. Lack of engagement, particularly in a hierarchical or functional organisation, can also result in a

negative response, as submitted by Hawley (1968), and witnessed in a scenario referenced by one interviewee, which had impacted critical project timelines. Stakeholder knowledge of Agile and Hybrid approaches was on the increase, attributed to the time spent by project/programme leaders, digital experts and PMO teams, ensuring awareness was raised and roles were clearly defined. Part of this increase in knowledge related to the use of Agile terminology, aligning with Boehm and Turner (2005), who recommend managing the challenge of introducing Agile into more traditional organisations such as central government. This increased understanding had improved stakeholder experience and perception of the project, as echoed by Eskerod and Jepsen (2013), and Huemann, Eskerod and Ringhofer (2016). Garland (2009) suggests stakeholders also needed to understand their roles and responsibilities throughout the end-to-end governance process. However, research found this had proved difficult, as no specific guidance or governance training was said to be available to provide this knowledge, hence the gap being filled by PMO specialists. Early and regular input from stakeholders to review project status was crucial in supporting both Agile and Hybrid approaches and has always been the case since the 'launch' of Agile by Beck *et al.* (2001a; 2001b). This has since been affirmed by both academic and practitioners including Boehm and Turner (2003), Wernham (2012), Schmitz, Mahapatra and Nerur (2019), and Belling (2020). The practice of securing stakeholder views was also seen in the application of Waterfall approaches, albeit linked to the Stage-Gate reviews. Such an approach was first described by Cooper (1988) and continues to be a part of the central government approval processes as provided in the IPA's Functional Standard (Infrastructure and Projects Authority, 2021a). In practice, the capturing of stakeholder views was never left to the formal gate, but formed part of an overall stakeholder engagement approach developed by the central government project teams. One of the more important stakeholder roles was to provide challenge and assurance of project decisions, particularly when the project manager becomes too focused on delivering the project to time, without considering the wider implications or risks associated with the decisions being made. This is described by Pinto (2014, p. 378) as the 'normalization of deviance' in projects. Nonetheless, this can only be achieved if the project managers, as employees of central government, are open, honest and transparent, as submitted by Simon (1997), and to meet the transparency requirements as

defined by the Department for Culture, Media and Sport (Department for Culture, Media and Sport, 2019). Such openness is particularly required for the reporting of progress across all project delivery approaches, as provided by Cooper (1988) for Waterfall (referencing the importance of customer testing), Wernham (2012) and Sutherland (2015) for Agile, and Belling (2020) and Gemino, Horner Reich and Serrador (2021) for Hybrid. One project manager interviewed, who was following a Hybrid approach, concurred with Wernham (2012), that there was a need for change in culture and behaviours to encourage such openness. Good stakeholder communications were critical to ensure decisions could be made quickly. Where Agile ceremonies were used, these were said to help with the ongoing decision-making and communication processes, as submitted by Boehm and Turner (2003; 2005) and, as described by Meadows (2003), this ensured stakeholder buy-in to the project. What were described as 'standard' paper-based reporting processes (e.g. project status reports, dashboards), were in place across all project delivery approaches. Where Agile and Hybrid were being followed, these reporting processes supplemented the Agile ceremonies, as they provided a formal way to inform stakeholders in more senior roles within the hierarchical structures of the project's progress. The request for maintaining the production of these traditional processes confirms the view expressed by Cohn and Ford (2003), who stated progress reports were still regularly provided and had observed the ongoing demand for formal plans when an Agile approach was being followed.

The approach to decision-making and approvals for Agile projects in central government has been provided by the IPA in its Functional Standard, and mirrors that of a project following a Waterfall delivery approach, referring to approval points across both approaches as 'gates/decision points' (Infrastructure and Projects Authority, 2021a, pp. 49, 51). The continued requirement for gates/decision points was apparent in the case studies following an Agile or Hybrid approach, as the Agile ceremonies were said to never replace the formal decision-making routes within the organisations. This requirement had resulted in duplication of reporting and communications, and did not appear to fully align with the Agile principles of regular, face-to-face communications with those developing the IT services, as established by Beck *et al.* (2001b).

5.6 Capability

Project delivery is universally considered to be a specialised role, which involves a high-degree of knowledge and capability. This has also been expressed by both the IPA (2018c; 2021b) and the Association for Project Management (APM, 2019a). It was critical for the right project resource to be in the right place at the right time, which meant there was some shift in individuals between projects depending on organisational priorities, aligning with the view offered by Biesenthal and Wilden (2014). Furthermore, Cobb (2011) states that the use of Agile requires a different set of skills and experience, with Dybå and Dingsøyr (2008, p. 850) suggesting that those working in the Agile team are 'less interchangeable' than those in a traditional project environment. The view of specialist skills was shared by interviewees in both Agile and Hybrid case studies. One interviewee following a Hybrid delivery approach suggested the digital design and delivery team would benefit from general project delivery skills, a view seen in Lappi and Aaltonen (2017). Interviewees in both Agile and Hybrid case studies felt that using Agile had to be underpinned by the right organisational culture, seen in Iivari and Iivari (2011) and Azenha, Reis and Fleury (2021), to counter the challenges faced from stakeholders who prefer projects delivered in a more traditional way. However, Chow and Cao (2008, p. 968) found that an Agile project delivery approach could still be a success even without 'strong executive support and/or strong sponsor commitment'. The reluctance to change was also referenced throughout interviews, and aligns with the desire to remain with the traditional way of working, as submitted by Gomberg (1964). One proposal for countering the reluctance to accept Agile was provided by Chan and Thong (2009, p. 811), who suggest this could be influenced by 'knowledge management outcomes (i.e. knowledge creation, knowledge retention and knowledge transfer)'. Secondary data analysis identified gaps in the Agile project delivery skills. This may have been the case when the data were first gathered, but case study participants following an Agile or Hybrid project delivery approach suggested that such skills gaps were no longer as common. The same could not be said for general project delivery capability across stakeholders. A new Government Projects Academy was launched in March 2021, will provide a 'single virtual hub for professional standards, accreditation and training for Project Delivery Professionals working across government' (Infrastructure and Projects

Authority, 2021c). However, access to this academy does not include the numerous central government stakeholders outside of project delivery, who are involved in critical project decision-making as part of the overarching governance processes (Infrastructure and Projects Authority, 2021a). As such, the PMO teams within the case study departments, as governance experts (Infrastructure and Projects Authority, 2018c), did what they could to increase this knowledge themselves. There is a risk that by allowing individual PMOs to offer this training and advice, the application and understanding of governance by project stakeholders, both within and across the organisations, could be inconsistent. Expanding access to the new Government Projects Academy to those critical stakeholders will remove the risk of inconsistency and improve the quality of input from project stakeholders.

5.7 Delegated authority, tolerances, and controls

Accountability and the associated authority given to achieve successful project delivery was referenced throughout all research, and a governance framework was in place across all case studies to provided details of these accountabilities, which aligned with the IPA requirement for all projects to have one (Infrastructure and Projects Authority, 2021a). Delegation of authority within tolerances was a fundamental part of this accountability, which is usually granted to the SRO by the departmental Accounting Officer (usually the Permanent Secretary or Chief Executive), within clearly defined parameters, as per the guidance provided by both the Cabinet Office and the IPA (Cabinet Office, 2014; Infrastructure and Projects Authority, 2019). Tolerances were used across all delivery approaches, to allow projects to proceed without the need for continual escalation or for decisions to be made at a more senior level as provided by the IPA (2021a). The allocation of accountability in this way provided the authority required for the SRO and programme director to request others to deliver project activities on their behalf. Youker (1993) has described this in terms of the ability of the project to deliver successfully, with Benson (1975, p. 244) describing it as being an ‘authoritative’ strategy, which provides an element of control over actions and activities.

Decisions were rarely made in isolation and were usually made at programme boards, with stakeholders selected due to their level of authority, knowledge or expertise, as per Weber (1964), Simon (1997), and Buchanan and Huczynski (2010). Concerns were expressed that stakeholders with the 'right' expertise and knowledge tended to be in demand, meaning some projects had to manage with whichever stakeholders were available, leading to concerns around the quality of decision-making. This view echoes that of Garland (2009), who emphasised the need to ensure decision-making boards were of the right size and comprised the right stakeholders, or risk project failure. Authority was also delegated to teams following an Agile or Hybrid approach, referred to as empowerment, which allowed them to make decisions quickly, based on feedback from stakeholders or users of the services they were developing. This enabled them to maintain the pace of delivery, as found by Lappi, Aaltonen and Kujala (2019), and is advocated in the Agile principles developed by Beck *et al.* (2001b), and presented by (Wernham, 2012). The power allocated to these teams through this delegated authority was granted within a set of constraints or parameters, and conferred by the senior leader accountable for overall project delivery. Trust was said to be fundamental in ensuring this delegated authority worked effectively in supporting the use of Agile and Hybrid approaches, as echoed by Wernham (2012), with interviewees in both these delivery approaches stating that a change in culture was required to ensure its success. This need for a change in culture was also recognised by Hakim (2019) and Belling (2020) for Hybrid, and Mergel, Ganapati and Whitford (2021) for Agile. As with the setting of tolerances, the delegation of decision-making had provided the opportunity for defined escalation routes across all project delivery approaches, as submitted by Too and Weaver (2014), and also aligns with the description of bureaucratic and administrative organisations, provided by Weber (1964) and Simon (1997). Moreover, Müller (2017b) suggests these defined escalation routes are particularly useful for conflict resolution between stakeholders, which was also seen in the case studies.

Regardless of the levels of delegated authority, for some projects regarded as high-value, novel or contentious by the Cabinet Office or HMT, hierarchical layers of governance were in place that sat outside of the departments' control, with final decisions to proceed being made by HMT according to their defined procedures

and timescales (Her Majesty's Treasury, 2016). Where IT services were delivered as part of the project, further approval was also required from GDS, who were involved in the final decision to proceed (Government Digital Service, 2016b). The requirement to obtain this external approval aligns with the definition of inter-organisational governance provided by Ahola *et al.* (2014). Some frustration was expressed with the requirements, but as these hierarchical approval stages had been in place for many years (and are typical of central government structures), it was accepted by PMO teams and project managers as a necessary part of the central government approvals process and was factored into the project delivery timeline.

Management of risk is viewed as a fundamental aspect of project delivery, and there are well-regarded and fully defined procedures in place to support this, developed by HMT and advocated by the IPA. This was referenced by all those interviewed, regardless of project delivery approach (Government Finance Function, 2020a; Infrastructure and Projects Authority, 2021a). Risks were said to be discussed at board meetings with all stakeholders, as recommended in Best Management Practice (2010) and The Orange Book developed by HMT (Government Finance Function, 2020a). This is further supported by research undertaken by Qazi, Dikmen and Birgonul (2020). Furthermore, risk management formed part of a project's regular reporting and decision-making processes across all delivery approaches, as referenced by Boehm and Turner (2003), and Flyvbjerg (2003). The reason given by IPA for introducing Agile was to reduce the level of risk associated with the development of IT services through the use of an iterative delivery method (Government Digital Service, 2016a; 2016b), which Belling (2020) also suggests applies to a Hybrid approach, and was substantiated throughout the research. Case studies following Agile and Hybrid approaches had embedded risk management processes, contrary to the GDS advice to manage risk only when it could impact delivery (Government Digital Service, 2016b). The stakeholders' risk averse attitude was attributed to previous experience of project delivery, which attests to the difficulty in changing organisations and ways of working, noted by Lawrence (1986) and Simon (1997). However, guidance has been provided by HMT on understanding and establishing a department's risk appetite and tolerances, and also defines how to manage risk to increase delivery success, and the opportunity to realise benefits

(Government Finance Function, 2020b). This guidance on risk appetite and tolerance was not raised by any interviewee, but the importance of risk management in project delivery featured in the findings from both the quantitative survey and the secondary data analysis.

Within the various definitions provided of governance, 'control' was given as one of the key words. The setting of tolerances was regarded by interviewees as a form of control across a range of deliverables, but how these tolerances were set was determined by the individual departments, as per the Functional Standard (Infrastructure and Projects Authority, 2021a). However, these tolerances were also said to be impacted by the risk averse attitude of the leaders within the organisation. The assurance processes embedded into governance frameworks, and primarily administered by PMO teams on behalf of the SRO and project leaders also provided the controls defined by the IPA (2021a). Part of the assurance process for major projects is the completion of independent assurance reviews. These are co-ordinated by the IPA and usually undertaken by experienced project professionals to ensure controls are being followed effectively and accurately, regardless of the project delivery approach (Infrastructure and Projects Authority, 2011; 2017a), also advocated by Too and Weaver (2014), and Azenha, Reis and Fleury (2021). However, these independent reviews are not completed for all projects and were not referred to by any interviewees during the case studies. It appears the independent assurance specified to satisfy the third line of defence, as defined by HMT and the IPA (Her Majesty's Treasury, 2012; Infrastructure and Projects Authority, 2018b), was not always completed, suggesting a gap in the assurance process for some projects. This in turn could reflect Kirkham *et al*'s (2021) findings, from an examination of historical assurance reviews, that questions could be posed about their effectiveness in fundamentally changing the direction of projects, which found that SROs determine the scope of the review and can decide whether to act upon the recommendations. The recommendations provided by the IPA facilitated assurance reviews might add value and positively impact projects, but having an experienced, confident PMO team in place, who have been given the authority by the SRO to implement controls and challenge reported project status through internal assurance processes, could also add a similar level of value and impact. Alternatives to the formally defined third line of

defence could be investigated further to establish the potential effectiveness of such an approach.

5.8 Summary

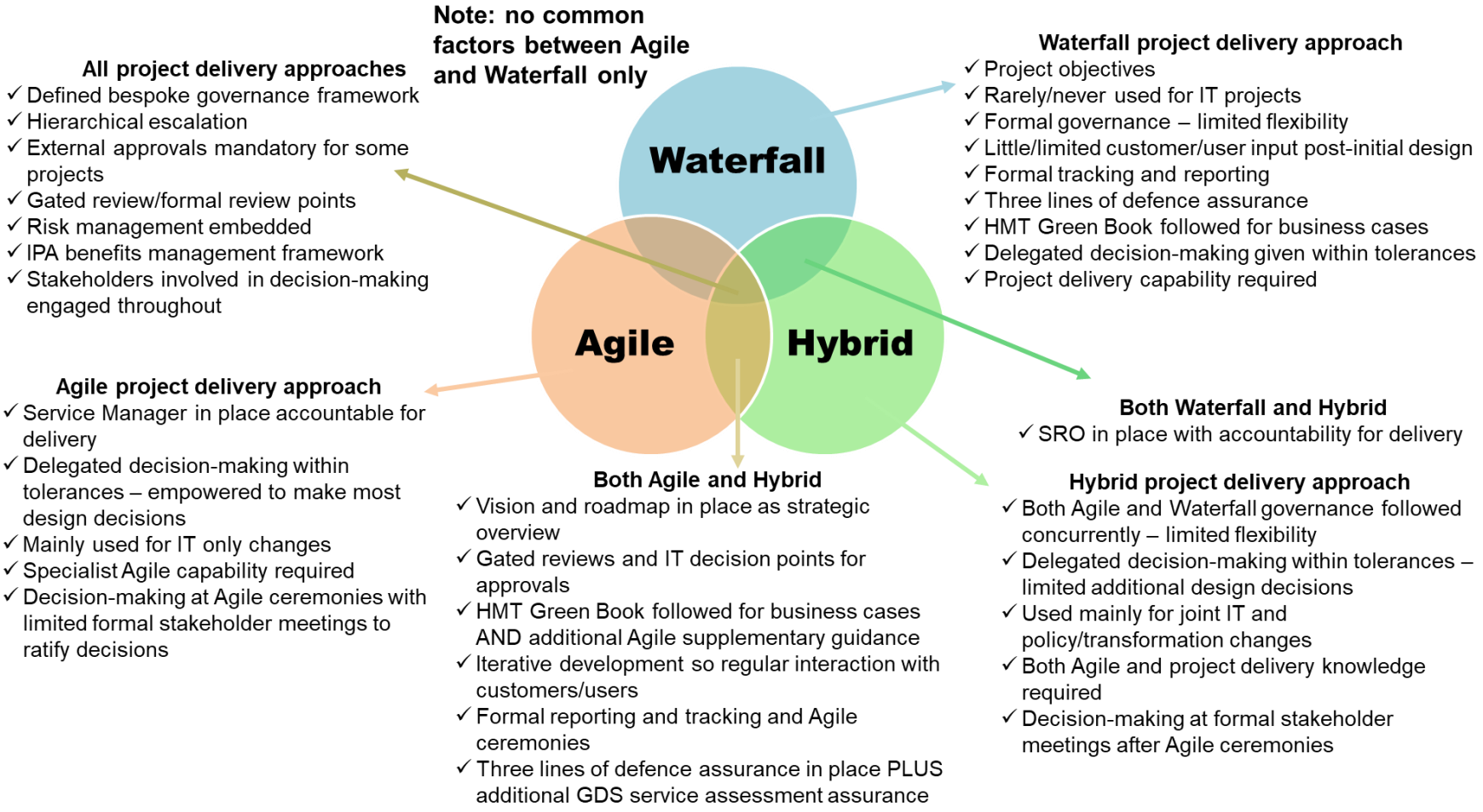
This research has confirmed the requirement for every project, regardless of the project delivery approach, to have its own governance framework that encompasses the accountabilities, roles, responsibilities, procedures and escalation routes within the departmental hierarchical structures and 'three lines of defence' (Her Majesty's Treasury, 2012). Governance frameworks in place were developed and administered by the PMO but required specialist skills and knowledge to ensure success. Investment in PMOs to be a 'centre of excellence' for project teams was required to secure this specialist knowledge. As each central government department, and on occasion the projects that reside within them, developed bespoke frameworks, inconsistencies arose. Flexibility or proportionality is encouraged by the IPA, but since guidance on defining this flexibility is not provided, this has also led to inconsistency in governance practices within and across central government departments. The lack of governance guidance to support the adoption of a Hybrid project delivery approach led to individual PMO teams filling the gap, resulting in duplication or misalignment of governance processes. Guidance on completing business cases is available for both Waterfall and Agile project delivery approaches, but this does not reference the use of Hybrid. However, there is no specific guide for the identification and management of benefits for an Agile approach; the assumption is made that the principles provided would be relevant for all project delivery approaches. Stakeholders' ongoing involvement in the decision-making as part of governance was crucial in ensuring projects were a success, but some stakeholders did not fully comprehend the importance of their role in the governance process, which was attributed to an absence of specific official governance training. Again, although PMO teams stepped in to fill this gap, this approach increased the risk of inconsistency even further. There was a deficiency in general project delivery knowledge by some stakeholders, however, the formal learning available tends to be designed for those working in projects already, rather than for stakeholders supporting projects. The requirement for central government departments to conduct formal gates/decision points at

various stages throughout a project remained the same across all delivery approaches, contradicting the Agile principles. Nonetheless, Highsmith proposes preparing for such ‘decision gates’ as a crucial part of the Agile governance process (Highsmith, 2010, p. 319). Using Agile ceremonies to communicate progress to stakeholders had also not removed the requirement for paper-based reporting and tracking, which was inefficient and caused duplication of effort. Delegating authority within set tolerances provided the opportunity for hierarchical escalation routes, which allowed those using Agile to make decisions more quickly, to maintain project momentum. For some projects, there remained a need for externally driven approvals from the Cabinet Office and HMT but, as departments were accustomed to this requirement, project timelines factored in these approval stages. Management of risk was fundamental to achieving project success, with all project delivery approaches having these processes embedded into governance as standard. Controls were embedded throughout the end-to-end governance framework, as observed in the hierarchical organisational structures, tolerances and various assurance arrangements in place.

Figure 5.1 links back to Table 4.10 and provides a pictorial view of the three project delivery approaches' comparable and different aspects of governance structures and practices. This is formulated from the empirical data and the discussion of the emergent themes against extant literature. The diagram presents the nuances of the differences between each delivery approach and highlights the particular challenges encountered through the adoption of a Hybrid project delivery approach. It also demonstrates that there are no common areas between solely Agile and Waterfall project delivery approaches.

The concluding chapter will review the outcomes of this final discussion against the objectives of the research.

Figure 5.1 Links and differences in governance across project delivery approaches in central government



Chapter 6. Conclusion

6.1 Introduction

This chapter draws conclusions from the research, which aimed to investigate the principles, practices and perceptions of governance in central government by conducting a comparative analysis across different project delivery approaches.

The post-positivist stance of this study was reflected in the identification of themes, which were based on outcomes of the literature review and analysis of a quantitative survey. These themes were used as the basis for the case study interviews, which also supported the post-positivist stance. This approach to the capture of data allowed knowledge to emerge around these themes through each research stage. As the researcher is a project professional, outcomes will be shared with fellow practitioners, which also aligns with the post-positivist approach. The mixed-methods approach, as reflected in the research methodology conceptual framework (Figure 2.1), ensured validity and reliability across the research stages. Using this mixed-methods approach also permitted the linking and triangulation of information from a range of data sources viz. multiple case studies, the quantitative survey and the secondary data sources, which increased confidence in the data and the findings. The risk of bias was reduced in the interviewee selection process, as all participants were identified by insider contacts, who deemed them to have the right level of knowledge and experience of project delivery. Although all the initial contacts were also interviewed and their views formed part of the analysis and outcomes, the researcher did not regularly work with them, nor had familiarity of the governance protocols they followed (see Chapters 2 and 4). The diversity of interviewee roles provided a wide range of alternative perspectives, which further increased the reliability of the research information. In terms of ensuring transparency of the research, completed questionnaires were retained; IPA 'official-sensitive' secondary data remains stored on a UK government computer accessible only by the researcher; and case study interviews were transcribed and coded using NVivo software, using the themes identified from the quantitative survey and literature review as a starting point (see Chapters 2 and 4). Analysis of all findings can be clearly traced back to the data collated by the researcher. The themes

identified to frame interview discussions were the same as those used to code the data, maintaining the consistency of the analysis across the case studies as seen in Chapter 4.

This chapter provides a summary of outcomes for each objective and presents a definition of project governance (the final objective) synthesised from across all findings. This leads to an outline of the contribution to knowledge, which includes identification of gaps in both academic literature and practitioner guidance. The next section reflects on the research and includes an evaluation of the research aim, obstacles encountered throughout the study, and a summary of the research limitations. Finally, proposals on how the findings will be progressed are provided.

6.2 Objective 1

Objective 1 explored the theoretical background to the three main project delivery approaches used in central government - Waterfall, Agile and Hybrid - to examine the context of their respective application in project delivery. The investigation into each of the three project delivery approaches found differences and overlaps in the application of governance in central government, as seen in Figure 5.1. However, there were a number of common areas, which included the requirement for a governance framework that also defined the hierarchical escalation routes and the use of gated review/decision points to obtain approval to proceed to the next stage of the project. Regularly involving and engaging stakeholders in decision-making across all aspects of project delivery was observed in all approaches. As part of the governance process, the adoption of risk management processes and procedures was seen as an important principle, which was also used to inform decisions. There was a common need to navigate through the controls and guidance put in place by central government departments who had overarching control and final approval for major projects, or those that introduced a new or amended IT system, specifically IPA, GDS, and HMT. Additionally, it was established that only a single IPA benefits management framework with a set of underlying principles has been recommended for use by central government project and finance specialists across *all* project delivery approaches.

6.3 Objective 2

Objective 2 explored and critically analysed the concept of project governance in central government across the three main project delivery approaches. The findings established that the definitions used as the basis for this examination required additional terms that were necessary to the governance of central government projects. Within these definitions, there was no specific reference to the need for an overarching framework to support the development and approach to governance, which should also include clearly defined accountabilities, structures, processes, responsibilities and controls, to remove the risk of any inconsistency in its application. The need for flexibility in the development and implementation of governance was said to be a necessity, and the ability to identify and apply flexibility was crucial and attributed to delegated decision-making or delegated authority. Delegated authority differed according to the project delivery approach, but was always constrained by clearly stipulated tolerances, and supported by risk management processes and procedures. All central government projects must have a business case with defined benefits, a requirement embedded into the governance framework, to ensure value is secured from its successful delivery. Finally, based on the empirical research, any definition of governance must acknowledge the vital role stakeholders play in contributing to the end-to-end delivery of projects, regardless of the project delivery approach.

The research found Hybrid was used extensively across central government, with over 57% of survey respondents stating that projects in their organisation followed this approach. However, governance guidance, provided by central government departments who oversee and control its provision, contained no acknowledgement of the use of Hybrid as a formal project delivery approach. As a result, departments following Hybrid had developed their own version of the guidance or implemented bespoke processes to fill this gap. Where governance guidance was available for Waterfall and Agile, there was little difference in the core principles and processes as outlined above. The reason for this could be attributed to the hierarchical, bureaucratic nature of central government, which was found to have influenced the governance approach and structures across all project delivery approaches. Although delegated authority was used as a driver

to introduce flexibility in governance processes, inconsistencies were evident. These were ascribed to the lack of clear guidance on how take advantage of the opportunity to develop and apply this flexibility. As a result, the perception of a lack of flexibility in governance continues to exist across all project delivery approaches.

Stakeholder engagement was crucial regardless of the project delivery approach. The role stakeholders had in ensuring the successful delivery of projects differed slightly, but their contribution to decision-making was a common area. The ongoing need for good communications was also identified, which included the open, honest and transparent reporting of project progress, and also supported the stakeholders in executing their decision-making responsibilities.

6.4 Objective 3

Objective 3 sought to formulate a definition of project governance, based on these research findings, that embodies the approach and application of governance in central government projects. Using the outcomes of the critical exploration of the definition of governance for both standard projects and those involving IT change, and the findings from the empirical research as outlined in 6.2 and 6.3 above, the following definition was formulated:

> Project governance must sit within an overarching framework that is flexible enough to support all project delivery approaches. The framework must define clear accountabilities, structures, processes, responsibilities and controls, and allow risk-based, delegated decision-making that is transparent and within agreed tolerances. Stakeholders are critical to the governance process, and should provide ongoing input and challenge to decisions, to ensure projects meet their objectives and continue to deliver the value as presented in the business case.

6.5 Contribution to knowledge

By investigating the principles, practices and perceptions of governance in central government, this research has made three contributions to knowledge. First, using mixed-methods empirical study and completing a comparative analysis across these methods and against extant academic and practitioner literature, it has identified new knowledge regarding the underlying principles and practices in adopting governance in central government across three different project

delivery approaches. Figure 5.1 summarises this new knowledge in the form of links and differences of governance between and across project delivery approaches in central government. Second, through the comparative analysis, gaps were identified in published academic and practitioner literature on the principles and practice of governance to support the delivery of projects following a Hybrid approach. The new knowledge to emerge from the research and help address the gaps includes the introduction of additional hierarchical decision-making layers and controls, which has resulted in duplication in time and effort for project professionals in administering governance. Third, this research found that, although extant academic and practitioner literature exists on the classification, management, and tracking of business and financial benefits identified at the start of all projects, this does not provide the specific principles necessary to support Agile and Hybrid project delivery approaches. As a result, it has identified a gap in knowledge in this critical area of project delivery and, therefore, highlighted an opportunity for further research.

In addition to the above contributions to academic knowledge, the research has contributed to the development of practitioner practice in two areas. First, it established how the absence of a governance framework to support a Hybrid project delivery approach has led to inconsistency and duplication in the application of governance across central government projects. Second, it has provided an understanding of how the absence of clear guidance on the development and application of flexible or proportionate project governance has caused misunderstanding of, and inconsistency in, governance approaches, both within and across central government departments. This builds on existing knowledge about the effects of the absence of clear guidance on the perception of inflexibility in project governance (Young, 2015).

Finally, the research has identified enhancements that could be made to current practitioner guidance and improvements to learning opportunities. The first of these enhancements, is the clarification of the role Agile ceremonies take in project decision-making to prevent the duplication of governance activities observed in both Agile and Hybrid project delivery approaches. Second, to improve decision-making, there is a need to raise the profile and clarify the concept of risk appetite and tolerances with project professionals across all

delivery approaches. The third enhancement is the emergent opportunity to develop alternatives to the formally defined third line of defence (Her Majesty's Treasury, 2012), and establish the potential effectiveness of such an approach in satisfying the independent assurance required for all projects. Additionally, improvements should be made to the learning opportunities available for project stakeholders and specialists external to the project profession, who are expected to provide support in the governance processes throughout the delivery of a project. The first of these learning opportunities relates to the training of central government finance specialists responsible for supporting the development of business cases and defining and managing benefits arising from projects for both Agile and Hybrid delivery approaches. The absence of formal training in this area has resulted in these specialists defaulting to Waterfall business case and benefits management processes. The second opportunity relates to project stakeholders generally. Extending access to the newly established Government Projects Academy to critical project stakeholders will increase their project delivery knowledge and stress the importance of their roles and responsibilities. In turn, this will increase their capability and effectiveness as a project stakeholder.

The areas identified above will clarify and enhance the delivery of central government projects. However, these proposals could also add value to the delivery of projects outside of central government. Although they may not be directly transferable, the concepts they offer provide the grounding for the development of additional project delivery best practice.

6.6 Reflections on the research

6.6.1 Evaluation of research aim

The aim of the research was to critically explore and conduct a comparative analysis of the principles, practice and perceptions of governance across different project delivery approaches within central government. This aim was achieved through the completion of empirical research undertaken using a mixed-methods approach to establish the context and environment of the design, development and practice of governance in central government. The information gleaned from

both academic literature and practitioner guidance, combined with the capture of the perceptions of project professionals, and the analysis of secondary data, resulted in the completion of a comparative analysis. The final outcome was a diagrammatic summary of the links and differences in governance across project delivery approaches (Figure 5.1), and the synthesis of a final definition of project governance applicable to central government (Section 6.4).

6.6.2 Challenges encountered throughout the research process

Access to individuals for case study interviews relied on contacts in the four departments, which meant opinions were at risk of being restricted to people who might have similar views to the original contact. However, the views provided by interviewees were sufficiently different to alleviate these concerns. Obtaining access to the IPA data was challenging due to the negotiations required to obtain a signed non-disclosure agreement. The delay to accessing this data meant analysis could not be undertaken in the sequence initially planned, which was to use the outcomes to inform the case study discussions. However, one advantage of this delay was that the analysis could be used to triangulate the findings from both the quantitative survey and the case studies.

The case study investigating the Hybrid project delivery approach was conducted across two different central government departments, deviating from the original research approach. After four interviews in the first department (Case Study 3a), access to additional interviewees was not forthcoming and, after investigation, the role of the individuals meant they would not have the in-depth governance knowledge to add value to the findings. Having a second department (Case Study 3b) provided the extra data and information needed to complete the research, but it prolonged the information capture and analysis phases. This delay meant that the final stage of the research and the Case Study 3b interviews were conducted during the Covid-19 pandemic. As a result, access to interviewees was impacted and, due to travel restrictions, the interviews had to be completed via telephone calls only.

A further challenge arose when Northumbria University was targeted by a cyber-attack, meaning access to the information was lost for three months. This

impacted on the planned research project timeline, so a full re-plan was undertaken, and the full comparative analysis was completed approximately six-weeks later than planned.

6.6.3 Limitations of the research

The focus of this study was the governance currently in situ to support the projects in central government across three delivery approaches – Waterfall, Agile and Hybrid. Although this means the findings are not generalisable beyond central government practice, governance is, and continues to be, a challenge across the project management discipline. As such, the findings may be transferable to similar organisational contexts and support the general practice of governance regardless of the project delivery approach.

6.7 Further research and action

Two opportunities have been identified for further research. The first is the completion of exploratory research to establish definitive underpinning principles and challenges in the governance of projects following a Hybrid delivery approach, both within and outside of central government. Secondly, opportunities exist to explore the classification, management and tracking of benefits for projects using an Agile or Hybrid project delivery approach, and the construction of a specific set of principles to support their development.

The researcher is an experienced project professional within a central government department, a member of the IPA Governance Community of Practice Group and Steering Group, and also has links with Project X – a collaboration between government, academia and industry representatives (Project X, 2021). These findings will be developed into a series of practical recommendations to be presented to each of these practitioner and academic communities, to explore opportunities for further research, influence the future development of project governance, and improve its future practice across central government.

Appendix 1: Questionnaire

1. What is the main purpose of the organisation in which you work? (please select 1)

- Policy development/delivery
- Construction/infrastructure
- Transport
- Defence
- Justice/Law and Order
- Communications
- Digital/Technology
- Agriculture/Rural
- Benefit Provision/Service Delivery
- Education
- Other (please specify)

2. What job role do you hold in your organisation? (please select 1)

- Senior Responsible Owner
- Programme Director
- Programme Manager
- Project Manager
- Project/Agile Strand: IT/Technology/Digital
- Project/Agile Strand: Business Design/Analysis
- Project/Agile Strand: Communications
- Project/Agile Strand: Programme/Project Management Office
- Project/Agile Strand: Finance and/or Business Case
- Project/Agile Strand: Communications and/or Stakeholder Management
- Project/Agile Strand: Business and/or IT Implementation
- Project/Agile Strand: Business Sponsor
- Other (please specify)

3. How long have you worked in projects?

- Less than 5 years
- Between 5-10 years
- Between 11-20 years
- More than 21 years
- I do not work in projects

4. Which project management method does your organisation mainly use?

- Waterfall or Stage-Gate method
- Agile methods
- Both Waterfall/Stage-Gate and Agile Methods (Hybrid)
- Other

5. Thinking about your response to Q4, please select 6 of the following that best describe the governance of projects in your organisation

- Direct/Steer/Influence
- Processes/Procedures/Systems/Policies
- Flexibility
- Delegated Authority
- Controls
- Relationships/Stakeholder Management
- Decision-making
- Authority/Power
- Conflict
- Risk management
- Accountability/Responsibility/Legitimacy
- Hierarchy/Structures
- Reporting/Tracking
- Bureaucracy/'Red tape'/Rules/Regulations/Legality
- Finance/budget drawdown/allocation
- Behaviours/Culture
- Time delay
- Other (please specify)

6. Thinking about your response to Q4, please select 6 of the following that least describe the governance of projects in your organisation

- Risk management
- Decision-making
- Finance/budget drawdown/allocation
- Relationships/Stakeholder Management
- Authority/Power
- Reporting/Tracking
- Behaviours/Culture
- Processes/Procedures/Systems/Policies
- Delegated Authority
- Controls
- Flexibility
- Hierarchy/Structures
- Bureaucracy/'Red tape'/Rules/Regulations/Legality
- Accountability/Responsibility/Legitimacy
- Conflict
- Direct/Steer/Influence
- Time delay
- Other (please specify)

Appendix 2a: Full survey responses to ‘best describe governance’

id	organisation	job	time	methods	B Controls	B Finance	B Reporting	B Decision	B Relationships	B Risk	B Account	B Delegated	B Authority	B Bureaucracy	B Processes	B Hierarchy	B Direct	B Behaviours	B Flexibility	B Conflict	Other Lesso	B Time
P1	Policy	Comms	11 to 20	Hybrid	1	1	1	0	1	0	1	0	0	0	1	0	0	0	0	0	0	0
P2	Environment	PPM Improvement	11 to 20	Waterfall	0	0	1	1	0	0	1	0	1	0	0	1	0	1	0	0	0	0
P3	Transport	Comms	11 to 20	Hybrid	1	1	1	1	0	1	0	0	0	0	0	1	0	0	0	0	0	0
P4	Public Health	Project Manager	Less than 5	Hybrid	0	1	1	1	1	1	0	0	0	0	0	0	1	0	0	0	0	0
P5	Digital	IT Strand	5 to 10	Hybrid	1	1	1	0	0	0	0	0	0	1	0	1	1	0	0	0	0	0
P6	Regulation	Portfolio Director	11 to 20	Waterfall	0	0	1	1	0	1	0	0	0	0	1	1	1	0	0	0	0	0
P7	Justice	Regulation	11 to 20	Hybrid	1	0	1	1	0	0	1	0	1	0	0	0	1	0	0	0	0	0
P8	Policy	Portfolio Director	5 to 10	Hybrid	1	0	1	0	0	0	1	0	0	1	1	1	0	0	0	0	0	0
P9	Policy	Business Design	5 to 10	Waterfall	1	1	1	1	0	0	0	0	0	1	1	0	0	0	0	0	0	0
P10	Education	PMO	5 to 10	Waterfall	0	0	1	0	0	1	1	0	1	0	1	0	1	0	0	0	0	0
P11	Policy	Project Manager	5 to 10	Waterfall	1	1	1	0	0	1	0	0	0	1	0	1	0	0	0	0	0	0
P12	Benefit provision	PMO	5 to 10	Waterfall	1	0	1	1	1	1	0	0	0	0	0	0	0	1	0	0	0	0
P13	Justice	Project Manager	I do not	Waterfall	0	0	0	0	0	1	0	0	1	1	0	0	1	0	0	1	0	1
P14	Digital	PMO	5 to 10	Hybrid	0	0	0	0	1	0	0	0	0	1	0	1	0	1	0	1	0	1
P15	Environment	Project Support	Less than 5	Agile	0	0	1	0	1	1	0	0	0	0	0	1	1	0	1	0	0	0
P16	LA Service Provision	Project Officer	11 to 20	Waterfall	0	1	1	1	0	1	1	0	0	0	0	0	1	0	0	0	0	0
P17	Policy	Portfolio Manager	11 to 20	Waterfall	1	1	0	1	0	1	1	0	0	0	0	1	0	0	0	0	0	0
P18	Benefit provision	PMO	More than 21	Hybrid	1	0	0	1	0	1	1	0	0	0	0	1	0	1	0	0	0	0
P19	Policy	PMO	Less than 5	Treasury Approval	0	1	1	0	0	1	1	0	0	0	1	1	0	0	0	0	0	0
P20	Benefit provision	PMO	Less than 5	Hybrid	1	0	1	1	0	1	1	0	0	0	1	0	0	0	0	0	0	0
P21	Benefit provision	PMO	More than 21	Waterfall	0	1	0	1	0	1	1	0	0	0	1	0	0	0	1	0	0	0
P22	Programme Delivery	IT Strand	5 to 10	Hybrid	0	1	1	1	0	0	1	0	0	1	1	0	0	0	0	0	0	0
P23	Digital	PMO	5 to 10	Hybrid	1	1	1	0	0	1	1	0	0	0	0	0	1	0	0	0	0	0
P24	Policy	PMO	11 to 20	Hybrid	0	0	1	0	1	0	0	0	0	0	1	1	0	1	0	0	0	1
P25	Policy	PMO	11 to 20	Hybrid	0	0	1	1	1	1	0	0	0	0	1	0	0	1	0	0	0	0
P26	Benefit provision	PMO	11 to 20	Hybrid	0	1	1	0	1	1	1	1	0	0	0	0	0	0	0	0	0	0
P27		Implementation	More than 21	Hybrid	1	1	0	0	1	0	1	0	1	1	0	0	0	0	0	0	0	0
P28		Policy	Less than 5	Agile	1	1	1	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0
P29		Implementation	5 to 10	Agile	1	0	1	0	0	0	1	1	0	0	0	1	1	0	0	0	0	0
P30		Portfolio Manager	11 to 20	Hybrid	1	0	1	1	1	0	0	0	0	0	1	0	1	0	0	0	0	0
P31		Assurance Manager	5 to 10	Waterfall	1	0	1	1	0	0	0	0	0	0	1	1	1	0	0	0	0	0
P32		Programme Director	11 to 20	Waterfall	1	0	0	0	1	1	1	1	0	0	0	0	1	0	0	0	0	0
P33		Programme Director	I do not	Waterfall	0	1	1	1	0	0	1	0	0	0	1	0	1	0	0	0	0	0
P34		Programme Manager	11 to 20	Hybrid	1	1	0	1	1	1	0	0	0	0	0	0	1	0	0	0	0	0
P35		Business Case	More than 21	Hybrid	1	1	0	1	0	0	1	0	0	0	0	1	0	0	0	0	1	0
P36		PMO	More than 21	Hybrid	0	1	1	0	0	1	0	1	0	0	0	0	1	0	0	0	0	1
	Totals				20	19	27	19	12	21	20	5	5	8	14	15	16	6	2	2	1	4

Appendix 2b: Full survey responses to ‘least describe governance’

id	organisation	job	time	methods	L Controls	L Finance	L Reporting	L Decision	L Relationships	L Risk	L Account	L Delegated	L Authority	L Bureaucracy	L Processes	L Hierarchy	L Direct	L Behaviours	L Flexibility	L Conflict	L Time	
P1	Policy	Comms	11 to 20	Hybrid	0	0	0	0	0	0	0	0	1	0	0	1	1	1	0	1	1	
P2	Environment	PPM Improvement	11 to 20	Waterfall	0	1	0	0	1	1	0	0	0	1	1	0	0	0	0	0	1	
P3	Transport	Comms	11 to 20	Hybrid	0	0	0	0	1	0	1	1	1	0	1	0	0	1	0	0	0	
P4	Public Health	Project Manager	Less than 5	Hybrid	1	0	0	0	0	0	0	0	1	1	0	1	0	0	0	1	1	
P5	Digital	IT Strand	5 to 10	Hybrid	0	0	0	1	1	1	0	0	0	0	0	0	0	0	1	1	1	
P6	Regulation	Portfolio Director	11 to 20	Waterfall	0	1	0	0	0	0	0	1	1	0	0	0	0	1	1	1	0	
P7	Justice	Regulation	11 to 20	Hybrid	0	1	0	0	1	1	0	0	0	0	1	0	0	1	1	0	0	
P8	Policy	Portfolio Director	5 to 10	Hybrid	0	0	0	0	1	0	0	1	0	0	0	0	1	1	1	1	0	
P9	Policy	Business Design	5 to 10	Waterfall	0	0	0	0	1	0	0	0	0	0	0	1	0	1	1	1	1	
P10	Education	PMO	5 to 10	Waterfall	0	1	0	0	0	0	0	0	0	1	0	1	0	1	1	1	0	
P11	Policy	Project Manager	5 to 10	Waterfall	0	0	0	1	1	0	0	1	0	0	0	0	1	1	1	0	0	
P12	Benefit provision	PMO	5 to 10	Waterfall	0	0	0	0	0	0	0	0	1	1	0	1	1	0	0	1	1	
P13	Justice	Project Manager	I do not	Waterfall	0	1	0	0	1	0	1	1	0	0	0	0	0	1	1	0	0	
P14	Digital	PMO	5 to 10	Hybrid	0	0	0	0	0	0	0	1	1	0	0	0	1	1	1	0	1	
P15	Environment	Project Support	Less than 5	Agile	0	1	0	0	0	0	1	0	1	0	1	0	0	0	0	1	1	
P16	LA Service Provision	Project Officer	11 to 20	Waterfall	0	0	0	0	1	0	0	0	1	0	1	1	0	1	0	0	1	
P17	Policy	Portfolio Manager	11 to 20	Waterfall	0	0	1	1	0	0	0	1	0	0	0	0	1	1	1	0	0	
P18	Benefit provision	PMO	More than 21	Hybrid	0	1	1	0	0	1	0	0	0	1	0	0	0	0	1	1	0	
P19	Policy	PMO	Less than 5	Treasury Approval	0	0	0	0	0	0	0	0	1	1	0	0	1	1	0	1	1	
P20	Benefit provision	PMO	Less than 5	Hybrid	0	0	0	0	1	0	0	1	0	1	0	0	0	1	0	1	1	
P21	Benefit provision	PMO	More than 21	Waterfall	0	0	0	0	0	0	0	0	1	1	0	1	0	1	0	1	1	
P22	Programme Delivery	IT Strand	5 to 10	Hybrid	0	0	0	0	1	0	0	1	1	0	1	0	0	1	1	0	0	
P23	Digital	PMO	5 to 10	Hybrid	0	0	0	0	0	0	0	0	1	1	0	1	0	1	0	1	1	
P24	Policy	PMO	11 to 20	Hybrid	0	0	0	0	0	0	1	1	1	0	0	0	1	1	1	0	0	
P25	Policy	PMO	11 to 20	Hybrid	0	1	0	0	0	0	1	1	0	1	0	1	0	0	0	0	1	
P26	Benefit provision	PMO	11 to 20	Hybrid	0	0	0	0	0	0	0	0	1	0	0	1	0	1	1	1	1	
P27		Implementation	More than 21	Hybrid	0	0	1	0	0	1	0	1	0	0	0	0	0	1	1	0	1	
P28		Policy	Less than 5	Agile	0	0	0	0	1	0	0	0	1	0	0	1	0	1	1	1	0	
P29		Implementation	5 to 10	Agile	0	1	0	0	1	0	0	0	0	0	1	0	0	1	0	1	1	
P30		Portfolio Manager	11 to 20	Hybrid	0	1	0	0	0	0	0	1	0	1	0	0	0	1	1	0	1	
P31		Assurance Manager	5 to 10	Waterfall	0	1	0	0	1	0	1	0	0	1	0	0	0	1	0	1	0	
P32		Programme Director	11 to 20	Waterfall	0	0	0	1	0	0	0	0	0	1	0	1	0	1	1	0	1	
P33		Programme Director	I do not	Waterfall	0	0	0	0	0	0	0	0	1	1	0	1	0	1	1	1	0	
P34		Programme Manager	11 to 20	Hybrid	0	0	0	0	0	0	0	1	0	1	0	1	0	1	1	1	0	
P35		Business Case	More than 21	Hybrid	0	0	0	0	0	0	0	0	1	1	1	0	0	1	0	1	1	
P36		PMO	More than 21	Hybrid	0	0	0	0	0	0	0	0	1	1	1	1	0	0	1	1	0	
	Totals				1	11	3	4	14	5	6	14	18	17	9	15	8	28	21	22	20	

Appendix 3: Interview Information Sheet

Northumbria University
Department of Mechanical and Construction Engineering
Information Sheet

Research Title: A framework to support the governance of digital projects in the public sector

Name of Investigator: Nicola Young

Research outline
This research forms part of a PhD which is investigating the approach to governance and approvals across the public sector. The continuing application of what is considered to be restricted governance and approvals for digital projects has caused perceived issues in the successful use and application of Agile in the public sector. As well as reviewing academic literature, a series of case study reviews are also being undertaken focusing on the way projects are managed using Agile, Waterfall (or gated review), and blended (or Hybrid or mixed) methods. The information for the case studies is being captured through a number of interviews with project and governance/approvals practitioners/professionals. The findings from the case studies will be used to draw conclusions to inform the establishment of a framework to support governance and approval of public sector digital projects.

Research aims
The aim of this research is to:
- Establish and define the theoretical background to governance methods supporting project management approaches;
- Identify and analyse the relevant organisational theory for governance and formal approvals in the public sector context;
- Establish the historical and current approach to public sector project governance, identifying and classifying situational parameters;
- Categorise the different governance approaches and drivers establishing critical factors and scenarios influencing successful public sector digital project delivery;
- Define a conceptual governance and approvals guidance framework and methods to support the project management of digital services within the public sector.

Information required and outline of any potential risks involved
The information required will consist of knowledge and expert opinion about the governance of projects in the public sector volunteered by practitioner participants through interviews. The exact nature of the questions and issues explored during the interviews will be informed by the aims and objectives, the development of discussions, and draft outputs. The interviews will be conducted either face-to-face or by telephone.
The only potential risks lie in the realms of confidentiality and data protection. Participants are assured of confidentiality and security of personal/sensitive information and security of their contributions. Data will be anonymised before publication and the inclusion/exclusion of other sensitive information will be checked with respondents. None of the interviewees will be identified without prior consent or in other publications based on the research. Data protection/security risks are addressed in the consent forms and

in the following section. As all interviews will be conducted in government buildings, there are no risks to health or safety.

How the information will be stored and published (if applicable)
Voice recordings and notes of the interviews will be kept secure and any personal/sensitive information will be kept secure and confidential. Where data is collected on a portable digital device (e.g. a voice recording device) the files and documents will be password-protected where feasible. These will be transferred as soon as possible to a networked drive to which only the researcher has access, and the temporary data deleted. All portable devices will be stored in locked cabinets or drawers. Data for analysis off university premises will be anonymised before transfer to portable storage devices/home computers. Hard-copy data and consent forms will be stored in locked cabinets and drawers. All research data will be kept by the researcher until the end of the project, and will then be disposed of in line with Northumbria University's retention policies.

Any other information deemed relevant to the project
Participants will be selected by a combination of private invitation (i.e. through personal contact). Participation in the research is voluntary and participants are free to withdraw at any time, or to decline to answer any questions that they feel are too intrusive.
Face-to-face or telephone interviews, lasting no longer than 1 hour, will be held and recorded.

The Data Controller is Northumbria University; a copy of Northumbria University's data protection policy is available on request.

Contact Details

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Appendix 4: Case Study Consent Form

Northumbria University
Department of Mechanical and Construction Engineering
Consent Form

Project Title: A framework to support the governance of digital projects in the public sector

Name of Investigator: Nicola Young

Name of Participant:…….

Please mark the appropriate box for all statements	**Yes**	**No**
I have read the information sheet and understand the purpose of the research.		
I am willing to contribute to and share appropriate information during the interview.		
I understand and agree that notes will be made during the interview and it will be recorded electronically. This is to feed into the subsequent thesis and any other published outputs. The voice recordings and transcripts will be kept securely.		
I know that my name and details will be kept confidential and will not be published without my prior consent.		
I understand and agree that data will be anonymised and any other sensitive information removed before being included in the thesis. If quotes are used they will be non-attributable. I will not be identified without prior consent in the thesis or other publications based on the research.		
I understand and agree that notes, any recordings and any personal/sensitive information will be kept secure and confidential. All data collected will be kept by the researcher and retained in line with Northumbria University's retention policy.		
I understand that this information will be used only for the purpose(s) set out in the information sheet supplied to me, and my consent is conditional upon the University complying with its duties and obligations under the General Data Protection Regulations (GDPR). The Data Controller for the purposes of the Regulations is Northumbria University; the University's data protection policy is available at: https://www.northumbria.ac.uk/about-us/leadership-governance/vice-chancellors-office/legal-services-team/gdpr/		
I understand I can withdraw my consent at any time, without giving a reason and without prejudice.		
I consent to take part in this research interview.		
I would like a copy of the signed consent form		
Signed:……Date:……..		

Should you wish to make a complaint about the conduct of the research you should contact Dr. Allan Osborne, Principal PhD Supervisor: allan.osborne@northumbria.ac.uk or Professor Julie McLeod, Second PhD Supervisor: Julie.mcleod@northumbria.ac.uk

Researcher

I confirm that I have explained the research to the participant and have given adequate time to answer any questions concerning it.

Signed:…… **Date:……..**

Appendix 5: Pre-interview questionnaire

Name: ……..

What role do you hold in your project organisation? (Select one option only)

Senior Responsible Owner	
(Senior) Business Sponsor	
Programme Director	
Programme Manager	
Project Manager	
Project Strand Manager: IT/Technology/Digital	
Project Strand Manager: Business Analyst	
Project Strand Manager: Programme/Project Management Office (includes Assurance Manager, Governance and Reporting Manager, Planning Manager, Risks and Issues Manager)	
Project Strand Manager: Finance and/or Business Case	
Project Strand Manager: Communications and/or Stakeholder Management	
Project Strand Manager: Business Change/Implementation	
Other (please specify)	

How long have you worked in projects?

Less than 5 years	
Between 5-10 years	
Between 11-20 years	
More than 21 years	
I do not work in projects	

Which project management method does your organisation mainly use? (select one option only)

Waterfall or Stage-Gate method	
Agile methods	
Both Waterfall/Stage-Gate and Agile Methods (Hybrid/blended)	
Other (please specify)	

From the following list of options, please select 6 that <u>Best</u> describe governance in your organisation, and 6 that <u>Least</u> describes governance in your organisation:

Options	Best describes governance (select 6 only)	Least describes governance (select 6 only)
Direct/Steer/Influence		
Processes/Procedures/Systems/Policies		
Flexibility		
Delegated Authority		
Controls		
Relationships/Stakeholder Management		
Decision-making		
Authority/Power		
Conflict		
Risk management		
Accountability/Responsibility/Legitimacy		
Hierarchy/Structures		
Reporting/Tracking		
Bureaucracy/'Red tape'/Rules/Regulations/Legality		
Finance/budget drawdown/allocation		
Behaviours/Culture		
Time delay		
Other (please specify)		

Appendix 6: Case Study Indicative Questions

Version 1 used for Stage-Gate/ Waterfall Case Study

Background
Please tell me your name and a little about yourself and your role in the organisation.

Project Portfolio Management
1. What is the decision-making process for adding new projects to the project delivery portfolio in your organisation?
2. Do the projects in your organisation usually have a project or programme management or support office?
3. How does this provide the support you need particularly relating to governance?

Process
4. Tell me the about the main aspects of the governance process you follow?
5. Does this differ depending on the project? To what extent/why?
6. Does what you believe to standardised/prescribed process differ to practice? If so, how?
7. If standard practices is not followed, who decides this, e.g. SRO, programme director/manager, etc.?
8. What factors do you think influence or drive the governance approach in your organisation, e.g. political, resources (people and others), level of risk, finance/funding?
9. Does your organisation follow the three lines of defence approach to project assurance and controls? How does this impact on your organisation's approach to governance?
10. Which do you think is **more** important from a governance perspective: decision-making, reporting, risk management, finance, stakeholder engagement, controls, delegated/devolved authority, or anything else?
11. What helps you throughout the governance process?
    a. What is your best practice in handling/managing governance?
12. What hinders you throughout the governance process?
    a. What could be better?
    b. What ideas do you have to improve it/make it more effective?
    c. How do you manage those things that hinder you?
13. What would you like to see as part of the governance process?

Attitudes/perspectives to governance
14. What behaviours/attitudes have you encountered throughout the governance process?
15. If you have encountered conflict in managing governance, how did you manage this?
16. What behaviours/attitudes would you prefer to encounter?
17. What do you think are the barriers to achieving these behaviours?
18. How do you think any barriers these could be addressed?
19. In terms of behaviours/attitudes to governance:
    a. What do you find works well?

b. What could be better/what would you improve?

Looking Forward

20. What **three** key things would you improve or take forward in the development of any governance approach or process?

Conclusions

21. Is there anything I haven't asked that you were expecting me to ask?

Version 2 used for Agile and Hybrid Case Studies

Background

Please tell me your name and a little about yourself and your role in the organisation.

Project Portfolio Management

1. What is the decision-making process for adding new projects to the project delivery portfolio in your organisation?
2. Do the projects in your organisation usually have a project or programme management or support office?
3. How does this provide the support you need particularly relating to governance?

Process

1. Tell me the about the main aspects of the governance process you follow?
2. Does this differ depending on the project? To what extent/why?
3. Does what you believe to standardised/prescribed process differ to practice? If so, how?
4. If standard practices is not followed, who decides this, e.g. SRO, programme director/manager, etc.?
5. What factors do you think influence or drive the governance approach in your organisation, e.g. political, resources (people and others), level of risk, finance/funding?
6. Does your organisation follow the three lines of defence approach to project assurance and controls? How does this impact on your organisation's approach to governance?
7. Which do you think is **more** important from a governance perspective: decision-making, reporting, risk management, finance, stakeholder engagement, controls, delegated/devolved authority, or anything else?
8. What helps you throughout the governance process?
    a. What is your best practice in handling/managing governance?
9. What hinders you throughout the governance process?
    a. What could be better?
    b. What ideas do you have to improve it/make it more effective?
    c. How do you manage those things that hinder you?
10. What would you like to see as part of the governance process?

Attitudes/perspectives to governance

11. What behaviours/attitudes have you encountered throughout the governance process?

12. If you have encountered conflict in managing governance, how did you manage this?
13. What behaviours/attitudes would you prefer to encounter?
14. What do you think are the barriers to achieving these behaviours?
15. How do you think any barriers these could be addressed?
16. In terms of behaviours/attitudes to governance:
    a. What do you find works well?
    b. What could be better/what would you improve?

Looking Forward

17. What **three** key things would you improve or take forward in the development of any governance approach or process?

Conclusions

18. Is there anything I haven't asked that you were expecting me to ask?

Appendix 7: Major Theme Recommendations and Definitions

Theme	Description
Governance	The oversight, structure, and decision-making of a project or programme, including alignment with pan government proprieties, strategies, and controls
Stakeholder Management	Focused around relationships with all parties with an interest in the outcomes of the project or programme, whether internal or external to the agency or government
Programme and Project Management	All aspects of project, programme and portfolio management, but excludes Risk, Issues and Dependency Management, and Resource Management themes
Change Management and Transition	Management of business change – all work required in the business and with the customer to make ready for the initiative, including business continuity planning, and changes to business processes, work processes, resourcing, organisational structures and staffing. Also includes transformation or process changes to business delivery to ensure a smooth transition to Business As Usual. It does not include technology Readiness for Service.
Financial Planning and Management	Financial planning, organising, directing, and controlling of financial activities
Benefits Management and Realisation	Identification, ownership, measurement, and realisation of financial or non-financial benefits and dis-benefits
Commercial Strategy and Management	End to end procurement process including procurement strategy and planning, approaches to the market, contract negotiation and contract management.
Context, Aim and Scope	Clarity of change to be implemented, including alignment to vision, strategy, and policy, purpose, objectives, justification and description of the change, determination and necessary environment to ensure success
Risk, Issues and Dependency Management	Identification, analysis, impact assessment, response, and ongoing review and management of risks, issues and dependencies, i.e. outputs required by a project to succeed delivered by parties outside the project's direct control
Resource and Skills Management	Identification, supply, optimisation, prioritisation, and maintenance of resources and appropriate skills
Knowledge Management	Process of capturing, developing, sharing, and effectively using organisational knowledge, including sharing knowledge and experiences or lessons learned
Technology	How technology aligns to strategy and defines plans for integration, operational readiness, and meets security requirements

Appendix 8: Minor Themes and Descriptions

Major Theme	Minor Theme	Description
Governance	Robust governance structures and processes	Structures and processes, e.g. Board Terms of References, Independent Assurance
	Commitment and Engagement	Effectiveness of behaviours of those involved in governance processes
	Approvals	Alignment with, and understanding of, internal and pan government approval processes
Stakeholder Management	Engagement Strategy and Planning	Stakeholder engagement strategy and planning
	Effective Engagement	Effective delivery of the strategy or plan, i.e. review of or commitment to engagement
	Effective Across Organisational Boundaries	Key relationships with other departments
Programme and Project Management	Planning	Understanding of planning, encompassing detailed proposals for various types of activities leading to a successfully executed programme or project
	Controls	Efficacy of monitoring and reviewing progress against project plan and business case
	Change Control	Specific controls to cater for scope changes
	Quality Management	Quality system, quality assurance, quality planning or quality control
	Information Management	Management and application of processes to collect, communicate, and process information to enable effective decision-making
	Communications	How project's stakeholders are kept informed
	Methodology and Standards	Use of structured proven approaches to programme and project management methodologies, e.g. MSP, PRINCE2, including Agile and iterative approaches and methods
	Requirements Definition	Process for understanding user needs, including processes used in an Agile environment
Change Management and Transition	Organisational Culture	Cultural and behavioural changes necessary to successfully transform the business or service
	Organisational Capability	Capability of the organisation to successfully implement the change
	Operational Readiness	Activities and processes that must be designed and established before a project can be signed off and considered part of the organisation's business as usual, including planning and implementation activities to support transition into the business, e.g. development and agreement of go/no-go decision criteria, operational governance and management structures, establishing appropriate staffing to handle peak go-live issues,

Major Theme	Minor Theme	Description
		and development of Service Level Agreements and/or Operating Level Agreements
	Customer Engagement	Preparedness of the public or enterprises to understand and cope with the change, e.g. transformed/new services, changes in legislation
Financial Planning and Management	Financial Planning and Management	No minor category
Benefits Management and Realisation	Benefits Management and Realisation	No minor category
Commercial Strategy and Management	Sourcing Strategy	End-to-end procurement process including procurement strategy and planning, approaches to market, and contract negotiation
	Contract Management	Implementation, administration, and processes involved from contract award to work completion, ensuring successful delivery and execution of supplies and services outlined in the contract
	Supply Chain Management	Oversight of products and services to be delivered by suppliers, particularly end-to-end coordination and integration of suppliers in a multi-supplier environment, excludes physical integration of technology solution components
Context, Aim and Scope	Vision Aims and Objectives	Clarity of understanding of, and alignment with Government and Departmental priorities and strategies
	Scope	Clear description and control of the work to be undertaken to deliver the project with required outcomes
	Business Case	Construction, iteration, and maintenance of the business case in ensuring a firm understanding of the costs, benefits and risk profile of the project or programme
	Alignment of Delivery to Policy	Outcomes of project when compared to the original policy intent
	Critical Success Factors	Clear understanding and definition of those factors essential to enable successful delivery
Risk, Issues and Dependency Management	Framework and Process	Processes, techniques and resources involved
	Active Risk Management	Genuine engagement of project, stakeholders, and wider organisation in the consideration and response to risks, issues and dependencies
	Contingency Planning	Contingency planning to mitigate business impact, excluding contingency funding
Resource and Skills Management	Leadership Capability	Experience, qualifications and commitment of key leadership roles
	Capacity Planning and Management	Estimation, prioritisation, recruitment and availability of resources
	Skills Assessment and Management	Assessment and acquisition of appropriate skills for all stages of the project or programme

Appendix 8

Major Theme	Minor Theme	Description
	Succession Planning and Management	Retention and sustainability of key resources
	Organisation	Clarity of roles and responsibilities
Knowledge Management	Best Practice	Dissemination of methods or techniques showing consistent results superior to those achieved with other means that have been/can be used as a benchmark
	Lessons Learned	Sharing knowledge acquired from innovative or an adverse experience resulting in process improvements
Technology	Alignment to Strategy	Strategic nature of the solution and alignment with technology and business strategies, e.g. tactical versus strategic considerations
	Integration	Management and integration of multiple suppliers of technology services to provide a single business solution, i.e. seamless integration of interdependent services from internal and external service providers into end-to-end service to meet business requirements
	Operational Readiness	Technology related activities, processes and procedures (including testing) that must be designed and implemented before technology can be transitioned and maintained in 'live'
	Security	Processes, methodologies, and documentation involved with keeping information available and confidential, assuring its integrity, including access controls, protection of information in transit, and detection and remediation of security incidents

Appendix 9: Number of recommendations by Major and Minor Theme

Major Theme and Total Number of recommendations	Minor Theme
Governance (379)	Robust governance structures and processes (288)
	Approvals (51)
	Commitment and Engagement (40)
Stakeholder Management (202)	Engagement Strategy and Planning (81)
	Effective Engagement (68)
	Effective Across Organisational Boundaries (53)
Programme and Project Management (433)	Planning (221)
	Communications (71)
	Controls (30)
	Information Management (30)
	Methodology and Standards (28)
	Requirements Definition (21)
	Quality Management (17)
	Change Control (15)
Change Management and Transition (172)	Operational Readiness (109)
	Organisational Capability (30)
	Customer Engagement (21)
	Organisational Culture (12)
Financial Planning and Management (76)	Financial Planning and Management (76)
Benefits Management and Realisation (119)	Benefits Management and Realisation (119)
Commercial Strategy and Management (184)	Sourcing Strategy (113)
	Contract Management (46)
	Supply Chain Management (25)
Context, Aim and Scope (307)	Business Case (124)
	Vision Aims and Objectives (79)
	Scope (67)
	Critical Success Factors (27)
	Alignment of Delivery to Policy (10)
Risk, Issues and Dependency Management (236)	Active Risk Management (117)
	Framework and Process (73)
	Contingency Planning (46)
Resource and Skills Management (341)	Capacity Planning and Management (132)
	Skills Assessment and Management (79)
	Leadership Capability (53)
	Organisation (41)
	Succession Planning and Management (36)
Knowledge Management (85)	Best Practice (34)
	Lessons Learnt (51)
Technology (89)	Operational Readiness (46)
	Alignment to Strategy (19)
	Security (15)
	Integration (9)
Total Number (2623)	

Abbreviations

APM	Association for Project Management
GDS	Government Digital Service
GMPP	Government Major Projects Portfolio
HMT	Her Majesty’s Treasury
ICT	Information and Communication Technology
IPA	Infrastructure and Projects Authority
IT	Information Technology
MSc	Master of Science
NAO	National Audit Office
OECD	Organisation for Economic Cooperation and Development
PMO	Project/Programme/Portfolio Management Office
PPM	Programme and Project Management
PRINCE2	Projects In a Controlled Environment (2)
SRO	Senior Responsible Owner
UK	United Kingdom
XP	Extreme Programming

Glossary

Note: unless specified, all definitions taken from gov.uk

Term	Description
Accounting Officer	The senior official in a central government organisation accountable to Parliament and the public for high standards of probity in the management of public funds, including for projects. Usually either the Permanent Secretary, in an arm's length body, the Chief Executive Officer.
Agile ceremonies	Agile tools and techniques used by the digital team to self-organise and plan, communicate (within the team and stakeholders), continuously improve ways of working, and get support from senior leaders.
Backlog	Items of activity are held in order of priority until work on them is ready to start.
Blocker	Major obstacles to delivery, things which are stopping the team from getting work done.
Cabinet Office	Support the Prime Minister and ensure the effective running of government and are the corporate headquarters for government, in partnership with HMT.
Department for Culture, Media and Sport	Helps to drive growth, enrich lives and promote Britain abroad.
Government Digital Service	Build platforms, products and services that help create a simple, joined-up and personalised experience of government to everyone.
Government Major Projects Portfolio	Ensures robust oversight of government's most complex and strategically significant projects and programmes.
Her Majesty's Treasury or Treasury	The government's economic and finance ministry, maintaining control over public spending, setting the direction of the UK's economic policy and working to achieve strong and sustainable economic growth.
Infrastructure and Projects Authority	We are the government's centre of expertise for infrastructure and major projects.
National Audit Office	The UK's independent public spending watchdog who supports Parliament in holding government to account and help improve public services through high-quality audits.
Product Manager	Responsible for the quality of IT products and uses knowledge of user needs and business goals to frame problems and set priorities for delivery teams.
Scrum	The most commonly used agile method what allows a highly structured model with clearly defined roles and responsibilities.
Service Manager	Responsible for managing the service delivery of information and communications technology services and working with teams from IT service operations.
Service Owner	Accountable for the quality of an IT service and will adopt a portfolio view, managing end-to-end services that include multiple products and channels.

Term	Description
Sprint(s)	A feature of scrum where the team works through agreed activity following the defined approach within a set timescale.
The Green Book	HM Treasury guidance on how to appraise and evaluate policies, projects and programmes.
The Orange Book	This guidance establishes the concept of risk management and provides a basic introduction to its concepts, development and implementation of risk management processes in government organisations.
Three lines of defence	By defining the sources of assurance in three broad categories, it helps to understand how each contributes to the overall level of assurance (see also (Her Majesty's Treasury, 2012).

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