

Leadership: Responding to complexity

A SYSTEMIC FRAMEWORK FOR RESPONDING TO COMPLEXITY IN
GOVERNMENT TRANSFORMATION AND SERVICE DELIVERY PROJECTS



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For more information on Project X, please visit www.bettergovprojects.com

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This qualitative case study has sought to generate insights from project delivery professionals with significant experience in the delivery of the government's transformation and service delivery portfolios

The views expressed in this analytical summary are those of the author and not necessarily those of government departments. Nor do they reflect government policy.

Executive summary

The aim of this case study is to provide a systemic leadership framework for responding to complexity that can support the continued capability development in the transformation portfolios of government. This case study is part of Project X, a broader research programme seeking to generate insights into major government projects and programmes.

This qualitative case study has sought to generate insights from project delivery professionals with significant experience in the delivery of the government's transformation and service delivery portfolios. This research views leadership as an activity, rather than focusing on the competencies or styles of individuals holding leadership positions. This view, based on what the academic literature refers to as leadership-as-practice approaches, accommodates the contributions of the individuals appointed to formal leadership roles while confronting broader, systemic aspects of leadership such as alternative sources of leadership.

This case study report is based on 15 semi-structured interviews conducted with a cross-section of project delivery professionals working in the major transformation portfolios of two central government departments. The data gathered also includes informal interviews and documents available in the public domain. The analysis adopts the theoretical lens of routines as it enables the examination of both formal leadership activities and their improvisations in responding to complexity.

The framework developed as a result of the analysis comprises four complexity response systems made up of multiple leaders and structural elements, which span multiple levels and are able to dynamically adapt to emergence:

■ Bridging

Responding to complexities associated with integrating knowledge across different functions or organisations by developing trading zones.

■ Positioning

Responding to threats and opportunities associated with specific authority positions by structuring leadership roles and relationships.

■ Legitimising

Responding to the different evaluations of desirability, propriety and appropriateness of the intended change, and how it is delivered by developing opinion formation systems.

■ Adapting

Responding to shifts in the context-impacting formal agreements produced at the front-end phase of projects or programmes through anticipation and shared leadership strategies. Responding to organisational changes to ways of working in portfolios, programmes and projects through translation strategies.

Drawing on insights from academic literature, this report also offers three areas of recommendations for further strengthening the framework:

■ Viewing leadership as an activity

This view can enrich alternative sources of leadership and broaden the repertoires of response.

■ Continuous learning and development

The report illustrates the unintended consequences or limitations of the framework and the opportunities for bottom-up learning, and recommends the adoption of systemic approaches to reflecting on and continuously developing the framework.

■ Developing the institutional conditions for strengthening the responses

Collective inquiry of all professional functions into responding to wicked problems and the paradoxical tensions underpinning the cross-profession interactions that can enrich the ecological conditions for the complexity response systems.

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1. Introduction

Major government projects are some of the most complex and diverse delivered by organisations in the UK and internationally. Transformation and service delivery portfolios account for almost a third of the government's major projects portfolio in terms of number of portfolios¹. These projects provide the opportunity to deliver significant benefits to the public as they are concerned with improving public services and making the government more efficient.

Yet, as the National Audit Office has highlighted, delivering these projects can be very challenging². The efforts undertaken so far to develop leaders of major projects through initiatives such as the Major Projects Leadership Academy (MPLA) have provided a solid foundation for developing individual competencies. However, insights generated by the academic leadership literature suggest that leading organisations through change requires systemic leadership capabilities.

This research has sought to generate insights from project delivery professionals with significant experience in the delivery of the government's transformation and service delivery portfolios, programmes and projects. The research aims to provide a systemic leadership framework for responding to complexity that can be practical and useful for practitioners, organisations and policy makers. This research is part of a broader research agenda within Project X that aims to generate insights into leadership in the government's major project portfolio.

Activity views of leadership focus on what's being accomplished and how it's accomplished over time, rather than who the leaders are and what they do

The qualitative case study views leadership as an activity. Activity views of leadership focus on what's being accomplished and how it's accomplished over time, rather than who the leaders are and what they do. This view accommodates the contributions of the individuals appointed to formal leadership positions in portfolios, programmes and projects. However, it also recognises the alternative sources of leadership that may or may not be situated within the boundaries of the portfolios, programmes and projects. Viewing leadership as an activity also provides sensitivity to how material objects and social and cultural conditions can act as enablers or constraints. Therefore, activity views of leadership are well suited for confronting broader sources of complexity and developing systemic responses.

The leadership framework developed for responding to complexity should not be treated as a universal solution for transformation and service delivery projects. The framework, which offers a model for understanding and responding to the key themes of complexity, should be adapted for local contexts. It's also important to note that a number of complex situations identified by the study have also been shown to be relevant to various industries and projects by the academic project management literature. Therefore the leadership framework produced by this study has the potential to provide useful insights into the wider project delivery community.

¹ The 2018 Annual Report on the Government Major Projects Portfolio (GMPP) from the Infrastructure and Projects Authority (IPA).

² NAO (2015) Lessons for Major Service Transformation, London: NAO.

2. Literature review

2.1. Position views of leadership

Conventional project management approaches associate leadership with a position. From this perspective, leadership is equated with the portfolio manager, programme manager and project manager positions.

This leadership position typically comprises three roles:

■ Team leadership

Inspire and motivate the team, develop effective teamwork conditions and relationships, and guide and support team members.

■ Change agency

Define the intended outcomes, establish credibility and protect the team, and influence stakeholders to accept and support the change. For portfolio managers and programme managers operating at the strategic level of the organisation, this change agency role also includes continuously aligning the intended outcomes to the organisational strategy.

■ Linking to governance

Making progress, risks and issues visible to the leaders and organisations governing the change. For portfolio managers and programme managers operating at the strategic level of the organisation, this role also includes collaborating with the individuals and organisations governing the change and setting local governance processes that are aligned to the organisational governance processes.

Position views of leadership often focus on the styles and competencies of the individuals appointed to the leadership positions. Project management literature typically draws upon the approaches from the leadership literature to generate insights and recommendations, such as:

- Bass and Riggio's transactional and transformational leadership behaviours.
- Situational and contingency approaches to leadership, such as Hersey and Blanchard's Leadership Model, and Blake and Mouton's management grid.
- Goleman's emotional intelligence approaches, and the intellectual, managerial and emotional and social dimensions of leadership developed by Dulewicz and Higgs (2005).

Position views of leadership also offer some insight into the collaborations between the different levels of formal leaders. Programme managers holding relatively senior positions are expected to guide and support project managers and align the hierarchy of goals. However, these top-down views of relating between the hierarchy of leaders can become relatively blind to bottom-up learning and cross-level collaborations.

The position views of leadership can also neglect alternative sources of leadership, such as informal leadership or formal delegation of leadership authority to the project team members. Therefore, these views can constrain the repertoires for responding to complexity. Distributed team leadership approaches attempt to address this limitation.

Position views of leadership also offer some insight into the collaborations between the different levels of formal leaders

Academic project management literature has been applying these views to project teams

2.2. Distributed team leadership

Various contributions within the academic leadership literature argue that effective responses to complex situations are based on distributed team leadership approaches. For example, Cox et al (2003) and Pearce (2004) suggest that:

- In situations of high interdependence, team members act as informal leaders in providing leadership to their peers.
- In situations where the task or problem requires significant creativity, the whole team acts as a source of leadership by collectively generating novel ideas.
- In situations where the task or problem is complex, a specialised group collectively generates solutions.

Academic project management literature has been applying these views to project teams. For example, Muethel and Hoegl (2011) argue that virtual project teams can respond to the task and environment uncertainties by sharing team leadership functions. From this perspective, the ties project team members have to their local environments and the specialist expertise of different project team members are opportunities for effectively responding to uncertainty. It's recommended that the following team leadership functions are shared:

■ Dispersed screening

Each project team member detects cues for change during their interactions with their own local environment.

■ Team-related interrelation

Team members jointly determine how to respond to the detected changes.

■ Self-directed and other directed interrelation

In situations where a project team member has an interdependency with another team member, the project team member interacts with that team member to proactively seek or offer advice.

Müller et al (2017) also drew on distributed team leadership approaches to define the 'balanced leadership' approach. This approach suggests that project managers delegate their authority temporarily to a project team member in situations that are appropriate for this delegation. A study by Drouin et al (2018) examined the balanced leadership approach in various countries and industries, and showed that project managers often delegate decisions requiring technical expertise to their project team members.

The importance of distributed team leadership as a way of complementing position views of leadership is increasingly being recognised in academia, industry and public sector organisations. However, there has been a relatively limited amount of research into the specific conditions in the public sector where distributed team leadership can become effective.

Distributed team leadership approaches also have significant limitations. As these approaches focus on the alternative sources of leadership within project teams, they can be relatively blind to alternative sources of leadership outside the boundaries of the project teams.

For example, formal and informal leaders that can promote the intended change with the recipients of change may not be recognised. This can limit the leadership capacity and capability of projects. These approaches are also relatively blind to the formal distribution of leadership authority beyond the boundaries of portfolios, programmes or projects in matrix organisations that can become a source of complexity. Activity views of leadership proposed by the academic leadership literature offer opportunities for addressing these limitations.

Activity views of leadership focus on what's being accomplished and how it's accomplished over time rather than who the leaders are and what they do

2.3. Activity views of leadership

Activity views of leadership focus on what's being accomplished and how it's accomplished over time rather than who the leaders are and what they do. This view accommodates the contributions of the individuals appointed to formal leadership positions in portfolios, programmes and projects. Since this view recognises the alternative sources of leadership within teams that can contribute to the accomplishment of the leadership activities, it can also accommodate the distributed team leadership views. However, this view also recognises the contribution of the concerted effort of formal and informal leaders who may or may not be positioned within the boundaries of the portfolios, programmes and projects.

From this perspective, it is possible to respond to the complexities associated with the horizontal distribution of leadership. For example, Gronn (2002), argues that formal leader constellations dividing leadership labour horizontally based on specialised expertise provide opportunities for effectiveness, but can also produce challenges for integration. From this perspective, influencing other leaders to achieve alignment is considered a limited response that doesn't leverage the opportunities intended with the horizontal distribution of leadership. Instead, what's recommended is the achievement of synergies through three modes of integration:

■ Spontaneous collaboration

Formal leaders pooling their expertise to collectively accomplish shared tasks or solve problems.

■ Intuitive working relations

Formal leaders developing shared understandings as a basis of acting as a joint unit of leadership.

■ Institutionalised practices

Formalising joint units of leadership through, for example, appointing a specialised task force.

This perspective makes it possible to reflect on and respond to complexities associated with the formal distribution of leadership beyond the boundaries of portfolios, programmes and projects. Activity views of leadership not only offer opportunities for examining the relationships with formal leaders situated in the broader context, but also the informal leaders situated beyond the boundaries of portfolios, programmes and projects.

For example, Hosking (1988) argues that networking activity is critical for leadership, stating that leadership is a specific kind of organising activity that's concerned with changes to the status quo and focuses on interpreting events in relation to the values, beliefs and interests of individuals and groups embedded in the wider context. From this perspective, networking activities enrich knowledge bases and resources, and develop understandings of how to promote values and interests and translate them into action. For Hosking, these activities typically resemble 'integrative bargaining' rooted in negotiations between individuals that rely on both transactional leadership approaches focusing on economic exchanges and transformational leadership approaches focusing on infusing meanings into relationships.

Activity views of leadership also provide a holistic approach that's sensitive to how material objects and cultural and social conditions can make positive contributions to leadership or can constrain leadership. For example, Oborn et al (2013) highlight that material objects such as protocols and technologies can contribute to developing legitimacy and trust. In this formulation, leadership styles and competencies can also be viewed as resources that individuals can draw upon.

Activity views of leadership also enable viewing legitimate authority as a resource that may facilitate or constrain leadership. For example, Heifetz (2001) argues that it's important to understand the threats and opportunities associated with having legitimate authority. For Heifetz, leadership is an activity concerned with mobilising people to recognise difficult problems, define what matters most and how to solve it.

Having legitimate authority can become a constraint, because in difficult situations people typically expect individuals in legitimate authority positions to provide answers and direction. In response, what's recommended is that legitimate authority is used to establish norms and processes for shifting the responsibility of solving problems to primary stakeholders and followers, and developing collective adaptive capabilities. According to Heifetz, individuals without legitimate authority can also become leaders as they have the opportunity of being close to what's happening on the ground and they have the ability to focus on one issue. For example, as entrepreneurs and positive deviants, they can spark constructive dissent and confront habits.

According to Grint (2005), complex problems can particularly benefit from collective inquiry

According to Grint (2005), complex problems can benefit from collective inquiry. This view is based on the typology of problems suggested by Rittel and Webber (1973) that define tame problems as complicated problems that have occurred before and wicked problems as complex problems that cannot be solved through linear thinking and have uncertain solutions.

Grint adds critical problems and situations of crisis that require quick response to this typology and suggests the framework shown in Figure 1 for responding to different problems. From this perspective, particularly wicked problems require leaders acting as 'bricoleurs'³ that can develop various combinations of hierarchical leaders, individuals comfortable with uncertainty that can provide positive deviance, constructive dissent and the collective intelligence of communities.

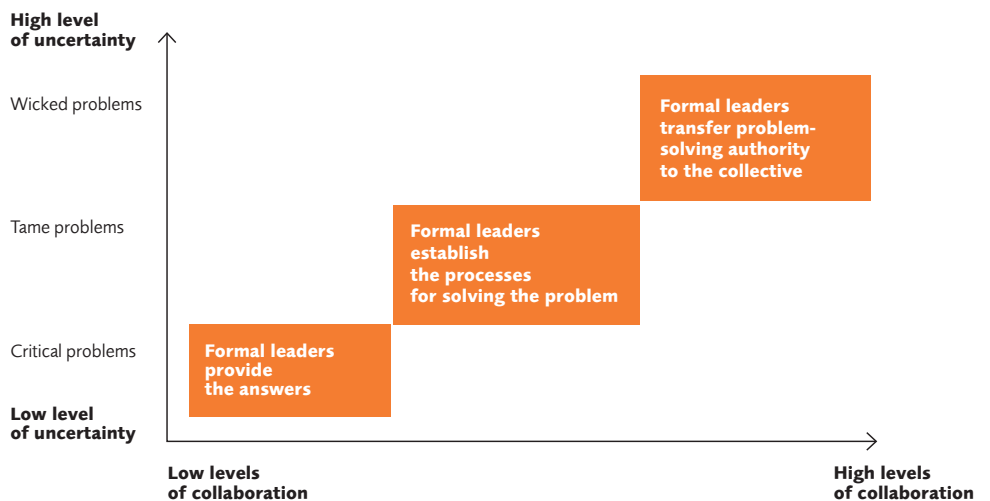


Figure 1: Typology of problems and suggested authority relationships

Both Heifetz and Grint highlight that problems may be socially constructed by various leaders to legitimise their actions. They therefore suggest that leadership activities are based on moral and ethical values.

Despite these insights generated by the academic leadership on activity views of leadership and their potential benefits for responding to complexity in portfolios, programmes and projects, they have been neglected by the project management field. This research intends to explore how an activity view of leadership can be applied to major portfolios, programmes and projects.

³Strauss CL (1962), *The Savage Mind*, Chicago, University of Chicago Press.

3. Research methodology

The research is based on a qualitative case study approach. This approach is used to generate rich insights into the sources of complexity associated with leadership and ways of responding to them. The study follows what the academic literature refers to as projects-as-practice approaches and the theoretical lens of routines. This approach enables examining leadership activities as a unit of analysis rather than focusing on the behaviours of the formally appointed leaders. This approach also makes it possible to examine both the formal leadership activities and the improvisations taking place in response to complexity.

The case study was conducted in two UK central government departments

The case study was conducted in two UK central government departments, with 15 semi-structured interviews conducted with a cross-section of project delivery professionals. The participants work in transformation and service delivery projects and programmes included within the government's major project portfolios (GMPP). The GMPP constitutes some of the most complex and strategically significant projects and programmes in the government. Participants included senior responsible owners (SROs), portfolio directors, programme directors, PMO directors, project directors and project team members. The interviews lasted between 45 and 60 minutes, and were recorded.

In addition to these formal interviews, three informal interviews were conducted with representatives from the Infrastructure and Projects Authority (IPA) and the Major Projects Leadership Academy (MPLA). Documentary data was also gathered. This include documentary reports and information relevant for project delivery published between 2012-2018 by various UK central government bodies (eg. IPA, HM Treasury, Cabinet Office, Civil Service and National Audit Office).

The audio recordings of the interviews were transcribed. To facilitate the analysis, data gathered was entered into an NVivo database for coding. The analytical process constituted iterations between first-order and second-order analysis:

- First-order analysis: Focused on identifying themes.
- Second-order analysis: Focused on explanations of the emerging patterns through a continuous reflection of the debates in the leadership and project management literature, and the cluster of leadership activities emerging from the empirical data.

To ensure validity of the developed framework, triangulation was conducted with different data sources. The conceptual framework produced comprises themes of complexity and systemic approaches for responding to them in transformation and service delivery projects.

4. Findings – leadership activities

4.1. Overview

The study identified 11 activities that project delivery professionals associate with leadership. Figure 2 shows these activities by grouping them into their core areas of focus.

Change agency	Linking to the organisation	Team leadership
<ul style="list-style-type: none"> ■ Shaping the intended change: Developing the vision for the intended change and translating it into realistic and measurable goals ■ Getting buy-in: Getting the key stakeholders to commit to the intended change ■ Shaping the roadmap: Charting the path and pace of the intended change ■ Defining the method and resourcing: Selecting the delivery method and securing resources ■ Shaping the new service delivery processes ■ Relating to the recipients of change: Gaining and maintaining the support of the recipients of change for the intended change and its implementation 	<ul style="list-style-type: none"> ■ Presenting: Making progress, risk and issues visible to individuals and groups governing the change ■ Sharing delivery leadership: Integrating the distributed leaders that share delivery responsibility such as the leaders of delivery groups and supplier organisations ■ Relating to the SRO: Collaborating with the SRO 	<ul style="list-style-type: none"> ■ Integrating the delivery collective: Integrating knowledge with the delivery partners and the suppliers ■ Relating to the core team: Developing individual and collective capabilities

Figure 2: Identified leadership activities grouped by their core areas of focus

4.2. Leadership activities across the levels and life cycle

Shaping the intended change

This activity is concerned with defining core problems and what successful solutions to these problems will look like. For policy-based change, the focus is on defining realistic and measurable business benefits aligned to the policy goals. For business-sponsored change, the focus is on identifying the core problems and translating them into realistic and measurable business benefits that are aligned to strategic goals (ie. for project alignment to programme goals, for programmes and portfolios alignment to the strategic business agenda and the policy agenda).

This is primarily a front-end phase activity for portfolios, programmes and projects that produces the business case. However, the continued validity of the intended benefits and alignment to the strategic goals remains a key concern during the execution phase.

Getting buy-in

This activity is concerned with getting sponsors, decision makers of the recipients of change groups, and leaders of the delivery partners to commit to the change.

■ For portfolios

At the front-end phase, this activity focuses on generating interest for the intended change with sponsors such as business owners and ministers, and getting the business case signed off with stakeholders. During the execution phase, the focus shifts to getting new programmes and projects approved by ministers and the portfolio board members.

■ For programmes and projects

This is primarily a front-end phase activity focusing on getting the stakeholders to sign off the business case. For cross-government change, such as those that have multiple departments as sponsors or projects delivering change to local government organisations, a key concern is obtaining formal commitments from the decision makers of these organisations.

Shaping the roadmap

This activity is concerned with charting the path and the pace of delivery.

■ For portfolios

This execution-phase activity focuses on accepting and prioritising new projects and programmes that can contribute to achieving the strategic goals of the portfolio. This activity also focuses on providing approval to the proposed plans of the prioritised programmes and projects.

■ For programmes and projects

This is primarily a front-end phase activity focusing on planning (ie. determining the scope, schedule and cost of delivery), and getting the plan approved. Adapting the path and pace of delivery to changes remains an area of focus during the execution phase.

Defining the method and resourcing

This activity is concerned with selecting the delivery method and securing resources.

■ For portfolios

This execution-phase activity focuses on securing resources for the portfolio and establishing contracts. This activity also focuses on defining the rules and procedures for selecting delivery methods (eg. waterfall, agile or blended method) and appointing resources for programmes and projects.

■ For programmes and projects

This is primarily a front-end activity focusing on selecting the delivery method, defining the resource requirements, securing resources (eg. project delivery professionals, specialist resources from other professions, resources from the recipient of change groups) and addressing potential competency or experience gaps in the appointed resources.

Shaping the new service delivery processes

This activity is concerned with defining the new service delivery processes.

■ For portfolios

This execution-phase activity focuses on reviewing and approving the programme and project proposals for new service delivery processes.

■ For programmes and projects

This execution-phase activity focuses on defining the new service delivery processes with the stakeholders and getting approval for these new processes. During the back-end phase, this activity focuses on defining engagements with the new processes after the programme or project closes.

Relating to the recipients of change

This activity is concerned with gaining and maintaining the support of the recipients of change for the intended change and its implementation. This execution-phase activity for portfolios, programmes and projects focuses on mobilising support and reducing potential resistance.

Presenting

This activity is concerned with connecting to different audiences for assurance and support. This execution-phase activity for portfolios, programmes and projects focuses on making progress, risk and issues visible to the individuals and groups governing the change.

Sharing delivery leadership

This activity is concerned with integrating the distributed leaders that share delivery responsibility such as the leaders of delivery groups and supplier organisations.

■ For portfolios and programmes

This execution-phase activity focuses on interacting with the portfolio board members to govern the delivery.

■ For projects

This is primarily a front-end phase activity that is of particular concern for cross-government projects such as those that have two organisations as sponsors. For these projects, the focus is on defining and structuring the role and interactions of the leaders appointed by the two organisations.

Relating to the SRO

This activity is concerned with the SRO collaborations.

■ For portfolios and programmes

Typically, the SRO selects and appoints the portfolio or the programme manager at the front-end phase or in situations where a change is required during the execution phase. The collaborations throughout the life of the portfolio or programme focuses on assurance and support.

■ For projects

The project manager may collaborate with the SRO during the execution phase in situations relating to the SRO accountabilities, such as situations where the SRO may need to present the project in public hearings.

Integrating the delivery collective

This activity is concerned with integrating knowledge within the delivery collective.

■ For portfolios

This activity is primarily a front-end activity that focuses on establishing structures for collaboration and cultivating collective identity.

■ For programmes and projects

This execution-phase activity focuses on collaborating on specific delivery tasks and negotiating the outputs and deadlines for the specific tasks of delivery partners.

Relating to the core team

This activity is concerned with developing individual and collective capabilities.

■ For portfolios and programmes

This execution-phase activity focuses on establishing structures for specialisation and integration, providing support and guidance to the project managers and their teams.

■ For projects

This execution-phase activity focuses on organising team structures, developing teamwork and providing support and guidance to the team members.

4.3. Linking the leadership activities to the APM Body of Knowledge

Figure 3 links leadership activities to the different areas of the APM Body of Knowledge. It is possible to view the interpersonal skills and professionalism sections within the people area as resources for accomplishing these activities.

Leadership activities	Delivery										Context - Governance						
	Business case	Stakeholder Management	Planning	Organisation	Information Management	Control	Scope Management	Schedule Management	Financial Management	Risk Management	Quality Management	Resource Management	Project Management	Programme Management	Portfolio Management	Knowledge Management	Sponsorship
Shaping the intended change	●	●															
Getting buy-in	●	●													◐		◐
Shaping the roadmap			○					●	●						◐		
Resourcing and defining the method											●				◐		
Shaping the new service delivery processes							○								◐		
Relating to the recipients of change		●					●										
Presenting						●											
Sharing delivery leadership				◐									◐	◐			
Relating to the SRO																	●
Integrating the delivery collective		○		◐	●											●	
Relating to the core team				●	●											●	

Legend

- Portfolios, programmes and projects
- Programmes and projects
- ◐ Some projects
- ◐ Portfolios only
- ◐ Programmes only

Figure 3: Linking leadership activities to the APM Body of Knowledge. This figure is based on the APM Body of Knowledge 6th edition which is available at the time of writing.

4.4. Themes of complexity cutting across the leadership activities

There are common themes of complexity that cut across the identified leadership activities. These complexity themes are:

■ **Boundary complexities**

Complexities associated with integrating knowledge across different functions or organisations.

■ **Different authority positions**

The threats and opportunities associated with the specific authority positions portfolio managers, programme managers or project managers take in their relationships with others.

■ **Different evaluations**

The threats and opportunities associated with the different evaluations of desirability, properness and appropriateness of the intended change and how it is delivered.

■ **Shifts in the ground**

Episodic or continuous shifts in the context that impact formal agreements or commitments produced at the front-end phase of projects or programmes, or change ways of working in portfolios, programmes and projects.

Figure 4 provides an overview of the complexity themes relevant to each leadership activity.

Leadership activities	Complexity themes			
	Boundary complexities	Different authority positions	Different evaluations	Shifts in the ground
Shaping the intended change	●	●		●
Getting buy-in			○	
Shaping the roadmap	●			●
Resourcing and defining the method			●	●
Shaping the new service delivery processes				
Relating to the recipients of change	●		●	
Presenting			●	
Sharing delivery leadership		●		
Relating to the SRO		●		
Integrating the delivery collective	●	○		
Relating to the core team		●		●

Legend ● Relevant for most contexts ○ Relevant in specific contexts

Figure 4: Complexity themes relevant to leadership activities

5. Findings – framework for responding to complexity

5.1. Overview

The study identified four complexity response systems that are developed in response to the complexity themes cutting across leadership activities: bridging, positioning, legitimising and adapting. Figure 5 shows these complexity response systems and the complexity theme they respond to.

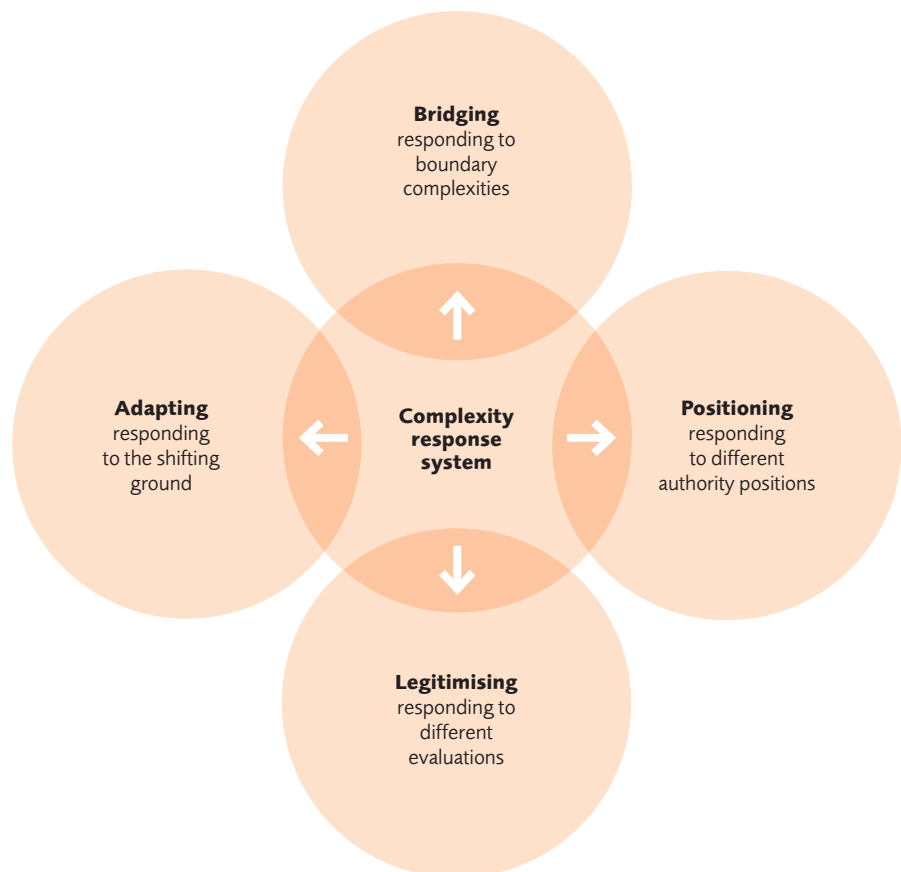


Figure 5: Complexity response system framework

**Bridging is concerned
with responding to
boundary complexities**

These complexity response systems:

■ **Constitute multiple leaders**

Complexity response systems often constitute formal and informal leaders within portfolios, programmes and projects, as well as formal and informal leaders situated across functional or organisational boundaries.

■ **Constitute various structural elements**

Complexity response systems typically include some structural elements such as norms, procedures or specialised documents.

■ **Span across multiple levels**

Complexity response systems often constitute structural elements and leaders at the portfolio, programme and project levels.

■ **Dynamically adapt to emergence**

Complexity response systems can cope with evolving opportunities and threats during the life of portfolios, programmes and projects. Upcoming sections will describe each of these complexity response systems in detail.

5.2. Bridging

Bridging is concerned with responding to boundary complexities. Boundary complexities are the complexities associated with integrating knowledge across different functions or organisations. The study identified the following boundaries as sources of complexity:

- Boundaries with the functions shaping the intended change.
- Boundaries with the functions or organisations receiving the intended change.
- Boundaries within the programme or project delivery collective.

Bridging focuses on developing a 'trading zone'⁴ for each boundary that acts as a source of complexity. A trading zone constitutes elements facilitating cross-boundary integration at portfolio, programme and project levels:

■ **Brokers**

Individuals having worked in both groups act as translators.

■ **Bridging rules and procedures**

Norms and procedures regulating the exchanges.

■ **Boundary objects**

Documents co-produced by members of both functions.

■ **Bridging functions**

A group that has collective expertise of both functions, acting as the organiser of exchanges.

■ **Bridging language**

Developing common terms that can facilitate exchanges.

⁴Galison P (2010), *Trading With The Enemy*. In: Gorman, ME (ed) *Trading Zones and Interactional Expertise*. Cambridge: The MIT Press.

The boundaries with policy/strategy and business functions can act as a source of complexity

Bridging with the groups shaping the intended change

For policy-based change, boundaries with policy/strategic functions and business-sponsored change boundaries with business functions act as a source of complexity for shaping the intended change. For policy-based changes, the boundary complexities with the policy/strategy function can produce issues such as:

■ **For portfolios**

Not having foresight into the pipeline of policies developed by the policy/strategy functions may constrain rapid responses to policies.

■ **For policy-based programmes or projects**

Potential feasibility deliverability issues, potential translation issues in interpreting policy into operational processes.

In response, portfolio managers, programme managers and project managers construct a trading zone for their levels. Table 1, based on the examples from various portfolios, programmes and projects, show the potential elements of a multi-level trading zone for bridging with the policy/strategy function.

Level	Examples of trading zone elements
Portfolio	<p>Bridging functions: Establishing a specialised function that evaluates the pipeline of new policies.</p> <p>Bridging language: Adopting term 'deal breakers' to refer to aspects of the change that are viewed as critical by the policy/strategy functions and their policy stakeholders.</p> <p>Boundary objects: Agreeing terms and conditions for accepting new policy into the portfolio.</p>
Programme	<p>Brokers: Getting a resource from the policy/strategy function into the programme to act as a translator.</p>
Project	<p>Bridging procedures: Holding a workshop with all stakeholders to collectively design the new operational processes.</p>

Table 1: Example of a multi-level trading zone with the policy/strategy function.

For business-sponsored changes, in some situations identifying the core problem that will produce the greatest benefits can be a 'wicked problem'⁵ that cannot be understood by one function alone, but there may be an inclination to jump to solutions.

The trading zones developed in programmes typically rely on the programme manager and the operations managers forming a bridging function. Positive examples of what has worked in practice include the programme manager visiting business sites with the business manager to explore core problems, with the programme manager, in their interactions with the business manager, focusing on questioning assumptions.

⁵ Rittel H and Webber M (1973), Dilemmas in a General Theory of Planning. *Policy Sciences* 4 (2) pp155–169.

The boundaries with the operations function, local government organisations and the public can act as a source of complexity

Bridging with the recipients of change

The boundaries with the operations function, local government organisations and the public can act as a source of complexity for various leadership activities. Typically, the business functions are the recipients of the intended change. Examples of complexities associated with the boundary with the business functions include:

■ **For shaping the intended change**

Not having an in-depth understanding of the business context may constrain the definition of realistic and measurable goals.

■ **For shaping the new service delivery processes**

Uncertainties associated with new processes such as the potential emergence of feasibility issues while implementing these new processes.

■ **For shaping the roadmap**

Task uncertainties produced by business demands such as requests for expanding the scope of delivery.

In response, portfolio managers, programme managers and project managers each construct a trading zone with the business functions. Table 2 is based on the examples from various portfolios, programmes and projects, and shows the potential elements of a multi-level trading zone for bridging with the business functions.

Level	Examples of trading zone elements
Portfolio	Brokers: Appointing an operations resource for defining the measurable goals of new projects.
Programme	Bridging procedures: Establishing scope control mechanisms.
Project	Bridging procedures: Holding a workshop to collectively design the new processes, testing the new process ideas through piloting.

Table 2: Example of a multi-level trading zone with the business function.

For programmes and projects delivering changes to the services used by the public, the boundaries with the public can also act as a source of complexity in shaping the new service delivery processes. For example, predicting how the public may engage with the new processes in the future and defining appropriate responses can be difficult. In response, the project may produce a boundary object for handover, such as a scenario-based document defining future public engagements.

For programmes or projects delivering change to local government, the inter-organisational boundary complexities can also produce constraints for relating to the recipients of change. For example, predicting responses and knowing individuals for solving problems may be difficult, and language differences may produce misunderstandings. In response, portfolios may appoint a broker such as a project manager with experience of working in local government organisations.

The functional and organisational boundaries with the delivery groups and suppliers acts a source of complexity

Bridging the delivery collective

For programmes and projects, the functional and organisational boundaries with the delivery groups and suppliers act as a source of complexity. The diverging worldviews, the transience of the engagement, and the commitments of the delivery group and supplier resources means that integrating the delivery collective is not necessarily straightforward. In response, a trading zone is constructed for facilitating effective integration. Positive examples of what has worked in practice includes the following trading zone elements:

■ **Bridging norms**

Establishing the norms of having regular short interactions and asking delivery partners to comment on updates, questioning the advice provided and establishing delivery norms aligned to departmental cultures for deadlines.

■ **Bridging language**

Learning the key terms used by the delivery partners to facilitate interactions.

For programmes and projects blending agile and waterfall methodology, the tensions between different mind-sets and terminologies can act as a source of complexity for integrating the delivery collective. In response, the trading zone may be extended at a portfolio level:

■ **Brokers**

Appointing a project manager comfortable with both methodologies.

■ **Bridging rules**

Defining roles and expectations as basis for daily negotiations.

Programmes and projects based on virtual conditions also experience boundary complexities. For example, in situations where the delivery collective is geographically distributed, developing trust and achieving alignment as a basis for integrating the delivery collective may be relatively difficult. These boundary complexities may be removed by co-locating the delivery collective.

However, in situations where the projects or programmes deliver change to geographically dispersed groups, this response may produce complexities relating to the recipients of change. Therefore, instead of co-locating the delivery collective, the trading zones may be extended. This can be done through, for example:

■ **Bridging tools**

Using knowledge-sharing tools.

■ **Bridging norms**

Establishing the norm of picking up the phone rather than sending emails for asking questions or discussing potential disagreements.

5.3. Positioning

Positioning is concerned with responding to the threats and opportunities associated with the different authority positions portfolio managers, programme managers and project managers take in their relationship with others. The focus is on structuring leadership roles and relationships in response to three different authority positions: lacking authority, having limited authority and having full authority.

Lacking authority – positioning for reciprocal influence

As the owners of the change agenda, business leaders and political leaders have hierarchical authority over the strategic direction of the intended change. For portfolio managers and programme managers, their relative lack of authority over shaping the strategic direction of the business or political agendas can become a source of complexity for ensuring the continuity of strategic alignment with these agendas. In response, portfolio managers and programme managers develop formal and informal reciprocal influence mechanisms.

The different goals, priorities and world views of this distributed leadership collective can act as a source of complexity for sharing delivery leadership

Formal reciprocal influence mechanisms include, for example, the senior management team members of the portfolio or the programme linking to the relevant business boards and inviting leaders of the operations functions and policy/strategy functions to the governance board of the portfolio or programme. Informal reciprocal influence mechanisms include, for example, the senior management team members of the portfolio or programme developing informal relationships with the private office of the ministers.

For policy-based projects and programmes, the relative lack of hierarchical authority programme managers and project managers have in their relationships with the political owners of the change can be a source of complexity for shaping the roadmap. In such situations, professional expertise can facilitate reciprocal influence. Positive examples from practice include a project manager responding to a situation (where accommodating political demands for go-live was not possible due to the government process requirements) by applying professional expertise to explain why the demands could not be met and proposed an alternative solution.

Having limited authority – positioning for collective action

Leadership authority is formally distributed in portfolios and programmes. Leaders of the delivery partners and supplier organisations have authority over specialist resources and their activities, and the leaders of the business functions also have authority over granting access to the context for landing the change. The different goals, priorities and world views of this distributed leadership collective can act as a source of complexity for sharing delivery leadership.

Achieving agreements for the intended change and how it is implemented may not be straightforward, and the transience of individuals holding leadership positions within this leadership collective can potentially disrupt the continuity of past agreements. In some situations, the ongoing professionalisation efforts also produce ambiguities in which decisions need to be shared and which can be made within professional functions. Due to competition for shared resources, some portfolios and programmes may also receive inadequate professional resources.

In response, portfolio and programme managers typically focus on complementing formal portfolio or programme board processes with positioning for collective action. This is typically done by combining the following two strategies:

■ Developing a collective identity

Getting the leadership collective to commit to shared goals, values and norms by, for example, co-creating a portfolio board charter and regularly reviewing those commitments in board meetings, holding informal 'handshaking' meetings for new projects to agree on the intended change, and delivery approach with the board members.

■ Developing one-to-one partnerships

Developing a sense of sharing the change journey through regular interactions.

In projects or programmes jointly sponsored by two departments, the distribution of decision-making authority across the two departments can also become a source of complexity. Positioning for collective action is typically achieved through transforming to a single department ownership structure. This transformation involves the appointment of one department to formally own the change and position the formally appointed leader from the other department as a board member.

Having full authority – positioning for efficiency and effectiveness

A single individual having hierarchical authority over a portfolio, programme or project can be a source of complexity. For example, reliance on a single individual may produce bottlenecks and vulnerabilities in decision making. In situations where difficult and highly consequential decisions need to be made, leaders can also feel exposed and defensive behaviours may emerge. Reliance on a single individual can also limit the leadership capacities and capabilities of portfolios, programmes and projects. In response, portfolio managers, programme managers and project managers focus on positioning for efficiency and effectiveness. There are two relationships that are of concern: the SRO-portfolio/programme manager relationship and the hierarchical leader relationships within portfolios.

Either a shared leadership strategy or a cascaded strategy is adopted in positioning for efficiency and effectiveness

SRO-portfolio/programme manager relationship

Either a shared leadership strategy or a cascaded strategy is adopted in positioning for efficiency and effectiveness. The shared leadership strategy is based on developing a joint unit of leadership. This joint unit of leadership focuses on achieving synergies by developing trust and understanding of the leadership capability of each leader. The SRO provides an 'active' engagement, but the intensity and nature of this engagement varies depending on situational requirements.

This joint unit of leadership provides a relatively richer leadership capability and can act as an emotional support mechanism for each of these leaders. The cascaded leadership strategy is based on the full delegation for the SRO authority to the portfolio manager or the programme manager. This strategy, which produces 'light' SRO engagement, empowers the portfolio or programme manager in their everyday activities, as the SRO primarily acts as a sounding board and an escalation route.

Hierarchical leader relationships within portfolios

A cascaded strategy is typically adopted in positioning for efficiency and effectiveness. This strategy focuses on empowerment through establishing portfolio norms and providing support. These empowerment activities rely on various approaches. For example, one portfolio has adopted an industry-wide approach for a phased roll-out of empowerment from the top levels down.

Another portfolio has developed the norm of developing an empowering climate that supports everyone to come up with ideas, regardless of how junior they are. This norm has been locally reinforced by the portfolio manager facilitating everyone to raise their ideas by sitting with their teams in an open-plan office and project managers giving voice to everyone at meetings.

Support is typically provided through learning and development activities, such as coaching, mentoring or training organised across multiple levels. For example:

- Departments organise training sessions where leaders share lessons learnt from formal development programmes, as well as develop emotional support networks for individuals appointed as portfolio managers, programme managers or project managers.
- SROs and portfolio managers conduct storytelling sessions and coaching to develop the confidence of their team members.
- Project managers provide one-to-one mentoring to their team members.

5.4. Legitimising

Legitimising is concerned with the different evaluations of desirability, propriety and appropriateness of the intended change and how it's delivered. These different evaluations can produce negative reactions, such as overt or covert resistance to change or credibility issues for the portfolios, programmes or projects. The study identified the evaluations of two key audiences as sources of complexity: the recipients of change and the formal leaders governing the delivery.

Legitimising focuses on developing an 'opinion formation system'⁶ for each of these audiences to gain and maintain positive opinions for the intended change and how it is delivered. Opinion formation systems comprise a cluster of opinion leaders:

■ **Senior leadership networks**

Formal or informal networks of senior leaders who can contribute their expertise, credibility and authority.

■ **Mass media leaders**

Leaders that have authority over large audiences.

■ **Ground-level opinion leaders**

Individuals that can provide personalised influence in one-to-one relationships.



⁶Burns JM (1978), *Leadership*, New York, Harper and Row.

These opinion leaders typically adopt the following strategies for gaining and maintaining positive opinion about the intended change and its implementation:

■ **Informing**

Tailoring communication approach to different audiences.

■ **Parading**

Promoting good news, showing and promoting confidence.

■ **Probing**

Testing ideas and potential responses from different audiences.

The recipients of change

In the departments studied, the operations functions receiving the change constitute a large number of individuals and groups with potentially fragmented goals and world views. Table 3 is based on the examples provided by various portfolio managers and programme managers, and shows the potential leaders and strategies included in opinion formation systems focusing on the operations functions.

Opinion leaders	Examples of different appointments of opinion leaders and their strategies
Mass media leaders	<ul style="list-style-type: none"> ■ Leaders of the operations functions: Informing large audiences through regular conferences that demonstrate support for the intended change and explain how the change is linked to the strategic direction and goals. ■ Portfolio managers and leaders of the business functions: Informing large audiences by conducting roadshows and probing through holding local show-and-tell sessions with smaller groups where people can ask questions and challenge the approach.
Senior leadership networks	<ul style="list-style-type: none"> ■ A coalition formed with leaders of the business areas: Parading in difficult situations by showing and promoting confidence to their networks and groups, and facilitating probing by acting as a sounding board for ideas.
Ground-level opinion leaders	<ul style="list-style-type: none"> ■ Resources from operations functions seconded into projects: Parading by showing and promoting confidence in one-to-one interactions with their peers.

Table 3: Opinion formation systems focusing on the operations function.

However, for projects and programmes delivering change into local government organisations, a different opinion leadership system is developed due to the lack of one organisation or individual having hierarchical authority over the high number of politically, geographically and operationally diverse local government organisations.

The focus of this opinion formation system at the front-end phase is on gaining legitimacy and during execution shifts to maintaining and repairing legitimacy. Table 4, based on the examples provided, shows the potential leaders and strategies included in opinion formation systems for legitimising with the local government organisations.

Opinion leaders	Examples of different appointments of opinion leaders and their strategies
Senior leadership networks	<ul style="list-style-type: none"> ■ Senior project manager: Paying special attention to the relationships with the leaders of sensitive groups, informing them through face-to-face meetings held in their offices and asking them to participate in the assurance reviews.
Ground-level opinion leaders	<ul style="list-style-type: none"> ■ Each project team member performing opinion leadership activities with a sub-set of local government organisations: Informing by linking the intended change to public value and highlighting ministerial sponsorship, showing expertise and civil service values.

Table 4: Opinion formation system options for local government organisations.

The formal leaders governing the delivery

This audience constitutes political and civil service leaders that govern the delivery. The diversity of views and volatility of opinions within this audience, together with the limitations of the standard assurance processes for presenting, means that maintaining positive opinion is not necessarily straightforward. Based on the examples from various portfolios and programmes, Table 5 shows the potential leaders and strategies included in opinion formation systems for legitimising with the leaders governing the delivery.

Opinion leaders	Examples of different appointments of opinion leaders and their strategies
Mass media leaders	<ul style="list-style-type: none"> ■ Portfolio manager: Parading success by actively promoting positive results of independent assurance reviews and surveys as evidence of getting things right. ■ Portfolio or programme manager: Informing by tailoring how issues are made visible to different leaders governing delivery so that issues can be confronted head on based on what audience needs to see what data for what purpose.
Senior leadership networks	<ul style="list-style-type: none"> ■ A non-executive director appointed to the portfolio board for providing independent oversight: Parading in difficult situations by showing and promoting confidence to their networks, facilitating probing by acting as a sounding board. ■ Portfolio board members: Facilitating probing by acting as a sounding board for presenting difficult situations associated with projects or programmes and understanding responses.

Table 5: Opinion formation system options for the leaders governing delivery.

The study identified four shifts as sources of complexity: shifts in the political ground, shifts in the ground for landing the change, shifts in the organisational ground and shifting technologies

5.5. Adapting

Adapting is concerned with responding to episodic or continuous shifts in the ground that impact formal agreements or commitments produced at the front-end phase of projects or programmes, or change ways of working in portfolios, programmes and projects. The study identified four shifts as sources of complexity: shifts in the political ground, shifts in the ground for landing the change, shifts in the organisational ground and shifting technologies.

Shifts in the political ground: anticipating strategies

Shifts in the political ground can disrupt the agreed roadmap. The study identified the following as potential disruptions that portfolios, programmes and projects can experience:

■ Pauses during election periods

During elections, purdah guidance and rules restrict activities. These restrictions can slow down the execution of portfolios, programmes and projects requiring ministerial decision making, high stakeholder engagement or procurement processes.

■ Changes to the political sponsors of the intended change

Changes to ministers mean that policy-based programmes and projects need to obtain buy-in from new ministers. Relatively controversial projects or programmes may also be terminated following an election.

■ Changes to policies

Emerging policy changes can require portfolios to rapidly accommodate new projects or programmes to change their scope.

■ Budget reductions

An annual spending review may produce budget cuts.

For practitioners, these sources of potential disruptions are well known. Therefore, responses are typically based on anticipation strategies that focus on being prepared for change. The study identified two anticipation strategies that portfolios, programmes or projects adapt:

■ Developing an absorptive capacity

This strategy focuses on the ability to quickly absorb the impact of the disruption. For example, a portfolio established mechanisms for absorbing small policy changes such as borrowing resources from operations or adding small changes to ongoing projects. A policy-based project prepared for ministerial changes by having ministerial statements and briefings at hand that explained the rationale of the intended change and the approach.

■ Preparing for revisioning

This strategy is concerned with rapidly adapting to change. For example, programmes make their plan assumptions visible to show the impact of potential budget or scope changes. Some projects conduct learning and development activities during purdah periods, while controversial projects may prepare for changes to political sponsorship by preparing alternative roadmaps for continuing and terminating the project.

Shifting technologies: anticipating strategies

For technology-enabled projects and programmes, rapid changes to technologies can mean that the designs can become outdated. For practitioners, this potential source of complexity is well known. Therefore, the responses are typically based on anticipation strategies that focus on being prepared for change. For example, a programme manager continuously scanned for emerging technologies, reviewing them to determine if the technology underpinning the designed solution required refreshing and the potential implications for the agreed programme roadmap.

Shifts in the ground for landing the change: shared leadership strategies

Shifts in the ground for landing the change can disrupt the commitments made in relation to the business benefits or the delivery roadmap, but also produce opportunities such as potential synergies in designing or delivering the new processes. The study identified the following areas of change:

■ Concurrent project delivery activities delivering change to the same business areas

Prioritisation of the business resources allocated to support project-based change can produce delays for programmes or projects that have relatively lower priority. Changes made by one project may have an adverse impact on the forecasted business benefits of another project.

■ Local changes implemented by the business areas

Changes may have an adverse impact on the forecasted business benefits of projects or programmes.

Some portfolios focus on reducing these complexities. For example, an SRO explained establishing norms that clarify which changes can be implemented by the business locally and which changes have to be implemented through centralised projects. However, the main focus is on identifying emerging change, assessing its impact and developing responses. To do this, shared leadership strategies are adopted:

■ Portfolios or programmes

For example, portfolio or programme managers invite other programme managers to their board meetings. These board meetings are used to identify threats and opportunities, and generate appropriate responses.

■ Projects

Projects may adopt dispersed screening mechanisms to identify potential changes. For example, project team members in their formal and informal interactions with the recipients of change identify changes and keep a view on the dashboards of other projects and programmes delivering change into the same business areas. Projects rely on self-organising team approaches to collectively interpret the identified changes and revision approach and plans.

Shifting organisational ground: translating strategies

Changes to the governance processes and ways of working, such as professionalisation, can produce opportunities and challenges. For example:

■ New professional guidelines and resources can provide opportunities for improving the efficiency and effectiveness of delivery activities, but may also produce challenges for integrating the delivery collective and relating to the core teams.

■ New governance processes can provide improved assurance, but periods of transition may produce ambiguities for providing assurance.

In response, portfolio managers, programme managers and project managers adopt translation strategies that focus on interpreting what the changes mean within the local context. For example:

■ Portfolios and programmes

Portfolio managers or programme managers may respond to the challenges associated with blending agile and waterfall methodologies by developing the local norms of appointing a project manager that has experience of both methodologies, as well as organising training on agile methodologies. Senior management team members of portfolios may resolve ambiguities produced by governance process transitions by making and validating temporary assumptions collectively with the stakeholders.

■ Projects

Project managers may respond to project delivery roles viewed as more important by their team members through continuously reminding the contribution of each role to the project.

Changes to the governance processes and ways of working, such as professionalisation, can produce opportunities and challenges

6. Recommendations – enriching the framework

The framework can be viewed as a guide for designing and developing complexity response systems in the local contexts of portfolios, programmes and projects. This section draws on the insights from the academic literature and offers strategies for further strengthening the framework and its application.

6.1. Bridging

Viewing leadership as an activity

The findings suggest that while trading zones within an organisation may constitute a variety of elements and strategies, within a specific portfolio context they often rely on a sub-set of these. Viewing leadership as an activity and adapting the approach of a 'bricoleur'⁷ that can develop elements and strategies relying on combinations of hierarchical relationships, interactions between entrepreneurial individuals and collective inquiry can facilitate broadening the repertoires of these trading zones. Potential next steps include:

■ Organisation

Cultivating collective responsibility for understanding and responding to boundary complexities across the organisation. This can be done through, for example, developing norms and incentives that promote narratives emphasising the value of collective inquiry into boundary complexities.

■ Portfolios

Developing structures of collective inquiry for developing bricoleur approaches, cultivating social networks to facilitate networking activities.

■ Project delivery profession

Conducting learning and development activities that focus on bricoleur approaches.

Continuous learning and development

Transactional leadership approaches focusing on accomplishing exchanges are often adapted in trading zones. Academic literature suggests that while transactional leadership approaches enable alignment, they often fall short of achieving synergies. Establishing continuous learning and delivery activities that focus on reflecting upon the achievement of synergies can be beneficial. Potential next steps include:

■ Portfolios and programmes

Portfolio managers and programme managers can respond to potential limitations of the transactional leadership approaches by infusing meaning into the trading zone activities. For example, this can be done through framing the importance of each group and how they contribute towards the shared goals, and cultivating a sense of collective responsibility for delivery.

■ Project delivery profession

Facilitating continuous learning and delivery activities focusing on developing synergies in trading zones.

Developing the institutional conditions for strengthening the responses

The institutional conditions for trading zones can be strengthened through collective inquiry with other professions into boundary complexities and ways of responding to them. These collective inquiries can also benefit from focusing on the constraints and the opportunities produced through professionalisation.

For example, the study identified that the unintended consequences of professionalisation include:

- Limiting the development of individuals that can act as future brokers in trading zones.
- Producing overlapping areas of responsibilities between professions.
- Task-based resourcing can reduce emotional commitments to project delivery.



⁷Strauss CL (1962), *The Savage Mind*, Chicago, University of Chicago Press.

At the same time, learning and development activities conducted to strengthen professional expertise can also offer opportunities for developing bridging capabilities. The institutional conditions for trading zones can be strengthened through the collaborations of all professions that contribute to project delivery. Potential next steps include:

■ Organisations

Creating cross-profession platforms that continuously reflect on and develop ways of responding to boundary complexities and the consequences of professionalisation, cultivating collective responsibility for the continuous improvement of project delivery.

■ Project delivery profession

Developing resources and support for working in a project delivery collective for non-project delivery professionals. This can facilitate cross-profession learning that's beneficial for enhancing bridging, such as identifying core business problems through the policy/strategy approaches for blue sky thinking.

6.2. Positioning

Viewing leadership as an activity

Viewing leadership as an activity can benefit positioning for efficiency and effectiveness. This view can be particularly useful in enriching the response to wicked problems as it enables promoting collective inquiry rather than turning to positions of authority. This view can also strengthen positioning in situations where portfolio or programme managers have limited authority or lack authority. This is because viewing leadership as an activity can shift the attention from achieving alignment to achieving synergies. Potential next steps include:

■ Organisations

Developing the conditions to support problem-based approaches to hierarchical authority relationships by, for example, showing recognition of collective inquiry into wicked problems.

■ Portfolios

Developing bricoleur approaches in hierarchical relationships, cultivating formal and informal leadership networks to facilitate positioning.

■ Project delivery profession

Cultivating learning and development that focuses on structures for integrating leaders that can enable achievement of synergies and problem-based structuring of hierarchical relationships.

Continuous learning and development

Academic leadership literature suggests that both cascading leadership and sharing leadership strategies can have important limitations and can also produce unintended consequences. Cascading leadership across the portfolio's levels of hierarchy can have an adverse impact on the leadership capacity of projects. This is because cascading leadership at the project level often requires providing personalised consideration to project team members. Indeed, the examples provided suggest that some project managers and line managers spend a significant amount of effort on changing the mind-sets and behaviours of the project team members who feel that their levels in the organisation do not allow them to make decisions without referring upwards or voicing their opinions.

Cascading leadership in the relationship between the SRO and the portfolio or programme manager through a 'light' engagement model can be viewed as a lost opportunity for enriching the leadership capacity and capability of portfolios. This is because the formal top-level leadership contribution is reduced to one leader. While this reduction can provide clarity to the portfolio collective and its stakeholders in terms of having one leader, it provides a relatively less rounded capability and a reduced support mechanism for the portfolio. On the other hand, an 'active' SRO engagement model provides a more rounded leadership capability and provides a mechanism of emotional support for the portfolio and programme managers.

However, it's also important to note that this sharing leadership strategy may not always be effective. For example, some individuals may take on the role of a follower in the joint leadership unit, different expectations and diverging views may produce tensions in interactions, the joint unit of leadership may lack a unified voice, or individuals may feel that they do not have enough room for manoeuvre.

Cascading leadership across the portfolio's levels of hierarchy can have an adverse impact on the leadership capacity of projects

Therefore, continuous learning and delivery activities reflecting upon and responding to the unintended consequences and limitations of positioning can be beneficial. Potential next steps include:

■ **Organisations**

Considering the compatibility of individuals and their capabilities in selecting the SRO and the portfolio/programme manager for portfolios and programmes.

■ **Portfolios and programmes**

At the front end of the SRO-portfolio/programme manager relationship, agreeing the engagement model (ie. 'light' engagement or 'active' engagement) and ways of responding to the complexities associated with each engagement model. For example, for 'active' engagement, agreeing the norms for the joint leadership unit (eg. the respective contributions of each leader and the distribution of recognition). Recognising the additional leadership capacity required for cascading leadership and adapting resourcing accordingly.

■ **Project delivery profession**

Facilitating platforms for reflecting on the limitations and unintended consequences of associated cascading leadership and sharing leadership strategies. Conducting learning and development on different SRO-programme/portfolio manager engagement models. Developing guidance to support joint units of leadership based on the insights from academic literature and practical experience. The insights from the academic literature can include, for example, the co-leadership approaches suggested by Gronn and Hamilton (2004): paralleling (making line of reasoning explicit so it can be collectively followed), positioning (bringing the other individual up to date on latest activities), anticipating (pre-meeting rehearsal to unify views), pooling (pooling of solutions to enable joint action), and retrieving (providing cues to reduce forgetting).

Developing the institutional conditions for strengthening the responses

Positioning for collective action can be constrained by paradoxical tensions experienced by leaders. For example, these tensions include the tension between the hierarchical accountability demands and the horizontal demands for leadership collaboration. Studies have shown that in public sector organisations, this tension may produce relatively weak forms of distributed leadership that fall short of leveraging the opportunities associated with distribution. Institutional conditions to support the collaborations of distributed leaders can be strengthened by collective inquiry into such paradoxical tensions. Potential next steps include:

■ **Organisations**

Creating cross-profession platforms that continuously reflect on and develop responses for paradoxical tensions in positioning for collective action.

■ **Project delivery profession**

Developing resources and support for responding to paradoxical tensions.

6.3. Legitimising

Viewing leadership as an activity

The examples provided suggest that the project team members typically focus on developing social capital with the recipient of change groups in their daily interactions. However, the study identified that the SROs and portfolio managers may be relatively blind to the opinion leadership provided by the project team members for legitimising with the recipients of change. Viewing leadership as an activity can facilitate the recognition of distributed leadership activities within projects that contribute to the opinion formation systems. Such a recognition can facilitate the proactive development of such contributions and also motivate project team members that are already making these contributions. Potential next steps include:

■ **Organisations**

Developing the conditions to support viewing leadership as activity by, for example, showing recognition of the contribution project team members make to opinion formation systems.

■ Portfolios

Developing opinion formation systems through a collective inquiry across multiple levels, cultivating a sense of collective responsibility for mobilising positive opinion with the recipients of change.

■ Project delivery profession

Conducting learning and development activities for legitimising strategies and distributed leadership approaches that draw upon insights generated by the academic literature. The academic studies referenced can include, for example, the work of Suchman (1995) or Burns (1978).

Continuous learning and development

Academic literature suggests that some of the legitimising strategies adopted can have important limitations. Burns argues that transactional leadership approaches based on cost-benefit logic of exchange have short-term effects and recommends moving from the logic of exchanging goals to pursuing shared end values. Suchman suggests that consequential legitimacy strategies emphasising the benefits of the intended change can only achieve episodic legitimacy and suggests complementing them with continuous legitimacy strategies such as linking the change to institutional values. Academic literature also suggests that legitimising strategies can have unintended consequences. For example:

- Legitimising narratives may produce a relative blindness towards assumptions that have been made and the ongoing shifts in the operating environment.
- Visible legitimising activities may attract additional scrutiny that may require further symbolic action and the support of legitimate authority positions.
- The concern for legitimising may constrain learning from the environment and produce a relative blindness to the ongoing shifts in the operating environment.
- Giving primacy to project management methodologies in legitimising may produce an inability to infuse value beyond the technicality of the new processes.

Continuous learning and delivery activities reflecting upon and developing responses to such unintended consequences and limitations can be beneficial. Potential next steps include:

■ Portfolios

Developing reflective processes for surfacing and responding to the limitations and unintended consequences of the local opinion formation system.

■ Project delivery profession

Providing guidance discussing a broad repertoire of legitimising strategies, their potential limitations and unintended consequences by drawing upon academic literature on leadership and organisational studies.

Developing the institutional conditions for strengthening the responses

The institutional conditions for legitimising can be strengthened through collective inquiry into constraints and opportunities for developing opinion formation systems with the leaders of operations functions, and leaders governing the intended change. Promoting shared responsibility for wicked problems can also be beneficial for developing better responses through collective inquiry. Potential next steps include:

■ Organisations

Cultivating collective responsibility for wicked problems so that leaders governing the change or receiving the change acknowledge the complexity of the situation and actively contribute to formulating responses.

■ Portfolios

Developing collaborative inquiry structures for clarifying the values underpinning the new processes, orchestrating constructive dialogue with recipients of change that surfaces competing perspectives.

■ Project delivery profession

Enhancing the assurance processes based on learning from portfolios and processes. For example, exploring how wicked issues can be best presented to leaders governing the change to facilitate collective inquiry.

6.4. Adapting

Viewing leadership as an activity

As the findings show, shared leadership strategies benefit from distributed team leadership approaches. Yet such activities are often not recognised as leadership contributions by leaders at more senior levels. This potential blind spot can limit the complexity response systems. For example, projects may not focus on distributing leadership activities, and the lack of recognition for the distributed leadership contributions may demotivate project team members. Viewing leadership as an activity can enable addressing such constraints. Potential next steps include:

■ Project delivery profession

Focusing on the promotion of distributed leadership approaches for projects, such as self-organising teams and distributed leadership approaches such as balanced leadership.

■ Organisations

Developing the conditions to support viewing leadership as activity by, for example, showing recognition of distributed leadership in projects.

■ Portfolios and programmes

Cultivating an empowering climate for self-organising and distributing leadership within project teams.

Continuous learning and development

Project delivery leaders establish mechanisms at their respective levels (eg. project, programme, portfolio) for effectively responding to shifting grounds. Portfolios can benefit from focusing on strengthening this cross-level integration through mechanisms for continuous learning and development. For example, academic literature suggests that dynamic capabilities of portfolios can be strengthened through balancing exploitation activities with exploration activities. Potential next steps include:

■ Portfolios

Focusing on developing dynamic capabilities of portfolios through linking top-level interventions to bottom-up insights generated by projects.

■ Project delivery profession

Facilitating learning and development that focuses on developing dynamic capabilities of portfolios.

Developing the institutional conditions for strengthening the responses

The findings suggest that the institutional hierarchy structures may constrain the recognition of bottom-up emergence of frictions in translations or improvisations in the performance of the translations. It is important to note that the academic literature views frictions and improvisations not necessarily as constraints, but rather as opportunities for enrichment.

For example, the study identified frictions and improvisations in relation to the visible leadership competency for project delivery professionals in local project contexts. These include:

- In situations where individuals do not want to 'have the spotlight on them', project managers improvise by proposing alternative ways of contributing leadership, such as providing leadership to initiatives associated with developing the project-delivery profession.
- Sometimes leaders are viewed to 'talk the talk but not walk the walk'. In such situations, where authenticity is questioned, frictions associated with visible leadership produce frustration.

These frictions and improvisations can possibly be associated with insights from the academic leadership literature. These insights suggest that visible leadership can promote heroic views of leadership that promote expectations of grand actions and may produce a sense of being in control that reduces the ability to detect fragility.

The institutional conditions for changing ways of working can be strengthened through strengthening institutional mechanisms for linking bottom-up emergence of frictions in local translations to the formal processes associated with the ongoing change. Academic literature can provide support for this. For example, Uhl-Bien and Arena (2017) argue that 'enabling leadership' activities are critical for translating emergence from local entrepreneurial activities to formal operational systems.

The study identified that the 'enabling leadership' activities of departmental heads of the profession often focus on mobilising entrepreneurial activities through communities of practice and linking them back to operational systems. A systemic focus on expanding the leaders contributing to 'enabling leadership' within departments and promoting a focus on frictions emerging in the translations of top-down change in projects can potentially be beneficial. Potential next steps include:

■ **Organisations**

Strengthening 'enabling leadership' activities for detecting and responding to bottom-up emergence of friction.

■ **Project delivery profession**

Providing learning and development activities that focus on 'enabling leadership', such as the insights from the study by Uhl-Bien and Arena (2017).

7. Conclusions

7.1. Summary of findings

The study developed a framework for responding to complexity based on experiences in the government transformation and service delivery projects. This framework provides a repertoire of structural elements and strategies for responding to different themes of complexity. However, it is important to note that complexity response systems require tailoring for the complexities relevant to the specific context of the portfolios, programmes and projects. Therefore, the local implementations of this framework are expected to look different.

It is recommended that portfolios regularly assess local complexities through collective inquiry and continuously develop their complexity response systems accordingly. Collective inquiry can be particularly beneficial since individuals may have different views of complexity and appropriate responses. This is because of the potential differences in past experiences, competencies, organisational positions and goals. In situations where the framework is found to offer limited guidance, this collective inquiry can seek to learn from the experience of other portfolios, programmes and projects. The recommendations provided also draw attention to potential ways of continuously strengthening the locally developed complexity response systems.

Some of the situations of complexity identified by the study have also been shown to be relevant to various industries and projects by the academic literature. For example, projects, programmes or portfolios operating in a matrix organisational structure can benefit from this framework. This is because the project management literature highlights that matrix organisational structures often produce boundary complexities, and the leadership literature suggests that the horizontal distribution of leadership tends to be a complex situation. As this example illustrates, the framework can be viewed as a potential resource for the wider community of the APM. Project delivery professionals can benefit from the complexity response systems that are relevant to their local conditions.

7.2. Further research

Some areas of further research suggested to develop and test the framework based on this exploratory qualitative study are:

■ **Exploring leadership practices through longitudinal studies**

Exploring leadership activities in daily actions and the interactions of portfolios, programmes and projects would be beneficial for examining subtle leadership activities and reducing potential heuristic biases such as hindsight or confirmation bias.

■ **Testing the framework in other public sector organisations**

It's recommended that the framework is tested in other public sector organisations that have different conditions for project delivery to the departments studied (eg. other departments or local government organisations). This would enable examining if such conditions produce variations in the framework.

■ **Exploring the experiences of other professions**

Exploring the complexities other professions experience and their responses in relation to project-based change would enable the incorporation of more diverse viewpoints and strategies into the framework.

The study developed a framework for responding to complexity based on experiences in the government transformation and service delivery projects

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