Project and Programme Management Capability Improvement Study

Independent Reporter (Part C) Mandate CN/025
Office of Rail Regulation and Network Rail

Summary Report

October 2013

1. Introduction

This study examines Network Rail's portfolio, programme and project management (PPP) practices and their current activities to improve PPP capability, in order to determine if these are in line with good industry practice. The outputs of the study are recommendations for the scope of a PPP capability improvement programme and for a methodology to measure such capability improvement.

We examined previous reports on Network Rail's opportunities for capability improvement, interviewed a range of people undertaking various roles within Network Rail both in the Operational Routes and the Infrastructure Projects (IP) Regional organisations and examined project processes and other improvement documentation. In forming our view of alignment with good practice we have also spoken to a number of comparator organisations and utilised Nichols industry knowledge, as well as referring to a number of industry standards and good practice guides.

We would like to thank the members of the Network Rail team for their cooperation in conducting this review, providing documentation and information to support the findings of this report and for the openness of those involved during interviews. We would also like to thank the comparator organisations for their cooperation and time supporting this study.

2. Background and Our Approach

The Periodic Review 2013 (PR13) will establish access charges, outputs and the associated regulatory framework for Network Rail for Control Period 5 (CP5, April 2014 to March 2019). Capability improvement in Portfolio, Programme and Project Management (PPM) during CP5 should derive benefits needed to deliver against PR13 through increased value for money, efficiency and effectiveness of delivery of the enhancements and renewals portfolios of some £24.4bn.

An attempt was made to assess potential cost savings in this area in 2011. ORR commissioned Halcrow to review Network Rail's Project and Programme Management Capability. The review was commissioned as a follow up to the Rail Value for Money Study, which identified a wide range of whole industry cost savings through Whole System Programme Management. A key objective of the Halcrow study was to assess the cost savings that could be attributable to Network Rail in CP5, including a view on current and future capability. The capability review was high level and was attempted during a significant re-organisation of Network Rail (Dime, devolution).

The findings from our study will help build assurance that Network Rail is driving forward improvements that will increase confidence in CP5 deliverability, and to demonstrate that it is continuously improving its capability in project, portfolio and programme management (PPP) in line with good practice.

We have worked collaboratively with Network Rail to develop a CP5 PPP Capability Improvement plan based on a methodology that is most likely to drive real benefits. We have taken the following steps to develop the improvement plan:

- conducted an analysis of the Network Rail efficiency challenge – what are the opportunities for benefits to be delivered?

- examined the major areas in the Network Rail project portfolio that will deliver these efficiencies

- evaluated the relevance of portfolio, programme and project management to the delivery of these benefits

- examined good practice for portfolio, programme and project management referencing industry knowledge, standards and the practices of comparator organisations

- recommended a scope for portfolio, programme and project (PPP) capability improvement

- recommended how this capability improvement should be both delivered and measured

We gathered data from interviews with Network Rail staff involved in the running of projects and programmes. This included interviews with people in London, Milton Keynes, Birmingham, Manchester, Peterborough, York and a teleconference with Reading whose roles covered:

- Infrastructure Projects (IP) Programme Directors from a sample of IP regions

- Discipline Review Group Members

- Project Managers from a number of regions

- Members of the team developing Network Rail's Project and Programme Management capability

- Risk Management

- Head of PM Systems

- Human Resources

- People involved in the implementation of 'Clienting' within Network Rail

- Route Asset Managers

We also reviewed a wide range of Network Rail and industry documentation. This included Network Rail's: project management documentation, project reporting, discipline management plans, risk documentation, role descriptions and a number of powerpoint presentations.

3. Portfolio, Programme and Project definition

Network Rail has a significant portfolio of major programmes, projects and sub-portfolios. Across industry there is frequent confusion about the distinction between portfolios, programmes and projects (PPP) with language and terms used interchangeably. To underpin recommendations for a capability improvement plan it was first necessary for our study to be clear about the use of these terms. This report uses as a basis the standard definitions from the Cabinet Office (formerly OGC) guidance, Management of Portfolios (MoP), Managing Successful Programmes (MSP), PRojects IN a Controlled Environments (PRINCE2). These definitions are also broadly aligned with the Association of Project Management (APM) definitions.

To ensure clarity of interpretation, we have emphasised the essence of each of the three disciplines from the basic definitions and this is illustrated by the sentences in highlights below.

Portfolio (MoP) – "totality of an organisation's investment (or segment thereof) in the changes required to achieve its strategic objectives"

Portfolio Management (MoP) – "a coordinated collection of strategic processes and decisions that together enable the most effective balance of organisational change and Business As Usual (BAU)"

Programme (MSP) – "temporary, flexible organisation created to coordinate, direct and oversee the implementation of a set of inter-related projects and activities in order to deliver outcomes and benefits related to the organisation's strategic objectives"

Programme Management (MSP) – "the action of carrying out the coordinated organisation, direction and implementation of a dossier of projects and transformation activities (i.e. the programme) to achieve outcomes and realise benefits of strategic importance to the business"

Project (PRINCE2) – "temporary organisation that is created for the purpose of delivering one or more business products [outputs or deliverables] according to an agreed business case"

Project Management (PRINCE2) – "planning, delegating, monitoring and control of all aspects of the project, and the motivation of those involved, to achieve the project objectives within the expected performance targets for time, cost, quality, scope, benefits and risks"

In summary, we make the following simplifying interpretations:

- managing portfolios is about choosing which projects and programmes should be undertaken

- programmes are about delivery of outcomes and business benefits

- projects are about delivery of outputs or products.

The differences between the three disciplines is further illustrated by the characterisations in Table 1 below.

Portfolio	Programme	Project
Collection of projects, programmes, or smaller portfolios with common theme	Outcome (desired benefit) known at the start, Outputs (deliverables) defined as programme evolves	Outputs (deliverables) and how they can be delivered can be known at the start
Balancing strategic objectives	Knowing when to drive for certainty	Driving certainty
Tight governance and control structure	Tight governance and control structure	Tight governance and control structure
Single sponsor for portfolio, may have others for projects and programmes	Single sponsor for programme, may have others for projects	Single sponsor
Budgets and timescales continually balanced to deliver strategic objective	Budgets and timescales defined as part of programme	Budgets and timescales known at the start
Managing people and organisational issues, balancing skills and finance	Managing people and organisational issues, developing new capabilities	Managing technology, specialist skills, contracts to deliver
Success measured in movement towards organisation's strategic goals	Success measured in creation of usable capacity or business benefits	Success measured in creation of specified deliverables within time and cost
Long duration during which balance of portfolio may change	Long duration during which work, skills and behaviours will change	Work, skills and behaviours change over lifecycle
Manager: outcome focused, driving for consensus, holistic approach, political awareness	Manager: outcome focused, comfortable with uncertainty, strategic vision, political awareness and high EQ, good leadership	Manager: output focused, driving for certainty, management and control orientated
Cross organisational boundaries	Cross organisational boundaries	Generally single organisation

Table 1 – Comparison of characteristics between Portfolios, Programmes and Projects

4. Opportunities to Apply Portfolio, Programme and Project Management

As a principle, we consider Network Rail should prioritise their capability improvement in portfolio, programme, and project management to those areas which that enable or deliver Network Rail's Value for Money and efficiency challenges.

Organisational scope

Network Rail (NR) Infrastructure Projects (IP's) core mode of operation is Project Management and the majority of their processes (e.g. GRIP) and systems (e.g. Oracle, Primavera) are developed to support that. Historically much of Network Rail's capability development has been Project Management and this is reflected in that this is the most mature of the three disciplines. However IP undertakes activities across the wider NR organisation, which lend themselves to the use of portfolio and programme as well as project management techniques.

At the highest level the Network Rail business planning process includes balancing strategic priorities across the Network Rail business including maintenance and renewals expenditure as well as enhancements and new capability. This is a cyclical process, planning in period (n) for delivery in period (n+1), and includes complex multi stakeholder negotiations. This process is an example of Portfolio Management "a coordinated collection of strategic processes and decisions that together enable the most effective balance of organisational change and Business As Usual (BAU)". We have not considered the Business Planning process within the scope of this review (as this reviews focus on Network Rail's internal operational capability). Nevertheless it is recognised that there is value to be derived from refining this process and we would recommend that the ORR and Network Rail undertake a joint review to ensure that lessons learned from the execution of the planning for CP5 is formalised and hence considered during the next planning cycle for CP6.

Figure 1 – Relevance of Portfolios, Programmes and Projects within Network Rail

Within Network Rail there are a small number of significant programmes of work i.e. Thameslink, Electric Spine, EGIP, and Crossrail. These programmes typically interface with other initiatives outside the immediate scope of Network Rail e.g. through the TOCs, DfT and ORR to coordinate with refranchising and rolling stock procurement. Typically for these programmes Network Rail Strategy and Planning (S&P) retain a leading role throughout the programme lifecycle in managing external stakeholders, eliciting high level requirements and securing on-going funding whilst managing the uncertainty inherent in such large schemes. This programme management is undertaken in conjunction with IP who typically retain responsibility for commercial strategy and delivery at the programme and the individual project level. In large-scale alliancing arrangements it is also likely that the supply chain partners will become involved in programme management activities for the specific programme.

In addition to the overarching business planning process, various Portfolio Management activities are conducted across the Network Rail organisation. Management of the various 'funds' is essentially a portfolio management exercise; selecting which schemes best deliver the fund objectives, commissioning the projects from Network Rail IP and retaining oversight during their delivery. The Route Asset Managers (RAM's) selection of renewals projects, and integration of this renewals portfolio with the enhancement programme in a logical and efficient manner for subsequent delivery can also be characterised as Portfolio Management. The central IP organisation undertake a number of planning governance functions in order to avoid significant operational risk. This includes central recording of access through the Delivery of Work Within Possessions (DWWP) process and system, plus the central planning of other scarce resources such as shared plant and equipment to avoid conflict. In conclusion, portfolio, programme and project management is applicable across many areas of Network Rail and their supply chain and this is illustrated graphically in figure 1 above.

IP delivers the majority of Network Rail's enhancement projects. In order to gain a view of Network Rail's overall project and programme management capability need it was necessary to examine a number of other organisational areas beyond IP. These include: IP delivery based in the Regions – project, programme and portfolio management; Route based renewals – project management; IP Programme Technical Services Director – portfolio management; Route Asset Managers – portfolio management; Group Strategy – the definition and roll out of clienting.

Delivery Scope

Figure 2 below shows a categorisation of Network Rail's CP5 planned £24.4bn expenditure into scale of expenditure and numbers of projects. This illustrates that the nature of the programme and portfolio management challenges are very different due to the size and number of projects to be managed.
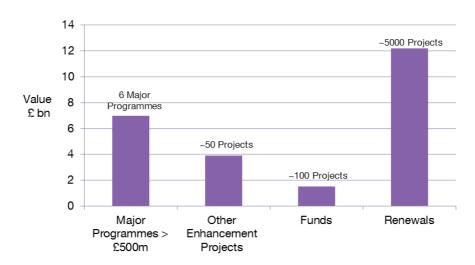

Figure 2 – Categorisation of CP5 Project and Programme Expenditure

The average renewals project for CP4 is approximately £2.3m. Assuming Renewals have similar project characteristics in CP5 this suggests Network Rail will need to deliver circa 5000 individual renewals projects. This can be compared with the 6 largest major programmes costing circa £7bn between them. Ultimately as these major programmes are defined in detail they will be delivered through individual projects that may represent significant projects in their own right. These constituent projects are not dissimilar in scale to the other enhancement projects, where circa 50 projects represent a planned expenditure of some £4bn at an average of circa £80m per project.

The point of this analysis is that the managerial challenge inherent in running a £200m portfolio of 100 renewals projects is somewhat different to running a single £200m project, or a £2bn programme. In the Network Rail renewals environment with its high volumes, large repeatable work content, and known technology, focus should be on increasing process definition, e.g. using techniques such as 6 Sigma and Lean to reduce the variety of approach and reduce waste such as unrequired effort and bureaucracy. The other implication of the greater number of renewals projects is that it implies a greater focus on portfolio management to ensure efficient grouping of scope and to efficiently manage the amount of control and reporting.

Conversely for large programmes, Network Rail is less likely to derive benefits through an increased application of process. Rather, here focus should be on managing external uncertainty, e.g. by examining governance arrangements to ensure an increased up-front effort in requirements analysis and option selection, plus identifying appropriate commercial delivery vehicles. Further, it is important to recognise that the various major programmes are at different stages of maturity. As the major programmes mature and individual schemes are defined, there is less benefit to be derived from early scheme planning or indeed portfolio or programme management. Rather the issue becomes one of efficient project delivery, as is the case for the rest of the enhancements portfolio. Therefore the on-going development of project management capability remains relevant, albeit at a lower priority.

5. Current approach

The Challenge

Network Rail has a significant Value for Money and efficiency challenge to deliver the Control Period 5 (CP5 – April 2014 to March 2019) outputs for the £24.4bn provided within the ORR's Draft Determination. Whilst we recognise that the forensic analysis of this challenge is beyond the scope of this report, we estimate that the scale of the gap between current and required performance is of the order of £3.6bn or 13%.

Developing Portfolio, Programme and Project management capability will contribute either by driving or enabling the required improvements against the Value for Money themes identified from the previous studies and analysis considered, including: the McNulty Report, the Halcrow Report and various Network Rail and ORR efficiency and benchmarking reports. Based on our research and study of comparator organisations, improvements in efficiency due to portfolio, programme and project management capability improvement can be demonstrated, but have not been fully quantified and mapped.

Comparator Summary

As part of this study we examined a number of other organisations to compare their approach to and current status of portfolio, programme and project management development with Network Rail. A summary of this comparison is contained in table 2 below.

Aspect	Comparator characteristics	
Portfolio Management	Some process and governance Some process development and training Not yet at stage of stopping projects	Most informal with senior manager Organisational level reporting
Programme Management	Some process and governance Some process development and training	Some select on behaviours
Project Management	Tight processes Central monitoring and assurance Standard reports Standard reviews Some complexity assessments	Measures of health Knowledge management Integrated Approval and Assurance Plans Training using APM Request made of supply chain
Project delivery change programme	Organisation wide change programme Staffing of 5-50 Includes resourcing Focus on embedment Senior sponsorship	Use P3M3 Use APM competency models Clienting training & improvements Measure impacts Measure soft (PM) portion of costs

Table 2 – Summary of findings from comparators

A key conclusion from this comparison is that there was no overall "best" organisation with most organisations good at projects but few claimed to be, or in our opinion were good at portfolio or programme management. From this comparators exercise, and from our industry knowledge, there are only a few organisations that have developed robust and mature standards for portfolio and programme management.

Network Rail's Current Approach

Network Rail is already developing its project management capability, e.g. the GRIP process, 'best of breed' project information systems. However, historically little development of Portfolio and Programme management has been undertaken. Our conclusions is that Network Rail's current level of PPP capability development is similar to that of the comparator organisations interviewed and that of the wider industry.

Network Rail's improvement activities, whilst of undoubted value, were generally focused on the Infrastructure Projects (IP) part of the organisation and do not currently cover other parts where portfolio, programme and project management capability improvement is needed to meet Network Rail's efficiency challenge, as shown in figure 1.

Network Rail has a variety of managerial challenges for which Portfolio, Programme, and Project Management capability is relevant and hence why capability and maturity development is relevant. The specific managerial challenges are different in nature and circumstances, they each require the development of different tools and techniques, i.e. it is not a case of one-size-fits-all.

Portfolio, Programme and Project Management capability improvement is not the only initiative by which Network Rail can achieve efficiencies; portfolio, programme and project management improvements must be coordinated with Network Rail's ongoing developments in Asset Management (e.g. the development of policies and standards) and Commercial Management (e.g. the move to collaborative forms of contracting such as alliancing) as well as coexisting with Network Rail's wider organisational change programmes.

Network Rail has a strong cadre of project management professionals, who are committed to working within the rail industry, and supported by an excellent catalogue of available training and support aligned with Association for Project Management (APM) good practice. However, following the DIME devolution of authority to the Network Rail Operational Routes, resource planning and development is now fragmented across the organisation with the split of responsibilities between central functions and the Routes unclear. Also, Network Rail's HR practices are perceived as a barrier to project management development, e.g. inhibiting the personal mobility required for a serial project career. As a consequence, we observed that generally the loyalty of the people in the project management community was to the industry and the profession rather than to Network Rail per se. Whilst current staff turn over is low, this could impact Network Rail capability when the economy picks up and the overall demand for project skills increases and Network Rail may have difficulty retaining project management resources.

Network rail's project management resourcing process does not help to provide the continuity of projects needed to develop project managers; this is evidenced when project managers are served with redundancy notices towards the end of their projects, and in some cases made redundant. This is conducted in an environment where there may be demand for these skills a short while later in a different part of the business. At best this has a distracting effect on staff whilst they are delivering challenging projects and leads to inefficiencies in resourcing, recruitment, and induction.

Network Rail's suite of best-of-breed information systems has been developed to support central information requirements and predominantly focuses on mid-sized enhancement projects, i.e. reflecting a central control approach. The capability of these information systems could also be used to simplify and streamline the bureaucracy surrounding smaller size renewals projects with their repeatable work content.

6. Recommendations

Scope of capability improvement

Table 3 provides a summary of our assessment of the relevance and therefore recommended scope for PPP capability improvement, in terms of the various areas of Network Rail activities.

Network Rail Activity	Portfolio Management	Programme Management	Project Management
Corporate Planning	**Priority: High** Re-evaluate central Vs local governance		
Major Programmes		**Priority: High** Programme Management Guidance, e.g. stakeholder management, commercial practice, systems engineering Programme Assurance	
Other Enhancement Projects	**Priority: High** Portfolio Management to consider most efficient and effective delivery strategies and "bundling"	**Priority: Medium** As for major programmes	**Priority: Medium** Respond to impact of alliancing, e.g. revised GRIP, skills, behaviours Standard delivery models Clienting
Funds	**Priority: Medium** Formalise fund governance		Clienting
Renewals	**Priority: High** Formalise route level planning Integration of enhancements and renewals Formalise resource usage Tracking Value for Money		**Priority: High** Tailoring GRIP for small projects Standard people/competencies Labour saving system developments

Table 3 – Recommended PPP capability improvement scope

Capability improvement

We endorse Network Rail's existing strategy to adopt the Cabinet Office's P3M3 maturity model. Specifically we recommend Network Rail should use P3M3 version 3; as this incorporates the new perspectives of Commercial Management and Asset Management, which are both relevant for Network Rail.

The scope of the improvement activities should cover portfolio and programme management, as well as the current improvements in project management. There are other capability improvement programmes on-going within Network Rail whose scope overlaps with improving portfolio, programme and project management capability e.g. development of Asset Management capability. The scope, maturity assessment methods and alignment of these potentially overlapping programmes should be decided and agreed with all stakeholders as part of the change planning process.

We recommend that Network Rail further enhance their people competency model to address programme and portfolio management by comparing their current 4 level APM based model, with other external standards such as those from the International Centre for Complex Project Management (ICCPM), the International Project Management Association (IPMA) and the Global Alliance for Project Performance Standards (GAAPS). Network Rail already encourages continuing professional development through courses and attending APM Branch and Specific Interest Group Events.

We recommend that Network Rail should examine the use of complexity models to drive further improvements once they approach level 4 maturity in project management.

The use of Clienting in the delivery of projects and programs is critical for success, Network Rail is already implementing improvements to this area which are due to conclude in December 2013. From our analysis of good practice an improvement function should be set up ensure this is embedded and to drive further improvements.

Change delivery

We recommend that the scope of the portfolio, programme and project management capability improvement programme should cover the whole of Network Rail, not just Infrastructure Projects, and our recommended priority areas are set out in Table 2 above. Current performance should be benchmarked for each of these priority areas before setting targets and planning capability improvement.

The change journey should be mapped out in clear tranches, supported by active senior sponsorship and a fully resourced Programme Management Office (PMO) team. Each tranche should engage the whole project community, be planned, communicated, delivered and embedded before progressing to the next tranche.

Ideally a change of this type should be run as a single corporate level change programme. However, Network Rail already has a large number of change programmes that already have a degree of momentum and structure. To duplicate others efforts or to attempt to stop and restart existing change programmes is considered impractical. Therefore we recommend that the interfaces to existing change programmes across other organisational areas of Network Rail should be identified and agreed. Where outputs are best delivered by other programmes these should be clearly identified and negotiated to avoid unnecessary duplication and to clarify accountabilities.

A capability improvement programme of this type will take a number of years spanning throughout Control Period 5. Formal measurement of progress by Network Rail and the ORR should be via the delivery of small number of high level milestones (1 or 2 milestones per year) and through the achievement of specified P3M3 maturity levels within each of the priority areas.