Office of Rail and Road and Network Rail

Review of Network Rail System Operator Control Period 6 processes and controls for investment decisions relating to capex spend

June 2018

JN5384

Office of Rail and Road and Network Rail
Review of System Operator CP6 processes and controls
for investment decisions relating to capex spend

Contents

Office of Rail and Road
Review of System Operator CP6 processes and controls
for investment decisions relating to capex spend

Executive summary

Background

The Office of Rail and Road (ORR) is currently in the process of its 2018 Periodic Review (PR18) that will set the outputs and funding for Network Rail for Control Period 6 (CP6) from 1 April 2019 to 31 March 2024. As part of this process, the System Operator (SO) within Network Rail has developed its own Strategic Business Plan and will receive its own funding settlement within Network Rail's overall funding determination for CP6.

As described in its Strategic Business Plan (SBP), the SO has proposed a suite of improvement programmes that are expected to provide significant industry wide benefits from a total capital expenditure of around £60m. The improvements are all at an early stage in their development lifecycle, and include the following:

Whole System Modelling – To increase modelling capability to better inform decisions on railway performance and operational impacts.

Train Planning System – To provide a significant step change to the timetable quality, including, amongst other things, the use of automated calculated running times.

Data Improvement – To work with the industry to finalise the design of a data strategy. It will include agreeing cross-industry policies and frameworks to help set out what data sets are required, what data attributes need to be captured and how the data is stored and accessed.

Better Access Planning – To further develop frameworks and competencies that guide the appropriate trade offs between running passenger and freight services and providing the necessary engineering access. This programme will also seek to replace the Possession Planning System.

Office of Rail and Road
Review of System Operator CP6 processes and controls
for investigation decisions relating to capex spend

To assist the ORR in its review of the SO's CP6 SBP, particularly with respect to consideration of the SO's capex programmes, Nichols were engaged in March 2018 by Network Rail and the ORR as an Independent Reporter to assess the appropriateness of the SO's processes and controls for managing these improvement programmes. As part of this we assessed the SO's processes and controls that are currently in place and plans for readiness for the commencement of CP6.

The mandate for this Independent Reporter assessment is enclosed as Appendix 1. It defines three themes and eight detailed criteria to inform the scope of the assessment. By assessing the SO's capex processes and controls against each of these themes, we were able to assess its capabilities and identify where there might be gaps and areas of improvement. The three themes are listed in Table 1 as Themes A to C.

Themes	
Theme A	Whether the process enables appropriate decision making points in the project management processes and controls to govern capex spend in a cost effective manner.
Theme B	Whether there is sufficient scrutiny of projects undertaken throughout the project and programme lifecycle so as to assure delivery.
Theme C	Whether the SO recognises and plans to develop the capabilities required to operate its controls and governance framework and deliver its projects.

Table 1: Assessment themes

This report sets out our findings, conclusions and recommendations against each of these three themes and the eight more detailed criteria that are listed in the main body of the report. We grouped our recommendations into three 'key recommendations' for the purpose of this executive summary.

Office of Rail and Road
Review of System Operator CP6 processes and controls
for investment decisions relating to capex spend

Methodology

In accordance with our mandate, we have undertaken a review of key documentation relating to the processes and controls that are currently in place and plans for CP6, which are listed in Appendix 2. We observed a number of key governance meetings, which are listed in Appendix 3. We held interviews and phone calls with key personnel, which are listed in Appendix 4.

We would like to record our appreciation for the significant support Network Rail has given us in regard to the conduct of this review, including facilitating a number of follow up interviews together with sourcing additional documentation beyond what was originally prescribed in the Independent Reporter Mandate. This has enabled us to conduct a more thorough assessment and further test and validate our key draft findings and conclusions before completion of this report.

Office of Rail and Road
Review of System Operator CP6 processes and controls
for investment decisions relating to capex spend

Summary findings, recommendations, areas for further consideration, and overall conclusion

During CP5 the SO function within Network Rail has undertaken a number of capex programmes, for example improvements to timetabling systems. To support this it has put in place a suite of processes and controls. We have observed good progress in developing these to date. The SO recognises that further improvements are required in readiness for CP6 and a number of actions are already in place to develop and refine existing processes and controls. Our findings and recommendations described in this report are intended to strengthen and complement the areas of improvement that the SO is already proposing.

Summary Findings

Good practice

Based on our review of documentation and interviews with key personnel, we observed a number of areas of good practice. We wish to particularly highlight the following examples:

- There is effective leadership and strong staff engagement in driving through the improvements already identified by Network Rail.

- There are a number of established forums for engagement with the wider rail industry at both an individual programme level, for example, the Whole System Modelling programme board (the primary forum for reviewing progress of the principle workstreams for this programme), as well as at an overall portfolio level.

- There is an effective programme management function, both at Capacity Planning level (which amongst other things co-ordinates the activities and reporting of the four SO capex programmes) as well as the newly established SO Programme Office (which takes a wider SO portfolio perspective).

- Project-level progress information is rolled-up in a consistent manner from individual project level through to overall portfolio level using standard templates and key performance indicators.

- There is a good focus on learning lessons and benchmarking from recently completed SO programmes and applying these to the programmes currently being developed in preparation for CP6 as part of a culture of continuous improvement.

Office of Rail and Road
Review of System Operator CP6 processes and controls
for investment decisions relating to capex spend

Areas for further development

We also identified a number of areas where further improvements should be made. Examples include the following:

- Whilst there are established meetings for industry wide engagement, we are of the view that there is a need to clarify the role of industry representatives in the development and delivery of these programmes in recognition that the benefits of these programmes are for the industry as a whole. It is also essential that Network Rail achieve wider industry buy-in to the aims and objectives of these programmes to enable their ultimate success. Network Rail accepts that this is a key area to focus on and steps are already being taken to address this.

- We observed that there would be benefit from a clearer definition of key roles associated with specification and delivery of the programmes, including those attending the programme boards.

- We are also of the view that there should be a greater focus on the management of the four capex programmes at an overall portfolio level as well as at an individual programme level. Steps have recently been taken by the SO senior leadership team to strengthen a portfolio approach, for example through the operation of the newly established SO Delivery Board (comprising membership from the SO's senior leadership team), which considers progress at a portfolio level.

- Whilst there is an established process for stage gate reviews we did not see recent evidence of independent assurance and challenge by Network Rail personnel outside the direct SO management team.

- We also consider that SO would benefit from having some financial contingency for these programmes at a portfolio level rather than purely at an individual programme level. This is in recognition of the fact the programmes are at an early stage of development and have significant interdependencies with each other.

- Whilst the SO is planning its project resource requirements for CP6, we are of the view that there needs to be a more portfolio based approach to resource planning and training which takes account of varying resource requirements during the life cycles of these programmes.

Office of Rail and Road
Review of System Operator CP6 processes and controls
for investment decisions relating to capex spend

Key recommendations

Our full set of conclusions and recommendations regarding the appropriateness of the processes and controls for the SO CP6 capex programmes are provided in the main body of this report against the three themes and eight supporting criteria described in the Independent Reporter Mandate.

From our review against the three themes and eight criteria described in the Independent Reporter Mandate we were able to distil our recommendations into three distinct categories for this executive summary covering:

- Industry wide engagement

- Internal Network Rail processes and controls

- Programme and portfolio management capability development

We grouped our recommendations described in the main body of the report against these categories to produce three key recommendations according to the process shown below in Figure 1. Our three summary recommendations are shown in Tables 2 to 4 below together with their mapping to the individual recommendations.

Process for determining the 3 key recommendations

3 themes from the Independent Reporter Mandate

With 8 criteria within the above 3 themes

From these 8 criteria we made 12 recommendations

From the 12 recommendations we grouped them into 3 key summary recommendations

Figure 1: Process for determining the 3 key recommendations

Office of Rail and Road
Review of System Operator CP6 processes and controls
for investment decisions relating to capex spend

Industry wide engagement:

Key recommendation 1
The SO should clarify and strengthen the level of relevant industry representation in the development and delivery of the CP6 SO capex programmes.
R6: Define the roles of industry representatives through relevant engagement with the industry and ensure appropriate representation at the various governance levels within the CP6 SO capex programmes.
R7: Have a clear process for gaining buy-in from the industry representatives to the aims and objectives of the programmes.
R8: Continue to ensure that single source data is used for consistency of reporting to all meetings that have industry wide representation, including information supplied to the planned SO Advisory Board.
R9: Clarify the appropriate route for escalation of issues for the agreed industry representatives.

Table 2: Key recommendation 1

Internal Network Rail processes and controls:

Key recommendation 2
Building on the good foundations already in place, the SO should further clarify and strengthen its SO processes and controls for capex programmes.
R10: Provide greater definition of the roles of key personnel associated with the delivery of the programmes, including the sponsor, client, business change manager and end user practitioner representatives.
R5: Ensure the roles of those attending the programme boards are clearly defined and documented.
R1: Define the critical success factors and metrics that will help to demonstrate the effectiveness of the processes and controls and regularly review throughout CP6.
R3: Ensure stage gate reviews are supported by appropriate Network Rail assurance by those outside the SO direct management team.
R4: Consider whether and how the SO's investment authority would benefit from relevant expertise and capability to consider whole industry benefits, in order to provide more effective challenge. Options could include the creation of a new SO investment panel.

Table 3: Key recommendation 2

Office of Rail and Road
Review of System Operator CP6 processes and controls
for investment decisions relating to capex spend

Programme and portfolio management capability development:

Key recommendation 3
The SO should improve its resource management across the capex portfolio, including in relation to relevant financial contingency.
R11: Assess how programme resource and training needs change throughout the various lifecycles of the programmes during CP6.
R12: The two PMOs should ensure that resources are managed at an overall portfolio level to ensure their most efficient utilisation across the individual capex programmes.
R2: Investigate the practicality of developing a strategy that gives consideration to allocating some financial contingency at overall portfolio level as well as at individual programme level.

Table 4: Key recommendation 3

Suggested areas for further improvement

In addition to our recommendations we have also highlighted a number of areas that Network Rail may want to take forward as part of its programme for further development and refinement of the processes and controls. Our suggestions, in part, draw on best practice and lessons learnt from other project and programmes and are described within the main body of this report. They include for example:

- The production of a processes and controls manual that will enable all SO employees to become fully acquainted with the programme governance structure and objectives of all forums to ensure compliance with the process.

- The Programme Management Office (PMO) should consider applying the learning from individual programme stage gate reviews to the overall SO capex portfolio as part of a process of continuous improvement.

- Consideration should be given to providing additional support to the current Senior Responsible Officer (SRO) for the four capex programmes in order to ensure suitable resilience of this key role.

Office of Rail and Road
Review of System Operator CP6 processes and controls
for investment decisions relating to capex spend

Summary conclusion

Our overall conclusion is that there is already a good foundation of processes and controls for the effective management of the SO capex programmes for CP6, which comply with Network Rail investment regulations (a framework for making investment decisions). However, we recommend that improvements should be made, as described in this report, in readiness for the commencement of CP6. These recommendations cover three categories: industry wide engagement; internal Network Rail processes and controls; and programme and portfolio management capability development. In recognition of the strong focus the SO senior leadership team already have in driving forward improvements, as evidenced by the approach being taken at portfolio level through the SO Delivery Board, Nichols is confident that the SO should be able to implement these recommendations in preparation for CP6. This also includes our suggestions for further areas of improvement. ORR discusses the timescales for reviewing progress against these recommendations as part of its draft settlement for the SO (available here).

Office of Rail and Road
Review of System Operator CP6 processes and controls
for investment decisions relating to capex spend

Background

Introduction

The ORR is currently in the process of its 2018 Periodic Review (PR18) that will set the outputs and funding for Network Rail for Control Period 6 (CP6) from 1 April 2019 to 31 March 2024. As part of this process the System Operator (SO) within Network Rail has developed its own Strategic Business Plan and will receive its own funding settlement within Network Rail's overall determination.

As described in its Strategic Business Plan the SO has proposed a suite of improvement programmes with associated total capital expenditure of around £60m to be delivered in CP6. This comprises four key programmes, which are planned to deliver significant operational benefits to Network Rail as well as the wider rail industry. The breakdown of the capital expenditure into anticipated final costs (AFC's) for each of the four programmes is shown in Figure 2 below.
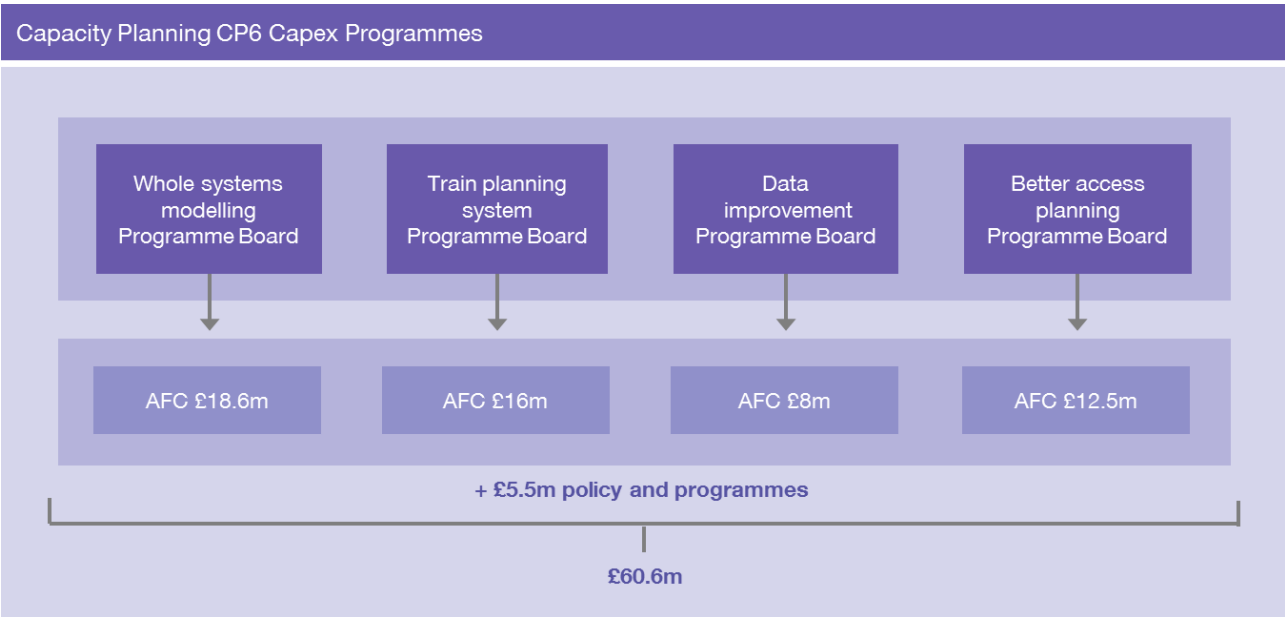
Capacity Planning CP6 Capex Programmes

Whole systems modelling Programme Board	Train planning system Programme Board	Data improvement Programme Board	Better access planning Programme Board
AFC £18.6m	AFC £16m	AFC £8m	AFC £12.5m

+ £5.5m policy and programmes

£60.6m

Figure 2: Proposed anticipated final cost for four capex programmes

Office of Rail and Road
Review of System Operator CP6 processes and controls
for investment decisions relating to capex spend

nichols

To oversee the development and delivery of these programmes, since May 2017 the SO has established a suite of processes and controls. These processes and controls have been informed by the way in which the SO interprets and incorporates Network Rail's corporate approaches to managing projects and programmes and will be applied throughout the development and delivery of the four capex programmes in CP6.

To assist ORR in making its determination for the SO capex funding for CP6 Nichols were appointed Independent Reporter in March 2018 to provide Network Rail and ORR with assurance that the SO's CP6 processes for governing capital investment decisions are appropriate.

Exclusions from our scope

In accordance with the Independent Reporter Mandate (see Appendix 1) this review focuses on the SO's processes and controls for governing SO capex investment decisions. The following areas were defined as out of scope of assessment in our mandate:

- Network Rail's corporate approach to business change, project management and investment regulations.

- The details, specifications and costs of the projects.

- The make up and structure of the SO Advisory Board, a new forum for the independent scrutiny of the System Operator's business plans and policies, their execution, effectiveness and ongoing engagement as referred to in the SO Strategic Business Plan.

- The individual skill sets and competencies of those currently fulfilling roles under the framework.

Office of Rail and Road
Review of System Operator CP6 processes and controls
for investigation decisions relating to capex spend

Methodology

Our assessment of the SO processes and controls for capex programmes for CP6 is based on the following three themes (A to C) and eight more detailed criteria as described in our mandate. For ease of reference these are shown below in Table 5.

Theme A – Whether the processes enable appropriate decision making points in the project management processes and controls to govern capex spend in a cost effective manner.
1. Does the SO have clear processes and controls to govern the developing maturity of the programme?
2. Are appropriate investment decision points identified in relation to the project and programme lifecycle?
3. Is the Route Services IT Investment Panel, which scrutinises and supports the SO's delivery, the most appropriate forum for investment decisions?
Theme B – Whether there is sufficient scrutiny of projects undertaken throughout the project and programme lifecycle so as to assure delivery.
1. Does the Programme Board composition (reflecting the responsibilities of those members, rather than their individual skill set) enable suitable challenge in programme delivery?
2. Does the SO's approach ensure sufficient industry engagement as its programme progresses?
3. What external reporting would aid transparency of SO's progress, including reporting to the SO Advisory Board?
Theme C – Whether the SO recognises and plans to develop the capabilities required to operate its controls and governance framework and deliver its projects.
1. Are the role and skill set of the SRO and the client appropriately identified and defined?
2. Does the SO understand the capabilities required to deliver and how these capabilities can be developed?

Table 5: Our 3 Assessment themes and 8 criteria

Office of Rail and Road
Review of System Operator CP6 processes and controls
for investment decisions relating to capex spend

A tri-partite (ORR/Network Rail/Nichols) planning meeting was held on 23 March 2018 at which the methodology and timings of the review were agreed. Our methodology is based on the following steps:

- A review of key documentation supplied by Network Rail, in accordance with our mandate, and subsequent follow up requests for additional documentation made to Network Rail. See Appendix 2 for full list of documentation reviewed.

- Meetings with key personnel, in accordance with our mandate, as well as follow up interviews and phone calls. See Appendix 4 for a full list of interviews held.

- Attendance at and observation of a number of existing governance forums as listed in Appendix 3.

- Presentation of emerging findings to Network Rail and the ORR.

- Production of draft and final reports.

This report has been structured around the three themes and eight more detailed criteria set out in Table 5 as above. We have presented our findings and recommendations against each of the eight detailed criteria before forming our conclusions for each of the three themes.

Office of Rail and Road
Review of System Operator CP6 processes and controls
for investment decisions relating to capex spend

Context for our findings

Introduction

Before presenting our findings it is important to understand the key current context surrounding the SO capex programmes and the processes and controls that are currently in place.

Capex programmes deliver rail industry wide benefits

The SO's proposed CP6 capex programmes are key initiatives for Network Rail and the wider rail industry with the potential to deliver significant strategic long-term benefits. As such, it is essential that the aims and objectives of the programmes have the buy-in and integrated approach from the wider rail industry throughout all stages of their life cycle. Furthermore, it is possible that going forward, specific elements of the programmes may be delivered by others across the rail industry which are beyond the direct responsibility of Network Rail. This may introduce a number of delivery dependencies. In assessing the processes and controls for these programmes we have therefore considered their appropriateness within Network Rail as well as the extent that they allow for sufficient engagement with the wider rail industry.

Capex programmes are very early in their development

In addition the programmes are still very much in their early stages of development and as such the outputs and detailed scope are yet to be fully defined. Similarly the cost estimates are relatively immature and as a consequence the anticipated completion dates are still not certain.

Office of Rail and Road
Review of System Operator CP6 processes and controls
for investment decisions relating to capex spend

nichols

Processes and controls currently in place

Network Rail provided us with a wide range of documentation that described the processes and controls for the management of SO capex programmes (currently as well as their plans for CP6). From the review of this documentation and discussion with key interviewees we have mapped the full extent of the processes and controls that are currently in place, as shown in Figure 3 below. These processes and controls are found at four levels within the SO structure: individual project level; programme level; portfolio level; and executive management level. These four levels are also shown in Figure 3.
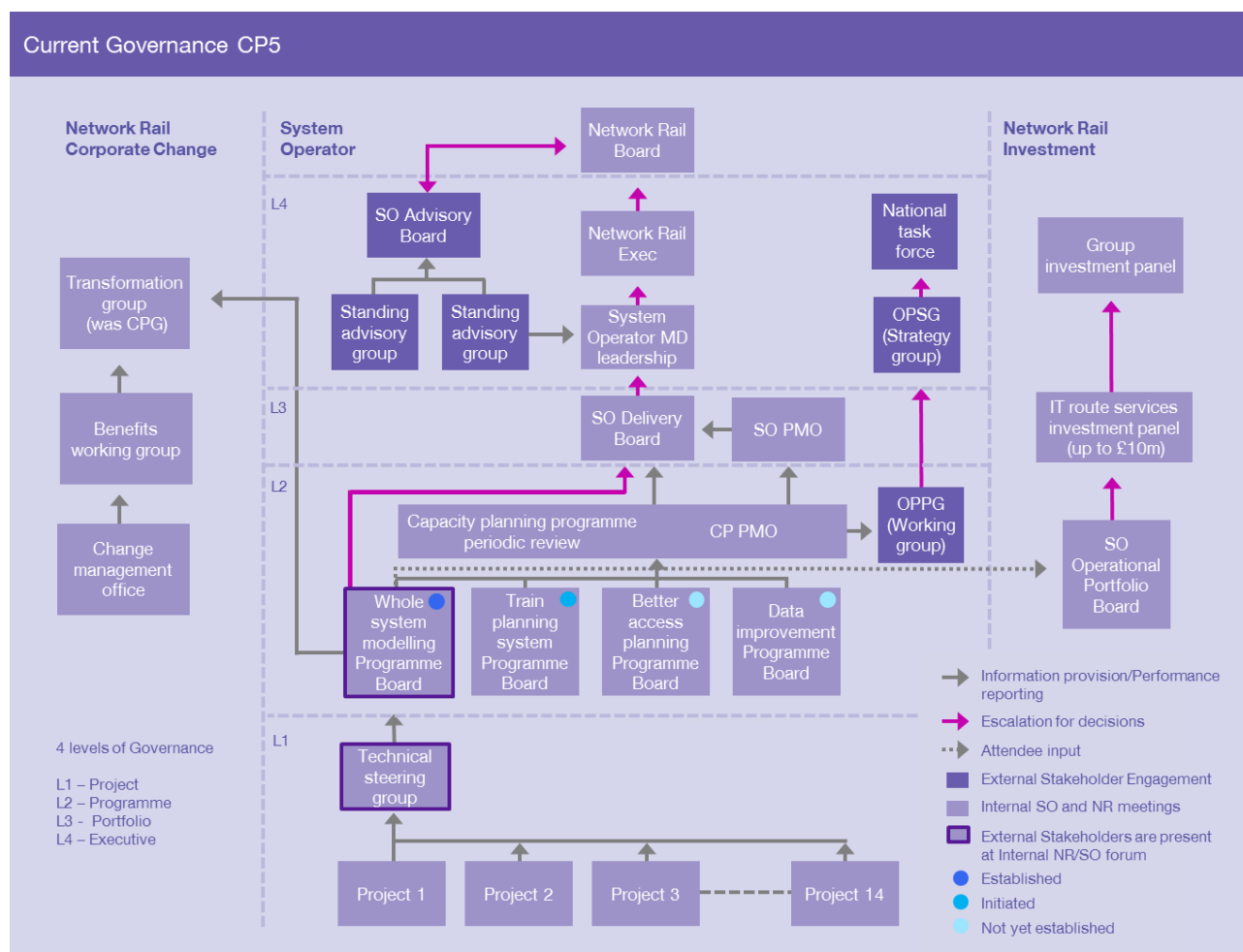

Figure 3: Current SO capex processes and controls and the four levels

The **individual SO capex projects** within a specific programme (level 1 in the table above) are managed at a working level with performance across the individual projects reviewed on a weekly basis by the Programme Manager. Technical progress of projects is also discussed at a Technical Steering Group.

Office of Rail and Road
Review of System Operator CP6 processes and controls
for investment decisions relating to capex spend

Individual programmes (level 2 above) are managed by the relevant programme board, chaired by the SRO who has been formally appointed to the role. The programme boards are the primary forums for technical and performance review across the relevant programme. The Whole System Modelling Programme is the most mature programme board with established attendees and reporting. The programme board for the Train Planning System Programme has recently commenced. Programme boards for the Data Improvement Programme and the Better Access Planning Programme are yet to be established. In accordance with the mandate our review at programme level has focused primarily on the Whole System Modelling programme as its processes and controls are regarded as a template for application to the other three programmes in due course (including the arrangements for individual projects to feed into these programmes).

Reporting at an **overall SO capex portfolio level** is co-ordinated by the Capacity Planning PMO and the newly established SO PMO. These have clear and complementary roles. The Capacity Planning PMO co-ordinates the activities of the four individual SO capex programmes, whereas the SO PMO takes a wider portfolio overview across the SO as a whole. This SO portfolio based capex information is discussed and reviewed at the SO Delivery Board (level 3). When necessary, issues are then raised for resolution to **executive level** for the attention of the Managing Director SO (level 4).

There is a separate process for **financial authority of the relevant lifecycle stage for each programme**, with requests for approval being made to the IT Route Services Investment Panel (a sub-set of the Route Services Panel) in accordance with Network Rail's investment regulations. Before formal submissions are made to the IT Investment Panel they are first considered at the SO Operational Portfolio Board. For those programmes that have an anticipated final cost greater than £10m, following approval at the IT Route Services Investment final financial authority needs to be made by Network Rail's overall Group Investment Panel.

In addition there are established forums **for co-ordinating the SO capex programmes with other business change initiatives across Network Rail**, for example the Benefits Working Group and the Transformation Group.

For engagement with the wider rail industry there are a range of established forums for seeking buy-in to the scope and projected benefits of each programme. This includes representation at programme boards as well as at a Capacity Planning portfolio level (via the Operational Practitioner Planning Group, Operational Planning Strategy Group and the National Task Force)[1]. The SO is also planning to commence the first meeting of the System Operator Advisory Board which, amongst other things, will consider the strategic progress of the SO capex programmes.

---

[1] These are industry wide forums at a technical and strategic level that co-ordinate performance and capacity improvement initiatives which the SO capex programmes contribute to.

Office of Rail and Road
Review of System Operator CP6 processes and controls
for investment decisions relating to capex spend

For co-ordinating delivery with other rail industry organisations, who may going forward be responsible for delivering specific parts of the SO capex programmes, for example the provision of supporting input to timetable development on a given route, the governance arrangements are still at an early stage of development. However, the intention is for the programme boards to be the primary forums to provide visibility and co-ordinate any such delivery by others.

Office of Rail and Road
Review of System Operator CP6 processes and controls
for investment decisions relating to capex spend

Findings and recommendations against the three themes and eight criteria

Introduction

In this section, we present our summary of findings and recommendations against each of the eight criteria contained within the three themes. In addition to the recommendations we have also highlighted a number of areas that SO may want to take forward as part of its programme for further development of its processes and controls. Our suggestions, in part, draw on best practice and lessons learnt from other projects and programmes. These are also listed against each of the eight criteria.

Theme A – Whether the processes enable appropriate decision making points in the project management processes and controls to govern capex spend in a cost effective manner.

Criteria 1 – Does the SO have clear processes and controls to govern the developing maturity of its programme?

We have assessed the processes and controls within the SO itself, relevant areas across other parts of Network Rail (for example the formal investment approval process and corporate management of strategic change initiatives), as well as the critical engagement process with the wider rail industry.

Our summary findings for criteria 1 are:

Good practice

1. There is a clearly defined process and controls structure that separates out performance and technical review from formal investment approvals, thereby ensuring compliance with Network Rail's investment regulations.

Office of Rail and Road
Review of System Operator CP6 processes and controls
for investment decisions relating to capex spend

2. For technical and performance review, there is a good reporting process that provides visibility of progress. Reporting is rolled up in a consistent manner from project level, via the programme boards, and ultimately to the Delivery Board. This is co-ordinated by the two PMOs who have clear and complementary roles.

3. For technical and performance review there is a clear escalation route for issues and risks that need management attention to the Delivery Board and if necessary to the SO Managing Director, albeit the operation of the Delivery Board is still in its early stages.

4. There are a number of forums for wider industry engagement regarding the aims and objectives of the programmes to ensure the benefits are bought into and ultimately realised (see criteria 5).

5. There are numerous working level forums in place to test ideas and secure buy-in before formal approvals and reviews, for example the Whole System Modelling Technical Steering Group and the SO Operational Portfolio Board.

6. Good templates exist for reporting (for example 'Programme On A Page' formats) and the project 'visualisation process' helps ensure good communication and awareness of progress at individual project level within the programme.

Areas for further development

1. It was not clear whether the success criteria for effective process and controls for CP6 capex programmes had been fully defined. For example, we had not seen evidence of what good industry wide engagement should look like and how it can be subsequently measured so as to assess buy-in to the scope and projected benefits of the programmes. We were also of the view that measurement of overall portfolio progress against SO baseline plan assumptions needs strengthening which in turn will assist reporting of progress to the wider industry.

2. We observed there were a number of key documents that described elements of the SO capex governance structure. Nevertheless, there does not appear to be a single document that describes the full extent of the processes and controls currently in place. This includes providing clarity of what needs to be further developed for CP6 covering the SO itself, as well as the interfaces across other parts of Network Rail and the wider industry. The creation of such a document would help all personnel to have a full understanding of the roles and responsibilities for the required processes and controls.

Office of Rail and Road
Review of System Operator CP6 processes and controls
for investment decisions relating to capex spend

3. We observed that following authorisation by the Route Services Panel the draw down of financial contingency is currently controlled exclusively at individual programme level rather than having some contingency retained across all of the programmes at overall portfolio level. We considered that this may be an inefficient way of managing contingency given each of the programmes were at an early stage in their development lifecycle and that they all had complex interdependencies with each other.

4. Whilst end users are present across the SO programme governance structure we are of the view that greater consideration is needed as to how end users (internal and external) are bought into (and remain bought into) the aims and objectives of the programmes in order to fully realise their significant benefits (see our recommendation in criteria 5). This includes for example ensuring that working level end user representatives are empowered to contribute to decision making at the appropriate governance forums.

Based on these findings our recommendations for criteria 1 are:

Theme A – Recommendations for criteria 1
R1: Define the critical success factors and metrics that will help demonstrate the effectiveness of the processes and controls and review regularly throughout CP6.
R2: Investigate the practicality of developing a strategy that gives consideration to allocating some contingency at overall portfolio level as well as at an individual programme level.

Table 6: Recommendations theme A criteria 1

Suggested areas for further improvement

In addition to our recommendations we also suggest the SO should consider the following areas for improvement:

- The production of a process and controls manual that expands upon the current SO capex governance framework, enabling all SO employees to become fully acquainted with the programme governance structure and the objectives of all forums to ensure compliance with the processes.

- Making sure that there is adequate representation of end user practitioners (with clear mandates for all stages of the programme lifecycle).

Office of Rail and Road
Review of System Operator CP6 processes and controls
for investment decisions relating to capex spend

nichols

Theme A – Whether the processes enable appropriate decision making points in the project management processes and controls to govern capex spend in a cost effective manner.

Criteria 2 – Are appropriate investment decision points identified in relation to the project and programme lifecycle?

We assessed the application of investment decision points across the programmes, with our findings focusing primarily on the Whole Systems modelling programme, given that it is the most mature of the four programmes.

Our summary findings for criteria 2 are:

Good practice

1. There are established stage gate processes at both programme and project level based on Managing Successful Programmes for Network Rail (MSP4NR) and Governance for Railway Investment Projects (GRIP) thereby ensuring compliance with Network Rail investment regulations. MSP4NR is particularly appropriate for these programmes given they are in effect business change programmes which are linked to strategic benefits and may require extensive system changes and/or behavioural changes. Financial authorisation of the programmes is made with reference to these stage gates.

2. There is a recognised structure for assessing whether a programme needs to comply with MSP4NR based on its level of change complexity. This provides a clearly understood set of guidelines for applying the stage-gate processes.

3. Programme Boards ratify whether a programme has successfully passed through a stage gate based on the relevant assessment criteria. This ensures a formal process for stage-gate approvals.

4. In advance of formal presentation to the Programme Board there is good preparation for and challenge of the content required for the relevant stage-gate review led by the Capacity Planning PMO. This helps ensure the information supplied to the stage-gate review is fit for purpose.

5. As part of continuous improvement there are examples of learning from the recently completed Timetable Review Improvement Programme being applied to the stage-gate reviews for the Whole System Modelling Programme. We consider that the PMO has an important role to play in making sure that the learning from each stage gate review is being applied systematically across the programmes as they progress through CP6.

Office of Rail and Road
Review of System Operator CP6 processes and controls
for investment decisions relating to capex spend

nichols

Areas for further development

1. We have seen recent examples of stage gate reviews that demonstrate a good application against the prescribed process. However we have not seen evidence of independent challenge and assurance being applied which we consider would significantly strengthen the robustness of the stage gate review process.

2. It is not clear whether the stage gate process includes appropriate involvement from the wider rail industry at the programme board to assess whether the scope continues to deliver the expected benefits.

3. The SO should ensure stage gate reviews are supported by appropriate technical input given the complex nature of these programmes.

Based on these findings our recommendation for criteria 2 is:

Theme A – Recommendation for criteria 2
R3: Ensure stage gate reviews are supported by appropriate Network Rail assurance by those outside the SO direct management team.

Table 7: Recommendations theme A criteria 2

Suggested areas for further improvement

In addition to our recommendations we also suggest the SO should consider the following:

- Stage gate review should also include appropriate technical input and wider rail industry input to focus on ensuring the benefits are on track for realisation.

- Network Rail should consider taking the learnings from each stage gate reviews and use them at a portfolio level by the PMO to ensure continuous improvement of the effectiveness of the stage-gate process.

Office of Rail and Road
Review of System Operator CP6 processes and controls
for investment decisions relating to capex spend

Theme A – Whether the processes enable appropriate decision making points in the project management processes and controls to govern capex spend in a cost effective manner.

Criteria 3 – Is the Route Services IT Investment Panel the most appropriate forum for investment decisions which scrutinise and support the SO's delivery?

Currently all SO capex investment decisions are considered by the Route Services IT Investment Panel meeting. The panel, chaired by the Finance Director Route Services, comprises two distinct parts: firstly, consideration of wheeled plant investment and; secondly, IT investment proposals.[2] Financial authority for SO capex programmes are currently considered under the second category.

Our summary findings for criteria 2 are:

Good practice

The panel meets on a periodic basis and by its nature considers a wide range of subjects across the Network Rail IT portfolio, of which SO capex items is a small sub set. The IT investment part of the meeting has good attendance from key IT specialists across Network Rail that provide effective challenge on IT investment decisions being considered by the panel. This includes a focus on end user benefits, cost and schedule robustness as well as lessons learnt from projects and programmes that have been completed (for example through consideration of close out reports). The panel currently has no membership from the SO.

For SO capex programmes, applications for investment authority are first discussed and reviewed at the SO Operational Portfolio Board before being formally submitted to the Route Services Panel for approval. The Operational Portfolio Board is regarded as a useful meeting to ensure that the SO IT systems are considered from a portfolio view before relevant investment authority being sought.

Financial authority applications to the panel are supported by a template compliant with Network Rail's investment criteria established by Group Investment. The template is well structured, comprises the relevant key headings required for decision makers and records the extent of buy-in to the proposal from key consultees across Network Rail. The meeting is supported by an effective secretariat function with actions clearly recorded and tracked until close out. Financial authority is only released once these actions are completed.

---

[2] We observed the operation of the IT Investment Panel on 24 April 2018

Office of Rail and Road
Review of System Operator CP6 processes and controls
for investment decisions relating to capex spend

We consider that the Route Services IT Investment Panel is an established investment panel, effectively chaired and operated in accordance with its agreed terms of reference. Whilst there were no specific SO capex investment applications submitted to the particular meeting we observed, we can conclude that the meeting would consider SO applications in compliance with Network Rail investment regulations.

Areas for further development

Notwithstanding our confirmation of compliance, it is important to highlight that the projected benefits from the SO capex programmes will be realised across the rail industry as a whole and as such there is a need to take a wider perspective than just the benefits that are likely to accrue to Network Rail. This wider perspective of benefits realisation is the responsibility of the SO. Given this key SO responsibility, we have considered as part of our study whether there may be a case for transferring investment authority for SO capex programmes from the Route Services Panel to a new dedicated SO Investment Panel.

To help objectively assess the merits of where decisions for SO capex authority should be made for CP6, we have proposed a number of key criteria which we consider are required for an effective SO capex investment authority forum to help inform our recommendation which are summarised below:

- Relevant experience and skill set of panel members

- Extent of independence from the day to day operation of the SO

- Links with other IT, business change and budget considerations across Network Rail

- Avoidance of conflict between funding approval and internal IT service supplier

- Focus on realisation of wider rail industry benefits (i.e. beyond those that just accrue to Network Rail)

- Ability to consider budget flexibility as part of a portfolio based approach to the SO capex programmes

Against these criteria we evaluated three options for SO capex investment authority:

Option 1 – Retain Route Services Investment Panel as is.

Option 2 – Modify attendance at the Route Services Investment Panel to include permanent SO representation.

Option 3 – Create a new SO Investment Panel.

Office of Rail and Road
Review of System Operator CP6 processes and controls
for investment decisions relating to capex spend

Our analysis of the options against the criteria is set out in Table 8 below.

Criteria	Remain as is – Route Services Panel	Modify attendance at Route Services Panel to include SO reps	Bring the investment decision process formally into the SO as a new and separate investment meeting (including relevant IT reps)
Relevant experience and skill set of panel members	✓	✓✓	✓✓
Extent of Independence from the day to day operations of the SO	✓✓	✓	X*
Link with other IT, business change and budget considerations across Network Rail	✓✓	✓✓	✓
Avoidance of conflict between funding approval and internal IT service supplier	X	X	✓
Focus on realisation of wider Industry benefits beyond Network Rail	X	✓	✓✓
Ability to consider budget flexibility as part of a portfolio based approach to the SO capex programmes	X	X	✓

*To mitigate this we recommend that the meeting is chaired by a senior representative who is not involved in the day to day management of the SO.

Table 8: Options for investment authority

Office of Rail and Road
Review of System Operator CP6 processes and controls
for investment decisions relating to capex spend

Based on our criteria, on balance we recommend that Network Rail give consideration to SO capex investment decisions being made by a new dedicated SO Investment Panel. This would ensure greater consideration of industry wide benefits. However we also recommend that this new panel has attendance from IT specialists from across Network Rail, for example the Chief Information Officer, to ensure wider buy-in on IT matters. In addition, this panel should be chaired by a suitably senior person from outside the SO, to provide the panel with appropriate independence and challenge from the day to day running of the SO itself.

Figure 4 below shows the recommended change of investment approval panel. We also consider the SO Operational Portfolio Board should be retained as it is regarded as a useful preparatory meeting for SO capex investment applications.
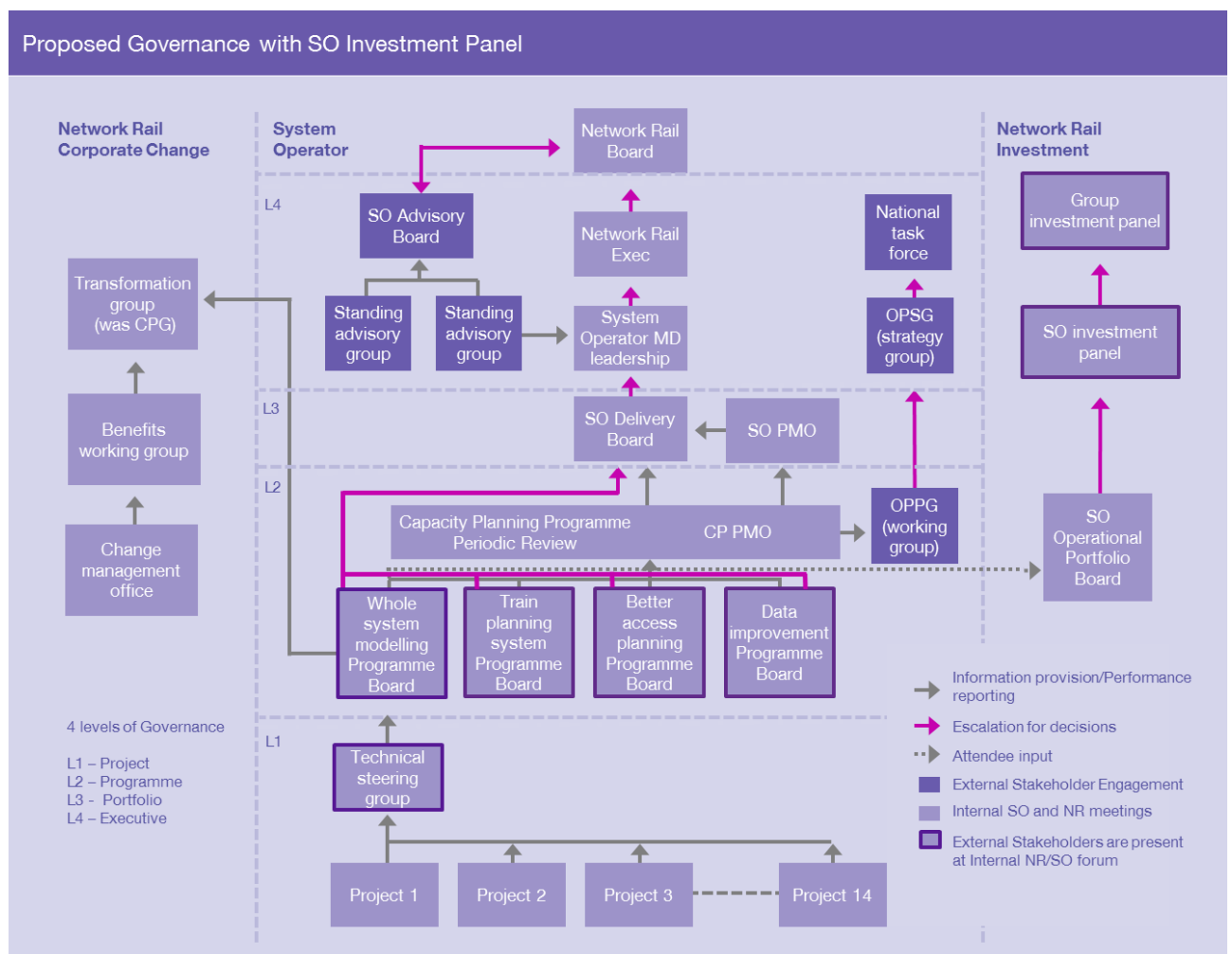

Figure 4: Proposed Governance with SO Investment panel

Office of Rail and Road
Review of System Operator CP6 processes and controls
for investment decisions relating to capex spend

nichols

Based on these findings our recommendation for criteria 3 is:

Theme A – Recommendation for criteria 3
R4: Consider whether and how the SO's investment authority would benefit from relevant expertise and capability to consider whole industry benefits, in order to provide more effective challenge. Options could include the creation of a new SO investment panel.

Table 9: Recommendations theme A criteria 3

Theme A Conclusion

Taking account of our findings for criteria 1-3 above our conclusion for theme A is shown in Table 10 below.

Theme A Conclusion	
Theme A	Whether the processes enable appropriate decision making points in the project management processes and controls to govern capex spend in a cost effective manner?
Conclusion	
The processes currently in place provide a good foundation for appropriate decision points in the project management processes and controls to govern capex spend in a cost effective manner. However we recommend a number of specific improvements as described in recommendations R1-R4.	

Table 10: Theme A conclusion

Office of Rail and Road
Review of System Operator CP6 processes and controls
for investment decisions relating to capex spend

Theme B – Whether there is sufficient scrutiny of projects undertaken throughout the project and programme lifecycle so as to assure delivery.

Criteria 4 – Does the Programme Board composition (reflecting the responsibilities of those members, rather than their individual skill-set) enable suitable challenge in programme delivery?

The programme boards are the primary forums for assessing performance for each of the four individual programmes before information is rolled up to a portfolio level for discussion at the Delivery Board.

We observed the meeting of the Whole System Modelling Programme Board on 24 April 2018, which was chaired by the SRO who had responsibility for delivering the benefits of this programme as prescribed in a formal letter confirming his appointment as SRO. Our findings for criteria 4 are based on our review of the Whole System Modelling programme and its application as a template for the other three programmes in due course.

Our summary findings for criteria 4 are the following:

Good practice

1. The SRO is fully aware of the responsibilities that have been formally given to that role and demonstrates effective management of the board and compliance with its terms of reference.

2. The Whole System Modelling programme board has a strong focus on managing programme level performance. There is good representation of programme management capability and experience with appropriate discussion and challenge on performance against baseline and technical issues. Individual projects are rolled up to programme level enabling the board to focus on the most appropriate issues.

3. There is a good focus on outputs, benefits and risks to their realisation. The board has a sponsor and a business change manager which gives added focus to these areas. However the board recognises that further steps need to be taken to further improve representation of these key disciplines which are essential to the overall success of the programmes.

4. There are representatives from both the Capacity Planning PMO as well as the wider SO PMO teams at the board, enabling wider challenge, consideration of best practice and a portfolio approach to decision making.

Office of Rail and Road
Review of System Operator CP6 processes and controls
for investment decisions relating to capex spend

Areas for further development

1. Whilst there are agreed Terms of Reference for the board, roles and responsibilities of individual programme board representatives are however not yet fully defined and endorsed. This is recognised by Network Rail and steps are being taken by the programme board to complete this action.

2. The programme board does have some wider rail industry representation (including at its Technical Working Group) but it is limited and there is a lack of clarity of this role from those external organisations attending the programme board. Clarity is also required as to which senior forum they can escalate issues to. Our findings in criteria 5 expand on these points further.

3. The SO recognises the need to strengthen the role of the end user representative within Network Rail as a necessary action in ensuring the requirements are effectively captured and the benefits of the programme are realised.

Based on these findings our recommendation for criteria 4 is:

Theme B – Recommendation for criteria 4
R5: Ensure the roles of those attending the programme board are clearly defined and documented.

Table 11: Recommendations theme B criteria 4

Suggested areas for further improvement

In addition to our recommendation we also suggest the SO should consider the following:

- Implement regular reviews of programme board effectiveness to focus on ensuring the outputs and requirements are sufficiently defined to enable the anticipated benefits to be realised.

Office of Rail and Road
Review of System Operator CP6 processes and controls
for investment decisions relating to capex spend

Theme B – Whether there is sufficient scrutiny of projects undertaken throughout the project and programme lifecycle so as to assure delivery.

Criteria 5 – Does the SO's approach ensure sufficient industry engagement as its programme progresses?

Throughout our study we observed a strong recognition by the SO team that steps need to be taken to improve engagement with the rail industry regarding the scope and forecast benefits of each of the programmes, at a working technical level as well as at a senior executive level. Our assessment focused on assessing the current level of engagement and to what extent actions were being considered for future improvements.

Our summary findings for criteria 5 are:

Good practice

1. All interviewees strongly supported the need for more effective industry wide engagement as key to the successful realisation of benefits. Industry engagement currently exists at a number of levels: a) individual programmes via the relevant programme board and respective sub groups, and; b) at the Capacity Planning portfolio level (Operational Planning Practitioner Group, Operational Planning Strategy Group and the National Task Force).

2. In addition to the above there will also be an SO Advisory Board together with two Standing Advisory Groups. The progress of the SO capex programmes will be discussed at these forums (at a strategic portfolio level) and industry representatives should be able to escalate issues from working groups if necessary. The first meeting of the SO Advisory Board has yet to be held.

3. We regard the co-chairing of the Operational Planning Strategy Group meeting by Network Rail and an industry representative as a good example of setting the right environment for effective collaborative dialogue between Network Rail and the wider industry. This was confirmed through our interview of the co-chair industry representative.

Office of Rail and Road
Review of System Operator CP6 processes and controls
for investment decisions relating to capex spend

Areas for further development

1. Whilst the external industry representatives understand the aims and objectives of the programmes, it is not clear whether for each programme these aims and objectives have been formally documented and shared by industry representatives. We consider this to be essential to ensure buy-in and that going forward such documents should be managed on a 'controlled' basis in order for any subsequent changes to be properly recorded. This process should be undertaken at Operational Planning Strategy Group and formalised at the relevant Programme Board.

2. Furthermore, we found a consistent theme from across all interviewees that the role of external industry representatives is not always clear, for example, whether they represent the wider industry or focus more on their own organisation's interests. This is a key finding in our review as it significantly risks wider buy-in to the objectives and benefits of the programmes. All interviewees were of the view that much greater clarity is needed regarding the role of the industry wide representatives at each of the governance meetings. The SO is aware of the need for this and plans are already in place to take this forward. For example, we saw evidence of a paper being prepared for the Operational Planning Strategy Group that sought to clarify the role of members at this key industry wide meeting.

Based on our findings our recommendations for criteria 5 are:

Theme B – Recommendations for criteria 5
R6: Define the roles of industry representatives through relevant engagement with the industry and ensure appropriate representation at the various governance levels within the CP6 SO capex programmes.
R7: Have a clear process for gaining buy-in from the industry representatives to the aims and objectives of the programmes.

Table 12: Recommendations theme B criteria 5

Suggested areas for further improvement

In addition to our recommendation we also suggest the SO should consider the following:

- When there is a specific need identified, for example, for a joint deliverable, appropriate consideration should be given to having some industry resources co-located with the SO Programme teams to foster a greater depth of integration and buy in to the business objectives.

Office of Rail and Road
Review of System Operator CP6 processes and controls
for investment decisions relating to capex spend

Theme B – Whether there is sufficient scrutiny of projects undertaken throughout the project and programme lifecycle so as to assure delivery.

Criteria 6 – What external reporting would aid transparency of the SO's progress, including reporting to the SO Advisory Board?

We assessed the range of reporting to industry wide organisations across the SO governance structure including plans for reporting to the SO Advisory Board.

Our summary findings for criteria 6 are:

Good Practice

1. Industry wide representatives are already attending programme boards and working group meetings and therefore have access to and full visibility of the management information supplied to these meetings. There is also the industry wide engagement process at Capacity Planning portfolio level through the Operational Planning Strategy Group to the National Task Force. As such there is already good transparency of data for industry wide representatives across a wide range of forums.

2. Reporting for each programme is based on the use of agreed template data sets of information to ensure consistency across the portfolio, with both PMO's supporting this process. We observed that this common data set is rolled up accordingly to the appropriate level of meeting, including using such information for external reporting.

3. The SO Delivery Board has acknowledged that it has an important role in reviewing and endorsing the data to be provided to the SO Advisory Board from a portfolio level perspective to ensure it is consistent and in a form that aids effective discussion at the SO Advisory Board.

Areas for further development

1. It was not fully clear what the process was for external representatives to escalate issues from an individual programme board level through to more senior portfolio level industry engagement forums.

2. The National Task Force is an established senior industry wide forum and there is a need to ensure the role of this meeting is fully understood with that of the proposed SO Advisory Group in regard to the oversight of the SO capex programmes.

Office of Rail and Road
Review of System Operator CP6 processes and controls
for investment decisions relating to capex spend

3. Further consideration needs to be given by the SO of the format of reporting to the SO Advisory Board. Our view is that such reporting should focus at a strategic level on the scope of the programmes, their benefits and progress against securing these benefits (including risks). Reporting on these themes would help ensure a clear distinction of role with that of the individual programme boards. We agree with the SO's current proposal to use balance score cards and KPI's for reporting to the SO Advisory Board but consider this can be supplemented with summary commentaries on progress including highlighting key issues and risks (including those escalated when appropriate from working level meetings) associated with achieving the industry wide benefits of the programmes.

Based on these findings our recommendations for criteria 6 are:

Theme B – Recommendations for criteria 6
R8: Continue to ensure that single source data is used for consistency of reporting to all meetings that have industry wide representation, including information supplied to the planned SO Advisory Board.
R9: Clarify the appropriate route for escalation of issues for the agreed industry representatives.

Table 13: Recommendations theme B criteria 6

Suggested areas for further improvement

In addition to our recommendations we also suggest the SO should consider the following:

*   The rolled up data set reporting to the SO Advisory Board should have a strong emphasis on progress, issues and risks associated with delivering the benefits of the programmes.

Office of Rail and Road
Review of System Operator CP6 processes and controls
for investment decisions relating to capex spend

Theme B Conclusion

Taking account of our findings for criteria 4-6 above our conclusion for theme B is shown below.

Theme B Conclusion	
Theme B	Whether there is sufficient scrutiny of projects undertaken throughout the project and programme lifecycle so as to assure delivery?
Conclusion	
The governance structure would support future scrutiny of programmes both within Network Rail and by external stakeholders. However, we are proposing a number of specific improvements including in particular, that the roles of the external stakeholders are properly defined across the SO programme governance structure and the level of such representation is increased where appropriate. Please refer to recommendations R5 to R9.	

Table 14: Theme B conclusion

Office of Rail and Road
Review of System Operator CP6 processes and controls
for investment decisions relating to capex spend

nichols

Theme C – Whether the SO recognises and plans to develop the capabilities required to operate its controls and governance framework and deliver its projects.

Criteria 7 – Are the role and skill set of the Senior Responsible Owner and the Client appropriately identified and defined?

Throughout our study period we tested the SO's understanding of the roles and skill sets of the key personnel involved in delivering the capex programmes. We based our assessment on the Whole System Modelling Programme given it is the most mature of the four programmes. We understand that the roles and appropriate resourcing would in time be rolled out across the other three programmes. We then cross checked the roles and skill sets in place for the Whole System Modelling programme with established best practice, including compliance with MSP4NR where appropriate.

Our summary findings for criteria 7 are:

Good practice

1. There is clarity of the respective roles for the management of the Whole System Modelling Programme, including the role of the client and the SRO.

2. MSP best practice is being applied to strengthen understanding and representation of the required roles for the programmes. For example, for the Whole System Modelling Programme steps have recently been taken to strengthen representation from sponsor, business change managers and business analysts.

3. The role and skill set of the SRO is clearly defined in the SRO appointment letter for the Whole System Modelling programme. This good practice should be applied to the other respective key roles, for example, to the client and sponsor to further aid understanding and ensure no overlaps.

Areas for further development

1. There is a concern that having one SRO for all four capex programmes may be too demanding as they progress into CP6, particularly as the same individual is also client for some of the individual projects within the programmes. We consider this is a critical role which needs appropriate support to ensure resilience.

Office of Rail and Road
Review of System Operator CP6 processes and controls
for investment decisions relating to capex spend

2. The SO acknowledges that the role of end user practitioners needs to strengthen to ensure that user needs are appropriately represented. This may, in part, mitigate some of the overarching concerns for the current SRO role described above.

3. There is also a need to further clarify the role of the client with that of the end user practitioner representative.

Our recommendation for criteria 7 is:

Theme C – Recommendation for criteria 7
R10: Provide greater definition of the roles of key personnel associated with the delivery of the programmes, including the sponsor, client, business change manager and end user practitioner representative.

Table 15: Recommendation theme C criteria 7

Suggested areas for further improvement

In addition to our recommendations we also suggest the SO should consider the following:

• Assess how best to provide additional support to the current SRO in recognition that this role currently has responsibility for all four SO capex programmes.

Office of Rail and Road
Review of System Operator CP6 processes and controls
for investment decisions relating to capex spend

Theme C – Whether the SO recognises and plans to develop the capabilities required to operate its controls and governance framework and deliver its projects.

Criteria 8 – Does the SO understand the capabilities required to deliver, and how these capabilities can be developed?

In addition to the discussion with the SO concerning processes and controls, we also assessed the extent that the SO understood the capabilities required to deliver these complex and technically challenging programmes with specific skill sets that can be difficult to recruit and retain.

Our summary findings for criteria 8 are:

Good practice

1. We observed that whilst plans were relatively immature in some instances, there was a strong leadership focus from the two PMO's and the senior executive team to have a more comprehensive portfolio based plan to resourcing.

2. Recruitment is underway for a number of specific programme and individual project roles for the four programmes against known vacancies for the next two years. There is recognition that it has been harder than expected to fill these roles, given their specialist nature. This is being partially mitigated by filling some roles on a temporary basis.

3. Consideration is being given to training needs at an individual role level and this is being built into staff personal development plans. Both PMO's, who have complementary roles as explained earlier in this report, are actively considering strengthening the training offer for staff as the programmes prepare for CP6, recognising that these programmes require unique specialist skills that differ from more traditional infrastructure delivery.

Areas for further development

1. Steps have been taken recently to strengthen sponsor and business change manager representation on the Whole System Modelling programme. This should also be applied to the other programmes as they prepare for CP6.

2. Greater clarity is needed of how the transition of solutions into the end user operations teams works. This includes, for example, how much planning is built in for training and embedding process changes.

Office of Rail and Road
Review of System Operator CP6 processes and controls
for investment decisions relating to capex spend

nichols

3. Whilst vacancies are being filled for specific roles, it is not clear whether there is a comprehensive resource plan for the four programmes managed by the PMO's at an overall portfolio level in preparation for CP6 (including the application of learning from CP5 and how such resources may change as the programmes move through their lifecycle in CP6). This plan should cover role definition, recruitment of the right people for the right roles, on-going training and ensuring retention.

Based on our findings our recommendations for criteria 8 are:

Theme C – Recommendations for criteria 8
R11: Assess how programme resource and training needs change throughout the various lifecycles of the programme during CP6.
R12: The two PMO's should ensure that resources are managed at an overall portfolio level to ensure their most efficient utilisation across the individual capex programmes.

Table 16: Recommendations theme C criteria 8

Theme C Conclusion

Taking account of our findings for criteria 7-8 above our conclusion for theme C is shown below.

Theme C Conclusion	
Theme C	Whether the SO recognises and plans to develop the capabilities required to operate its controls and governance framework and deliver its projects.
Conclusion	
The SO recognises the need to have clarity of roles and responsibilities as well as the right level of skills and capabilities for the CP6 programmes. However, a more structured SO portfolio approach is needed for this which covers role definition, recruitment of the right people for the right roles, their on-going training and ensuring their retention. Such a plan needs to cover the entirety of CP6 in recognition of the fact that these programmes will have different resource and capability needs as they progress through their lifecycles. Please refer to recommendations R10-R12.	

Table 17: Theme C conclusion

Office of Rail and Road
Review of System Operator CP6 processes and controls
for investigation decisions relating to capex spend

Conclusions

Our conclusions against each of the three themes discussed in the main body of this report are summarised in the table below.

Conclusions for each theme	
Theme A	Whether the processes enable appropriate decision making points in the project management processes and controls to govern capex spend in a cost effective manner?
Conclusion	
The processes currently in place provide a good foundation for appropriate decision points in the project management processes and controls to govern capex spend in a cost effective manner. However we recommend a number of specific improvements as described in recommendations R1-R4.	
Theme B	Whether there is sufficient scrutiny of projects undertaken throughout the project and programme lifecycle so as to assure delivery?
Conclusion	
The governance structure would support future scrutiny of programmes both within Network Rail and by external stakeholders. However, we are proposing a number of specific improvements including in particular, that the roles of the external stakeholders are properly defined across the SO programme governance structure and the level of such representation is increased where appropriate. Please refer to recommendations R5 to R9.	
Theme C	Whether the SO recognises and plans to develop the capabilities required to operate its controls and governance framework and deliver its projects.
Conclusion	
The SO recognises the need to have clarity of roles and responsibilities as well as the right level of skills and capabilities for the CP6 programmes. However, a more structured SO portfolio approach is needed for this covering role definition, recruitment of the right people for the right roles, their on-going training and ensuring their retention. Such a plan needs to cover the entirety of CP6 in recognition of the fact these programmes will have different resource and capability needs as they progress through their lifecycles. Please refer to recommendations R10-R12.	

Table 18: Summary conclusions

Office of Rail and Road
Review of System Operator CP6 processes and controls
for investment decisions relating to capex spend

From our review against the three themes and eight criteria we were able to distil our recommendations into three distinct categories covering:

- Industry wide engagement

- Internal Network Rail processes and controls

- Programme and portfolio management capability development

We then grouped our recommendations described in the main body of the report against these categories to produce three key recommendations. Our three summary recommendations are shown in Tables 19 to 21 below together with their mapping to the individual recommendations.

Industry wide engagement:

Key recommendation 1
The SO should clarify and strengthen the level of relevant industry representation in the development and delivery of the CP6 SO capex programmes.
R6: Define the roles of industry representatives through relevant engagement with the industry and ensure appropriate representation at the various governance levels within the CP6 SO capex programmes.
R7: Have a clear process for gaining buy-in from industry representatives to aims and objectives of the programmes.
R8: Continue to ensure that single source data is used for consistency of reporting to all meetings that have industry wide representation, including information supplied to the planned SO Advisory Board.
R9: Clarify the appropriate route for escalation of issues for the agreed industry representatives.

Table 19: Key recommendation 1

Internal Network Rail processes and controls:

Key recommendation 2
Building on the good foundations already in place, the SO should further clarify and strengthen its SO processes and controls for capex programmes.
R10: Provide greater definition of the roles of key personnel associated with the delivery of the programmes, including the sponsor, client, business change manager and end user practitioner representatives.
R5: Ensure the roles of those attending the programme boards are clearly defined and documented.

Office of Rail and Road
Review of System Operator CP6 processes and controls
for investment decisions relating to capex spend

R1: Define the critical success factors and metrics that will help to demonstrate the effectiveness of the processes and controls and regularly review throughout CP6.
R3: Ensure stage gate reviews are supported by appropriate Network Rail assurance by those outside the SO direct management team.
R4: Consider whether and how the SO's investment authority would benefit from relevant expertise and capability to consider whole industry benefits, in order to provide more effective challenge. Options could include the creation of a new SO investment panel.

Table 20: Key recommendation 2

Programme and portfolio management capability development:

Key recommendation 3
The SO should improve its resource management across the capex portfolio, including in relation to relevant financial contingency.
R11: Assess how programme resource and training needs change throughout the various lifecycles of the programmes during CP6.
R12: The two PMOs should ensure that resources are managed at an overall portfolio level to ensure their most efficient utilisation across the individual capex programmes.
R2: Investigate the practicality of developing a strategy that gives consideration to allocating some financial contingency at overall portfolio level as well as at individual programme level.

Table 21: Key recommendation 3

Office of Rail and Road
Review of System Operator CP6 processes and controls
for investment decisions relating to capex spend

Appendices

Appendix 1 – Reporter mandate

Appendix 2 – Documentation reviewed

Appendix 3 – Meetings observed

Appendix 4 – Log of meetings held

Office of Rail and Road
Review of System Operator CP6 processes and controls
for investment decisions relating to capex spend

Appendix 1 – Independent Reporter Mandate – Lot 4

Title	Review of the System Operator's CP6 processes and controls for investment decisions relating to capex spend
Unique Mandate Reference Number	L4NI002
Date	15 March 2018
ORR Lot Lead	Sneha Patel
ORR lead for this inquiry	Siobhán Carty
Network Rail Lot Lead	Jon Haskins
Network Rail lead for this inquiry	Toby Patrick-Bailey

Background

The Office of Rail and Road (ORR) is currently in the process of its 2018 Periodic Review (PR18). This will set the outputs and funding for Network Rail for Control Period 6 (CP6), which will run from 1 April 2019 to 31 March 2024. As part of this process, the System Operator (SO) within Network Rail has developed its own Strategic Business Plan (SBP) and will receive its own settlement, one of ten settlements that will make up Network Rail's overall determination.

Office of Rail and Road
Review of System Operator CP6 processes and controls
for investment decisions relating to capex spend

As part of its SBP, the SO has proposed a suite of improvement programmes, with associated capital expenditure of around £60m to be delivered in CP6. These relate to, for example, the development of an integrated train and possession planning system and improvements to the SO's modelling capability regarding timetable performance. While the ORR's assessment of the SO's SBP is on-going, the costs associated with the improvement plans reflect informed estimates made by the SO (considering historic expenditure and with input from subject matter experts within the business) and it would appear that there is broad support among industry and from funders to support improvements in these areas.

Both Network Rail and ORR agree that these improvement programmes are at an early stage of development. For example, the SO is only at initial stages of determining the benefits and outputs of the projects and of agreeing the likely cost estimates. Network Rail and ORR also agree that it would be impracticable to seek to determine these outputs/costs through the PR18 process, as there is insufficient detail to assess whether the proposed programmes represent an efficient cost or not.

As such, ORR wishes to seek assurance that the funds can be appropriately managed during CP6.

To oversee the development and delivery of these improvement programmes, the SO is proposing a suite of processes and controls which set out how it will make decisions relating to its capex spend over CP6. This is informed by the way in which the SO interprets and incorporates Network Rail's corporate approaches to managing projects and programmes. Specifically, these processes and controls include:

- How the SO is organised to deliver the requirements of Network Rail's business change policy.

- The approach taken where 'local' project governance is applied in accordance with Network Rail's business change policy.

- The processes, reporting, engagements and accountabilities that support the oversight and scrutiny of the SO's project and programme plans.

- The approach by which the SO makes applications to a Network Rail investment panel, and when this will occur in the project and programme lifecycle.

The SO has additionally proposed a governance framework for CP6, which includes an Advisory Board and Standing Advisory Groups to encourage transparency and industry engagement throughout its activities.

Office of Rail and Road
Review of System Operator CP6 processes and controls
for investment decisions relating to capex spend

Purpose

The purpose of this Independent Reporter study is to provide Network Rail, ORR and the SO stakeholders with assurance that the SO's CP6 processes and controls for governing capital investment decisions are appropriate.

The review should consider whether the SO's project management processes and controls provide sufficient management/stakeholder scrutiny and are suitably flexible to allow the SO to make timely spending decisions in an efficient way. Network Rail and ORR would also like assurance that the capabilities required to meet these objectives and deliver the proposed CP6 portfolio of projects are understood by the System Operator.

The review should attempt to identify recommendations to address any weaknesses it identifies in the SO's processes and controls. These recommendations should be tangible, specific and cost-effective, such that ORR could seek to require Network Rail to implement the recommendations through the determination. Any recommendations made should not create inconsistency with Network Rail's corporate approaches to the management of change programmes and capital expenditure.

Scope

The review should be undertaken at a relatively high level, with the following aspects to be considered:

1. Whether the processes enable appropriate decision making points in the project management processes and controls to govern capex spend in a cost effective manner.

   - Does the SO have clear processes and controls to govern the developing maturity of its programme?

   - Are appropriate investment decision points identified in relation to the project and programme lifecycle?

   - Is the Route Services IT Investment Panel the most appropriate forum for investment decisions which scrutinise and support the SO's delivery?

Office of Rail and Road
Review of System Operator CP6 processes and controls
for investment decisions relating to capex spend

2. Whether there is sufficient scrutiny of projects undertaken throughout the project and programme lifecycle so as to assure delivery.

- Does the Programme Board composition (reflecting the responsibilities of those members, rather than their individual skill-set) enable suitable challenge in programme delivery?

- Does the SO's approach ensure sufficient industry engagement as its programme progresses?

- What external reporting would aid transparency of the SO's progress, including reporting to the SO Advisory Board?

3. Whether the SO recognises and plans to develop the capabilities required to operate its controls and governance framework and deliver its projects.

- Are the role and skillset of the Senior Responsible Owner and the Client appropriately identified and defined?

- Does the SO understand the capabilities required to deliver, and how these capabilities can be developed?

The following areas are considered out of scope of the review:

- Network Rail's corporate approach to business change, project management and investment regulations.

- The details, specifications and costs of the projects themselves.

- The make-up and structure of the SO Advisory Board.

- The individual skills and competencies of those fulfilling roles under the framework currently.

Office of Rail and Road
Review of System Operator CP6 processes and controls
for investment decisions relating to capex spend

nichols

Timescales and deliverables

Network Rail and ORR would like to commence this review as quickly as is reasonably possible. Ideally, the review would be carried out to the following timescales:

Presentation of initial findings – 27 April 2018

Presentation of final conclusions – 11 May 2018

Draft report – 11 May 2018

Final report – 18 May 2018

The Independent Reporter should provide weekly updates to both NR and ORR as part of this review; it is expected that these would be provided as 'flash reports' of progress. If there are exceptional issues meetings/conference calls should be scheduled.

It is envisaged that the review should be conducted at a high level, generating a brief report which sets out the Reporter's findings in the three key focus areas outlined within this mandate. The report should provide concise, evidenced answers to the eight detailed questions set out above. The report should be fit for publication as a piece of supporting evidence underpinning ORR's determination.

The report should also contain, where appropriate, recommendations in relation to cost effective improvements that might be made by the SO to its proposed project and programme governance framework and its plans for developing the capability within its organisation.

It is envisaged that the Independent Reporter will conduct this review through interviews of members of the SO programme teams and scrutiny of documentation provided by the SO. As such, the review will require a number of meetings at Network Rail offices in London and/or Milton Keynes.

Office of Rail and Road
Review of System Operator CP6 processes and controls
for investment decisions relating to capex spend

Documentation for review will include:

- The SO guidance on project processes and controls

- Network Rail's investment regulations

- Network Rail's business change policy

- Terms of reference for existing Programme Boards

- MSP4NR/GRIP artefacts generated by the SO

- Applications to the existing Route Services Investment Panel

It is anticipated that interviews will be required with:

- Programme Director roles within the SO (x2)

- An individual within Network Rail's Group Investment team

- An existing Senior Responsible Owner within the SO

- SO leads for Programme Controls (x2)

The following meetings are expected to inform the review:

- A 'kick off' meeting with the SO and potentially ORR

- Whole System Modelling Programme Board

- Route Services Investment Panel

Office of Rail and Road
Review of System Operator CP6 processes and controls
for investment decisions relating to capex spend

Independent Reporter Proposal

The Reporter shall prepare a proposal for review by ORR and Network Rail on the basis of this mandate.

The final approved proposal will form part of the mandate and shall be attached to this document.

The proposal will detail methodology, tasks, programme, deliverables, resources and costs.

Given the importance of this inquiry, the Reporter shall provide qualified personnel with direct experience in the respective disciplines to be approved by ORR and Network Rail. In particular, expertise around the delivery of business change associated with IT projects would be welcomed.

Appendices

Appendix 1 – Joint ORR and Network Rail Guidance to Reporters

Office of Rail and Road
Review of System Operator CP6 processes and controls
for investment decisions relating to capex spend

Appendix 2 – Documentation reviewed

In accordance with the Mandate, we were afforded full access to the Network Rail SharePoint system to access the documentation. During the review period, Network Rail provided additional documentation to supplement what was provided in the original mandate. The full list of documentation provided is listed below:

ID	Document Name	Date Received
1	Application to the Route Services Panel	29 March 2018
2	Business Change Policy 2017 v0.7	29 March 2018
3	Delivery Board Terms of Reference	29 March 2018
4	Network Rail Investment Regulations	29 March 2018
5	SO Governance Framework V2	29 March 2018
6	SRO Role Letter WSM	29 March 2018
7	System Operator SBP February 2018	29 March 2018
8	Response narrative for IR Review document request	5 April 2018
9	Programme Board Meeting Agenda	5 April 2018
10	Programme Working Group Meeting Agenda	5 April 2018
11	Investment Panel Timetable	5 April 2018
12	Terms of Reference – Route Services Panel	5 April 2018

Office of Rail and Road
Review of System Operator CP6 processes and controls
for investment decisions relating to capex spend

13	System Operator Guide 15 12 17	5 April 2018
14	Terms of Reference – Transformation Working Group	12 April 2018
15	Whole System Modelling P10 Board Minutes	12 April 2018
16	Whole System Modelling Programme Pack Period 11	12 April 2018
17	Whole System Modelling Programme Pack Period 12	12 April 2018
18	Whole System Modelling Risk Register and Dashboard Live	12 April 2018
19	Improvement Portfolio P13 Report 2	12 April 2018
20	Whole System Modelling Feasibility Programme Board Terms of Reference March 2018	12 April 2018
21	Whole System Modelling Benefit Distribution Matrix	12 April 2018
22	Whole System Modelling Blueprint V0.1	12 April 2018
23	MSP4NR (Managing Successful programmes for Network Rail) 1.1 Deliverables	12 April 2018
24	MSP4NR Lessons Learned Report - Trip Close V3	12 April 2018
25	Stage Gate Review Tool – presented at Steering group	12 April 2018
26	TRIP benefits tracking position paper V3	12 April 2018
27	TRIP Programme Plan	12 April 2018
28	TRIP Project Brief – Observed Data Analytics V0.2	12 April 2018
29	TRIP Stage 4 Gateway Summary Presentation	12 April 2018
30	Whole System Modelling (WSM) Stakeholder Profile document	12 April 2018
31	WSM Shared Change Purpose Page 1	12 April 2018

Office of Rail and Road
Review of System Operator CP6 processes and controls
for investment decisions relating to capex spend

nichols

32	WSM Benefits Map Final V7.1	12 April 2018
33	WSM Benefit Profiles Final V2.0	12 April 2018
34	Whole System Modelling Feasibility Programme Stakeholder Profiles	12 April 2018
35	Transition Plan V12 9.5.17	12 April 2018
36	SBP 310118 Slides v0.4 Capex Extract	12 April 2018
37	Programme Closure Report – TRIP v4.0	12 April 2018
38	PR18 Progressive Assurance Capacity Planning Programmes Deep Dive v1.5	12 April 2018
39	'Clienting' Principles	13 April 2018
40	Capacity Planning Operational Management framework	13 April 2018
41	WSM Technical Steering Group P10	16 April 2018
42	WSM Technical Steering Group Terms of reference	16 April 2018
43	BOPS – CP – TPS Tactical Roadmap	19 April 2018
44	WSM Project on a Page Period 13	19 April 2018
45	WSM programme Pack Period 13	19 April 2018
46	WSM Excom (Executive Committee) Paper	19 April 2018
47	Terms of Reference	19 April 2018
48	System Operator OPB Meeting Minutes 20180405	19 April 2018
49	SO Portfolio Dashboard OPB 180404	19 April 2018
50	Route Services Panel Pack 24-04-2018	19 April 2018

Office of Rail and Road
Review of System Operator CP6 processes and controls
for investment decisions relating to capex spend

51	PSS (Programme Support Services) periodic Review Terms of Reference V1.0	19 April 2018
52	Operational Planning Strategy Group Meeting Minutes 160318	19 April 2018
53	HCPC284 Terms of Reference OPPG Meeting Update 06122016	19 April 2018
54	E2EP (End to End Planning) Master Slides 002	19 April 2018
55	Systems Operator Organisation Chart	25 April 2018
56	Whole Systems Modelling Programme, Stage Gate 2 documentation	10 May 2018
57	Options for investment panel	11 May 2018

Office of Rail and Road
Review of System Operator CP6 processes and controls
for investment decisions relating to capex spend

Appendix 3 – Meetings observed

Meeting Observed	Date	Attendees	Location
Whole system modelling Programme Board	Tuesday 24 April 9 – 11.30am	Programme Board Members Robert Freeman – Chair Joan Buszewska – Nichols Michael Hurn - Nichols	Network Rail office Milton Keynes
Project and programme visualisation Boards	Tuesday 24 April 11.30 – 12.30pm	Michael Brown Programme Manager Whole System Modelling Programme Penny Hunt – SO PMO Michael Hurn – Nichols Joan Buszewska – Nichols	Network Rail office Milton Keynes
IT investment panel	Tuesday 24 April 1 – 4pm	IT Investment Panel Members Michael Hurn – Nichols Joan Buszewska – Nichols	Network Rail office Milton Keynes
Delivery Board	Thursday 3 May 12.35 – 2pm	Delivery Board Members Donna Wheeler – Chair	The Wesley Hotel (Mandela room), 81-103 Euston Street, London

Office of Rail and Road
Review of System Operator CP6 processes and controls
for investment decisions relating to capex spend

Appendix 4 – Log of meetings held

In accordance with the Independent Reporter Mandate we held a number of interviews with key personnel in Network Rail SO and the ORR.

In addition a number of follow up meetings were held to address some key issues which arose from the original meetings. The follow up meetings were used to test and triangulate our findings. The full list of interviews and telephone calls are listed below.

Meeting Topic	Date	Attendees	Location
Initial kick off meeting	Thursday 29 March	Toby Patrick-Bailey – NR SO Matthew Blackwell – NR SO Siobhan Carty – ORR Stephen Jones – Nichols	ORR office, Holborn, London
Introduction meeting	Thursday 5 April	Toby Patrick-Bailey – NR SO, Michael Hurn – Nichols Joan Buszewska – Nichols	Nichols office, Stratford Place, London
Introduction meeting	Thursday 5 April	Siobhan Carty – ORR Martin Leggett - ORR Michael Hurn – Nichols Joan Buszewska – Nichols	ORR office, Holborn, London
SO PMO	Wednesday 11 April	Penny Hunt – NR SO Michael Hurn – Nichols Joan Buszewska – Nichols	Network Rail offices Milton Keynes
IT Investment Panel	Wednesday 11 April	Bryan Leonard – NR Michael Hurn – Nichols Joan Buszewska – Nichols	Network Rail offices Milton Keynes

Office of Rail and Road
Review of System Operator CP6 processes and controls
for investment decisions relating to capex spend

Capacity Planning PMO	Friday 13 April	Jamie Thomas – NR SO Michael Hurn – Nichols Joan Buszewska – Nichols	Network Rail offices Milton Keynes
SRO / Sponsorship for Whole System Modelling programme	Friday 13 April	Robert Freeman – NR SO Tracey Webster – NR SO Michael Hurn – Nichols Joan Buszewska – Nichols	Network Rail offices Milton Keynes
Capacity Planning Programme Office	Wednesday 18 April	Kris Alexander – NR SO Michael Hurn – Nichols	Network Rail offices Milton Keynes
Independent Review Progress Meeting	Wednesday 18 April	Penny Hunt – NR SO Kris Alexander – NR SO Toby Patrick-Bailey – NR SO Esme Pooke – NR SO Jamie Thomas – NR SO Siobhan Carty - ORR Martin Leggett- ORR Stephen Jones – Nichols Michael Hurn - Nichols	Network Rail offices Milton Keynes
Follow up meeting on Respective roles of the 2 PMOs (SO PMO and CP PMO)	Wednesday 25 April	Penny Hunt – NR SO Jamie Thomas – NR SO Kris Alexander – NR SO Michael Hurn – Nichols Joan Buszewska – Nichols	Network Rail offices Milton Keynes
Introductory Interview	Wednesday 25 April	Donna Wheeler – NR SO Michael Hurn – NR SO Joan Buszewska – NR SO	Network Rail offices Milton Keynes
Meeting with OR to share existing SO governance structure	Thursday 26 April	Martin Leggett – ORR Siobhan Carty – ORR Michael Hurn – Nichols Joan Buszewska – Nichols	ORR offices Holborn, London

Office of Rail and Road
Review of System Operator CP6 processes and controls
for investment decisions relating to capex spend

Follow up Meeting with Kris Alexander re: External Stakeholder forums and escalation	Thursday 3 May	Kris Alexander – NR SO Michael Hurn – Nichols Joan Buszewska - Nichols	Conference call
Operational Planning Strategy Group Forum Co-Chair	Wednesday 9 May	Oliver Bratton – MTR Corporation	Conference call
Meeting with Network Rail to fact check emerging findings	Friday 4 May	Donna Wheeler – NR SO Calvin Lloyd – NR SO Penny Hunt – NR SO Kris Alexander – NR SO Toby Patrick-Bailey – NR SO Michael Hurn – Nichols Stephen Jones – Nichols Joan Buszewska – Nichols	Nichols offices, London
Initial findings meeting with ORR and Network Rail	Monday 7 May	Martin Leggett – ORR Toby Patrick-Bailey – NR SO Michael Hurn – Nichols Joan Buszewska - Nichols	Conference call
Recommendations meeting with ORR and Network Rail	Monday 21 May	Siobhan Carty – ORR Martin Leggett – ORR Donna Wheeler – NR SO Calvin Lloyd – NR SO Penny Hunt – NR SO Toby Patrick-Bailey – NR SO Matthew Blackwell – NR Michael Hurn – Nichols Joan Buszewska – Nichols	ORR office, Holborn, London
ORR comment review meeting	Wednesday 23 May	Siobhan Carty – ORR Martin Leggett – ORR Michael Hurn – Nichols	ORR office, Holborn, London