

The Hansford Review

Unlocking rail investment – building confidence, reducing costs

An independent review chaired by
Professor Peter Hansford FREng

June 2017



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Foreword



This report is about building on transformations already underway in Network Rail; enabling better value infrastructure projects; and creating confidence for wider investment in the national railway.

Unlocking investment in rail infrastructure by third parties will have dual benefits. It will attract much needed additional funding, whilst also bringing a competitive pressure to reduce costs. These changes will benefit Network Rail, government and the wider investment market.

There are barriers to overcome that are discouraging or hindering the involvement of third party investment. Some of these barriers relate to process; some concern the role and perceived behaviours of Network Rail towards third parties.

To address these issues, I was invited by Mark Carne, CEO of Network Rail to chair an independent review of contestability in the UK rail market, with the aim of encouraging third party investment and infrastructure delivery on the national railway. This report sets out the findings and recommendations of my review.

I am grateful to members of the Review Panel for their advice and guidance during this review and in preparing this report. I am also grateful to the team from The Nichols Group and to Rail PR for their support throughout.

During the course of this review we have consulted more than 150 parties, who collectively have helped us to build up a picture of the issues, obstacles and potential solutions. I would like to thank them for their time, contributions and insights. It is clear that there is huge interest in this subject and a keen appetite for the outcomes of the review to succeed. I trust that all views have been properly represented, whilst maintaining anonymity of source.

In undertaking this review, I am mindful of previous reports produced on related aspects of railway investment – for example the Shaw Report on *The future shape and financing of Network Rail*, published in 2016. The Review Panel and I have taken the recommendations of these reports as firm foundations for this review, to ensure that our own recommendations align with transformations underway. Visible progress has already been made; I am clear however that there is much more to be done to truly unlock the market.

My recommendations are offered to the Board of Network Rail, as well as to all parties with a role to play in taking this important agenda forward. I believe that the potential ‘size of the prize’ is significant and that this prize is within reach.

Peter Hansford FEng
June 2017

The Review Panel

Professor Peter Hansford FREng,
University College London (Panel Chair)

Mike Gerrard, Independent

Alistair Gordon, CEO, Keolis UK

Daniel Hanson, Director, PwC

Zara Lamont OBE,
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John Smith,
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The Nichols Group supported the review, led the consultation process, provided analysis support and project management.



Rail PR led the communications strategy.



Rail Positive Relations
Verba mea auribus

Summary

Contestability

A contestable market has few barriers to entry and a threat of competition to incumbents. Increased contestability can lead to greater innovation, better value for money and deliver more for customers. Where there is little threat of competition, a monopoly organisation can become unresponsive to its customers and lack the incentive to reduce costs.

This review

This is an independent review of contestability in the UK rail market, to consider third party investment in and infrastructure delivery on the national rail network. In this review, a third party means any public or private organisation other than Network Rail, the Office of Rail and Road (ORR) or the Department for Transport (DfT).

The underlying tenet of the review is that a more contestable market for rail projects would create pressure on Network Rail and its suppliers to be more innovative, to improve cost performance, deliver projects more competitively and predictably and therefore offer better value for money. In addition, it would provide more opportunities for third parties to fund and deliver projects.

Accordingly, the review has addressed:

- Attracting funding and financing
- Removing barriers to third party involvement
- Increasing contestability to provide more opportunities for third parties
- Using different contracting strategies, so third parties can deliver for less cost

Recommendations are made under four headings:

- Delivering more value for money
- Broadening third party investment
- Enabling third party delivery
- Oversight arrangements

How contestable is the existing market?

Network Rail is a natural monopoly due to its ownership of most of the UK's rail network infrastructure and its position as the main route for the majority of government investment in rail.

The majority of public expenditure for infrastructure projects is channelled through Network Rail. Network Rail is funded in five-year control periods; we are currently in control period 5, which started in April 2014 and ends in March 2019. Indicatively, expenditure of £24.9 billion was agreed as funding for Network Rail for both infrastructure renewals (£12.1 billion) and enhancements (£12.8 billion) in this five-year control period. This total has been derived from the 2013 Final Determination by the ORR using a 2013 price base. This is approximately £5 billion of expenditure per annum during the control period.

Government already has alternative choices to Network Rail for developing and delivering infrastructure projects. Authorities such as Transport for London (TfL), or Special Purpose Vehicles (SPVs) such as Crossrail Limited and High Speed 2 (HS2) Limited, offer alternative routes to channel public money into rail infrastructure projects.

Crossrail has been able to attract third party funding from private property and housing developers who have contributed to the costs of building new stations. The value to local businesses of improved transport links has been captured by an additional surcharge to London business rates.

The forthcoming South Wales Metro upgrade project will provide an interesting new example, as the successful third party bidder will take over, upgrade and extend transport infrastructure around Cardiff.

The larger schemes, like Crossrail, demonstrate some of the benefits of a contestable market, but have been undertaken as one-off projects. There is no routine consideration of contestability within the mainstream arrangements for infrastructure.

In 2012, Network Rail took an important enabling step towards a more contestable market for the management of delivery of infrastructure projects. It established an in-house projects organisation as a separate entity, Network Rail Infrastructure Projects (NRIP). This step was intended to allow third party providers to compete with NRIP for the management and delivery of Network Rail's infrastructure projects. However, NRIP is still at the centre of project development and delivery for both Network Rail and third party funded projects. There remains a lack of a routine and repeatable way that private sector companies could invest, manage risks and achieve a financial return for managing Network Rail's infrastructure projects.

Network Rail change context

Network Rail has been the subject of numerous related reviews, notably by CEPA/RDG (March 2017), ORR (August 2016), Nicola Shaw (March 2016), Sir Peter Hendy (January 2016), Dame Colette Bowe (November 2015) and Sir Roy McNulty (May 2011). This review has sought to build on their recommendations; in particular, the change introduced by Network Rail to devolve accountability to discrete geographically based route organisations.

The aim of devolution is to bring Network Rail, as the infrastructure operator, closer to its customers and make it more responsive to their requirements. Network Rail will continue to be the owner and operator of the majority of rail infrastructure, and it will still have a central role as the system operator, undertaking strategic planning and ensuring the integrity of the network as a whole.

Network Rail is implementing a transformation plan with the objective to become "a public sector organisation that behaves like a private sector business". Some of the initiatives in this plan are very relevant to this review. For example, a new head of profession for sponsorship has been appointed, responsible for ensuring internal consistency across the devolved route structure. The sponsor role provides the link between the client, funder, system operator, delivery management and stakeholders. This role is at the heart of making choices as to how Network Rail projects are delivered. Network Rail is also recruiting

new business development directors in each route who will be remitted to help secure third party funding for its projects.

The review has recommended further changes needed within Network Rail's organisation to encourage third parties to fund and deliver improvements to rail infrastructure in the context of a devolved route structure. It is not advisable to introduce a separate change programme and the recommendations of this review should be embedded in the existing transformation plan. This will require the objectives and scope of the transformation plan to be reviewed and updated to achieve this end.

Attracting funding and financing

A funder is a provider of a monetary contribution to meet all or part of the cost of an infrastructure project and will want to see the benefits it derives from the project are in proportion to its funding contribution. These benefits could be monetary or non-monetary and include the social benefits the project creates or associated profits that can be realised from increased land values or a new business enterprise. The justification for the funder's contribution is expressed in a funding case.

The need for financing arises when there is a timing difference between the capital expenditure incurred on a project and the receipt of funding to pay for it, whether through capital grants, revenues from fares or a combination of the two. Finance itself may be deployed as equity or debt, or a combination of the two. The return payable on finance depends primarily on the risks that its providers are bearing.

The review has determined that government is primarily focused on attracting third party funding and financing that meets certain criteria. Funding contributions from third parties are welcomed for projects that are demonstrably required to benefit the rail network, and also supplement existing transport funding. However, where other parties realise economic benefits from rail projects, such as housing developers and local authorities, these parties need to develop their own funding cases. For example, a local authority must justify its funding contribution and determine how it will realise its benefits, recognising that they may take many years to materialise.

There should be an expectation that third parties that realise economic benefits from rail projects will pay a more significant funding contribution. For example, this could require local authorities to realise the increase in land values associated with developments enabled by new rail connections. In return, they need a mechanism to do this and assistance to develop a viable funding case.

Network Rail, as system operator, undertakes long-term planning of the rail network to identify where additional capacity or resilience is needed. It does this by consulting with local stakeholders and producing strategies for each route. The strategies also identify candidate projects for government to consider that would satisfy these needs. For emerging projects that fall outside the route strategy, the assessment process to determine which projects justify investment must still be rigorous. It must consider deliverability, value for money and the impact on the existing rail network. For example, if a third party proposes a new project, such as a new station, its impact on the network must be assessed.

A clear and transparent process is needed to routinely consider and conclude on the merits of third party funding proposals in addition to the long-term planning process. This process should quickly establish third party proposals that are worth progressing and identify unacceptable proposals that would be detrimental to the network – weeding out ‘bad’ projects.

The government’s *Green Book: appraisal and evaluation* guidance is currently being updated and may need to take greater recognition of how the merits of projects are assessed to attract more third party funding.

There are complex accounting rules with detailed interpretations that determine whether third party finance can be classified as being on or off the government balance sheet. In addition, private sector finance typically comes with a higher financing charge than public sector finance. It is possible to make the case for using private sector finance if a significant risk transfer to the private sector can be demonstrated, but generally this will be difficult to achieve. As a consequence the review has concentrated on making recommendations for attracting more third party funding, rather than finance. The subject of private financing within procurement of rail infrastructure has been well covered by a CEPA/RDG report (March 2017).

Removing barriers

An extensive consultation was undertaken with many different private and public sector stakeholders including government. This revealed a set of commonly perceived barriers, which discourage or prevent those third parties from investing in rail infrastructure projects.

These barriers include:

Lack of a specific party responsible for ensuring the creation of a more contestable market: It is not clear who has oversight or responsibility to promote contestability, remove barriers to entry and define success.

Lack of visibility of a pipeline of third party projects: There is no clear forward plan of upcoming opportunities for third parties. This makes it difficult for organisations or consortia to overcome the inefficiency associated with ‘one-off’ projects, or to put in place the right resources and financing to deliver projects.

Network Rail roles and behaviours: The consultation responses provided consistent feedback on what it is like for a third party to work with Network Rail. It was characterised as being: fragmented and lacking a common authoritative voice able to commit the whole organisation across its many different roles; unresponsive and lacking interest in third party objectives; unable or unwilling to provide certainty of project costs; and lacking interest in helping third parties to achieve a cost-effective result.

Inappropriate risk transfer: Network Rail is able to bear significant financial risks, such as train service delay costs under Schedule 8, by spreading them across its large portfolio. A third party undertaking a discrete project is not able to benefit from this approach and such risks can become disproportionate to the rewards available from a single project.

Standards and scope control: Network Rail is perceived to apply standards inappropriately as it develops the scope and design of a project. ‘Standards’ may be used to legitimise a significant increase in the scope of a third party project to upgrade existing assets or improve the performance of the network.

Asset Protection Agreements: These are agreements to protect Network Rail assets from the risk of damage by adjacent third party projects. The agreements can be disproportionately onerous on the third party for low risk projects.

Complex business cases and funding agreements: Projects involving third party funding or financing require complex business and financial cases to be agreed before the project can proceed into development. There are no clear templates or guidance available for these agreements or the mechanisms available for the third party to make an investment and achieve a return. The cost required to develop a bespoke agreement may be prohibitive.

Increasing contestability

The review looked at lessons learnt from previous projects and identified three areas where the rail infrastructure market could be made more contestable.

Firstly, contesting at an early stage for funding and solutions from third parties to meet specific needs identified by the system operator in the route strategies. Previously these projects have typically been funded directly by government with Network Rail undertaking project development and delivery. An alternative to this conventional approach is being taken by Transport for Wales in seeking a private entity to take over, operate, upgrade and extend the transport network around Cardiff under the banner of the South Wales Metro.

In a contestable market, the Network Rail routes should also be allowed to compete for projects against third parties with alternative solutions and associated funding contributions, with the aim of finding an optimal answer to meeting the need with the least amount of public funding subsidy.

Secondly, government deciding to channel available public funding to another organisation other than Network Rail to develop and deliver a project. A recent example of this is the government's decision to appoint the East West Rail company to develop and seek additional third party funding for the rail line between Bicester and Bedford and then later onto Cambridge.

Thirdly, introducing more contestability within Network Rail for the management and delivery of infrastructure projects. While NRIP was created as a separate entity by Network Rail to enable such choices, in practice the level of change has been limited. To take advantage of this opportunity each route sponsor should make a conscious choice about whether to engage NRIP or a third party to deliver a project. This will open up the opportunity for the route to use different contracting strategies to engage third party suppliers, and seek better value for money outcomes.

A necessary prerequisite of enabling this option is that each of the eight routes will require suitable strength and depth of commercial capability. This will include the skills needed to define output requirements, write contract terms, and undertake procurement and exceptional negotiating skills. The approach will also need to be predicated on a deeper understanding of delivery risks and what risks are transferred under contract to the third party. The review heard that these skills are not available today within the route teams and so there is a significant challenge to build this capability.

The previous change in 2012 to create NRIP was intended to create a more contestable situation. An unintended consequence of this change has been a concentration of project management and commercial expertise in the new entity NRIP. This has left Network Rail's sponsorship capability without the necessary skills to act as effective internal delivery clients. An option to fill the capability gaps in route sponsorship teams would be to consider re-deploying capability from NRIP. This would also need to be supplemented with additional resource.

A consequence of the previous unsuccessful attempt to introduce contestability is that Network Rail will need to demonstrate its renewed commitment to increasing contestability, both internally and externally.

Using different contracting strategies

This section addresses how Network Rail could engage third party suppliers to deliver projects at lower costs or better value for money.

NRIP performs an internal prime contractor role on behalf of Network Rail for the delivery of infrastructure projects. This means Network Rail bears the financial consequences of risks occurring unless NRIP explicitly transfers them to a third party under contract.

There are reasons why it is appropriate to have NRIP as the prime contractor for certain types of projects. These include where the scale of the project and associated risks could not be tolerated on a private sector company balance sheet. However, this is not the case for all projects where more discrete risks can be passed to the private sector to incentivise delivery of the project at a lower overall cost or for a better outcome. The review heard that using local contractors directly engaged by the routes to undertake non-complex station related works could deliver more practical and aesthetic designs. The rationale being that the local company would be contracted on a design and build basis with their reputations in the local communities providing an incentive to create an excellent outcome.

The NRIP prime contractor role can be described as the 'hub and spoke' model, whereby Network Rail undertakes the hub role and manages a series of different third party contractors and their interfaces as the spokes.

Using different contracting strategies will alter the balance of responsibility between Network Rail and the private sector third party. A good example of the success of a different contracting strategy was the electrification project between Stockley Junction and Maidenhead. This section is part of Network Rail's works for Crossrail. It was completed and put into service during May 2017 to meet a key milestone. Here, the private sector third party had much greater responsibility for delivery than the hub and spoke arrangements used on the Great Western electrification project delivering the adjacent sections beyond Maidenhead.

In summary, there appears to be a lack of considered choices being made between different contracting options in the current arrangements. For certain projects the private sector could deliver at lower cost if a different contracting model and risk apportionment were to be used.

Recommendations

The recommendations of this review arise from analysis of the considerations set out above and represent practical, measurable steps to achieving a more contestable rail market.

There are twelve recommendations grouped under the following headings:

1. Delivering more value for money
2. Broadening third party investment
3. Enabling third party projects
4. Oversight arrangements

The justification for all of these recommendations is set out in further detail in sections 6, 7, 8 and 9 of this report.

Group 1: Delivering more value for money

Alternative design and delivery models

Network Rail routes, as the internal delivery clients, do not have the necessary processes and specialist commercial capability required to execute alternative contracting models.

Recommendation 1: Network Rail to develop and embed processes and specialist commercial capability consistently within the routes to establish and execute a range of alternative design and delivery options for infrastructure projects.

Demonstrating commitment to contestability

The priority associated with a drive to increase contestability needs to be balanced against day-to-day demands of managing the performance of the network. Network Rail needs to demonstrate that it is committed to developing a more contestable market and achieving the benefits, otherwise counter pressures will prevail.

The review panel considered whether to recommend that Network Rail should set efficiency targets and publish a contestability plan as a way of demonstrating this commitment. Given the lack of evidence and measures of contestability available it was decided that these actions were not practical, and that setting arbitrary targets would be counter-productive. It is for Network Rail to determine how it will demonstrate its commitment and to build up an evidence base for gains from contestability.

Recommendation 2: Network Rail to demonstrate its commitment to creating a more contestable market and evaluate resulting gains.

Group 2: Broadening third party investment

Contestability decisions process

There is not a routine, transparent consideration of contestability during the lifecycle of development and delivery of infrastructure projects. To provide transparency, confidence and to open up opportunities for the market, contestability must be made a routine consideration. Consequently the review has identified a need for an effective contestability decisions process. The principles of this process are:

- Choices are considered explicitly at various points through the project lifecycle either by government in the early stages or by Network Rail in the delivery stage.
- All projects that have a public funding requirement go through the decisions process.
- Third party proposals are assessed using transparent appraisal methods. Those that do not meet the criteria are rejected and those that are viable continue into further development.
- Due consideration with clear criteria is given to choosing alternative delivery management and contracting strategies.

Recommendation 3: Network Rail in conjunction with government to develop clear, transparent principles and processes for considering contestability at each investment decision stage.

Appraisal methodology

Third party funding proposals may not be considered proactively because the government's five-case business case appraisal methodology does not include encouraging contestability as a routine consideration. It is also crucial for appraisals to properly include and quantify wider economic impacts in order to help ensure the right projects go ahead.

This may require local planning processes to better quantify the true value to a developer of a new station or train service; for additional revenues to be identified; and/or a more reliable means of capturing increases in land value generated by rail investment.

Addressing all of the above: embracing contestability in the business case framework; properly quantifying wider impacts; making it more possible for the beneficiaries to contribute to the cost of the project, could increase the chance of economically attractive schemes being selected.

Recommendation 4: Government to ensure that it gives due consideration to contestability in its business case methodology, and to publish appraisal guidelines to assist third parties to realise financial benefits associated with rail infrastructure projects.

Funding early development

The cost to third parties of developing high quality project proposals, prior to having certainty of achieving approvals is one barrier identified in this review. This barrier is compounded by the absence of clearly understood ways by which a project sponsor can ensure a period of exclusivity during which to develop their detailed business case, and how the project sponsor would retain rights over the intellectual property of the business case itself. Without assurances on these points parties will be reluctant to commit substantial resources.

Third parties may be developing proposals either in response to a call for proposals from a transport authority to meet a need it has identified (contesting for solutions and funding) or it could be a proposal that has been identified and promoted by the third party.

In either scenario, there is a need for a clearer more transparent appraisal methodology that will require development of a detailed business case upon which a final investment decision can be taken. The early stages of any project are also particularly uncertain especially where permissions or powers may be required. Network Rail has an advantage in this area due to its permitted development rights. An early development fund is needed to support the cost exposure of third parties. The fund could recover its contribution from successful projects. It would need clear criteria to be developed for its use by third parties. This approach should encourage the development of high quality proposals that can be properly assessed using a consistent appraisal methodology.

Recommendation 5: Government to establish an early development fund with clear criteria to assist in the creation of high quality investment proposals.

Forward view of opportunities

There is no clear forward view of opportunities for third parties in the rail infrastructure sector. To respond in a more contestable market, third parties will need to invest and develop their own capability in advance. Having a reasonable forward view of the scale and timing of opportunities should provide the market with the confidence to make those investments.

Recommendation 6: Network Rail in conjunction with government to create and maintain a forward view of the scale of third party investment opportunities, giving visibility and confidence to the market.

Pathfinder projects

Pathfinder projects provide an opportunity to address complex issues, overcome barriers and build confidence. They need supporting governance and oversight arrangements to challenge the status quo.

It is suggested that within twelve months, Network Rail identifies and proposes a series of pathfinder projects to government, for its agreement.

Recommendation 7: Network Rail in conjunction with government to identify a range of pathfinder projects to demonstrate the removal of barriers and the benefits from alternative funding and delivery models

Group 3: Enabling third party projects

Roles and accountabilities

Third party developers and funders need certainty and confidence. Network Rail lacks a single point of contact for third parties, empowered to bind Network Rail to parameters of cost, time, scope and quality to assist third parties in making funding decisions. This point of contact should be in the route organisation, not in NRIP.

Recommendation 8: Network Rail to define roles and accountabilities, build capability and provide support to the routes for engaging with third party investors (funders and deliverers); and to define the respective accountabilities of the routes and Network Rail Infrastructure Projects directorate.

Culture and behaviours

The existing Network Rail transformation programme may not be adequately focused on the culture change required to support third party engagement.

Recommendation 9: Embed within Network Rail's transformation programme the behavioural changes required to create a welcoming, predictable and trusting environment, providing more cost and risk certainty.

Terms of engagement

Network Rail's existing Code of Practice does not include a service level commitment to third parties. Further, Network Rail's template agreements, asset projection agreements and guidelines on risk transfer are complex, at times unsuitable and poorly understood by third parties.

Recommendation 10: Network Rail to convert its Code of Practice into a Service Level Agreement, refreshing its template agreements, asset protection agreements and guidelines reflecting a more balanced risk transfer, in consultation with industry.

Challenge of scope and standards

Government sets out its requirements for infrastructure projects in the form of a High Level Output Specification (HLOS), coupled with the funding available for delivery. Network Rail takes the HLOS and develops options to deliver the outputs. Sometimes this will also include meeting requirements from third party funders. Network Rail may require improvements to existing assets and other works to be added to the project, at the cost of the third party, under the banner of 'compliance with standards'.

There is a lack of transparency to third parties in the early stages of development regarding such increases in scope and cost. Derogations are explored too late in the project, causing additional project scope and potential increase in costs for third parties.

Network Rail does not have an effective independent appeals process where third parties can challenge the extent of additional requirements.

Recommendation 11: Create a transparent process to enable and facilitate third party challenge of scope and standards application during project development, fixing them before funding commitments are made.

Group 4: Oversight arrangements

Increasing the level of contestability in the market will take time and there is a need for strategic oversight to drive contestability and remove roadblocks.

Oversight should be built into existing governance structures, involving Network Rail, DfT and ORR input as necessary. Given the scale and breadth of change required in Network Rail, it seems appropriate for this oversight to be undertaken by or on behalf of the Network Rail Board, perhaps via a Board sub-committee.

Recommendation 12: Establish effective oversight arrangements to provide strategic direction for a more contestable rail infrastructure market, building on existing Network Rail governance structures and involving government as appropriate.

Dependence on others

Network Rail cannot deliver the recommendations of this review alone. It will need the support of the regulator, government and the wider industry.

Recommendations 4 and 5 require government to lead, and recommendations 3, 6, 7 and 12 require government involvement.

1. Introduction

1.1 Background

In December 2016, Mark Carne, CEO of Network Rail, invited Professor Peter Hansford of University College London to chair an independent review of contestability in the rail market. The terms of reference for the review are set out in Appendix 4.

The Hansford Review is preceded by several other notable reviews of the rail industry in recent years. In 2011, the McNulty Review considered ‘options for improving value for money to passengers and taxpayers while continuing to expand capacity’. This delivered recommendations to improve the efficiency gap, proposing that rail costs in Britain should be considerably lower.

Issues with planning and implementation of the 5-year Control Period (CP5) in 2015 prompted the Secretary of State to commission Dame Colette Bowe to consider the lessons to be learned from the planning process, and the practical steps that might be taken to ensure more effective future planning and delivery. The Bowe Report recommended changes in the governance and roles of the DfT and Network Rail in the planning and project development process. Subsequently, Network Rail and DfT published an agreed Memorandum of Understanding in March 2016. It clarifies the DfT’s role as the funder and client for infrastructure investments, and Network Rail’s role as the system operator and principal delivery partner. It contains a joint commitment to drive the efficiency of railway improvement programmes.

Also in 2015, it became clear that costs were increasing and the original schedule could not be met for the Network Rail Great Western electrification programme. The National Audit Office reported in November 2016 several contributory causes of the significant cost escalation. This included failings in Network Rail’s approach to planning and delivering the infrastructure programme.

On taking up his role as Chair of Network Rail in 2015, Sir Peter Hendy undertook a review of Network Rail’s CP5 enhancement programme in England & Wales to

see what could be delivered affordably within the funding period to 2019. The review highlighted the challenges of delivering the programme to cost and time, and resulted in some projects being re-scheduled.

Government asked Nicola Shaw to advise on the future shape and financing of Network Rail. Her report was published in March 2016 and identified the tension between the UK’s fiscal and economic environment and the need to continue to grow the railway to meet social and economic demands. Recommendation 6 of the Shaw Report was to ‘explore new ways of paying for growth in passengers and freight on the railway’.

Following this, Network Rail and the Rail Delivery Group commissioned research by Cambridge Economic Policy Associates (CEPA) into ‘bringing more private delivery and/or investment into the rail industry’. This research focused on new ways of attracting private finance. The CEPA report was published in March 2017. It concluded there is a substantial market appetite for such involvement, subject to the removal of some inherent barriers to entry into the market.

In August 2016 ORR published its annual efficiency and finance assessment report of Network Rail for the year April 2015 to March 2016. This highlighted the performance and efficiency challenges that Network Rail still faces in delivering rail infrastructure projects.

Despite the various insightful reviews that have taken place and the progress already made by Network Rail, it is clear there remains an opportunity to explore how greater contestability in the rail market can provide a much-needed boost to railway infrastructure funding and drive down costs.

1.2 Aims of this review

This is an independent review of contestability in the UK rail market, to consider third party investment in and infrastructure delivery on the national rail network. In this review, a third party means any public or private organisation other than Network Rail, the ORR or the DfT.

The underlying tenet of the review is that a more contestable market for rail projects would create pressure on Network Rail and its suppliers to be more innovative, to improve cost performance, deliver projects more competitively and predictably and thus offer better value for money. In addition, it would provide more opportunities for third parties to fund and deliver projects.

1.3 Contestability

A contestable market has few barriers to entry so that incumbents face the threat of competition from new entrants. Such a market will deliver the benefits of an effectively functioning market, including providing the quantity and quality of outputs that customers want and at prices in line with the value they create. This means reducing the costs incurred in providing the outputs, both through greater efficiency and with innovation.

Contestability is already working for the rail industry. High Speed 1 (HS1) is an example of a privately owned and operated railway, through a 30-year infrastructure manager concession to HS1 Limited. The creation of SPVs such as Crossrail Limited, HS2 Limited and London and Continental Railways are further examples of non-Network Rail delivery channels being employed by government to deliver major projects. There are many examples of Train and Freight Operating Companies funding and delivering improvement schemes such as the Chiltern upgrade (Evergreen 2), and connections to freight facilities at ports.

These are, however, isolated examples; delivery of the majority of infrastructure projects via Network Rail has not seen a transparent and routine consideration of contestability throughout the project lifecycle.

Network Rail is a natural monopoly due to its ownership of most of the UK's rail network infrastructure and its position as the delivery channel for the majority of government investment in rail infrastructure. The majority of public expenditure for infrastructure projects is channelled through Network Rail. Network Rail is funded in five-year control periods. We are currently in control period 5, which started in April 2014 and ends in March 2019.

As an indication, expenditure of £24.9 billion was agreed as funding through Network Rail for both infrastructure renewals (£12.1 billion) and enhancements (£12.8 billion) in this five-year period. This total has been derived from the 2013 Final Determination by the ORR and is based upon 2013 financial figures and rates.

This is approximately £5 billion of expenditure per annum during the control period.

There are advantages to this model: as network operator Network Rail ensures that trains run seamlessly and safely across the network; it can enjoy significant economies of scale and it can generate efficiencies through standardisation and repetition of activities.

The disadvantages of contestability arise from having more parties involved in funding and delivery which dilutes these economies of scale and makes it more difficult to gain efficiencies. However, contestability has a strong gearing effect. Not all projects need to be contested and even fewer need to be competed to drive responsiveness, innovation, benchmarking and challenge into the remainder.

There are different approaches to combat monopolistic behaviour in a market. These include the introduction of competition and also regulation. In the rail market:

- Competition has been introduced via the rail-franchising model. The rights to run particular services on specific routes are tendered on a periodic basis in franchises, augmented with open access competition.
- Regulation determines what Network Rail should produce in terms of outputs and at what cost for five-year control periods.

Increasing contestability can be viewed as being complementary to both of these approaches.

In practice, few if any markets are perfectly contestable and most have barriers to entry:

- Artificial barriers – for example, the establishment of reputational advantages that convey no value, or standards that are set too high.
- Intrinsic or ‘natural’ barriers – these include up-front investment or sunk costs. Firms would not invest if they were continually exposed to ‘hit and run’ competitor entry, and without such up-front investments many markets would not exist at all. This intrinsic barrier to entry enables incumbents to recover their sunk costs with a reasonable return, which helps to incentivise investment. However, if they try to earn a supernormal return they are vulnerable to entry competition from firms that may yet decide to invest.

- External constraints – for example, in the rail industry contestability is further complicated because the government owns Network Rail. It is therefore subject to public sector funding and financing constraints and accounting rules. The limit on Network Rail's ability to borrow money in its own right makes it important to attract private sector funding. It may also benefit from private finance, although the cost of doing so may be in conflict with strict value for money tests that must be passed for projects to gain the authority to proceed.

Key questions that the review has sought to answer:

- How contestable is the rail market at present? For example, do barriers exist which limit the practical ability of third parties to invest in projects? Do these factors vary in relation to different types of major rail project, and if so how?
- How contestable could the market be? In other words, to what extent and how could the issues listed above be addressed?
- What are the potential outcomes of increasing contestability?
- What is the 'size of the prize'?

1.4 Network Rail change context

In September 2014, Network Rail was reclassified as a central government body to be financed directly by the UK government, rather than by raising its own debt.

In early 2016, Network Rail introduced a major re-structuring to devolve accountability from central functions to discrete geographically based route organisations. The aim of devolution is to bring Network Rail as the infrastructure operator closer to its customers and make it more responsive to their requirements. Network Rail will continue to be the owner and operator of the majority of rail infrastructure. It will still have a central role as the system operator, undertaking the planning and ensuring the integrity of the network as a whole.

The purpose of devolution is to empower local leaders in the route organisations (routes) to make decisions which better reflect local customer needs. The routes also become the clients within Network Rail for the central support available from functions such as Network Rail Infrastructure Projects (NRIP). This review has assumed a devolved routes organisation structure for Network Rail as its starting point.

In July 2016, Network Rail launched an internal transformation plan in response to the Shaw, Hendy and Bowe Reports. The plan recognises the industry's view of Network Rail as a regulated monopoly.

The stated objective of the transformation plan is to change Network Rail to become 'a public sector organisation that behaves like a private sector business'. Some of the initiatives in this plan are very relevant to this review.

For example, a new head of profession for sponsorship has been appointed, responsible for ensuring internal consistency across the devolved route structure. The sponsor role provides the link between the client, funder, system operator, delivery management and stakeholders. This role is at the heart of making choices as to how Network Rail projects are delivered. Network Rail is also recruiting new business development directors in each route who will be remitted to help secure third party funding for its projects.

This review has focused on changes needed to encourage third party infrastructure and delivery in the context of a devolved route structure. It is not advisable to introduce a separate change programme and therefore the recommendations of this review should be embedded in the existing transformation plan. This will require the objectives and scope of the transformation plan to be reviewed and updated to achieve this end.

1.5 The review process

The terms of reference for the review are contained in Appendix 4. It sets out four areas for the review to investigate:

- Attracting funding and financing
- Removing barriers to third party involvement
- Increasing contestability to provide more opportunities for third parties
- Using different contracting strategies, so third parties can deliver for less cost

These areas were explored using various methods including:

- A wide spread consultation exercise
- Meetings to follow-up on consultation responses
- Meetings with government stakeholders
- Holding an industry seminar and discussion
- Reviewing previous rail projects as case studies
- Reviewing examples from comparator industries

A list of organisations that contributed to the consultation is contained in Appendix 1. This included over 150 individuals and organisations representing:

Rail industry suppliers
Developers
Local authorities
Train and freight operating companies
Central government
Network Rail employees
Regional transport authorities
Legal professionals
Finance professionals
Third party promoters

The consultation exercise commenced with a press release announcing a ‘Call for Evidence’ in late December 2016. Questionnaires were issued to over 140 organisations and individuals and over 40 written responses were received. The questionnaires were supplemented by meetings with over 90 stakeholders. The written and oral views submitted to the review are being treated as confidential, and any quotations or views included in the report are not attributed to any specific party.

The review team developed a ‘landscape’ of different project types to characterise the various types of third party involvement. It was shared at an industry seminar in March 2017 to reflect back to the audience the wide range of different third party interests in the review. Over 120 delegates attended the seminar and a list of the organisations they represented is contained in Appendix 2. The seminar provided a further source of valuable input. The number of attendees is another indicator of the high level of interest in the review.

The review team also investigated ten case studies projects that are listed below. They are described in further detail in Appendix 5:

Hull to Selby electrification
Uckfield route modernisation
Gatwick Airport Station
Heathrow Southern Access
Borders Railway
East London Line
Leeds Station
East West Rail (Oxford to Cambridge)
Stratford, Tottenham and Angel Road (STAR)
Digital Railway

A summary of the analysis of comparators from other industries is contained in Appendix 6.

1.6 Other ideas collected

The consultation process yielded various ideas for improving the efficiency of railway project delivery, which fell outside the scope of this review, for example, the separation of Network Rail into an operating company and a property company. The operating company would focus solely on the operational railway (rather than commercial matters) as well as supporting the newly devolved Network Rail routes. A thorough cost-benefit analysis would be required for this type of change, akin to what the Competition and Markets Authority would do in a market investigation.

Although it is not a formal recommendation of this review that further work be undertaken to examine these ideas, it is apparent that much innovative thinking around new investment and delivery models remains to be harnessed within the rail sector. This original thinking was symptomatic of the high quality and enthusiastic engagement that the review team found in reaching out to consultees.

1.7 Structure of this report

The remainder of this report has four sections covering each of the four areas set out in the terms of reference:

Section 2 – Attracting funding and financing

Section 3 – Removing barriers to third party involvement

Section 4 – Increasing contestability to provide more opportunities for third parties

Section 5 – Using different contracting strategies, so third parties can deliver for less cost

Recommendations are made under four headings in the following sections:

Section 6 – Delivering more value for money

Section 7 – Broadening third party investment

Section 8 – Enabling third party delivery

Section 9 – Oversight arrangements

Followed by:

Section 10 – Concluding remarks

Section 11 – Summary of recommendations

2. Attracting funding and financing

2.1 Introduction

A funder is a provider of a monetary contribution to meet all or part of the cost of an infrastructure project and will want to see that the benefits it derives from the project are in proportion to its funding contribution.

These benefits could be monetary or non-monetary and include the social benefits the project creates or associated profits that can be realised from increased land values or a new business enterprise. The justification for the funder's contribution is expressed in a funding case.

Financing is the loaning of money to pay for an investment for which the financier will require a means to recover the cost of its investment and an additional financing charge.

It is anticipated that there will be reduced government funding available in the Network Rail CP6 settlement. This is a strong incentive to drive simplification and improvement of all interactions with third parties to encourage new sources of investment into the railway.

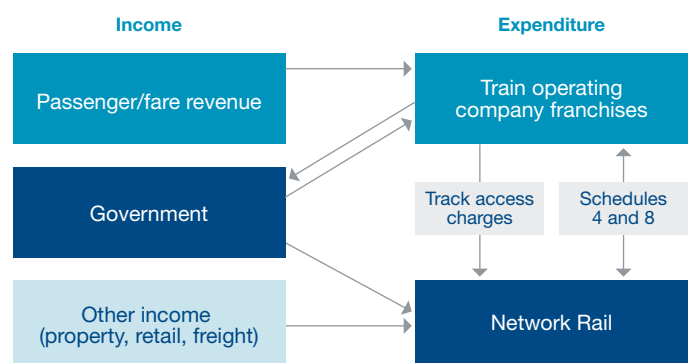
2.2 Analysis

Figure 1 below provides a simple summary of the industry contracting arrangements and associated money flows between the parties:

- The DfT lets a franchise to a train operator through a competitive tender.
- The train operator generates money from passenger revenues and either receives a subsidy or pays a premium, depending on the outcome of the franchise tender.

- Network Rail contracts with the train operator to provide access to the infrastructure.
- Network Rail receives access charge revenue from the train operator. Network Rail receives a direct subsidy (or payment) from the DfT. Network Rail pays out to, or receives money from train operators under Schedules 4 and 8 of the Track Access Agreement, depending on its and the train operator's performance (see Appendix 6 for a further description). Network Rail also generates revenues from various commercial activities, for example, shops and car parks at stations.

Figure 1 – Industry money flows



An early finding from the review was a realisation of the many different types of third party involvement in rail infrastructure projects. These are characterised by different combinations of funding, sponsorship and financing arrangements. The review team developed a ‘landscape’ of different project types, labelled A to G in Figure 2 below. Table 1 describes the project type in more detail and refers to specific examples from the case studies analysed.

The concept behind the landscape is to portray an increasing degree of involvement by a third party from no involvement on the left-hand side of the diagram, to a significant degree of involvement on the right.

On the left of the landscape (types A–C), Network Rail takes the lead in delivery of the project. On the centre and right of the landscape (types D–G), a third party takes the lead in delivering the project, with Network Rail in an enabling role as system operator, network operator and guardian of asset protection.

The funding arrangement describes the ultimate provider who meets the capital cost of the work, whereas the financing arrangement describes the temporary provision of finance for the project.

Figure 2 – Investment landscape

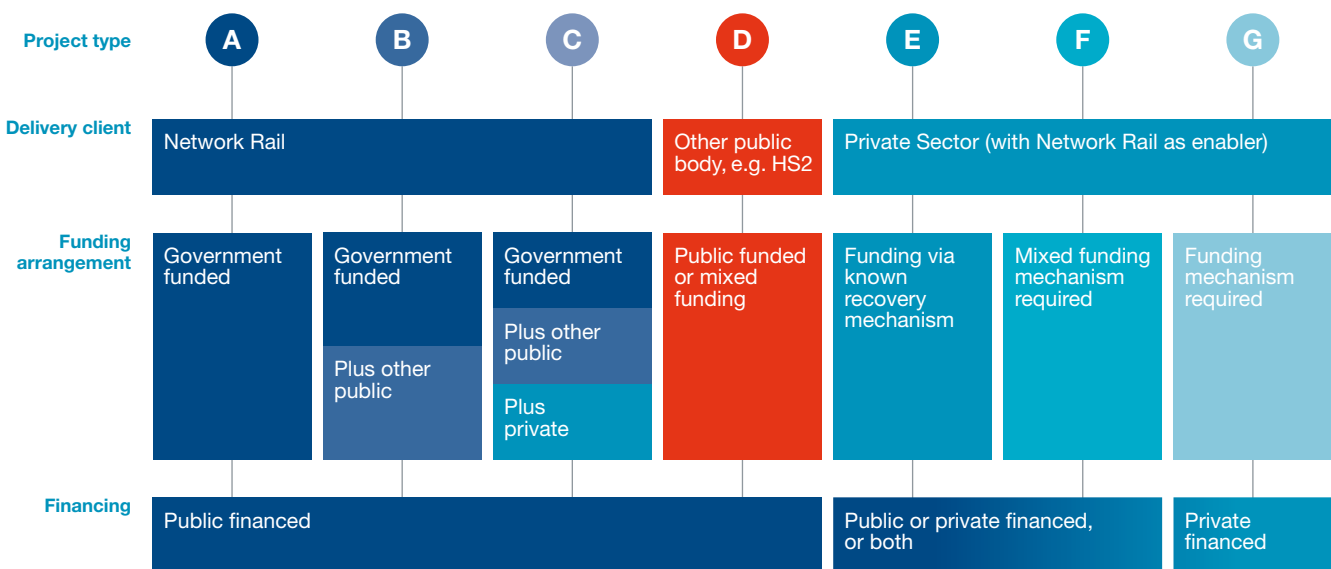


Table 1 – Project type characteristics and examples from the case studies

Project type

A	Characteristics	Examples
	<p>A project is promoted by the System Operator (Network Rail), publicly funded through DfT's transport budget channelled through Network Rail and delivered by Network Rail Infrastructure Projects (NRIP). Third parties are only involved in their capacity as contractors to NRIP.</p> <p>In Control Period 5, the majority of the expenditure on infrastructure enhancements was undertaken via this type of project.</p>	<p>Great Western Electrification programme Midland Main-line Electrification</p>
	<p>Similar to a type A project, except it includes incremental funding contributions provided by third parties as a grant from another source of public funding via a local or devolved government organisation e.g. Local Enterprise Partnership.</p>	<p>Stratford, Tottenham Hale, Angel Road capacity project (STAR)</p>
	<p>Similar to a type A project, except it includes incremental funding contributions provided by third parties who are commercial organisations that will recoup their investment off-railway.</p>	<p>Gatwick Station upgrade Heathrow Southern Access</p>
	<p>Publicly funded from any one or a combination of sources (e.g. Network Rail, DfT, TfL), supplemented by public or private third parties, and delivered by a Special Purpose Vehicle as delivery client.</p>	<p>HS2 Limited Crossrail Limited Union Railways – HS1 during public sector development phase</p>
	<p>Promoted by a third party, funded by the third party who is a commercial organisation that already has an existing funding mechanism to recoup their investment.</p> <p>These projects are typically:</p> <ul style="list-style-type: none"> • Station upgrades, and new depots promotes by train operators in their franchise bid • Extensions to new freight terminals, depots 	<p>East Midlands Gateway – a multi-modal freight terminal Penzance Light Maintenance Depot – HS2 and Local Growth Fund monies passed to GWR via Cornwall Council. The asset will be handed back to Network Rail. Gloucester car park improvement – Land purchase funded by FirstGroup, to be transferred to DfT as a Primary Franchise Asset at franchise end; car park development is Core Funding provided by GWR as franchise operator. Aylesbury Vale Parkway – Privately funded project in operation since May 2009; operation is jointly undertaken by Chiltern Railways and partners Wattrus Group, who together maintain the ticket office building, platforms, the car park and landscaped areas.</p>
	<p>Promoted by a third party who is providing project funding based on either recouping their investment from non-transport benefits e.g. housing development or via a new funding recovery arrangement that has to be agreed with DfT.</p> <p>The project may also require some incremental public funding from DfT transport budget to make it a viable project, which would have to be justified in a transport business case.</p>	<p>Leeds Station Upgrade – being led by Leeds City Council Windsor Rail Link</p>
	<p>Promoted by a third party who is providing the financing for the project, but needing a funding recovery arrangement to be agreed with the DfT.</p> <p>The use of private finance needs to be justified via a value for money test compared with using public finance with a lower cost of capital.</p>	<p>Borders Railway – as an attempted type G project</p> <p>This is now a successful operational railway, delivered by Network Rail on behalf of Transport Scotland (i.e. developed as a 'type D' project). However the original strategy was to seek a privately financed solution funded from passenger revenue, as Network Rail's prior proposal for re-opening the line proved to be unaffordable. The PFI deal was subsequently abandoned although this threat of competition appears to have forced Network Rail to reduce its price for delivering the project.</p>

2.3 Financing and balance sheet treatment

The management and transfer of risk under contracts raises important issues of balance sheet capacity and accounting treatment.

Risks are best transferred to those most able to manage and price them. The process by which risk transfer between public and private sectors is assessed, to maintain a level playing field, is well documented. In the context of contestability, the capacity of private sector balance sheets to absorb risk inevitably places limits on alternative delivery models, although not necessarily to the detriment of value for money.

The primary purpose of risk transfer in project delivery is to create incentives for their better management, not to find a sink to park risks.

Where private finance is mobilised in support of a chosen delivery model the question will arise as to whether, in the view of prevailing accounting rules, the private finance should be treated as public finance in disguise or on balance sheet to the public sector. The rules which determine this are complex and do not always give results that are expected. Nonetheless, the public policy line has been consistent and clear for many years: a public sector on-balance sheet determination does not, by itself, preclude the use of private finance. What matters is value for money. A chosen delivery model that deploys private finance must demonstrate that it brings cost, quality, timeliness and performance advantages, which more than make up for the higher cost of its finance.

The Digital Railway was mentioned several times during the review as a project for which a case might be made for a bespoke financing and funding solution for its infrastructure projects. The case would be based on transferring significant risks of new technology and complex interfaces to the third party. The Digital Railway programme has already been established as a separate industry project by DfT and, although it is led by Network Rail, it has significant involvement from other parts of the rail industry. The development, delivery and maintenance of such a complex programme of work could attract third party finance, especially from suppliers with specialist expertise who could benefit from the significant opportunities and have the ability to manage the risks. A recovery mechanism for the third party, such as an availability charge, would need to be developed and agreed between Network Rail, the supplier and potentially ORR.

2.4 Conclusions

The review has determined that government is primarily focused on attracting third party funding and financing that meets certain criteria. Funding contributions from third parties are welcomed for projects that are demonstrably required to benefit the rail network, and also supplement existing transport funding. However, where other parties realise economic benefits from rail projects, such as housing developers and local authorities, these parties need to develop their own funding cases. For example, a local authority must justify its funding contribution and determine how it will realise its benefits, recognising that they may take many years to materialise.

There should be an expectation that third parties that realise economic benefits from rail projects will pay a more significant funding contribution. For example, this could require local authorities to realise the increase in land values associated with developments enabled by new rail connections. In return, they need a mechanism to do this and assistance to develop a viable funding case.

Network Rail as system operator undertakes long-term planning of the rail network to identify where additional capacity or resilience is needed. It does this by consulting with local stakeholders and producing strategies for each route. The strategies also identify candidate projects for government to consider that would satisfy these needs. For emerging projects, which fall outside a route strategy, the assessment process to determine projects for investment must still be rigorous. It must consider deliverability, value for money and the impact on the existing rail network. For example, if a third party proposes a new project, such as a new station, its impact on the network must be assessed.

A clear and transparent process is needed to routinely consider and conclude the merits of third party funding proposals in addition to the long-term planning process. This process should quickly establish third party proposals that are worth progressing and to weed out unacceptable proposals that would be a detriment to the network.

The government's *Green Book: appraisal and evaluation* guidance is currently being updated, and may need to take greater recognition of how the merits of projects are assessed, to attract more third party funding.

There are complex accounting rules with detailed interpretations that determine whether third party finance can be classified as being on or off the government balance sheet. Private sector finance typically comes with a higher financing charge than public sector finance. The review found that making the case for using private sector finance is possible if significant value for money advantages can be demonstrated, regardless of balance sheet classification.

The review has concentrated on recommendations for attracting more third party funding, rather than finance.

3. Removing barriers

3.1 Introduction

Significant barriers to third party investment were identified from a wide cross-section of consultees.

Consultees were asked to identify barriers to third party involvement in infrastructure investment and delivery and their responses have been consolidated into seven common themes set out in Table 2 below and then

expanded in the following sub-sections. Some views expressed by consultees are quoted below, without attribution.

Table 2 – barriers, common themes

1. Lack of ownership for contestability	It is not clear who has oversight or who is remitted or incentivised to promote contestability, remove barriers and define success.
2. Lack of visibility of a pipeline of third party projects	It is not clear what opportunities exist for third parties, as there is no clear programme.
3. Network Rail roles and behaviours	Network Rail seems to lack ability or willingness to help third parties in furthering their projects.
4. Inappropriate risk transfer	Network Rail and the regulator are perceived as being unable to offer an attractive commercial model, one that offers rewards commensurate with their risk exposure. An inappropriate risk burden can undermine the viability of the financial case for third party investment.
5. Standards and scope control	Inappropriate application of standards is perceived as the cause of 'gold plating' Network Rail's requirements, to the cost of the third party. Can be used to legitimise a significant widening of the scope of a third party project to upgrade non-compliant assets.
6. Asset Protection Agreements	Asset Protection Agreements are often unduly onerous and can be inappropriate for low risk projects.
7. Complex business cases and funding agreements	Projects require complex business cases to be agreed before a multi-party funding agreement can be reached. There are no repeatable models available to give third parties clarity on mechanisms for making investment and obtaining a return. The cost and effort required to develop a bespoke funding agreement may be prohibitive.

3.2 Lack of ownership for contestability

This review has not been able to identify a clear owner for contestability. The consultation heard evidence of some good work being done to encourage the

involvement of third parties; for example, through Network Rail's property directorate, and through its freight business. However, this was far outweighed by the number of comments identifying a lack of a mandate across the industry to encourage third party involvement.

The perception is that the rail industry lacks a focus on removing barriers, and that there is no single guiding mind or leader who champions third party involvement. There is a lack of clear and predictable processes, and a lack of strategic oversight for the apportionment of risk. This prohibits the success of third party projects either as self-delivered projects, or delivered by Network Rail on their behalf.

This is a particular issue when the benefits of a project include non-rail benefits, or require trade-offs; for example between journey time benefits and local growth benefits and between capital cost and whole-life cost.

This lack of ownership for contestability has also made it difficult for third parties who wish to invest, to know whom to approach, who makes decisions and on what basis; or to find a route for escalation if their projects face problems.

3.3 Lack of visibility of a pipeline of projects

“Contestability will only deliver and encourage third parties if the opportunities are well signalled through published and well supported pipelines of potential projects.”¹

The periodic review system has provided a pipeline of projects for Network Rail. There is, however, no specific pipeline of potential projects available for third party funding and delivery.

This presents a number of issues for third parties:

- It is not viable to spend time or resources on developing business strategies and meeting the costs of entry to the market to ensure they are ready to work on rail projects.
- Variable workload makes it difficult to justify hiring staff with rail-specific skills, or training staff. These skills are hard to come by on an ad-hoc basis.
- Investor confidence in the rail market is low.
- The projects which are most likely to be successful are those which are given priority for public funding, and therefore do not require third party investment.

3.4 Network Rail roles and behaviours

It takes time to change a large organisation and its embedded culture. It is likely that the views heard during the consultation exercise do not yet fully reflect the benefits of the transformations already underway in Network Rail. Equally, it is also possible that the current transformation process is not creating sufficient change to the environment within which third parties and Network Rail interact.

Network Rail is involved in projects in a number of different roles with different objectives, which may seem confusing and contradictory to third parties. As a result, consultees reported finding it difficult to get firm decisions, or to understand the level of authority of the individual they were dealing with, and unable to obtain all the necessary approvals. Accordingly, Network Rail has been described as fragmented and bureaucratic, and a ‘less than willing counterparty’.

“Network Rail lacks urgency in responding to third party schemes which reflects their priorities and often third parties experience considerable unexplained delays in response to queries and in progressing their projects.”²

The functions within Network Rail that have most impact on third parties are its business managers, sponsorship team, infrastructure projects directorate, commercial team, route asset managers and project engineering function (which governs the use of standards). Each of these functions is incentivised to act in pursuance of its own objectives, which may result in a number of differing pressures for a third party to manage. There is a reported lack of an overarching organisational will to drive third party projects forward.

The requirements of different Network Rail teams can emerge at different times during a project’s lifecycle, with route and timetable issues, for example, emerging late, sometimes after the project has been physically completed.

The lack of a single empowered representative who could make decisions and agreements that would bind all the various parts of Network Rail was consistently cited as a barrier to progressing projects by third parties.

“The interface with Network Rail was constantly changing and different people gave inconsistent advice”³

1. Comment from representative of the passenger and freight industries

2. Comment from existing supplier to the rail industry

3. Comment from a developer

A comparison was made by one consultee between dealing with Network Rail and Highways England on a specific project. The Highways England sponsor was described as consistent, empowered, motivated and supported by their organisation to effect progress. The road scheme in question was delivered by the private funder with its own contractor and to its own required timescale and was accepted by Highways England based on an assurance package covering the standards applied and corresponding construction and test records. The rail connection by comparison, which was to be delivered by Network Rail, was beset with issues of inconsistent advice, rising costs and changing dates.

Network Rail has published a document entitled *Stakeholder Relations Code of Practice – Investing in the Network*. This document is thorough in describing the project development processes and available agreements. However, it does not provide any guidance on the level of service or duty of care a third party can expect to receive, nor any reassurance about the generation of an acceptable price or programme for Network Rail's involvement.

3.5 Inappropriate risk transfer

Throughout the consultation a common theme has been the lack of parity between Network Rail and third parties when it came to their ability to manage and absorb risk. With a large portfolio of assets Network Rail has the ability to oversee, manage and diversify risk across the network. Network Rail is backed by government and can absorb risk, which would potentially overwhelm a private organisation. Any attempt to push undue risk towards third parties is a significant barrier if they cannot manage, mitigate or absorb it.

Third parties have also reported a perception that they are faced with a higher risk apportionment for their projects than Network Rail applies to its own. There is pressure to accept emerging cost contracts leaving all design and delivery risk with the third party, even if this is due to an error or omission on the part of Network Rail.

Consultees have also cited a lack of asset information, lack of clear acceptance criteria, and unpredictable access as significant risks which hinder their appetite to invest in or deliver rail infrastructure works.

During interviews with third party investors, one party cited £200 million as being the minimum size of project that warranted detailed negotiations on asset and delivery risk, due to the significant cost of employing lawyers and commercial dealmakers. Employing such skills would potentially be prohibitively expensive for smaller projects, and a barrier to negotiating a successful deal.

3.6 Standards and scope control

Onerous standards application and poor scope control were consistently reported by consultees as a barrier to third party investment. Safety and reliability are rightly the rail industry's primary concerns and the use of standards plays a significant role in both of these. However, it is clear that behaviours relating to the use of standards do not always lead to optimal solutions. Accordingly, there is a case for constructive challenge to be applied to these issues, if greater third party involvement is to be achieved. Views received on this subject included:

- Standards can be a lever that is used to increase the scope of a third-party project beyond what is reasonable.
- The delineation between corporate policies and standards is not always made clear, and is used to extend third party funding to areas desired by Network Rail, but which are not strictly the responsibility of the project in hand.
- The use of standards, or acceptance of derogations is open to engineering preference and not universally applied:

“What is acceptable by one route may not necessarily be acceptable by another, which confuses the supply chain and creates variability in quality across the routes.”⁴

- Network Rail is incentivised to approve the use of standards and derogations on its own projects in an efficient way, but not for third party projects. The application of standards is done without due reference to efficient cost for the third party.

“Network Rail have full control on matters such as providing derogation on standards and often fail to take into consideration the impact on the cost of project when enforcing standards.”⁵

Also

“Standards are not applied intelligently and derogations are not reasonably sought – there is no sense of making the project affordable through challenging standards.”⁶

- The process for applying for derogation is not clear and not easy to follow.

“Lack of clarity and decision taking on standards derogation or confirmation.”⁷

4. Comment from regional transport authority

5. Comment from regional transport authority

6. Comment from freight industry representative

7. Comment from a major contractor

Discussions with Rail Safety and Standards Board (RSSB) as part of this review have shown that there is a clear process for seeking derogations and for assistance with interpreting standards. RSSB reported, however, that it is under-utilised as a source of guidance and interpretation.

The barriers appear to result from a lack of incentivisation within Network Rail to agree derogations efficiently or to interpret standards to achieve an appropriate residual risk to the operational railway. Instead, the tendency is towards zero residual risk and full compliance, which can import unnecessary cost increases.

3.7 Asset Protection Agreements

The review heard that Asset Protection Agreements are often unduly onerous, complex and may not always be appropriate for a low risk project.

During works on or adjacent to the railway, it is essential that Network Rail has proper procedures in place to ensure that the rail service is not interrupted, that equipment or structures cannot be damaged, and that safety is given the highest priority. However, as with the application of standards, the perception is that Network Rail's approach is excessively risk-averse, and not incentivised to help third parties. Consultees described an inflexible approach to using asset protection:

“Contractual process (asset protection agreements) is not agile and Network Rail does not act in a commercial manner in determining risk or viability of schemes, which imports time and additional cost to third party proposers.”⁸

Network Rail's reasonable requirements are poorly understood by third parties and not communicated or interpreted consistently by Network Rail. There does not seem to be sufficient incentive to minimise this burden on third parties.

3.8 Complexity of funding agreements

Making schemes demonstrably financially viable for private sector third parties is essential if they are to invest. However, conventional approaches to structuring and appraising projects means that many rail projects have marginal (or negative) financial cases.

“Many projects are unsuitable, insufficiently self contained, risky, uncertain and without a revenue stream or would need to be substantially rethought to attract private finance.”⁹

Views received include:

- It is difficult for third parties to generate and extract benefits from investments.
- There is a mismatch between the tenure of a rail franchise and the length of time over which an investment is likely to generate returns.
- The liquidation of rail assets is difficult unless, for example, major retail offerings exist which tend to be limited to city centres. Local authorities are reluctant to support significant retail development within stations where it might detract from high street trading.
- Long standing reluctance by the public sector to use additional taxes or tax revenues that could be generated by the higher levels of economic activity as a result of the transport scheme.
- The numerous different parties (i.e. Network Rail, DfT, HM Treasury, local government) involved in structuring the funding of projects, each of whom tend to have different objectives and perspectives.
- Lack of confidence among funders that these points can be successfully addressed.

In summary, achieving a predictable financial return on investment presents a significant challenge within the industry.

8. Comment from a train operating company

9. Comment from representative of the passenger and freight industries

4. Increasing contestability

4.1 How contestable is the rail market at present?

In comparison with privatised industries such as energy and telecoms, the introduction of contestability and related innovation within the rail sector has been relatively slow.

This statement must be set against the backdrop of some outstanding achievements. For example, since privatisation, the volume of passengers travelling by rail has more than doubled; stations such as King's Cross and St Pancras have undergone world class transformations; and major new lines and freight depots have been brought into service.

There is also much to celebrate in the contestability already evident within the rail infrastructure market and the benefits it has already delivered: most notably in relation to the sponsorship and delivery management of major schemes such as the Channel Tunnel, HS1, Crossrail and HS2. The creation of a more contestable market should, therefore, be seen as starting from a solid base.

In addition to the barriers discussed above this review has examined contestability from several other perspectives:

- Existing choices
- Additional choices
- Embedding contestability decisions
- Integrating contestability and business case development
- The 'size of the prize'

The above points are covered in the sub-sections below.

4.2 Existing choices

To aid the description of where choices exist in the project lifecycle it has been necessary to define a simplified generic project investment lifecycle split into four stages:

- Sponsor development activities
- Delivery client development activities
- Design and delivery activities
- Operations management

Table 3 below lists the activities associated with each of the four stages.

The project sponsor can be government (as client and funder for Network Rail) or a third party who is sponsoring the project, including train operators, local authorities, property developers or regional transport authorities.

The delivery client is appointed by the sponsor and can be a Network Rail route, public sector owned special purpose vehicles (for example, HS2 Limited), private sector owned special purpose vehicles or, potentially, joint ventures between combinations of these.

The expenditure incurred during the sponsor development phase of a project will typically lie in the range 3–5% of the capital cost of the project. This leaves 95–97% of the capital expenditure to be borne during the later phases. From this analysis, the gains potentially available from greater contestability during the development phases are relatively minor compared with the design and construction phase. A similar comparison can be made between development phase expenditure and the total of all future years' operating phase expenditure.

However, it is during the sponsor and delivery client development phases that all the key decisions affecting construction and operating costs and risks are made. This highlights the importance of the choices made during these two stages.

Key decision points during the development phases:

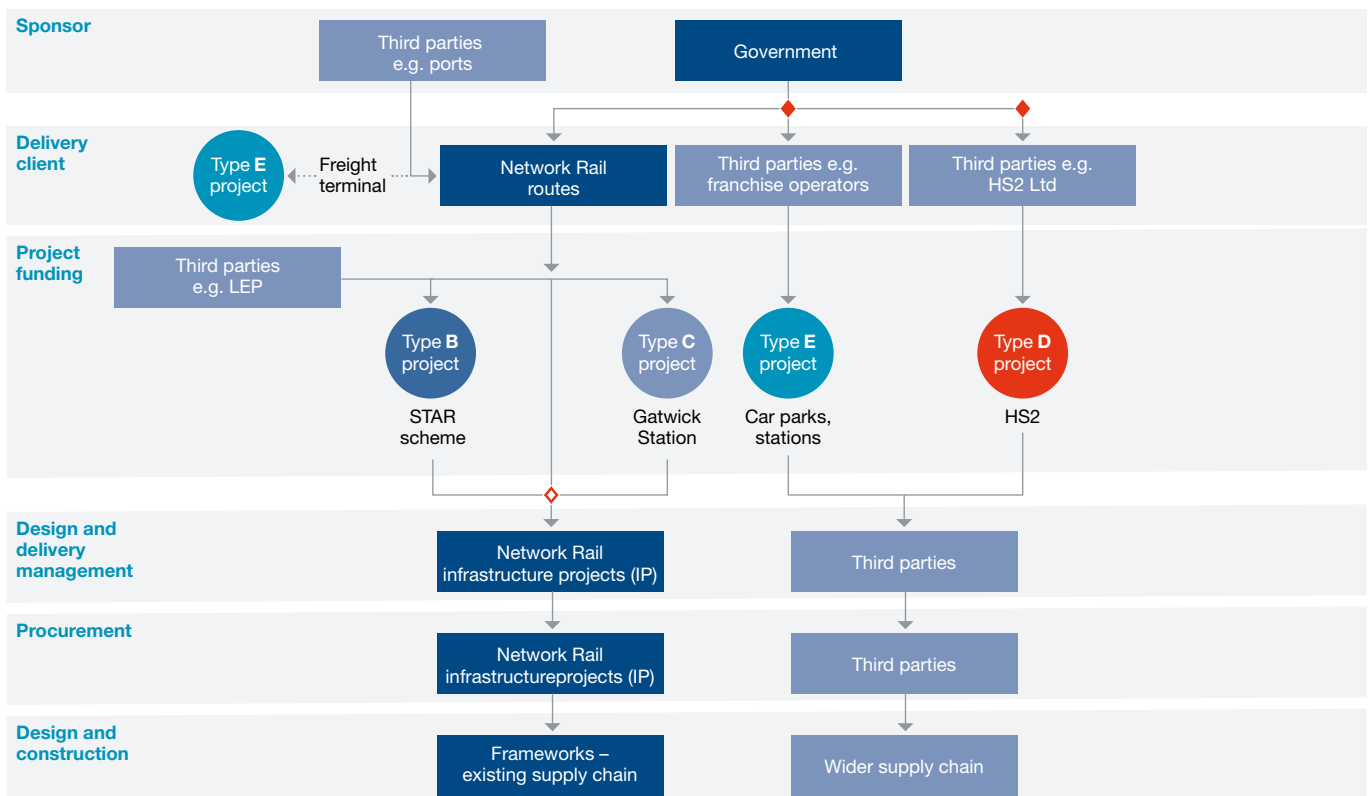
1. The sponsor selecting the delivery client to take management responsibility for successful completion of the development and construction phases.
2. The delivery client engaging the design and delivery manager to undertake procurement and management of design and construction.

Figure 3 shows these two key decision points in the project lifecycle and also what choices exist at present.

Table 3 – Simplified project investment lifecycle

Sponsor led development	Delivery client development	Design and delivery	Operation
Outline design for business case and budgeting	Land assembly and consents	Resource mobilisation	Business-as-usual operations management
Business case development and approval	Scope and option design for planning and procurement	Detailed engineering design	Routine maintenance
Stakeholder engagement	Procurement strategy	Track and equipment sourcing and fabrication	Life-cycle maintenance
Market engagement	Contracting strategy	Civil works and construction management	Facilities management
Core funding arrangements	Incremental project funding arrangements	Mechanical and electrical installation and connections	Performance management
Finance strategy (if relevant)	–	Logistics, scheduling and interface management	Possessions management
Outputs specification for engaging Delivery Client	–	Systems integration	–
–	–	Building off-network facilities	–
–	–	Testing and commissioning	–
Closing event: Release of remit and funding to the delivery client to continue development.	Closing event: Award of contracts for design and construction.	Closing event: Completion of all facilities and adoption within business-as-usual.	Closing event: First major overhaul or expiry of design life.

Figure 3 – Existing choices available



- ◆ Existing contestability choices
- ◇ No contestability choices

Existing choices for delivery clients

The three choices that exist for government as sponsor to appoint a delivery client are shown in Figure 3. The two alternatives to choosing a Network Rail route are indicated by the upper two diamonds:

- Contracting delivery of infrastructure through franchise agreements, for example: train operators, funding train depots or station improvements delivered through franchise commitments.
- Engaging another public sector delivery client, such as HS2 Limited.

The delivery client role does not offer the option of a substantially outsourced model and certainly not to any kind of fixed price contracting. There are simply too many unknowns and external processes that impact on the timescale and costs associated with project development for this to be feasible.

However, the delivery client organisation may have available in-house all the project development resources it needs. And one of its first decisions will be to choose where on the range of ‘thin-client’ versus ‘thick-client’ it will sit. A thin-client relies mostly on consultants and contracted resources to provide its delivery client capability. A thick-client relies mostly on recruited in-house capability. There are several considerations that inform this decision, such as the longevity of the project development phase and whether it is part of pipeline of projects to be developed.

Existing choices for management of design and delivery

In comparison, the Network Rail routes as delivery clients have no routine choice for alternative delivery manager outside Network Rail Infrastructure Projects (NRIP). This is shown in Figure 3 with the single diamond.

When NRIP was separated into a separate entity it was the intention that there would be competition for the delivery manager role. In practice all project development and delivery work is still channelled in this way, and Network Rail tends to continue its hub and spoke approach discussed later in section 5.

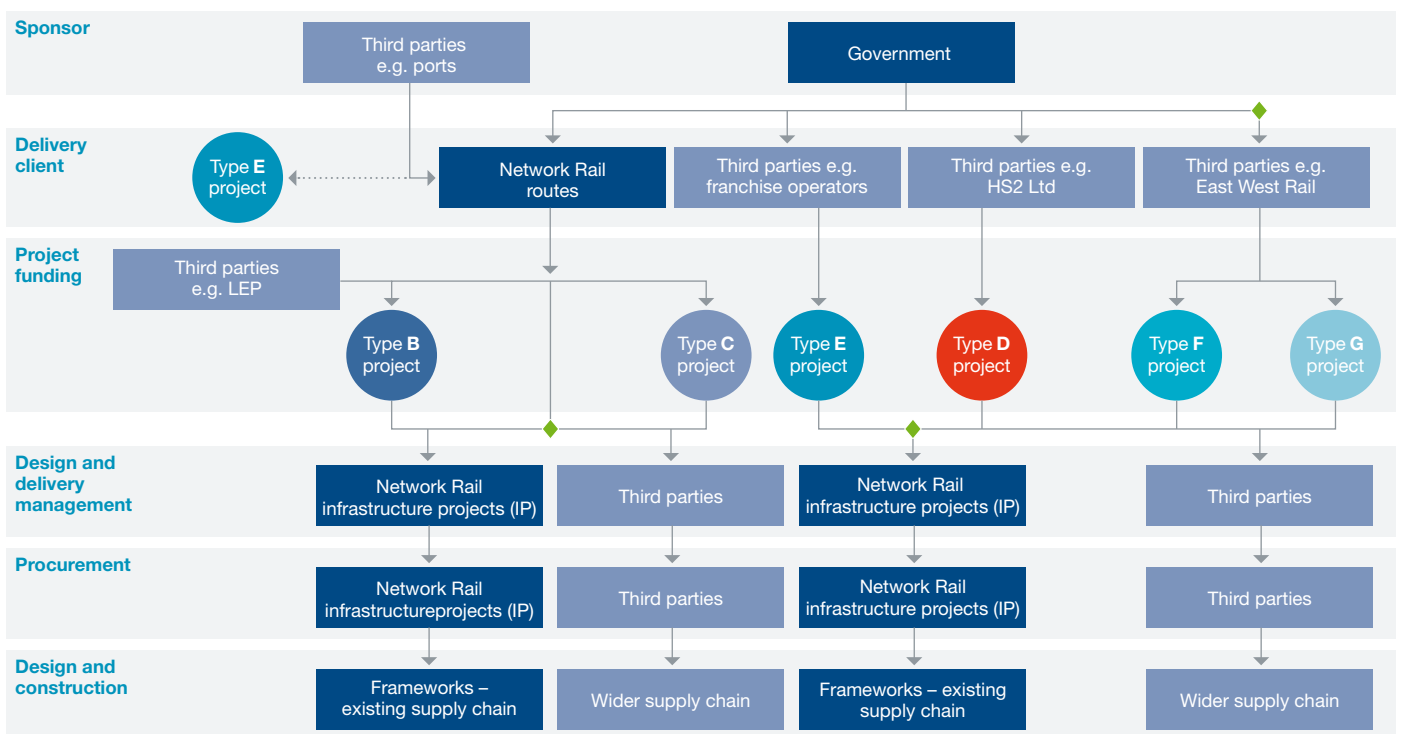
4.3 Additional choices

Introducing more contestability choices needs to be underpinned by:

1. Increased confidence within Network Rail that this is an empowering opportunity for it to outperform, rather than a threat to safety, jobs or careers.
2. Increased confidence within the private sector and third party public sector bodies, such as local authorities, that money invested in developing proposals for enhancements will be well spent; Network Rail and the DfT are committed to support the preparation of such proposals; and timescales for decisions are realistic and tightly controlled.

Additional contestability choices could be introduced into the project lifecycle that will provide additional opportunities for third parties and also for NRIP. The additional choices are illustrated in Figure 4 below.

Figure 4 – Additional choices



◆ Additional choice for contestability

Additional choices for delivery clients

An additional choice for government, beyond those already available, would be to appoint a third party company as their delivery client. This is shown in Figure 4 by the uppermost diamond. A recent example of government exercising this choice is the appointment of the East West Rail Company, to develop the funding and delivery strategy for Phase 2 of the route between Oxford and Cambridge. This is a potential pathfinder that will demonstrate the benefits of this type of alternative delivery client.

Additional choices for management of design and delivery

An important objective of increased contestability in the management of design and delivery is to make the process reciprocal. This means that NRIP would have opportunities to support third party sponsors as much as the Network Rail routes have opportunities to select third party delivery management contractors, other than NRIP, to deliver their projects. To make this fully effective, however, would require NRIP to behave more like an arms-length contractor.

The feasibility of establishing alternative delivery management options was explored with Network Rail managers in the routes. They identified that lack of commercial capability and skills within the route teams as a potential barrier to this happening. However, this issue is recognised and is the subject of on-going remedial action within the Network Rail's Transformation Programme.

Once the capability to operate different models is established within the routes then other options will be available, each of which will require different commercial and technical skills. These include:

- Design and Build with the contractor handing over assets to the relevant route to maintain and operate. In order for this option to generate additional value it must be procured so far as is possible as an output specification to permit the contractor to innovate within the appropriate standards envelope.
- Self-delivered schemes by the funder, where the funding body contracts directly with the market to make changes to the network. This option will rely on there being reasonable asset protection costs and predictable hand-over requirements.
- PFI options including DBFT or DBFM which would include financing of construction by a third party. The new or upgraded assets would be sold back to the relevant Network Rail routes on completion or paid for on an on-going availability basis.

As already noted private finance options do not always provide value for money. It is important however, to recognise that they exist and that they may be appropriate in certain circumstances.

Any contracting option that includes third party maintenance of part of the operational railway would need careful consideration, to ensure that the safety management system for which Network Rail is responsible remains intact. It should however be possible to devise assurance processes that would overcome this issue for discrete sub-systems within the network.

4.4 Embedding contestability decisions

Embedding a more explicit and routine process for making contestability decisions, along with a set of clear criteria for determining the suitability of projects, would provide more confidence to third parties to enter the marketplace. The project appraisal and selection process has, in some cases, seemed impenetrable to third parties.

Figure 5 below contains a conceptual contestability decisions process (or 'hopper'), which could be embedded within existing project governance processes that already consider projects against a number of criteria: such as value for money, deliverability and impact on the existing rail infrastructure.

There are six questions in the model decisions process. The decisions associated with Questions 1 to 4 would be made by government or another transport authority. The decisions associated with Questions 5 and 6 are for the Network Rail routes. The characteristics of this process are as follows:

- The questions are routinely considered at various points through the project lifecycle (as shown in Figure 5).
- If the project is entirely self-funded by the third party it would go straight to appointment of the delivery client role and the options set out in the previous section. Otherwise it would go through the decisions process.
- Third party proposals are assessed using transparent appraisal methods. Those that do not meet the criteria are rejected and those that are viable continue into further development.
- Due consideration is given to choosing alternative delivery client and delivery management options, as set out in the previous section.

The actual decision points in the project lifecycle, which will add most value, will depend from project to project. The criteria to be applied, in making these decisions, will need further development. Taking the questions in turn:

Question 1: this step confirms that third party proposals requiring a public funding contribution would enter the hopper to be considered for funding alongside proposals from the Network Rail system operator.

Question 2: will apply to all projects entering the hopper and above a minimum project cost threshold. This step is used to ascertain whether the project is of sufficient size and suitability for consideration of a bespoke financing and funding approach. This decision is in the government part of the process, as the solution may include a concession or other undertaking required from government. The threshold value will need to be determined to take account of the potential significant costs of initiating and structuring a bespoke financing and funding solution.

Question 3: will apply only to third party proposals. This step is used to:

- Quickly establish the viability of proposals using a transparent appraisal methodology.
- Confirm the adequacy of proposed funding arrangements: whether the third party is contributing an appropriate amount to the cost of the project and whether the requirement for additional public is funding acceptable.

The purpose of this step is to identify any unacceptable proposals or to initiate further development of attractive third party proposals, including whether any development funding is available.

Question 4: this step initiates the decision by government to select the delivery client for the project as explained in the previous section. Criteria for this selection need to be developed.

The remaining two decisions are for Network Rail and are taken by the route which has been allocated funding by government.

Question 5: this step initiates the route to confirm whether any incremental third party funding is already secured and to seek further funding if possible.

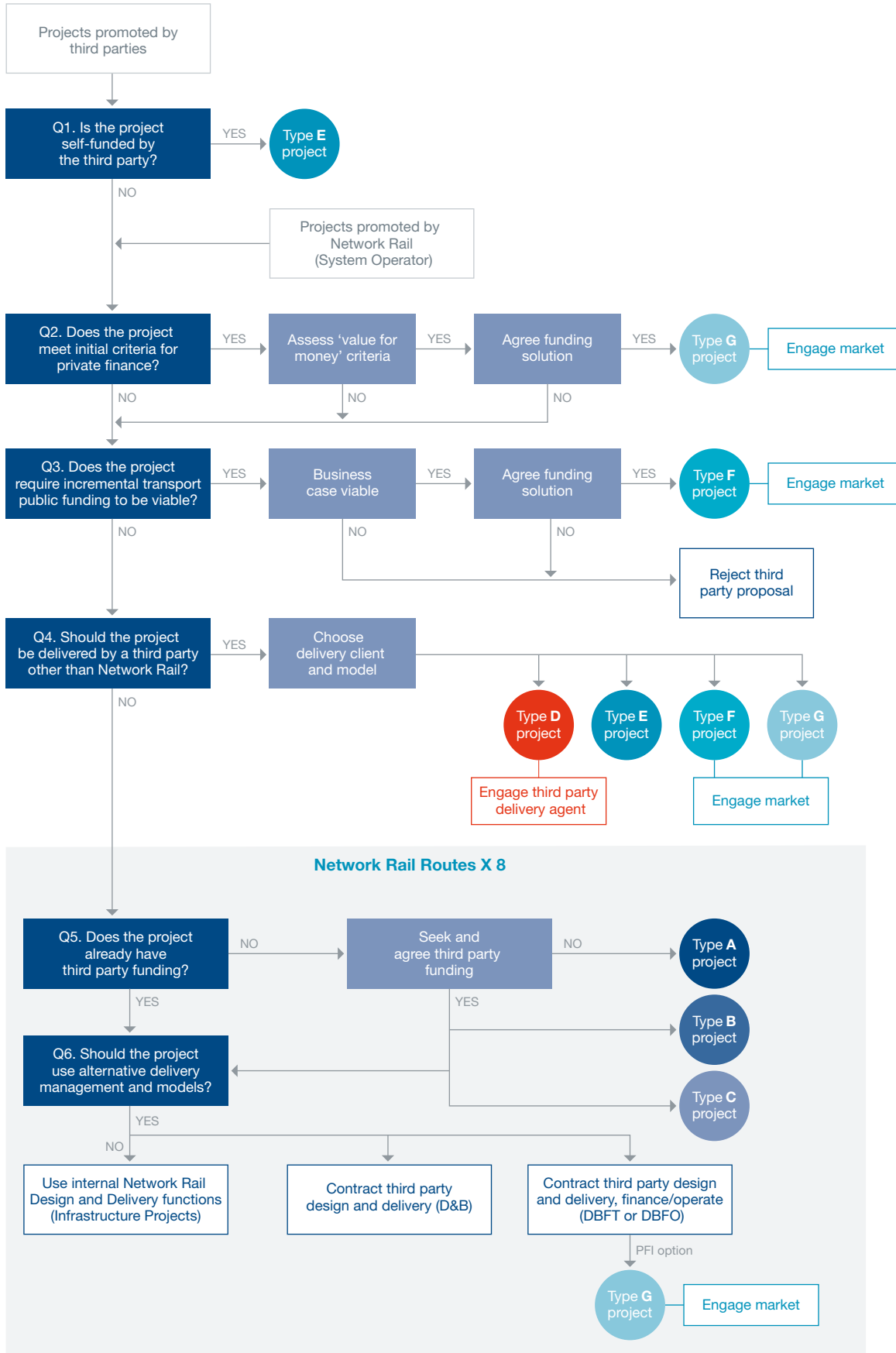
Question 6: this step initiates the decision by the Network Rail route to select the delivery management and contracting arrangements for the project as explained in the previous section. Criteria for this selection need to be developed. For example, these could include consideration of the capability of the supplier market being sufficient to support strong competition for design and project management capabilities.

In summary, a contestability decisions process:

- Should identify those projects which are suitable for delivery by alternative bodies to Network Rail including SPVs, Train Operators, rolling stock owners or other third parties with the capacity to provide the necessary funding.
- Should consider whether private finance would be a suitable model for delivering specific projects. This is to filter out large-scale projects that are suitable for bespoke funding and financing solutions, recognising that these will be exceptions.
- Should identify those projects that deliver non-rail infrastructure benefits: for example by connecting to ports, airports, industrial facilities, housing and regeneration schemes.
- Could be developed and used as a tool by Network Rail's new business development directors and should be applied to all forms of railway investment, not just those which already have third party involvement.

By way of guidance, a threshold is needed, above which there is an expectation of a contestability decisions process being applied. For example, a minimum capital value for projects of £50 million. The figure will should be refined in consultation with stakeholders, but will only ever be guideline and not a strict pass-fail test.

Figure 5 – Contestability decisions process



4.5 Integrating contestability in business case development

The government's 'five case model' for investment appraisal is the methodology used to develop projects through three investment decision gateways. Table 4 shows the business case stages where contestability could be introduced and the potential benefits of doing so.

4.6 The 'size of the prize' for increased contestability

It is clear from consultations that there are no quantified measures that express the level of contestability in the rail market. However, the benefits to the UK's economy that result from better transport are considerable. The underlying tenet of this review suggests that more of the right projects could be undertaken and at lower cost, made possible by more involvement from the private sector in their funding and delivery.

The 'size of the prize' is potentially large and is recognised by other industries. Water and electricity generation and supply have provided benefit to customers by increasing contestability.

Table 4 – Integrating contestability into government's 5 case model

Business case stage	Description (from business case guidance)	What are the benefits of considering contestability at this stage?	Enablers
Policy objective	Ascertaining strategic fit or need.	Decisions at this stage are a point of strategy for government, however, devolution of the rail industry could enhance local policy contribution.	Working with local policy makers.
Strategic outline business case	Making the case for change and exploring the preferred way forward.	Innovative solutions. Joined up business case; e.g. including housing, land-value uplift. Benefitting from broader development expertise. Local authority buy-in.	Value for money criteria agreed with government and third party promoter (may include non-transport benefits). Clear funding/revenue model. Clear governance structure (with spending authority). Clear operational or asset transfer strategy.
Outline business case	Determining the value for money, preparing for the potential deal, ascertaining affordability and funding requirements, planning for successful delivery.	Special Purpose Vehicle enables flexible resourcing and skills development. Innovative procurement strategies. Specialist non-rail knowledge, to suit project's needs.	Clear sponsorship by the owner of the strategic case. Clear operational or asset transfer strategy. Network Rail support for developing outline business case.
Full business case	Procuring the value for money solution, contracting for the deal, ensuring successful delivery.	Reduce 'gold plating' of design by making third party responsible for design, operation and maintenance – removing the asset transfer risk.	Operational strategy which allows for a third party to operate and maintain asset for a defined period.
Implementation	Project initiation.	Drive efficiencies by having a commercial focus in the procurement strategy, linked to a pain/gain mechanism for the procuring authority. Innovative procurement models.	Government support for alternative models of procurement.

5. Using different contracting approaches

5.1 Introduction

Network Rail could engage third party suppliers to deliver projects at lower costs or better value for money.

Reducing the cost of infrastructure projects is a key concern for government and Network Rail. Whilst financing is not the primary focus of this review it is discussed in this section to provide an insight into all possible delivery models. This follows the work of the CEPA report (March 2017).

5.2 Delivery models and risk transfer

Using different contracting and procurement approaches alters the apportionment of risk between Network Rail and the private sector.

NRIP performs a role akin to that of a prime contractor on behalf of Network Rail for the delivery of infrastructure projects. This can be described as the ‘hub and spoke’ model, whereby Network Rail undertakes the hub role. As the hub, Network Rail coordinates and manages the interfaces across a series of different third party contractors. Figure 6 below provides a simplified illustration of the ‘hub and spoke’ delivery management model. Table 5 contains an example of risk apportionment.

Figure 6 – Simplified illustration of a hub and spoke model

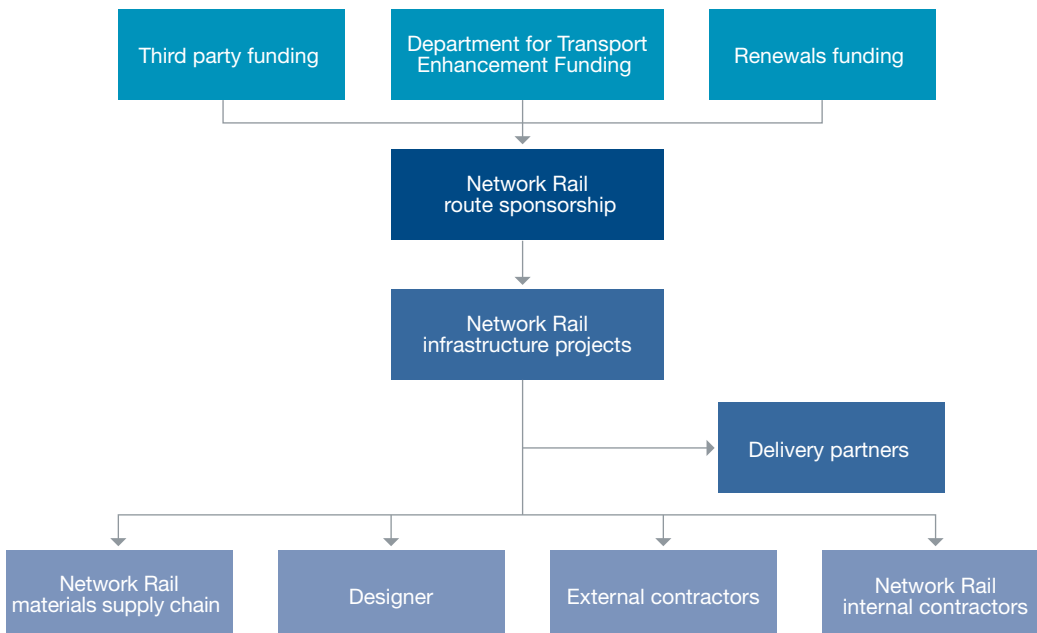


Table 5 – Example of risk apportionment for hub and spoke model

Risks	Bears the liability	Manages the risk	Control/influence
Access – availability of booked possessions	NRIP	Network Rail route operations	Network Rail route operations, train and freight operating companies
Access – efficient use of available possession time	NRIP	NRIP	Network Rail route operations, NRIP, contractors and delivery partners
Scope development	Network Rail route sponsor	NRIP	Network Rail route asset management
Asset condition – application of standards	NRIP	NRIP	Network Rail route asset management
Design	NRIP	NRIP	Network Rail route asset management
Interfaces during construction	NRIP	NRIP	Contractors and delivery partners

There are reasons why it is appropriate to have NRIP as the prime contractor for certain types of projects. These include where the scale of the project and associated risks could not be tolerated on a private sector company balance sheet.

However, this is not the case for all projects where more discrete risks can be passed to the private sector to incentivise delivery of the project at a lower overall cost or to achieve a better outcome. It is perceived by stakeholders that using local contractors directly engaged by the routes to undertake non-complex

station related works could deliver more practical and aesthetic designs. The rationale being that the local company would be contracted on a design and build basis with their reputations in the local communities providing an incentive to create an excellent outcome.

A typical alliance model can be used to illustrate the change in risk apportionment when using a different delivery management model. Figure 7 below provides a simplified illustration of an alliance during construction. Table 6 contains an example of risk apportionment.

Figure 7 – Simplified illustration of an alliance model

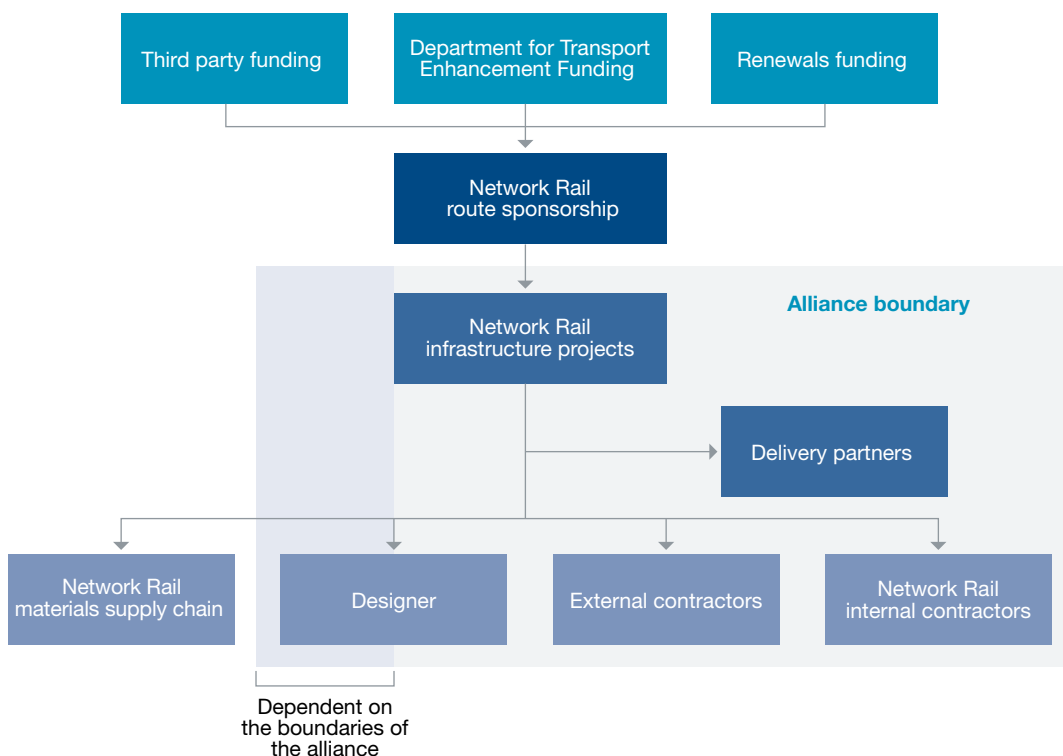


Table 6 – Example of risk apportionment for alliancing model

Risks	Bears the liability	Managing the risk	Control/influence
Access – availability of booked possessions	NRIP	Network Rail route operations	Network Rail route operations, train and freight operating companies
Access – efficient use of available possession time	NRIP Alliance	NRIP Alliance	Network Rail route operations, NRIP, contractors and delivery partners
Scope development	Network Rail route sponsor	NRIP	Network Rail route asset management
Asset condition – application of standards	NRIP or NRIP Alliance	NRIP Alliance	Network Rail route asset management
Design	NRIP or NRIP Alliance	NRIP or NRIP Alliance	Network Rail route asset management
Interfaces during construction	NRIP Alliance	NRIP Alliance	Contractors and delivery partners

Interface risks relate to the physical boundary between the project and the main network, and also to contractual boundaries. Management of both of these risks must be clearly apportioned to ensure effective overall delivery, contract and project management.

5.3 Framework contracts

Frameworks can be used to foster greater collaboration, innovation and better outcomes for projects. Network Rail has a rigorous process for tendering and selecting its framework partners, to choose its suppliers. The suppliers can expect a regular supply of work, and the process for engaging them for discrete pieces of work is made quicker and easier.

However, the review heard the view from consultees that frameworks can limit contestability and drive inefficiency. The perception is that the selection process is difficult for new or smaller suppliers to engage with, limiting their ability to enter the rail market. The review also heard examples of significant savings being achieved by third parties tendering works themselves, when compared to using Network Rail's framework suppliers.

Whilst it is possible that suppliers on a framework contract may lose their incentive to drive costs down, the level of reported cost inefficiency suggests that the full benefits of framework contracting are not being realised. To unlock the opportunities presented by framework contracts requires joined-up working across Network Rail as the client organisation. It also requires an environment that is ready to embrace innovation from the supply chain.

Alliancing was reported as being a model that has been successful in driving down costs and improving innovation through long-term contractual relationships. For both framework and alliance models, encouraging contestability must be considered alongside the more practical benefits of speed and ease, to ensure the right incentives are put in place for both the suppliers and the client organisation.

5.4 Output based procurement

The review heard concerns regarding Network Rail's so-called 'gold plating' of designs and an apparent lack of motivation or capability to design solutions that deliver an optimal output-to-cost ratio or value for money. Some stakeholders perceive that Network Rail designs are over-engineered and aesthetically poor.

Delivery clients in the Network Rail routes need alternative options to contract for design so that they can achieve the right trade-off between standards, design and cost. They must also be incentivised to actively explore these options.

Two of the strongest influences on project cost come from project scope and design. The development of an outline business case will involve an iterative process between scope, cost and affordability, in which the delivery client will play a central role. A similar iterative process can be expected in finalising a project's design, in which by contrast, delivery management will play a central role. Across the lifecycle, design is developed for:

- Business case approval
- Planning approval
- Tender
- Engineering design

Each step in this design evolution process presents opportunities for different delivery models to be adopted. It is beyond the scope of this report to describe all of models. However, by way of illustration, it is informative to consider the interaction between output based contracting and design.

Single point responsibility is an acknowledged driver of value-for-money where a supplier is enabled to make design trade-offs between, for example, constructability and life-cycle maintenance cost within a single integrated long-term cost envelope. This principles lies behind some PFI and PPP models where the project sponsor or delivery client has decided to contract for project outputs – such as system availability – rather than inputs such as the choice of design for individual components. In this way, the chosen procurement and contracting strategies for the construction and operational phases of a project become major drivers for the introduction of increased contestability.

If payment is made for contracted outputs rather than inputs, it is likely that the supplier will incur costs ahead of its receipt of payment, so obliging it to raise finance to bridge this timing difference. If this finance is raised on a limited recourse basis (such as relying solely on payments derived from the project itself) then the invested capital (as well as the return paid on that capital) will be at risk to project performance. This is a common feature of PFI and PPP delivery models. To have invested capital at risk in this way provides a powerful contractual incentive which goes well beyond that typically found within design and build style contracts that involves greater risk transfer.

The PFI/PPP contractor will, of course, have to make decisions about how it sub-contracts for the component design, fabrication, construction, commissioning and either handover or O&M services which it is responsible for integrating. This is no different from the decisions faced by a delivery client who has chosen not to go the route of output based contracting. There is a broad range of such contracting models to choose from, including: design and build; engineering, procurement and construction; alliancing; and programme management contracting. Contestability in delivery model selection arises naturally from the choices made between these different contractual forms, which are driven largely by considerations of value for money.

5.5 Summary

In summary, there appears to be a lack of considered choices being made between different contracting options in the current arrangements. For certain projects the private sector could deliver at lower cost if a different contracting model and risk apportionment was used.

6. Delivering more value for money

6.1 Introduction

Contestability can deliver better value for money

This section sets out recommendations for Network Rail to implement contestability to achieve better value for money through:

- Alternative design and delivery models
- Demonstrating commitment to contestability

6.2 Alternative design and delivery models

As discussed in section 5, alternative design options can be achieved as part of a wider set of delivery model options, including: Design and Build; funder-delivered schemes; and PFIs such as DBFT or DBFM. Adopting some of these models would require a greater use of output and outcome based contracting. Such a radical change would require complementary change in Network Rail's approach to standards and acceptance processes if this were to present a genuine opportunity for innovation.

The review has seen evidence where design and build contracts have provided better outcomes in terms of cost and time than the conventional hub and spoke arrangement built around NRIP. This approach should be developed within the more predictable technical environment noted above.

One of the most challenging options for Network Rail would be the self-delivery of a scheme by a private enterprise such as a developer. This would require substantial changes to the way in which Network Rail interacts with third parties including the provision of positive assistance in the management of risk and associated costs.

Specialist commercial capability will be required should Network Rail choose to contract for a privately financed project delivered to Network Rail's output specification. The third party would, for example, need an agreement as to how it would recover its costs over the life of the contract. The third party may also have some non-railway options to recover some of its investment. Therefore, a complex funding agreement would be required.

There are significant challenges in developing this type of scheme including the need to demonstrate value for money by comparing whole life cost against a publicly funded option. Given that Network Rail enjoys a significantly lower cost of capital than many third parties, the case has to be made based on efficiency or innovation gains, the risk transfer achieved, or the benefits to the industry as a whole.

Building this specialist capability in the sponsorship function of all eight routes is required as an enabler for these alternative delivery models. Different options can be explored as to how this capability gap could be met quickly in the short-term. These options include: training; re-deployment of expertise from NRIP; or establishing a small core central team that would build the process and provide the specialist commercial expertise for shaping the more complex financing and procurements. This capability could be migrated to the routes as part of the on-going Network Rail transformation programme.

Recommendation 1: Network Rail to develop and embed processes and specialist commercial capability consistently within the routes to establish and execute a range of alternative design and delivery options for infrastructure projects.

6.3 Demonstrating commitment to contestability

The review heard that there is a perceived lack of will within Network Rail to challenge and incentivise contestability and, in particular, for the routes to adopt alternative delivery management and models.

The priority associated with a drive to increase contestability needs to be balanced against day-to-day demands of managing the performance of the network. Network Rail needs to demonstrate that it is committed to developing a more contestable market and achieving the benefits, otherwise counter pressures will prevail.

The review panel considered whether to recommend that Network Rail should set efficiency targets and publish a contestability plan as a way of demonstrating this commitment. Given the lack of evidence and measures of contestability available it was decided that these actions were not practical, and that setting arbitrary targets would be counter-productive. It is for Network Rail to determine how it will demonstrate its commitment and to build up an evidence base for gains from contestability.

Recommendation 2: Network Rail to demonstrate its commitment to creating a more contestable market and evaluate resulting gains.

7. Broadening third party investment

7.1 Introduction

Contestability should be considered routinely as part of the project investment lifecycle.

This section sets out recommendations aimed at broadening investment from third parties under the following headings:

1. Embedding a contestability decisions process in the project lifecycle.
2. Enhancing third party investment proposals.
3. Providing confidence to existing and potential infrastructure investment parties.

7.2 Embedding contestability decisions

This section considers how to make consideration of contestability a routine feature of the project investment lifecycle, so it is systematically considered and decisions taken at various points in the lifecycle.

There is not a routine transparent consideration of contestability during the lifecycle of development and delivery of infrastructure projects. To provide transparency, confidence and to open up opportunities for the market, contestability must be made a routine consideration. Consequently the review has identified a need for an effective contestability decisions process, described in section 4. The principles of this process are:

- Choices are considered explicitly at various points through the project lifecycle either by government in the early stages or by Network Rail in the delivery stage.
- All projects that have a public funding requirement go through the decisions process.
- Third party proposals are assessed using transparent appraisal methods. Those that do not meet the criteria are rejected and those that are viable continue into further development.
- Due consideration with clear criteria is given to choosing alternative delivery management and contracting strategies.

Recommendation 3: Network Rail in conjunction with government to develop clear, transparent principles and processes for considering contestability at each investment decision stage.

7.3 Enhancing third party investment proposals

Third party funding proposals may not be considered proactively because the government's five-case business case appraisal methodology does not include contestability as a routine consideration. See section 4 for more details.

In addition, it is perceived that third parties who benefit from a rail enhancement scheme do not make an appropriate level of contribution to the cost of that scheme. This could be because the existing Town and Country Planning process is not sufficiently robust to value the true benefit to a developer of a new station or train service; or because Section 106 monies are diverted to other local needs by the planning authority; or because there is no reliable means of valuing an increase in the price of land generated by rail investment.

During the consultation the review heard about a number of barriers that are preventing third parties from organising sufficient funding based on non-railway benefits. Where this is the case, the project would still be reliant on appraisal of operational rail benefits to be considered as viable, such as improved capacity or service reliability. To obtain approval for such a project requires cases to be made and approved for both the third party funding case, detailing how will they achieve benefits from their contribution, and the transport business case for the incremental public funding. The latter case may also rely on demonstrating the viability of indirect socio-economic benefits.

Equally there are examples of projects promoted by third parties whose funding case is based on realising non-railway benefits, such as housing or commercial development. These projects were typically over £50 million in capital value. The third party would be providing the majority of project funding required with some incremental public funding from government being required. Funding from non-rail benefits include local authorities that have been able to secure land value increase benefits, local taxes or commercial income from developments enabled by additional railway infrastructure.

If it were possible to fully quantify the positive impact of rail enhancements on potential third party funders, this would encourage third party funders to make larger funding contributions to those projects and increase the chances of them being viable schemes.

Recommendation 4: Government to ensure that it gives due consideration to contestability in its business case methodology, and to publish appraisal guidelines to assist third parties to realise financial benefits associated with rail infrastructure projects.

Funding early development

The cost to third parties of developing high quality project proposals, prior to having certainty of achieving approvals is one barrier identified in this review. This barrier is compounded by the absence of clearly understood ways by which a project sponsor can ensure a period of exclusivity during which to develop their detailed business case, and how the project sponsor would retain rights over the intellectual property of the business case itself. Without assurances on these points parties will be reluctant to commit substantial resources.

Third parties develop proposals either in response to a call for proposals from a transport authority to meet a need identified by them (contesting for solutions and funding) or as an unsolicited investment proposition.

In either scenario, there is a need for a clearer, more transparent appraisal methodology, that will require development of a detailed business case upon which a final investment decision can be taken. The early stages of any project are particularly uncertain especially where permissions or powers may be required. Network Rail has an advantage in this area due to its permitted development rights.

Therefore to positively encourage a contestable market, an early development fund is needed. The fund could recover its contribution from projects that were successful. It would need clear criteria to be developed for its use by third parties. This approach should encourage the development of high quality proposals that can be properly assessed using a consistent appraisal methodology.

Factors to consider include:

- Granting exclusivity for a period.
- Ensuring that the fund is spent efficiently and economically, with controls to enable those responsible to monitor its use.
- Developing criteria and terms of use for the fund, drawing on lessons learned from Ofgem's successful use of competitive fund allocation, and the DfT's 'Accelerating Innovation in Rail' funding competition.

Recommendation 5: Government to establish an early development fund with clear criteria to assist in the creation of high quality investment proposals.

7.4 Providing confidence to investors

Forward view of opportunities

Market confidence is built both by the demonstration of past successes and by the visibility of a credible forward pipeline of opportunities. The former has been greatly assisted by projects such as Crossrail, which has shown how a publicly funded special purpose vehicle can be formed for a single major programme.

There is no clear forward view of opportunities for third parties in the rail infrastructure sector. To respond in a more contestable market, third parties will need to invest and develop their own capability in advance. A reasonable forward view of the scale and timing of opportunities would provide the market with the confidence to make those investments.

Recommendation 6: Network Rail in conjunction with government to create and maintain a forward view of the scale of third party investment opportunities, giving visibility and confidence to the market.

Pathfinder projects

Pathfinder projects provide an opportunity to address complex issues, overcome barriers and build confidence. They need appropriate governance and oversight arrangements to support a challenge to the status quo and provide authority to ensure barriers are being overcome.

It is suggested that within twelve months, Network Rail identifies and proposes a series of pathfinder projects to government, for its agreement. These should be selected based on their ability to help drive the other recommendations of this review.

Pathfinder projects have a number of purposes, to:

- Help overcome the barriers to increasing contestability within the rail infrastructure delivery market.
- Demonstrate to the market and wider stakeholders that the pipeline of opportunities is real, so building confidence and market capacity.
- Support transformations already underway within Network Rail, such as strengthening delivery client capability within routes.
- Create learning which can be applied across a broader portfolio of projects.
- Deliver much needed investment in rail infrastructure.

The selection of projects must take into account practical constraints such as deliverability, affordability and skills availability. It is recommended that the available candidate projects are scored against these various criteria and to use this information to prepare a prioritised and realistic delivery plan. The responsibility for their success should be part of the remit for the oversight arrangements described later.

Recommendation 7: Network Rail in conjunction with government to identify a range of pathfinder projects to demonstrate the removal of barriers and the benefits from alternative funding and delivery models.

8. Enabling third party projects

8.1 Introduction

Third party developers and funders need certainty of their costs and confidence that their investment will be delivered on time.

This section sets out recommendations aimed at Network Rail's role in enabling more successful delivery of third party funded and delivered projects under the following headings:

1. Clarifying Network Rail roles and accountabilities
2. Changing culture and behaviour
3. Enhancing the terms of engagement
4. Challenging scope and standards

8.2 Roles and accountabilities

Network Rail lacks a single point of contact empowered to bind the whole of Network Rail to parameters of cost, time, scope and quality to assist third parties in making funding decisions. Such a role would give third parties the certainty they need early in the project lifecycle; help expedite communications within Network Rail; and permit investment decisions to be made with confidence.

The parts of Network Rail that have most impact on third parties are its business managers, sponsorship team, NRIP, commercial team, Route Asset Managers, standards team and to a lesser degree the timetable team. Each of these parts is capable of acting unilaterally to enforce its own requirements, which may result in a number of differing pressures for a third party to manage. The requirements of these parties may also arise at different times during a project's lifecycle with route and timetable issues in particular emerging late, sometimes after the project has been physically completed.

Network Rail should determine the nature and extent of the senior support needed for this function in each route, which could be based on the new business development directors who are being recruited in each route with a remit to secure third party funding for Network Rail projects.

Recommendation 8: Network Rail to define roles and accountabilities, build capability and provide support to the routes for engaging with third party investors (funders and deliverers); and to define the respective accountabilities of the routes and Network Rail Infrastructure Projects directorate.

8.3 Culture and behaviours

During the consultation, the review team heard negative perceptions about how Network Rail and its staff behave towards third parties. The views seem to arise from a variety of issues, including: the difficulty of dealing with a fragmented entity; an apparent lack of interest in third party requirements; a tendency to view third party funds as a contribution towards Network Rail's own assets; gaps in skills and resources; and a bureaucratic approach.

Network Rail has a number of specific improvement programmes already under way including a programme to improve its sponsorship capability. What is not clear, however, is how the individual improvement programmes will join up to improve the overall third party experience.

The existing improvement programmes, such as the Network Rail transformation plan, should be reviewed to ensure that they generate complementary change across all elements of the organisation that can impact on the third party experience. Areas to review and embed in the Network Rail Transformation Programme include:

1. How Network Rail defines success for the company as a whole, balancing day-to-day operation with a desire to develop the network for passengers and freight.
2. How accountability for this broader measure of success is devolved through all levels of the organisation permitting success to be rewarded and poor performance remedied.

3. Ways of breaking up silos to ensure common agendas across the organisation.
4. Using the so-called ‘safety card’ intelligently and operating an approach to compliance which reduces risk to ‘as low as reasonably practicable’, including a reference to cost and value.
5. Taking responsibility for Network Rail’s errors and omissions.
6. Reducing bureaucracy.

The existing Network Rail transformation programme may not be adequately focused on the culture change required to support third party engagement. However, the on-going transformation work could be aligned with the recommendations of this review without the need to create additional work-streams for the contestability agenda.

Recommendation 9: Embed within Network Rail’s transformation programme the behavioural changes required to create a welcoming, predictable and trusting environment, providing more cost and risk certainty.

8.4 Terms of Engagement

Network Rail’s existing Code of Practice does not include a service level commitment to third parties. Further, Network Rail’s template agreements, asset protection agreements and guidelines on risk transfer are complex, at times unsuitable and poorly understood by third parties.

The document *Stakeholder relations code of practice – Investing in the network version 1.1* is thorough in describing Network Rail’s project development processes and the various agreements that can be used according to the type of project and stage of development. However, it does not provide any guidance on the level of service a third party can expect to receive, or any reassurance about generating a reasonable price or acceptable programme.

Network Rail should develop and publish a simpler document as a service level agreement to replace this code of practice. This will provide more certainty over the level of service third parties can expect to enjoy when promoting projects, either through Network Rail or as independently delivered upgrades.

This will have a profound impact on how Network Rail is perceived and its attractiveness as a partner in delivering or supporting third party projects. It is to some extent the outward manifestation of some of the changes contained in the other recommendations.

The new service level agreement should include:

Creating a welcoming, predictable and trusting environment:

- A single point of contact who will actively work to make investment attractive and outcomes predictable.
- Assurance that third party funders will be treated the same as Network Rail’s internal sponsors.
- An efficient appeals and escalation process.
- Clarity of the end-to-end process, including the hand-back requirements at the end of long-term contracts.

Providing more certainty over outturn cost

- Published table of norms.
- Controls to avoid opportunistic behaviour by Network Rail in extending project scope.
- Clear boundaries regarding the extent of related compliance works required within a non-compliant environment.
- Transparent build-up of cost and risk allowances on the same basis as for a Network Rail project.
- Fixed prices offered at GRIP stage 4 based on the properly developed cost and risk allowance noted above.
- Asset Protection Agreement costs and liabilities rigorously challenged within Network Rail.
- Providing more certainty over the risks a third party is taking.
- Handover criteria agreed at GRIP 4 design stage.
- Schedule 4 costs to be in proportion to the value of the project, and added to the project costs.
- Schedule 8 risks to be capped for works unlikely to impact on operations.
- Mechanism for determining asset transfer values at the end of the project or franchise period, cognisant of asset risk.

Recommendation 10: Network Rail to convert its Code of Practice into a Service Level Agreement, refreshing its template agreements, asset protection agreements and guidelines reflecting a more balanced risk transfer, in consultation with industry.

8.5 Challenging scope and standards

There is a lack of transparency to third parties in the early stages of developing scope regarding improvements to existing assets and other works that Network Rail may require to be added to the project at the cost of the third party. Derogations are explored too late in the project, causing additional project scope and potential increase in costs for third parties. Network Rail does not have an effective independent appeals process where third parties can challenge the extent of additional requirements.

Compliance with standards is a straightforward issue with a green-field, new-build project. However, a great deal of the UK's rail infrastructure is, at its core, a Victorian railway. This makes it difficult to achieve compliance with modern standards. For example, many stations have non-compliant platform, stair and corridor widths for passenger numbers and do not meet disability access requirements. If the asset is left unchanged it can continue to operate under so called 'grandfather rights', but when the asset is improved it generally needs to be brought up to modern standards or derogations obtained for areas of non-compliance.

While this principle is a reasonable one, as it should lead eventually to an improved passenger experience, it can create uncertainty of scope for a third-party funder. Standards can also be used as a banner to promote other issues such as timetable resilience that can drive 'nice to have' scope increases during the development of a third-party-funded project.

The standards landscape is highly complex, but there are processes available to challenge standards and obtain variations to them. To do this, however, requires significant competence on behalf of the applicant along with knowledge of how to navigate through the process. This complexity means there are many misunderstandings or 'myths and legends' surrounding standards.

Standards themselves are not necessarily the source of the issue behind third party concerns. It is more likely that the main issues are the complexity of the standards landscape and the variations and derogations process; a lack of transparency in the process for applying standards during project development; the misuse of standards to drive 'gold plating'; and the lack of timely decisions regarding the scope of standards-related work which can lead to unplanned impacts on construction and handover.

To address these issues, the following changes are necessary:

Transparency of application of standards

Network Rail should provide transparency during the early GRIP stages for each option being considered, regarding the scope of the core project; the scope of any contextual changes required to deal with historic non-compliance of existing assets at that location; and the extent of any associated works that Network Rail considers should be added to the scope of the scheme.

Actively seek derogations

All options for derogations should be explored during the GRIP 3 stage of project development to limit any additional scope and thus the estimated cost of the project under consideration.

Appeals process

Network Rail should implement an efficient and independent appeals process where third parties can challenge the extent of Network Rail's additional requirements or the unexpected cost increases which have been reported during this consultation. Depending on the nature of the standards and regulations involved, the process may need endorsement by ORR.

Communication

The opportunity for variations and derogations should be communicated more widely, and Network Rail in particular should actively support non-expert third parties if needed.

Recommendation 11: Create a transparent process to enable and facilitate third party challenge of scope and standards application during project development, fixing them before funding commitments are made.

9. Oversight arrangements

High-level ownership of the contestability agenda is required to maintain momentum. Increasing the level of contestability in the market will take time and there is a need for strategic oversight to drive a transition plan for introducing contestability, and to remove barriers.

Understandably, there is no appetite to create a new governance body to oversee this agenda. Oversight should be built into existing governance structures, involving Network Rail, DfT and ORR input as necessary. Strong support at a senior level is required, at least in the short term, whilst the capability within the Network Rail routes is further developed and greater autonomy is achieved.

Given the scale and breadth of change required in Network Rail, it seems appropriate for this oversight to be undertaken by or on behalf of the Network Rail Board, perhaps via a Board sub-committee.

Recommendation 12: Establish effective oversight arrangements to provide strategic direction for a more contestable rail infrastructure market, building on existing Network Rail governance structures and involving government as appropriate.

10. Concluding remarks

The review panel has sought to strike a balance between the universality of its recommendations and their prescription.

In a landscape as large and complex as that of the rail sector and for a topic as diverse in its implications as contestability, it can be difficult to find consistent issues that lend themselves to simple recommendations.

The supporting narrative of this review can be as potentially important as the recommendations themselves, in terms of effecting change. Moreover, the Review Panel firmly believes that it is for Network Rail and DfT to interpret these recommendations so that they are delivered within the context of the changes already underway, as a result of reports – such as the Shaw Report – which apply to many of the same functions and people who are touched by this review.

The broad range and number of consultees who volunteered their time and thoughts to engage with the review team speaks volumes for the desire

and commitment of all stakeholders, both private and public sector, to seize the opportunity which a contestability agenda presents for rail infrastructure projects. Accordingly, the review panel is confident that if the right steps are taken to implement its recommendations, they will receive an enthusiastic response from the market.

The Review Panel also drew considerable confidence from the successes already achieved in introducing contestability in other examples in the rail market, most notably HS1, Crossrail Limited and HS2 Limited. The point being that if such major projects can be successfully brought to fruition through different delivery models, then there really is no limit to what may be achieved by introducing contestability into Network Rail's projects.

11. Summary of recommendations

Recommendation 1: Network Rail to develop and embed processes and specialist commercial capability consistently within the routes to establish and execute a range of alternative design and delivery options for infrastructure projects.

Recommendation 2: Network Rail to demonstrate its commitment to creating a more contestable market and evaluate resulting gains.

Recommendation 3: Network Rail in conjunction with government to develop clear, transparent principles and processes for considering contestability at each investment decision stage.

Recommendation 4: Government to ensure that it gives due consideration to contestability in its business case methodology, and to publish appraisal guidelines to assist third parties to realise financial benefits associated with rail infrastructure projects.

Recommendation 5: Government to establish an early development fund with clear criteria to assist in the creation of high quality investment proposals.

Recommendation 6: Network Rail in conjunction with government to create and maintain a forward view of the scale of third party investment opportunities, giving visibility and confidence to the market.

Recommendation 7: Network Rail in conjunction with government to identify a range of pathfinder projects to demonstrate the removal of barriers and the benefits from alternative funding and delivery models.

Recommendation 8: Network Rail to define roles and accountabilities, build capability and provide support to the routes for engaging with third party investors (funders and deliverers); and to define the respective accountabilities of the routes and Network Rail Infrastructure Projects directorate.

Recommendation 9: Embed within Network Rail's transformation programme the behavioural changes required to create a welcoming, predictable and trusting environment, providing more cost and risk certainty.

Recommendation 10: Network Rail to convert its Code of Practice into a Service Level Agreement, refreshing its template agreements, asset protection agreements and guidelines reflecting a more balanced risk transfer, in consultation with industry.

Recommendation 11: Create a transparent process to enable and facilitate third party challenge of scope and standards application during project development, fixing them before funding commitments are made.

Recommendation 12: Establish effective oversight arrangements to provide strategic direction for a more contestable rail infrastructure market, building on existing Network Rail governance structures and involving government as appropriate.

Abbreviations

CP	Control Period
CEPA	Cambridge Economic Policy Associates
DfT	Department for Transport
FOC	Freight Operating Company
GWR	Great Western Railway
GRIP	Governance of Railway Investment Projects
HMT	Her Majesty's Treasury
HLOS	High Level Output Specification
HS1	High Speed 1
HS2	High Speed 2
IPA	Infrastructure and Projects Authority
LEP	Local Enterprise Partnership
ORR	Office of Rail and Road
PFI	Private Finance Initiative
RDG	Rail Delivery Group
RSSB	Rail Safety and Standards Board
SPV	Special Purpose Vehicle
TOC	Train Operating Company

Glossary

Asset Protection Agreement

Template Network Rail agreements, outlining information and requirements when working with respective railway assets.

Bowe Review

A review chaired by Dame Colette Bowe (November 2015) on the planning of Network Rail's enhancements programme 2014 – 2019.

Core funder

The party who provides the majority of the project funding.

Customer

End user of the rail infrastructure i.e. train operating companies, freight operating companies, open access operators, passengers.

CEPA/RDG Report

A report produced by CEPA and RDG (March 2017) on bringing more private delivery and/or investment into the rail industry. The key finding of this report was that there is currently a substantial appetite for such involvement, subject to the removal of some inherent barriers to entry into the market.

Delivery client

The client for delivery of an infrastructure project, who manage the development and hold overall responsibility for the scheme e.g. Network Rail (route), or third parties such as Crossrail Limited and train operating companies.

Delivery manager

The party responsible for managing the delivery phase (design, procurement, construction and handover) on behalf of the delivery client e.g. Network Rail (Infrastructure Projects) or a third party.

Department for Transport

The UK Government department responsible for the English transport network and a limited number of transport matters in Scotland, Wales and Northern Ireland that have not been devolved.

Funding

Unless otherwise stated, funding of the capital cost of an infrastructure improvement, or underwriting the future repayments of capital cost.

Financing

The act of providing money to meet costs (i.e. capital costs), with a requirement for a return on, and ultimately the return of, capital.

Government

This includes all central and devolved government transport bodies i.e. Department for Transport, Welsh Government and Transport Scotland.

GRIP

Network Rail's Guide to Railway Investment Projects – a project lifecycle process.

Grey assets

Grey assets or 'not examined' assets are those which are known to exist, such as earthworks, but for which there is a lack of accurate asset record.

Hendy Review

A review chaired by Sir Peter Hendy (January 2016) on re-planning Network Rail's investment programme.

HLOS

Sets out information for the Office of Rail and Road, and for the rail industry about what the Secretary of State for Transport wants to be achieved by railway activities during the current control period.

Innovation

Innovating to find the optimal solution, in order to deliver value for money. This could include innovative delivery models, new technology, and replicating the use of successful delivery examples from other industry sectors.

Infrastructure and Projects Authority

The UK government's centre of expertise for infrastructure and major projects.

Local authority

An administrative body in a local government.

Maintainer

The party responsible for the long-term maintenance of the infrastructure asset; the recipient of an asset, which may have been designed by another party.

Mixed economy

A market economy with mixed features including regulatory oversight, governmental provision of funding, and a mix of public and private ownership of assets.

McNulty Report

A report on realising the potential of GB Rail by Sir Roy McNulty (May 2011).

Network Rail Infrastructure Projects

The internal Network Rail delivery manager, responsible for delivery of major renewals and enhancements, across four regional areas.

Network Rail routes

Also known as ‘Network Rail route business’, responsible for the day-to-day maintenance and upkeep of the network. The business is divided into eight geographical routes and one national freight and passenger route.

Network operator

As set out in Network Rail’s licence conditions, granted by the Secretary of State, Network Rail is the ‘network operator’, responsible for the operation and safety of infrastructure assets.

Office of Rail & Road

The UK’s independent economic and safety regulator for Rail. Regulates the rail industry’s health and safety performance, and holds Network Rail and High Speed 1 to account.

ORR Report

ORR report on annual efficiency and financial assessment of Network Rail, published in August 2016.

Off Railway

Non-core operational railway assets such as station car parks.

Rail Regulator

The Office of Road and Rail.

Rail Safety and Standards Board

Aims to help the rail industry work with standards and regulations at UK, European and international level, with a view to addressing legal and other obligations.

Sponsor

The party who owns the strategic case; for rail projects, this is typically the Department of Transport, but could also be a third party public or private promoter.

Schedule 4

Compensation for train and freight operators for the impact of planned service disruption. A schedule to the Track Access Agreement.

Schedule 8

Compensation for train and freight operators for the impact of unplanned service disruption. A schedule to the Track Access Agreement.

System operator

A Network Rail responsibility for timetabling, capacity management, analysis and long-term planning functions for the rail network.

Shaw Report

Report chaired by Nicola Shaw (March 2016) on the future shape and financing of Network Rail. The report identified the tension between the UK’s current fiscal and economic environment, and the need to continue to grow the railway to meet social and economic needs. Recommendation 6 of the Shaw Report was to ‘explore new ways of paying for growth in passengers and freight on the railway’.

Track Access Agreements

Agreement between Network Rail and a train operator granting access to the railway network, to run train services.

Transformation programme

A transformation programme within Network Rail, led by the executive committee following the Shaw Report on the future shape and financing of Network Rail.

Third party

Any public or private organisation outside the typical delivery arrangements between Network Rail, the Office of Rail and Road (ORR) and the Department for Transport.

Appendices

List of appendices:

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Appendix 2 – Organisations attending the breakfast seminar

Appendix 3 – Panel biographies

Appendix 4 – Terms of reference for this review

Appendix 5 – Case studies

Appendix 6 – Analysis

Appendix 7 – List of figures, tables and references

Appendix 1 – Organisations consulted

- A** Abellio Transport Group
ACE
Achilles Info Ltd
All Party Parliamentary Group
Allan Rail
Amey
Arriva UK Trains
Ashurst
- B** BEIS
Better Transport
- C** Carillion
Campaign for Better Transport
CECA
Competition and Markets Authority
Cambridgeshire City Council
- D** Department for Transport
- E** East West Rail
Eversheds Sutherland
- F** First Class Partnerships
First Group
Freightliner
- G** G20 Infrastructure Hub
Gatwick Airport Ltd
Gutteridge, Haskins & Davey
GHD
GTR
GLA
Glasgow City Council
Grant Thornton
- H** Heathrow Airport Ltd
Hitachi Rail Europe
HS Developers UK Ltd
HM Treasury
High Speed 1/London
Continental Railway
High
Hull Trains
- I** IFM Investors
Institution of Mechanical Engineers
- J** John Laing
- K** Keolis
Kilbride Group
KPMG
- L** Laing O'Rourke
Leeds City Council
- M** Mace
Mersey Travel
MTR
- N** North East Combined Authority
National Grid
Network Rail
- O** Office of Rail and Road
Ofgem
Osbourne Clarke
- P** PwC
- R** Rail Alliance
Rail Freight Group
Rail Industry Association
Rail Delivery Group
Rail Supply Group
Rail Forum East Midlands
Resonate
Rock Infrastructure
Rolls Royce
Roxhill Developments
RSSB
- S** Siemens
SLC
Strathclyde Partnership for Transport
Swindon & Wiltshire LEP
- T** Transport for Greater Manchester
Transport for West Midlands
Transport for the North
Transport for London
Transport Scotland
Transworth Rail
- U** UBS
UK Government Investment
Urban Transport Group
- V** Virgin Trains
- W** Welsh Government

The review team is grateful to all other independent respondents who contributed their views.

Appendix 2 – Organisations attending the breakfast seminar

- 3** 3i
- A** Achilles Information Ltd
Addleshaw Goddard
Africa Finance Corporation
Amberside Capital
Arcadis
Arriva Trains
Arup
Ashurst
Aviva Investors
- B** BAM Nuttall
BDO
BEIS
Berwin Leighton Paisner
Blaklock Associates
- C** CACIB
Carillion
CECA
Cambridge Economic Policy Associates
CH2M
Clifford Chance
Competition & Markets Authority
CP2
Crede Associates
- D** DBJ Europe
Dentons UKMEA
Department for International Trade
Department for Transport
DLA Piper
Durham County Council
DWPF
- E** East West Rail
European Investment Bank
EY
- F** Foster & Partners
- G** Gatwick Airport Ltd
GB Railfreight
GHD
Gowling WLG
GWR
- H** Heathrow Airport Ltd
Heathrow Southern Railway
HM Treasury
HS2 Growth Partnership
HS2 Ltd
- I** Infracapital
International Business Times
Investec Bank
IPA
IPFA
- J** John Laing
- K** Keolis
KPMG
- L** Legal & General Investment Management
LGIM
Lloyds Bank
Lloyds Banking Group
London School of Economics
- M** Mace Group
Mott MacDonald
MTR Corporation Ltd
- N** National Audit Office
Network Rail
Newbridge Advisors
- O** Ofwat
Operis
Office of Rail and Road
- P** Pinsent Masons
Pointwork Ltd
PwC
- R** Rail Alliance
Rail Delivery Group
Rail PR
Resonate
Rock Rail Holdings
RSM
RSM Corporate Finance
Rail Safety and Standards Board
- S** ScotRail Alliance
Siemens Rail Automation
Simmons & Simmons
Skanska
SLC Rail
SMBC
SNC-Lavalin
Squire Patton Boggs
Stephenson Harwood
Sunbeam Management Solutions
- T** Transport for Greater Manchester
The Nichols Group
Transport for London
Transport Scotland
Transworth Rail
Turner & Townsend
- U** University College London
UK Government Investments Ltd
- W** Westbourne Capital
Willis Towers Watson
Windsor Link Railway
WSP

Appendix 3 – Panel biographies

Professor Peter Hansford FREng FICE FAPM

Peter Hansford is Professor of Construction and Infrastructure Policy at University College London. He was Chief Construction Adviser to the UK Government from 2012 to 2015 and was previously an executive director at the Nichols Group. He is a past President of the Institution of Civil Engineers and a Fellow of the Royal Academy of Engineering.

Peter holds a BSc in Civil Engineering from the University of Nottingham and an MBA from Cranfield. In 2014 the University of Nottingham awarded him an honorary doctorate for services to civil engineering.

Peter has over 40 years' experience in major infrastructure projects, in the UK and overseas. He has worked on highways, railways and energy projects and advised on infrastructure developments and capital investment programmes around the world.

Mike Gerrard FICE, Independent

Mike Gerrard has worked for much of his career in the development, financing and delivery of major infrastructure investments, both in the UK and overseas.

He has worked within both the public and private sectors, including regulated businesses, and has significant experience regarding investments within the environmental, transport and energy sectors.

Most recently, he was Managing Director of the Thames Tideway Tunnel Project (2011–15). He is a fellow of the Institution of Civil Engineers.

Alistair Gordon, CEO, Keolis UK

Alistair Gordon is CEO of Keolis UK, responsible for operations and maintenance of the Docklands Light Railway, operator of Nottingham trams, and a partner (with Govia) in three major rail franchises.

With over 20 years experience in the transport sector, Alistair was involved as a transport consultant in the development of rail privatisation, and before joining Keolis in 2004 he was Strategy Director for Eurostar.

Alistair is a graduate in Mathematics from University College London. As a partner on the GTR franchise he is responsible for their delivery role in the Thameslink rail infrastructure project and was involved in the consortium in Nottingham that built the additional lines 2 and 3 on the tram network, under a complex PPP deal. He is a major advocate for Digital Railway in the UK.

Daniel Hanson, Director, PwC

Daniel Hanson leads PwC's strategy, economics and policy work in the transport sector. He has considerable experience in the economic appraisal of major transport projects and the role of third party investment in delivering enhanced infrastructure.

Most recently Daniel has advised on the appraisal of a number of major road projects and sits on a number of Expert Panels including the DfT and Highways England Expert Panel on Road Investment Strategy 2. He was one of the architects of the regulatory framework for HS1 and is advising on the regulation of, and access charge framework for Crossrail (i.e. the Elizabeth Line). He also has extensive experience of competition, regulation and dispute resolution, having advised on these matters in most sectors of the economy.

Zara Lamont OBE FICE FCIQB, Performance Improvement Director, Carillion

Zara Lamont, a civil engineer by profession, has had a varied construction career with the opportunity to experience service delivery from many different perspectives. Starting in a design practice in Northern Ireland she joined Carillion in 1987 as a site engineer and over the subsequent years held various positions in a range of divisions until 1998 when, as Contracts Director, she was offered the opportunity to lead the Government's Construction Best Practice Programme. Three years later as her secondment was coming to an end she was approached by a group of public and private sector clients and asked if she would extend her secondment by a further 18 months to help them establish a client movement for change within the industry.

Since returning to Carillion in 2003 she has worked across all construction sectors putting into practice all that she learned regarding construction improvements. In 2014 she became a Vice President for the Institution of Civil Engineers taking on responsibility for the UK regions portfolio. In 2016 she took on the business transformation challenge of Carillion's Joint Venture Telecoms Business.

Andy Milner FICE FCIHT, CEO, Amey

Andy Milner, is the Chief Executive Officer of Amey, a public services company which employs over 20,000 people in the UK and internationally. Amey, works across the utilities, highways, environmental, rail, justice and facilities management markets. In 2006 Andy was appointed as Managing Director of Amey Consulting and subsequently took responsibility for Amey's rail business, a major national UK operation which delivers electrification, trackwork and projects as well as operation and maintenance expertise to UK rail and metro clients.

Andy's successes include launching a number of businesses overseas in the US, Middle East and Australia and he has also been instrumental in the design and implementation of a number of major finance projects and PFIs, including the Sheffield Highways PFI which was awarded to Amey in 2012. This £2bn contract saw the creation of a roadside technology business which dominates the UK market and the development of a fully integrated, whole life asset management business model that differentiates Amey in the UK and international markets.

Andy is a Chartered Civil Engineer, a Fellow of the Institution of Civil Engineers and a Fellow of the Chartered Institution of Highways and Transportation. He is an executive committee member of the International Association for Bridge and Structural Engineering as well as a partner to the Rail Supply Group which aims to strengthen the UK rail supply chain to promote growth.

John Smith, Managing Director, GB Railfreight

John Smith founded GB Railfreight in 1999 and is the company's Managing Director. He has worked in the rail industry for 33 years.

In 1977, John joined British Rail, managing rolling stock maintenance at various locations, including York, Longsight, Bounds Ground, Willesden and Wembley. He worked at Crewe on overhead line engineering during the Crewe remodeling of the 1980s, and at Derby as Project Manager of InterCity's secondary door-locking project, before eventually becoming Deputy Managing Director at operator Anglia Railways.

In 1999, John decided to set up GB Railfreight (GBRf), with a plan to undertake more open access work on the rail system. As Managing Director of GBRf, he has grown the company from just two employees to a yearly turnover in excess of £100 million.

John graduated from Loughborough University in 1982 as a mechanical engineer and is a Member of the Institution of Mechanical Engineers.

Matthew Symes, Partner, Concerto

Matthew Symes specialises in the management and rescue of business change programmes across all sectors including construction, property, telecoms, media and broadcasting and across government.

Matthew's skills draw on his early career as an engineer, and were broadened through working with the major management consultancy firms. In Concerto Partners, Matthew has led, directed and facilitated several major transformation programmes including launching the Olympics.

Matthew reviews major infrastructure projects and programmes for the UK and international governments and has a special interest in contract development, change management, and business transformation.

Appendix 4 – Terms of reference for this review

Background

Professor Peter Hansford (the Review Chairman) of University College London has been commissioned by the Board of Network Rail to undertake an independent review of contestability in the UK rail market to make recommendations on encouraging third party capital investment and infrastructure delivery on the national railway (Review).

Assumptions and issues

1. The overwhelming majority of new rail infrastructure on the national rail network is delivered and financed by Network Rail.
2. There is limited innovation within the UK Rail Industry when compared to other industries and most new technology is introduced through programmes led by Network Rail or other statutory bodies such as Rail Safety Standard Board.
3. For the rail network to grow and meet the exciting challenges of the future, more needs to be done to:
 - a) attract new funding and financing to the industry;
 - b) create a framework that encourages and allows new infrastructure to be developed and built by investors and parties outside Network Rail’s direct control; and
 - c) agree a contracting strategy with appropriate governance, controls and risk allocation which attracts market investment and generates

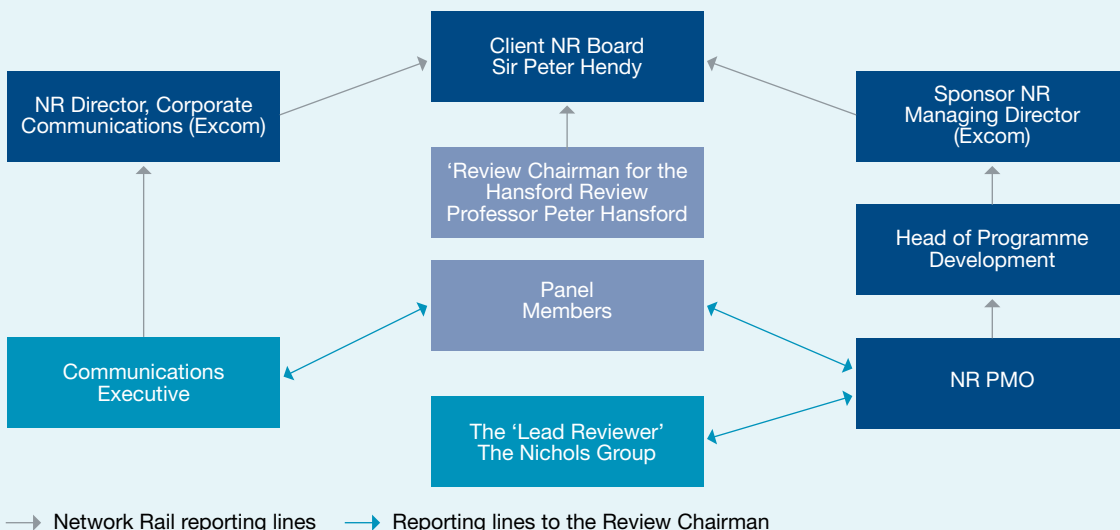
an appetite for third parties to deliver rail infrastructure.

4. Network Rail has previously been criticised for not doing enough, despite its license obligations, to facilitate and support new investment and technology on the rail network.

Terms of reference

1. To develop and produce recommendations on encouraging third party capital investment in and infrastructure delivery on the national railway, including giving consideration to and investigating the assumptions and issues outlined in these terms of reference.
2. To consider barriers to funding and financing, clienting/ sponsorship, project delivery, asset protection, and maintenance/operation.
3. The Review will be carried out by the Review Chairman acting independently of Network Rail.
4. The output of the Review will be in the form of a report to be presented to the Network Rail Board on 24 May 2017, with an expectation that the report is circulated subsequently beyond Network Rail.
5. It is expected that the report will be made publicly available in June 2017 together with Network Rail’s response.
6. Information provided to the Review by consultees will not be provided, made available or be accessible to Network Rail.

Organisational arrangements for the Hansford Review



Appendix 5 – Case studies

Uckfield Modernisation

Project type

This project is in the early stages of policy development. It could potentially be suitable for third party development of the concept, design and delivery, supported by Network Rail as system operator. The project would require a funding and financing mechanism to be developed, which allows a third party to recoup their investment.

Description

This is a route upgrade proposal which includes electrification of the Uckfield branch of the Brighton Main-line and the creation of new train stabling at Crowborough, to reduce empty stock moves and increase capacity. The upgrade scheme can be undertaken using Network Rail's land, but also provides opportunities for Network Rail and adjacent owners to release land for housing. This would increase the potential benefits of the scheme.

The Uckfield branch of the Brighton mainline is operated by a single train operator with a diesel fleet maintained out of the Selhurst Depot. Selhurst Depot is one of the congested locations on the Southern network. Empty stock must come from Selhurst in the morning to pick up passengers from Uckfield, and then return (again empty) at night generating inefficiency and fuelling issues. The electrification of the line (from Hurst-Green to Uckfield) and new train stabling would address these issues.

The reduction in empty stock moves and use of electric trains would also allow more efficient crew working, and improved maintenance access. Electric trains (for example, EMUs) could be deployed from surplus rolling stock elsewhere, such as Thameslink, and it is proposed that the redundant diesel trains would be redeployed elsewhere resulting in less train sets overall being required. This solution would require 'whole system' thinking to ensure the rolling stock deployment, land availability and housing opportunities are optimised. This would need to be developed in tandem with expected performance improvements.

A revenue mechanism could be developed whereby the train operator pays for traction current through a long term agreement with the third party investor who would take long term ownership of the overhead line equipment. The train operator would no longer need to pay for the maintenance, fuelling, and other facilities required for a diesel fleet, and this greater efficiency should reduce the net cost of the power system to the train operator while helping to pay for the original investment. The system could be subsequently bought by Network Rail, or revert to their ownership once the investment has been recovered.

Hull – Selby Electrification

Project type

Potential third party promoted and delivered (design, build, finance and transfer)

Description

First Hull Trains (Open Access Operator) proposed a fast track electrification of 112km of track in 2013. Costs were estimated and assets were to be bought back and owned by Network Rail after completion.

Government supported the scheme and provided funding for early development of the project, but it was intended that construction would be financed by the third party. Network Rail were closely involved in the project because of their role as asset owners. The scheme was envisaged to supplement the Transpennine Electrification programme. Options for how the third party would recoup their investment were discussed but a funding agreement was not reached.

The scheme cost estimates increased substantially during the development; the Transpennine Electrification scheme was delayed; and First Hull Trains subsequently procured bi-mode electro-diesel trains to operate their service. These factors removed the original rationale for the scheme and it was abandoned in November 2016 as the Department for Transport considered that "The passenger benefits can be delivered without the significant disruption of electrification.'

Heathrow Southern Rail Access

Project type

- Core proposal is promoted by Network Rail with additional funding from third parties.
- Two other third party proposals are at early stages of development.

Description

There are three proposed schemes to provide improved rail access to Heathrow:

The Southern Rail Access is a scheme that Network Rail have been developing to feasibility stage under instruction from DfT, following the outcome of the Airports Commission inquiry. The feasibility study analysed many different options and there appears to be a business case based on strategic objectives of road to rail modal transfer, revenue benefits and journey time savings.

A third party is promoting a private sector project to construct new rail infrastructure from the west end of the Terminal 5 station to a junction with the Virginia Water to Weybridge line north of Chertsey.

Windsor Link Railway is proposing a two-phase project to firstly link Slough to Waterloo via a tunnel in Windsor (with road improvements to the M4 and land redevelopment around Windsor riverside). The second phase is a new rail link from Windsor, directly to the West of Terminal 5.

All three proposals have different models for funding, realisation of benefits and third party involvement.

Gatwick Airport Station

Project type

Network Rail promoted scheme with prospective additional funding contributions from a LEP and the airport.

Description

A development to increase the size and accessibility of Gatwick Station by building a new bridge and platform over the tracks, in between two existing footbridges that run between the car park and the South Terminal of the airport. Gatwick Airport Ltd, Local Enterprise Partnership (LEP) and the DfT are anticipated funders.

Estimates of funding contributions from third parties were made based on an original project cost estimate. However, costs have risen by over 50% during development of the scheme as a result of which

the project team is exploring other options and has undertaken a value engineering exercise. The terms of the funding arrangement have not yet been agreed, although Gatwick Airport is expecting a 'reasonable rate of return' for any contribution they may make.

Borders Railway

Project type

Original scheme: sponsored by regional government and tendered as a PFI scheme.

Actual scheme implemented: sponsored by regional government and delivered by Network Rail under different terms.

Description

Scottish Government sought third party PFI contract to re-establish 50km of self contained rail link from Tweedbank to Edinburgh including seven new stations.

Transport Scotland sought a PFI approach as Network Rail's original proposal for re-opening the line was unaffordable and involved a design Transport Scotland did not like. Their highways division led the procurement due to their familiarity with PFI contracts, but with Transport Scotland rail expertise seconded into the team.

During the tender process two out of three bidders dropped out and the procurement exercise was cancelled, the stated reason being the level of risk the third parties were being asked to accept during the operating phase including revenue and Schedule 8 risk. Following the failure of the PFI procurement, Network Rail was asked to take on the project. They provided an acceptable price to Transport Scotland for a new design, possibly as a result of the demonstration of contestability the PFI tender achieved. The project is complete and the new line is operating.

East West Rail

Project type

Sponsorship by DfT with third party (East West Rail) company as delivery client.

Description

This is a new line from Oxford to Cambridge, which is planned to be delivered in 3 phases: phase 1 is Oxford to Bicester (11 miles of renewal of existing track and 3 miles of new track), phase 2 is Bicester to Bedford, and phase 3 is Bedford to Cambridge. A consortium of local authorities has been promoting a scheme since 1995.

Phase 1 started as a project sponsored by Chiltern Railways to provide 2 trains per hour into London Marylebone from Oxford as an alternative journey option. At that time the project was designed as a minimalist scheme just to handle the 2 trains per hour. The project was then incorporated into a broader East West Rail project delivered by Network Rail and the train service and infrastructure requirements were significantly updated to suit the East West Rail train service required by the DfT business case. These requirements included passive provision for future electrification and W12 freight gauge clearance. This meant there was additional works on gauge clearance, embankments and structure strengthening, signaling and immunisation.

Phase 2 is now the focus of East/West Rail co and comprises the following sections:

- an existing, infrequently used freight line from Bicester to Claydon Junction;
- an old alignment from Claydon Junction to Bletchley;
- an existing freight line from Claydon Junction to Aylesbury;
- an existing service from Bletchley to Bedford.

As with Phase 1, the original scheme and business case has been superseded by a DfT business case and associated train service specification. Network Rail is now undertaking development of Phase 2 and the cost estimates have increased significantly above the original estimates as the Development work has progressed. The costs have risen as additional scope has been identified. For example, the need to remove level crossings between Bletchley and Bedford. DfT has set-up a new company, East/West Rail Co., and commissioned a review to make recommendations on how to proceed to fund and deliver the project.

Leeds Station

Project type

Third party promoted by Leeds City Council and HS2.

Description

The redevelopment of Leeds Station to integrate HS2 provision into the existing station. The scheme includes improving the public realm around the station and boosting regeneration to the south of the station.

The Programme is in the early stages with master planning progressing. The master-planning brief also considers TransPennine Route Upgrade and Northern Powerhouse Rail proposals, including new through or extended platforms. Costs, business case, final design, construction approach and ownership of assets are still to be determined. HS2 and Leeds City Council have signed a collaboration agreement to underpin their relationship and Leeds City Council chairs a Joint Programme Board for the station with representatives from DfT, Network Rail, HS2, and Transport for the North, Rail North, and other government departments.

East London Line

Project type

Third party promoter was Rail for London, who funded and acted as Delivery Client.

Description

Conversion of the existing East London tube line to a national rail system and extension to Dalston and the North London Line.

Powers to implement the scheme were held by London Underground which did not have the funding to proceed. The Strategic Rail Authority (SRA) subsequently pursued the scheme with Railtrack as the delivery agent and owner. However due to the significant number of 'grey' assets involved Railtrack was unwilling to proceed without an unlimited indemnity against any possible outcomes related to updating these 'grey' assets. Eventually the SRA provided London Underground Ltd with a guarantee that the scheme would be funded and on that basis the powers were implemented and the scheme progressed. The responsibility for the project was transferred from the SRA to Rail for London (part of TfL) with funding from the Mayor's prudential borrowing capability.

Rail for London used its own approach in sponsoring, delivering and operating the East London Line, including using its own standards, derogation and design assurance processes. Continuity with the national rail network is achieved via contracts with Network Rail to provide signalling services, power control and GSM-R coupled with collaborative agreements covering maintenance and incident management at the connections. This is all integrated within Rail for London's Safety Management System operating as an Infrastructure Manager.

Stratford, Tottenham and Angel Road (STAR)

Project type

Promoted by Network Rail with third party funding contributions from GLA and partners (project type B)

Description

The addition of a third track on the West Anglia Main Line between Stratford and Tottenham Hale (funded by the DfT) and an 'extension' to extend the third track to Angel Road that is being promoted by the GLA and partners based on the economic development case in addition to the transport benefits. The intended capacity of an additional 4tph was fundamental to the case for building new homes in the Lea Valley area.

It is proposed the total investment will support the delivery of over 15,000 homes, 15,700 jobs and by 2031 an additional GVA of £10.7 billion within the Lee Valley opportunity area. The third parties committed funding to the project, however since then project costs have increased and a revised funding agreement is needed to conclude the development and design.

Digital Railway

Project type

Promoted by Network Rail (Digital Railway directorate), options for third party funding/financing and delivery are being explored.

Description

Digital Railway is the proposal for the UK to adopt modern digital signalling and train control over the next 25 years. The strategy is to create credible options to upgrade the railway to next generation technology as it becomes available and where it is most needed.

Conventional upgrades to the network are vital, but they can't deliver the major increase in capacity the UK needs without costing too much, major disruption, and taking too long. This capacity can only come from making the UK's existing infrastructure more productive, applying proven digital technology.

For example, in-train signalling (called the European Train Control System) and traffic management systems optimise the speed and movements of trains on the network, so they can be run closer together safely.

The Digital Railway is in very early stages of development and planning. Final decisions have yet to be taken on technology, delivery programme, eventual costs or the management structure underpinning the roll out and maintenance of the system. However the specific risks associated with digital infrastructure design and delivery make it a candidate for a bespoke funding and financing solution.

Appendix 6 – Analysis

Industry Comparators

The review has carried out a comparison exercise with other industries including UK electricity, UK airports, Rail PPP projects in France, and international rail PFI projects.

UK Electricity

Findings

- UK electricity industry is split into two networks, transmission and distribution networks.
- The transmission network is owned and maintained by three regional transmission companies and operators. The distribution network has 14 licensed distribution network operators (DNOs).
- There are also smaller numbers of networks owned and operated by independent distribution network operators (IDNOs).
- The DNOs are regulated by Ofgem, as effectively they have a monopoly position.
- IDNOs were introduced to provide competition in the operation and to support the expansion of the network.
- A self-certification approach was taken following a review by Ofgem, who identified smaller contractors were experiencing barriers to enter and stay in the market, this was due to DNOs having too much control over processes.
- Ofgem gave DNOs 3 years to prove that there was competition in the market at which point regulation would be removed.
- Ofgem introduced a new licence condition that stipulated that a code of practice had to be agreed between the DNO and industry.

Other initiatives to promote competition include:

- A low carbon innovation fund, providing up to £500m, for new technologies, operating and commercial agreements.
- Separate tendering of new on-shore transmission assets run by Ofgem to introduce competition of who builds, finances, owns and operates on-shore transmission systems.
- Competitively tendering licenses.

Key relevance

- Separate licencing for system operators, to generate competition in the market place.
- In electricity, operators are required to agree to a code of practice.
- Accreditation system could be used in rail to remove the need for some approvals under asset protection.
- Identification of new assets that are discrete from the main lines of business and competed for others to deliver.
- Seed fund that can be used by third parties in rail to, explore, develop and initiate new solutions, for example, technologies and commercial arrangement.

UK Airport

Findings

- Comparisons with this scenario can be found in the aviation industry where NATS (and Eurocontrol for flights within Europe) are independent from the airport operator and airlines, and are responsible for ensuring safe and efficient air traffic services are provided to airports, airlines and governments.

Key relevance

- Contestability could be introduced into rail operations by separating responsibility for signaling and co-ordination of traffic on the network from infrastructure asset ownership.

Rail PPP projects in France

Findings

- Funding for new lines was a challenge especially because the new routes were not the most profitable segments. This required innovation to attract private funding and delivery partners.
- In some projects, private sector partners (consortia) provide the financing, construction and management, but are liable for revenue risk. The consortia are paid on an availability basis over a 25 year period.

Key relevance

- The private sector provides the financing, construction and management, but is protected from revenue risk by being paid on an availability basis (instead of access or usage).
- If revenue risk is taken by the private investor loans are guaranteed by the French Government.

International Rail PFI projects

Findings

- PFI contracts are often technically successful as the private sector is skilled in meeting construction challenges and new infrastructure is commissioned on time and with the required specification.
- However problems often occur during the operating phase when demand can be lower than expected. This undermines the financial basis of PFIs that include revenue risk.

Key relevance

- Adding revenue risk into the financial profile of a PFI may well deter investors. Alternatively it can require step-in by government when forecasts prove to be over-optimistic.

The Significance of Schedule 4 and 8

Findings

- Schedules 4 and 8 of the standard Track Access Agreements between Network Rail and operators have been in existence since rail privatisation. They were created as a result of vertical separation between infrastructure management and train and freight operations, in an attempt to align the interests of the infrastructure manager with those of train operators.
- Schedule 4 compensates train operators for the impact of planned service disruption due to works being undertaken outside agreed access periods.
- Schedule 8 compensates train operators for the impact of unplanned service disruption and rewards Network Rail for good performance of its infrastructure.

Schedule 4

- From time to time it is necessary for Network Rail and others to gain access to undertake engineering work or deliver upgrades, which involves taking additional possessions on a section of route outside of the normal access pre-agreed in the 'Rules of the Route' between Network Rail and the operators.

Schedule 8

- Where an infrastructure failure causes delay to a train service, the train operator can suffer a financial loss because the delay will adversely affect customer perception of service reliability and reduce their willingness to use the service over the long term. In a similar way, a delay caused by a train operator has the potential to delay other operators' services, and cause them financial loss. The party which has caused the delay is required to pay compensation to the affected parties. Network Rail receives payments under schedule 8 if it meets certain measures of infrastructure availability and reliability.

Key relevance

- TOC/FOC compensations with regards to Schedule 4 & 8 have a considerable impact on potential liabilities for third parties investing in the network.

Standards, Derogation and Scope Control

Findings

- That the risk of not getting derogations or deviations to standards is a barrier to third parties.
- A perception that standards were open to subjective interpretation by Network Rail engineers.
- Overly strict adherence to standards being a source of 'gold plating' in project designs.
- Getting derogations and deviations being open to engineering preference and easier for Network Rail to gain than a third party.
- Clear processes exist to obtain derogations and deviations but the 'burden of proof' sits with the party applying.
- Project teams did not have the knowledge, competence or will to apply for derogations or deviations.
- There is very little challenge of standards.
- Compliance with standards is a straightforward issue with a greenfield new-build project. Less so when working on non-compliant older structures.
- When assets are improved they generally need to be brought up to modern standards or derogations obtained to limit the extent of associated compliance works.
- There are two main bodies responsible for setting standards for railway works, RSSB for Technical Specifications for Interoperability (TSIs) and Network Rail for Company Standards.

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Figure 2 – Investment landscape

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Table 5 – Example of risk apportionment for hub and spoke model

Table 6 – Example of risk apportionment for alliancing model

List of references:

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