ORR/ATOC/Network Rail

Rail industry cost and revenue sharing

Final report

25 February 2011

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Agenda

- Executive summary
- Introduction
- Analysis of sharing mechanism practicalities
- Option evaluation and implementation
- Appendix
  - analysis of current situation
  - alliancing best practice

Introduction

- ORR, ATOC and Network Rail ("NR") jointly commissioned L.E.K. Consulting LLP ("L.E.K.") to examine how a number of different options for cost and revenue sharing could work in practice
- ORR's ITT for this project describes the background and the potential scheme as follows:

> "The sharing of cost and revenue outperformance and underperformance (against a baseline trajectory) between Network Rail and train operators at a local/route level is a potentially fundamental element of rail industry reform
>
> It provides for better alignment of incentives and encourages closer working between Network Rail and train operators, which should improve efficiency, value for money for customer/passenger and taxpayer, and other industry outcomes
>
> There is a broad acceptance of the conceptual benefits of 'sharing' but more work is required to examine the **practical** implementation and operational issues"

- The need to improve alignment of incentives across the rail industry was further highlighted in the Secretary of State's statement to parliament on 7 December 2010
- L.E.K.'s work was carried out over a six week period from 12 November to 23 December 2010. This included extensive industry consultation and detailed examination of each of the options under consideration. L.E.K. submitted its draft final report on 23 December. This final version of L.E.K.'s report incorporates stakeholders' comments on the draft final report
- L.E.K. has carried out a separate, but related, study for the McNulty Rail VfM review. This separate study involved development and evaluation of alternative railway structures for cost reduction. Implementation of any cost and revenue sharing mechanisms would need to be coordinated with implementation of the alternative railway structures. L.E.K. submitted its draft final report for the alternative railway structures project on 28 January 2011. Readers should refer to that report for details of our work for the Rail VfM team

There are 27 potential options for the sharing of cost and revenue performance relative to a baseline trajectory. L.E.K. has analysed the building blocks necessary to evaluate all of these, but we have focussed our evaluation summaries on 4 of the options

Options for sharing performance relative to a baseline trajectory

Options		Cost and revenue components		
		NR costs and revenue	TOC revenue	TOC costs
1 / 2	Regional EBS	Included	Excluded	Excluded
3	NR shares TOC revenue	Excluded	Included	Excluded
4	Full scope	Included	Included	Included

The Regional EBS can be either symmetrical (option 1) or outperformance only (option 2). Options 3 and 4 are based on symmetrical sharing of outperformance and underperformance. However, the impact of asymmetrical mechanisms has also been evaluated

- The ITT for this project focuses on *"the sharing of cost and revenue outperformance and underperformance (against a baseline trajectory) between Network Rail and train operators at a local/route level"*
- There are 27 potential cost and revenue sharing options if every combination of the following variables is considered:
  - NR / train operators / both
  - Costs / revenue / both
  - Outperformance only / underperformance only / both
- L.E.K. has analysed the building blocks necessary to evaluate all of the potential options, and details of that analysis have been included in this report. However, for presentational purposes we have focussed our evaluation summaries on the four combinations shown opposite

Summary of the 4 options for sharing cost and revenue performance relative to a baseline trajectory that have been included in L.E.K.'s evaluation summary

Options for sharing cost and revenue performance relative to a baseline trajectory

Options		Description
1	Regional EBS (symmetrical)	L.E.K. has assumed the following changes to the existing PR08 EBS for the purposes of the evaluation summary - Separate EBS calculations are performed for each of NR's (modified) Operating Routes - The DfT does not apply any 'no net loss, no net gain' mechanisms to any EBS payments - Covers both underperformance and outperformance (i.e. it is symmetrical) - Includes mechanisms to limit the risk exposure of TOCs (i.e. caps and the exclusion of a few specific causes of variances) - Applies to new franchises only, via the franchise letting process L.E.K. has assumed that the EBS would continue to be carried out on a cash expenditure basis rather than a revenue requirement basis
2	Regional EBS (upside only)	As above, but applying only to outperformance by each of NR's Operating Route
3	NR shares TOC revenue	NR takes a share of total TOC passenger revenue in exchange for a fixed reduction in FTAC
4	Full scope	Symmetrical Regional EBS as described above, plus NR shares in under/outperformance of TOC revenue and cost relative to a defined baseline

L.E.K. has evaluated a further 4 options for changing incentives which do not (necessarily) involve the sharing of cost or revenue under/outperformance relative to a defined baseline. This results in a total of 8 options

Other options for changing incentives evaluated by L.E.K.

Category	Options		Description
Partial exposure to ORR's periodic review determinations	5	Delta FTAC	Changes in FTAC at periodic reviews no longer a full pass-through via Clause 18.1 (or similar provisions) but operators would still have some level of protection. This could incentivise train operators to engage more actively during periodic reviews, e.g. by critically reviewing NR's business plan to ensure that all planned expenditure is justified
	6	Delta OMR baseline	Similar to the "Delta FTAC" option but instead based on the ORR's assessment of the efficient OMR expenditure for the next control period – i.e. this still relates to changes in an ORR determined baseline between control periods. This does not relate to actual NR expenditure relative to the baseline (that is Option 1)
Regulated transaction charges	7	Higher VTAC rates	Increasing the variable usage charge could provide an incentive for NR to accommodate additional trains as its incremental revenue could exceed its incremental cost – although this would depend on a number of factors including whether enhancements would be required
Non-prescriptive	8	Bespoke, line-of-sight deals	Bespoke commercial deals made between NR and train operators, typically (but not necessarily) in situations where specific, tangible opportunities have been identified. These deals could take many forms, which may or may not involve a cost and revenue sharing mechanism This option assumes that funders and the ORR adopt a much more flexible approach in how they deal with train operators and NR

L.E.K. has taken into account 13 different criteria in its evaluation of the 8 options

Category	Criterion	Key question / test
A. Stakeholder support	A1. Primary operators	Did the scheme have support (in workshops and consultation) from operators who are potentially primary operators in a route/region? (Would they be a willing participant?)
	A2. Secondary operators	Did the scheme have support from operators who would expect to be secondary operators?
	A3. NR	Did the scheme have support from NR?
B. Effective incentive	B4. Scope	Does the scheme cover a substantial part of the revenue and cost within the industry? Will the incentive apply in a wide range of situations?
	B5. Alignment of incentives	Does the incentive align the interests of all parties in a way that drives improvements in VfM? Does it avoid creating any perverse incentives?
	B6. Avoidance of gaming	Does the scheme avoid creating opportunities for gaming?
C. Simplicity	C7. Simplicity	Is the scheme easy enough to communicate that the incentive can be understood and internalised throughout all relevant organisations – including people responsible for making day-to-day decisions that impact other organisations?
D. Focus	D8. Controllability	Does the scheme only cover cost, revenue and risk items that parties are able to control, or at least influence?
	D9. Directness	How direct is the link between action and outcome? (For example, are the benefits certain and near term?)
	D10. Free-riders	Does the scheme prevent any party benefiting from it without having participated in improving VfM?
E. Scheme costs	E11. Scheme costs	Will costs of the scheme (e.g., negotiation, monitoring and settlement) be reasonable? To include counterparties, other operators and wider industry costs (e.g. ORR/funders)
F. Implementation	F12. Implementation cost	Can the scheme be implemented without excessive costs?
	F13. Implementation speed	Can the scheme be implemented across a substantial part of the network quickly?

L.E.K. has drawn on a number of different sources in its evaluation of the 8 options and has used a 5 point scoring system to help summarise the results of the evaluation process

- L.E.K. has drawn on a number of different sources in its evaluation of the 8 options, including:
  - L.E.K.'s alliancing best practice review
  - Analysis of whole industry financials and regional train operations data
  - Stakeholder engagement through individual interviews, five workshops and a review of stakeholder submissions to the McNulty review
  - ORR's PR08 determination and supporting documents
  - Review of reports prepared for the earlier phases of the McNulty review
  - L.E.K.'s prior experience in the industry
  - L.E.K.'s assessment of the rational response by participants
- L.E.K. has used a 5 point scoring system to help summarise the results of its evaluation of how well each of the 8 options performs in terms of each of the 13 evaluation criteria
- The resulting summary provides a high level picture of the strengths and weaknesses of each option but cannot capture all of the subtleties associated with each option. For example:
  - There are a range of sub-options within each option. L.E.K. has only shown the results for the most attractive version of each option
  - Some of the weaknesses of individual options can be addressed by combining two or more options together
  - The relative attractiveness of each option varies by geographical region. For example, whether there is a single dominant operator or a mix of many different operators with no operator being dominant
  - The assessment may change over time as the industry evolves. For example, devolution of NR could improve train operator support for some of the options
- Because the evaluation involves assessing future behaviours and outcomes, some judgement is required
- The main body of our report contains a more detailed assessment of how each option could work in practice

Options 3, 7 and 8 appear to be the most attractive in the short term. However, Options 3 and 7 are focussed on the same objective

High level summary of option evaluation – for implementation in the short term

Criteria	Sharing of cost and revenue out/underperformance vs baseline				Other options for changing incentives			
	1: Regional EBS (sym)	2: Regional EBS (upside)	3: NR shares TOC revenue	4: Full scope	5: Delta FTAC	6: Delta OMR baseline	7: Higher VTAC rates	8: Bespoke L-of-S
A1. Primary operators	--	0	+	--	-	-	0	++
A2. Secondary operators	--	0	0	--	-	-	-	+
A3. NR	+	-	+	+	+	+	0	++
B4. Scope	+	-	+	++	+	+	--	0
B5. Alignment of incentives	+	+	+	++	0	0	+	+
B6. Avoidance of gaming	+	+	++	--	++	++	++	+
C7. Simplicity	0	0	++	--	+	+	++	+
D8. Controllability	--	--	-	--	--	-	++	++
D9. Directness	--	--	++	--	-	-	++	++
D10. Free-riders	-	-	++	-	--	--	++	+
E11. Scheme costs	0	-	++	-	+	+	++	0
F12. Implementation cost	+	+	++	0	++	++	++	+
F13. Implementation speed	--	--	0	--	+	+	+	+

This table is a high level summary of the option evaluation process. Individual scores should be treated as indicative and may vary across regions, over time or depending on the package of options

Achieving better alignment of incentives should be viewed as a journey. It is important that the industry makes the first steps on that journey imminently in order to set expectations for industry participants

- There is broad agreement that rail industry VfM would benefit from better alignment of incentives between NR and operators. However, our assessment suggests that a number of the options considered in this project have significant weaknesses that would be hard to overcome
- This should be viewed in the context of comparing the options against true alignment of incentives that would be achieved in a vertically integrated railway. The options may still have significant merit when compared with the existing system in which there is very poor alignment of incentives
- Achieving full or even good alignment may require several steps of reform and involve cultural change in order to lead to behavioural change
- A key enabler of such cultural change is taking a first, public, step towards better alignment of incentives
  - this would send a signal to industry participants about the direction of travel
- We therefore recommend a “bias towards action”, i.e., that the industry takes at least some imminent steps to improve alignment of incentives

Summary of recommendations

Option	Implement?	Comments
1: Regional EBS (symmetrical)	?	L.E.K. has concerns that a Regional EBS would not deliver VfM in the short term due to a number of factors such as TOCs' limited ability to influence NR's costs. If a Regional EBS were to be implemented then a phased approach aligned with horizontal separation of NR would be best – horizontal separation would significantly improve train operators' ability to influence NR's costs A Regional EBS could create a perverse incentive on TOCs to try to persuade ORR to set soft targets for NR during periodic reviews. To overcome this, any Regional EBS mechanism should be combined with a mechanism that gives TOCs a partial exposure to periodic review determinations, i.e. Option 5 or 6 Given the uncertainty over whether a Regional EBS would deliver VfM for taxpayers, in might be best to include it as a priced option during franchise bids rather than as the base case The relative attractiveness of an outperformance-only EBS mechanism and a symmetrical mechanism depends on how TOCs would price these two mechanisms, and this is uncertain **All of the above points are discussed further in this Executive Summary**
2: Regional EBS (upside only)	?	
3: NR shares TOC revenue	✓	Implement through franchise re-lets. Also explore with incumbent TOCs whether it can be implemented mid-franchise in a way that delivers VfM for the taxpayer
4: Full scope	X	Implementing a full version of the cost and revenue sharing mechanism in the near term against the wishes of train operators would go directly against the key learnings from the alliancing best practice review. It would be far better to start with a much more limited form of partnership working and then to gradually deepen the arrangements when both parties are comfortable to do so
5: Delta FTAC	(X)	Many of the issues with Options 1 and 2 would also apply to Options 5 and 6. However, in one respect they create an opposite issue to Options 1 and 2 – they could act as a barrier to cooperation between NR and train operators because the latter would be incentivised to use any information which they obtain from NR to help the ORR make more challenging price determinations. If Option 1 or 2 is implemented then it should be combined with Option 5 or 6. As with Options 1 and 2, horizontal separation of NR would significantly improve train operators' ability to influence NR's costs Options 5 and 6 are very similar. However, L.E.K. has a preference for Option 6 as it is more directly linked to NR's operational expenditure (and is therefore less impacted by additional factors which are outside train operators' control)
6: Delta OMR baseline	?	
7: Higher VTAC rates	(X)	Seeks to achieve the same objectives as Option 3 but is less attractive because it has a much narrower scope and incentives are less well aligned. This option should not generally be implemented but there might be a few franchises where Option 3 cannot be implemented within a reasonable timeframe where Option 7 could be considered
8: Bespoke line-of-sight deals	✓	**Implementation requirements discussed further in this Executive Summary**

Horizontal separation of NR is an essential enabler of all cost and revenue sharing options as discussed on the next slide

Horizontal separation of Network Rail is an essential enabler of all of the cost and revenue sharing options* (1 of 2)

- During L.E.K.'s workshops, train operators were generally not supportive of any cost and revenue sharing mechanisms which gave them exposure to NR's costs
- The one exception to this was Option 8, bespoke line-of-sight deals, where train operators were able to take on exposure to a tailored package of NR's costs and risks on a willing buyer basis – i.e. they would be structuring the deal in a way that gives them sufficient control, or at least influence, over the costs and risks
- Train operators put forward a number of reasons for why they were not comfortable taking on a broader exposure to NR's costs and risks through a prescriptive regional cost and revenue sharing framework
  - TOCs were not confident that robust financial information was currently available at a regional level. This would hamper their ability to identify opportunities and make decisions on a whole system, whole life optimisation basis. It would also expose them to changes in NR's cost allocation policies
  - NR's highly centralised management approach would hamper TOCs' ability to work with NR's regional managers to innovate and implement changes locally
  - Some TOCs even questioned whether NR responds to financial incentives in the same way as a normal commercial organisation given its position as a single monopoly supplier and its CLG ownership and governance structure

Note: * Except higher VTAC rates which simply involves changing a transaction charge

Horizontal separation of Network Rail is an essential enabler of all of the cost and revenue sharing options* (2 of 2)

- L.E.K.'s 28 January report on Alternative Railway Structures strongly recommended horizontal separation of NR. Horizontal separation should go some way towards overcoming train operators' concerns
  - Gives train operators much better information on their, and other, Regional Infrastructure Managers (Regional IMs). This greatly strengthens train operators' ability to help deliver cost savings through a number of mechanisms, including external challenge of the Regional IMs
  - Gives more accountability and decision making authority to the regional managers with which train operators have the closest working relationships
  - Introduces indirect competition between Regional IMs through comparative regulation. This, together with the publication of a range of KPIs (financial and non-financial) on their performance, greatly strengthens their incentives to seek continuous improvement
- L.E.K.'s Alternative Railway Structures report highlighted that there are a range of options for horizontal separation which span from devolution within NR ownership to multiple owners of the Regional IMs (with NR potentially retaining ownership of several of the Regional IMs)
- Any move towards horizontal separation would help to address some of the downsides associated with prescriptive regional cost and revenue sharing mechanisms. However, experience from other regulated sectors has shown that having multiple owners of the Regional IMs improves comparative regulation and strengthens the incentives on Regional IMs to seek continuous improvement. As such, horizontal separation with multiple owners would be the strongest enabler of cost and revenue sharing mechanisms
- Horizontal separation could be implemented through a phased approach between now and the end of CP5
  - NR devolution implemented in CP4 (NR has already announced its intention to implement devolution)
  - ORR regional regulation from the start of CP5
  - Three or four Regional IMs become independently owned during CP5

Note: * Except higher VTAC rates which simply involves changing a transaction charge

Horizontal separation of NR would improve the attractiveness of Option 1, Symmetrical Regional EBS, but some significant issues would remain

Criteria	1: Regional EBS (sym)		Comments
	Now	After implementing HS with multiple owners	
A1. Primary operators	--	-	TOCs would probably still prefer not to be given broad exposure to a Regional IM's costs. But HS would go some way to addressing their concerns
A2. Secondary operators	--	--	No significant change: Secondary operators would still have limited influence over outcomes and freight operators would have limited ability to take the downside exposure
A3. NR	+	+?	Unclear. Currently strong support from NR head office but more mixed reaction from regional managers
B4. Scope	+	+	No change
B5. Alignment of incentives	+	+	No change
B6. Avoidance of gaming	+	+	No change
C7. Simplicity	0	0	No change
D8. Controllability	--	0	There would be greater scope for TOCs to work with Regional IMs to innovate and implement changes locally. It would remain the case that TOCs can only influence a significant proportion of the Regional IM's cost base through external challenge, but they would have significantly better information with which to do this
D9. Directness	--	--	No change. Although performing separate calculations for each region is a significant improvement on the current national EBS mechanism, still no direct link between specific actions and outcomes. Payments based on the ORR's annual assessment of the Regional IM's overall regional efficiency
D10. Free-riders	-	-	No change. Regional IM out/underperformance will result from a wide range of factors and each operators' contribution will be aggregated within the overall outcome. Significant risk of train operators making a token effort to drive VfM improvements in order to qualify for a share of the benefits that have been generated by other companies
E11. Scheme costs	0	0	No change. Could impose fairly significant costs on TOCs as they would need to have significant engagement with NR's cost base and ORR's regulation of NR
F12. Implementation cost	+	+	Relatively limited if horizontal separation occurs anyway. Assume that scheme would not be implemented mid-franchise - incumbent TOCs would probably charge a large risk premium for mid-franchise implementation
F13. Implementation speed	--	--	No change: Probably only applies to new franchises due to cost of implementation as a mid-franchise change. Furthermore, could only be implemented from start of CP5

L.E.K. has concerns that a Regional EBS would not deliver VfM in the short term due to a number of factors such as TOCs' limited ability to influence NR's costs. If a Regional EBS were to be implemented then a phased approach aligned with horizontal separation of NR would be best

- In L.E.K.'s opinion, many of the concerns raised by train operators regarding a prescriptive cost sharing mechanism are valid. These concerns include the limited ability of TOCs to influence NR's costs under NR's current, highly centralised management approach. As such, L.E.K. has concerns that a Regional EBS would not deliver VfM in the short term – irrespective of whether it is symmetrical or outperformance-only
- Horizontal separation of NR would improve the attractiveness of Options 1 and 2, so if a Regional EBS mechanism were to be implemented then it should follow a phased approach which is aligned with horizontal separation of NR:
  - Include in new franchises from the point that government announces horizontal separation. This would improve the likelihood of achieving VfM through the franchise letting process as train operators would have greater confidence that their current concerns would be addressed
  - Could become active from the start of CP5 but with a low starting sharing percentage (e.g. 12.5%). This would enable all parties to get used to the mechanism in a relatively low risk environment (half way between a "wooden dollars" introduction and a big-bang introduction). It also reflects the fact that there could be quite a high level of uncertainty over the CP5 regional efficient expenditure determinations
  - Full sharing percentage of 25% applies from the start of CP6 when both horizontal separation and the EBS mechanism have had a chance to bed down
- If an EBS mechanism were implemented then it could create a perverse incentive whereby TOCs would try to persuade ORR to set soft targets for the Regional IMs during periodic reviews. To overcome this, any EBS mechanism should be combined with a mechanism that gives TOCs a partial exposure to ORR's periodic review determinations (i.e. Option 5 or 6)

Given the uncertainty over whether a Regional EBS would deliver VfM for taxpayers, in might be best to include it as a priced option during franchise bids rather than as the base case

- Even if a phased approach were used to implement a Regional EBS mechanism, significant uncertainty remains over whether such a mechanism would deliver VfM for taxpayers
- Overall VfM would depend on a number of factors including how train operators price a Regional EBS mechanism into their franchise bids. Bidders would have to take a number of factors into account including:
  - The Regional IM's likely cost and revenue performance relative to the regulatory target in the absence of train operators' input (i.e. the average outturn vs target)
  - The range of uncertainty around the outturn vs target (i.e. the variability of outcomes)
  - The extent to which train operators are able to influence NR's costs
- Franchise bidding has been very competitive in recent years and this could indicate that taxpayers would secure VfM through a Regional EBS mechanism being implemented through a bidding process. However, there is significant uncertainty regarding all of the factors listed above and that, combined with train operators negative reaction to cost sharing mechanisms during L.E.K.'s workshops, could lead to conservative pricing in this area
- A Regional EBS could be included as a priced option in franchise bids rather than the base case. This would have the advantage of providing transparency of train operators' views of the cost and benefits of the mechanism, thereby facilitating an assessment of VfM. However, bidders have limited capacity to price options during the bidding process so funders need to be careful in the prioritisation of options

The relative attractiveness of an outperformance-only EBS mechanism and a symmetrical mechanism depends on how TOCs would price these two mechanisms, and this is uncertain

- There are two significant disadvantages of an outperformance-only Regional EBS mechanism relative to a symmetrical mechanism
  - First, if train operators believe that the Regional IM is going to under-perform their baseline then they may simply ignore the EBS mechanism because there would be no reward for contributing to efficiency improvements
  - Second, it becomes more difficult to value the EBS mechanism because the value becomes more sensitive to the variability of the Regional IM's performance versus baseline. This concept is described in more detail later but in essence, the train operators would benefit from this underlying variability because they receive a share of any outperformance but do not have to make any payments in the event of underperformance. This phenomenon is often referred to as "option value"
- The existence of the option value would make it more difficult to secure VfM through implementing an outperformance-only Regional EBS during existing franchises. Train operators would be unlikely to agree to pay for the option value (or at least to pay for its full value) so there would be a negative VfM impact unless the train operators made a large enough contribution to Regional IM efficiency improvements to offset this
- It is uncertain how train operators would price the option value if an outperformance-only Regional EBS mechanism were introduced through a franchise bidding competition. However, L.E.K. thinks it likely that bidders would price this conservatively due to the uncertainty over the level of variability and train operators lack of control over this item
- The main advantage of an outperformance-only EBS mechanism over a symmetrical mechanism is that bidders would not have to charge a risk premium to protect themselves against the potential downside risk. However, it should be noted that the EBS mechanism could include caps and tapered sharing percentages to limit the downside exposure to train operators and therefore limit the risk premium charged by TOCs
- In summary, the relative attractiveness of an outperformance-only EBS mechanism and a symmetrical mechanism depends on how train operators price these two mechanisms, and this is uncertain. If both mechanisms were priced competitively based on good information then the symmetrical EBS mechanism would be the more attractive because TOCs would be less likely to ignore the mechanism. However, the uncertainty over the pricing of this mechanism should not be underestimated

L.E.K. recommends that funders / ORR promote Option 8, bespoke line-of-sight deals. However, a cultural change is required in order for these to make a significant contribution to improving rail industry VfM

Centralised, contract based approach

Interactions between different rail industry participants are currently managed using a very contractual approach

Whilst a range of contractual and regulatory protections are absolutely necessary, the inflexible way in which these are currently applied stifles innovation and the adoption of new ways of working. It also discourages industry participants from challenging the status quo, which leads to specifications and standards becoming ossified

This problem is compounded by NR's highly centralised management approach

Cultural change

Devolved, relationship based approach

Many other industries which require close cooperation across the supply chain have moved to more relationship based management approaches

These management approaches were initially pioneered in Japan but have subsequently been embraced across Western Europe and North America. Some European railways have started to adopt these approaches, e.g. Denmark

Relationship based approaches provide much greater flexibility to implement the right solution for each situation and to evolve over time as circumstances change and innovations occur. Contractual and regulatory protections will still be required, it is a question of how they are applied

Devolved decision making is an absolutely critical enabler of relationship based management approaches

Funders and the ORR would need to do a number of things to facilitate these deals

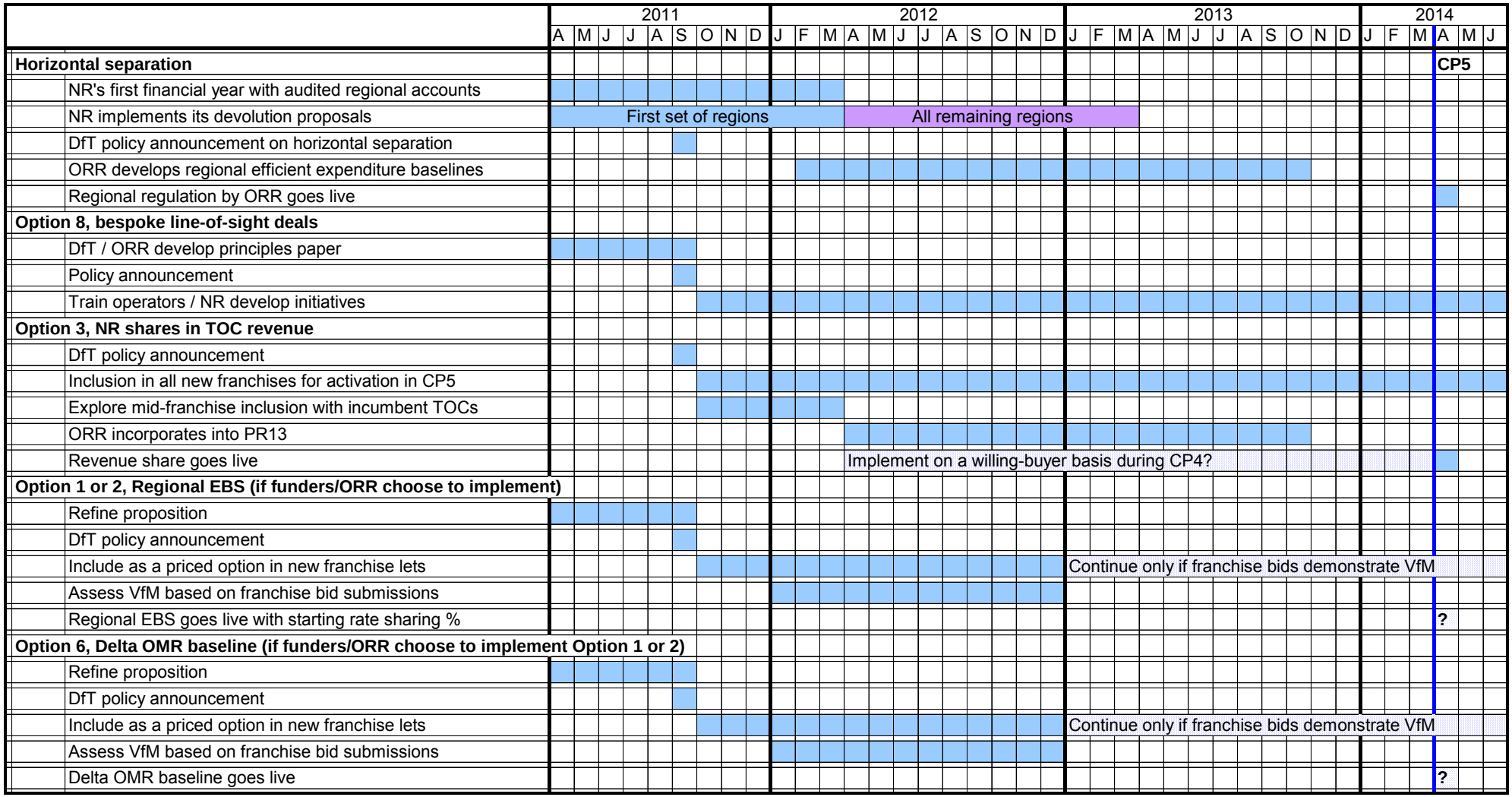
Funders / ORR actions to facilitate bespoke, line-of-sight deals

- Clear statement from the leadership of the DfT, other funders and ORR encouraging a move towards more devolved, relationship based management approaches and the development of bespoke line-of-sight deals
- Publication of a principles paper that describes funders / ORRs new, more flexible approach to managing the various contractual and regulatory arrangements. This would include details of:
  - The types of areas and circumstances where funders / ORR will be more flexible, and the likely degree of flexibility in these areas. This would include details of materiality thresholds to help identify where a “light touch” approach is appropriate
  - Key principles for ensuring that third parties are no worse off as a result of a deal. This would include principles for determining funders share of any savings which have been facilitated by a relaxation of an output specification. It would also include details of the minimum requirements for involving third parties in decisions that could impact them (this could be a light touch version of existing industry arrangements)
  - the delegated authority of funders / ORR staff who will have the closest relationships with NR and train operators
- Ensure that funders / ORR have the right number of people, in the right positions, with the right skills to:
  - Use the delegated authorities to effectively manage the various contractual and regulatory arrangements in line with the new more flexible management approach
  - Help overcome specific roadblocks and other barriers to implementing change
- Publically celebrate any bespoke line-of-sight deals that improve VfM
  - This would help to create momentum across the industry. Once a few deals have been successfully completed, TOC and NR managers in other regions are likely to feel the pressure to implement similar deals

Option 8 is a carrot-based option not a stick-based option. Allowing train operators and NR to develop their own approach to bespoke line-of-sight deals would maximise the scope for innovation

- A number of stakeholders have expressed the view that some form of target or obligation would be required in order to push TOCs and NR into making bespoke, line-of-sight deals, otherwise nothing will happen. However, the whole point of these deals is that they are carried out on a willing buyer basis. These deals should be initiated by train operators or NR because they perceive an opportunity to achieve mutual benefit by working together. The role of funders and the ORR is to create the right environment for these opportunities to be worth pursuing. As highlighted earlier, this includes:
  - Horizontal separation of NR
  - A more flexible approach to managing regulation and contracts
  - Allowing train operators and NR to achieve commercial gain from the deals (i.e. Option 8 is a carrot-based option not a stick-based option)
- Allowing each region to develop its own approach to bespoke line-of-sight deals would maximise the scope for innovation, and would allow regional managers to take account of both the specific circumstances of each region and the preferred approach / experience / skills of the local managers. L.E.K.'s alliancing best practice review highlighted that each alliance is unique and develops over time
- Experience from other industries shows that successful partnerships often start with relatively simple contractual arrangements and then evolve through to increased dependency. Therefore, it is quite likely that in some of the regions the partnerships would evolve into formal joint ventures or comprehensive cost and revenue sharing mechanisms. However, the critical point is that the end state and transition arrangements would not have been mandated. Instead, they would have been achieved through steady development of the following:
  - Individual and corporate relationships and trust, together with the necessary alliancing skills
  - A commercial model which each party is comfortable with - including the allocation of accountabilities, responsibilities and risks
  - Supporting systems and business processes
  - Senior management commitment

Indicative timeline for implementation programme



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> There is a broad acceptance of the conceptual benefits of 'sharing' but more work is required to examine the **practical** implementation and operational issues"

- The need to improve alignment of incentives across the rail industry was further highlighted in the Secretary of State's statement to parliament on 7 December 2010
- L.E.K.'s work was carried out over a six week period from 12 November to 23 December 2010. This included extensive industry consultation and detailed examination of each of the options under consideration. L.E.K. submitted its draft final report on 23 December. This final version of L.E.K.'s report incorporates stakeholders' comments on the draft final report
- L.E.K. has carried out a separate, but related, study for the McNulty Rail VfM review. This separate study involved development and evaluation of alternative railway structures for cost reduction. Implementation of any cost and revenue sharing mechanisms would need to be coordinated with implementation of the alternative railway structures. L.E.K. submitted its draft final report for the alternative railway structures project on 28 January 2011. Readers should refer to that report for details of our work for the Rail VfM team

The ITT provided a list of assumptions that L.E.K. was required to make for the purposes of the cost and revenue sharing study

Assumptions stated in the ITT

- The existing track access arrangements remain in place, including charging (except charges that are used as a basis for implementing sharing), network code, possessions and performance regimes
- A key exception to this is the 'no net loss, no net gain' provision in franchise agreements, the relaxation or amendment is key to cost/revenue sharing and needs to be considered as part of the study
- The primary accountabilities of train operators and Network Rail remain unchanged
- The sharing mechanism effectively 'sits on top of this' so that each party shares in the other's performance
- Longer term (15 year) and less tightly specified franchises are in place

The spirit of these assumptions is that there are no radical changes to the nature of either train operators or Network Rail. This is also consistent with the franchising policy statement published by the DfT in January 2011. As such, L.E.K. has assumed for the purposes of this study that there would be no other major changes to the franchising system (e.g. we have assumed that franchises do not become regulated by the ORR in a similar way to NR)

Source: Cost and revenue sharing project ITT

Given the practical focus of this study, L.E.K. carried out an extensive programme of stakeholder consultation to understand the views of industry participants

Regional case study workshops

7 December, Chiltern

- Chiltern Railways
- Arriva Cross Country
- WSMR
- Freightliner
- NR
- ORR
- ATOC

9 December, LNE

- East Coast
- Northern Rail
- First Capital Connect
- Arriva Cross Country
- DB Schenker
- NR
- ORR
- ATOC

14 December, LNE

- East Coast
- Northern Rail
- First Capital Connect
- Arriva Cross Country
- Grand Central
- DB Schenker
- NR
- ORR
- ATOC

Industry workshops

23 November

- Virgin Trains
- Go-Ahead
- Stagecoach
- DB Schenker
- NR
- ORR
- ATOC

30 November

- FirstGroup
- Serco
- National Express
- Veolia
- Freightliner
- NR
- ORR
- ATOC

Individual stakeholder interviews

- Freightliner
- DB Schenker
- Grand Central
- Rail Freight Group
- Danish State Railways
- ATOC
- NR (Paul Plummer)

Other

- ATOC Franchise Working Group meeting

There are 27 potential options for the sharing of cost and revenue performance relative to a baseline trajectory. L.E.K. has analysed the building blocks necessary to evaluate all of these, but we have focussed our evaluation summaries on 4 of the options

Options for sharing performance relative to a baseline trajectory

Options		Cost and revenue components		
		NR costs and revenue	TOC revenue	TOC costs
1 / 2	Regional EBS	Included	Excluded	Excluded
3	NR shares TOC revenue	Excluded	Included	Excluded
4	Full scope	Included	Included	Included

The Regional EBS can be either symmetrical (option 1) or outperformance only (option 2). Options 3 and 4 are based on symmetrical sharing of outperformance and underperformance. However, the impact of asymmetrical mechanisms has also been evaluated

- The ITT for this project focuses on *"the sharing of cost and revenue outperformance and underperformance (against a baseline trajectory) between Network Rail and train operators at a local/route level"*
- There are 27 potential cost and revenue sharing options if every combination of the following variables is considered:
  - NR / train operators / both
  - Costs / revenue / both
  - Outperformance only / underperformance only / both
- L.E.K. has analysed the building blocks necessary to evaluate all of the potential options, and details of that analysis have been included in this report. However, for presentational purposes we have focussed our evaluation summaries on the four combinations shown opposite

Summary of the 4 options for sharing cost and revenue performance relative to a baseline trajectory that have been included in L.E.K.'s evaluation summary

Options for sharing cost and revenue performance relative to a baseline trajectory

Options		Description
1	Regional EBS (symmetrical)	L.E.K. has assumed the following changes to the existing PR08 EBS for the purposes of the evaluation summary - Separate EBS calculations are performed for each of NR's (modified) Operating Routes - The DfT does not apply any 'no net loss, no net gain' mechanisms to any EBS payments - Covers both underperformance and outperformance (i.e. it is symmetrical) - Includes mechanisms to limit the risk exposure of TOCs (i.e. caps and the exclusion of a few specific causes of variances) - Applies to new franchises only, via the franchise letting process L.E.K. has assumed that the EBS would continue to be carried out on a cash expenditure basis rather than a revenue requirement basis
2	Regional EBS (upside only)	As above, but applying only to outperformance by each of NR's Operating Route
3	NR shares TOC revenue	NR takes a share of total TOC passenger revenue in exchange for a fixed reduction in FTAC
4	Full scope	Symmetrical Regional EBS as described above, plus NR shares in under/outperformance of TOC revenue and cost relative to a defined baseline

L.E.K. has evaluated a further 4 options for changing incentives which do not (necessarily) involve the sharing of cost or revenue under/outperformance relative to a defined baseline. This results in a total of 8 options

Other options for changing incentives evaluated by L.E.K.

Category	Options		Description
Partial exposure to ORR's periodic review determinations	5	Delta FTAC	Changes in FTAC at periodic reviews no longer a full pass-through via Clause 18.1 (or similar provisions) but operators would still have some level of protection. This could incentivise train operators to engage more actively during periodic reviews, e.g. by critically reviewing NR's business plan to ensure that all planned expenditure is justified
	6	Delta OMR baseline	Similar to the "Delta FTAC" option but instead based on the ORR's assessment of the efficient OMR expenditure for the next control period – i.e. this still relates to changes in an ORR determined baseline between control periods. This does not relate to actual NR expenditure relative to the baseline (that is Option 1)
Regulated transaction charges	7	Higher VTAC rates	Increasing the variable usage charge could provide an incentive for NR to accommodate additional trains as its incremental revenue could exceed its incremental cost – although this would depend on a number of factors including whether enhancements would be required
Non-prescriptive	8	Bespoke, line-of-sight deals	Bespoke commercial deals made between NR and train operators, typically (but not necessarily) in situations where specific, tangible opportunities have been identified. These deals could take many forms, which may or may not involve a cost and revenue sharing mechanism This option assumes that funders and the ORR adopt a much more flexible approach in how they deal with train operators and NR

The rest of this report is structured in two main sections

Analysis of sharing mechanism practicalities

This section contains a detailed analysis of ten key practicalities which form the building blocks of a mechanism for sharing cost and revenue out/underperformance relative to a baseline trajectory

This analysis has been used to inform the subsequent option evaluation

Option evaluation and implementation

This section evaluates each of the 8 options described on the last few slides. It provides the next level of detail behind the evaluation summaries that were provided in the Executive Summary of this report

This section also includes a set of recommendations and a high level implementation plan

Agenda

- Executive summary
- Introduction
- Analysis of sharing mechanism practicalities
- Option evaluation and implementation
- Appendix
  - analysis of current situation
  - alliancing best practice

This section analyses ten practical issues in the context of Option 4, full scope. The subsequent section then uses the findings as an input to the evaluation of all options – to the extent that they are relevant to each option

1 Scope

Cost and / or revenue

Outperformance and / or underperformance

NR and / or train operators

2 Geography

Geographic extent of each cost / revenue sharing mechanism (e.g. NR operating region vs strategic route)

3 Baseline

Baseline against which performance is measured (e.g. ORR's periodic review determination)

4 Causes

Are any causes of variance between actuals and baseline to be excluded?

5 Percentages

Proportion of outperformance and underperformance vs baseline shared between NR and train operators

6 Caps

Any limit on risk sharing for large gaps between actuals and baseline (e.g. in the event of major incidents such as bridge collapse)

7 Secondary users

Should secondary users be include in the sharing mechanism? How should their interests be protected?

8 Information

What information should be shared between parties? Impact of multi-party situations

9 Governance

What governance activities are required / who should be responsible for them? This includes protection of wider social interests

10 Implementation

Timing and transitional issues, in particular in relation to franchise renewal and periodic reviews

1 – Scope: The starting point for the "full scope" option is the broadest possible scope of costs and revenues being included in the mechanism. This section then considers which items should be excluded

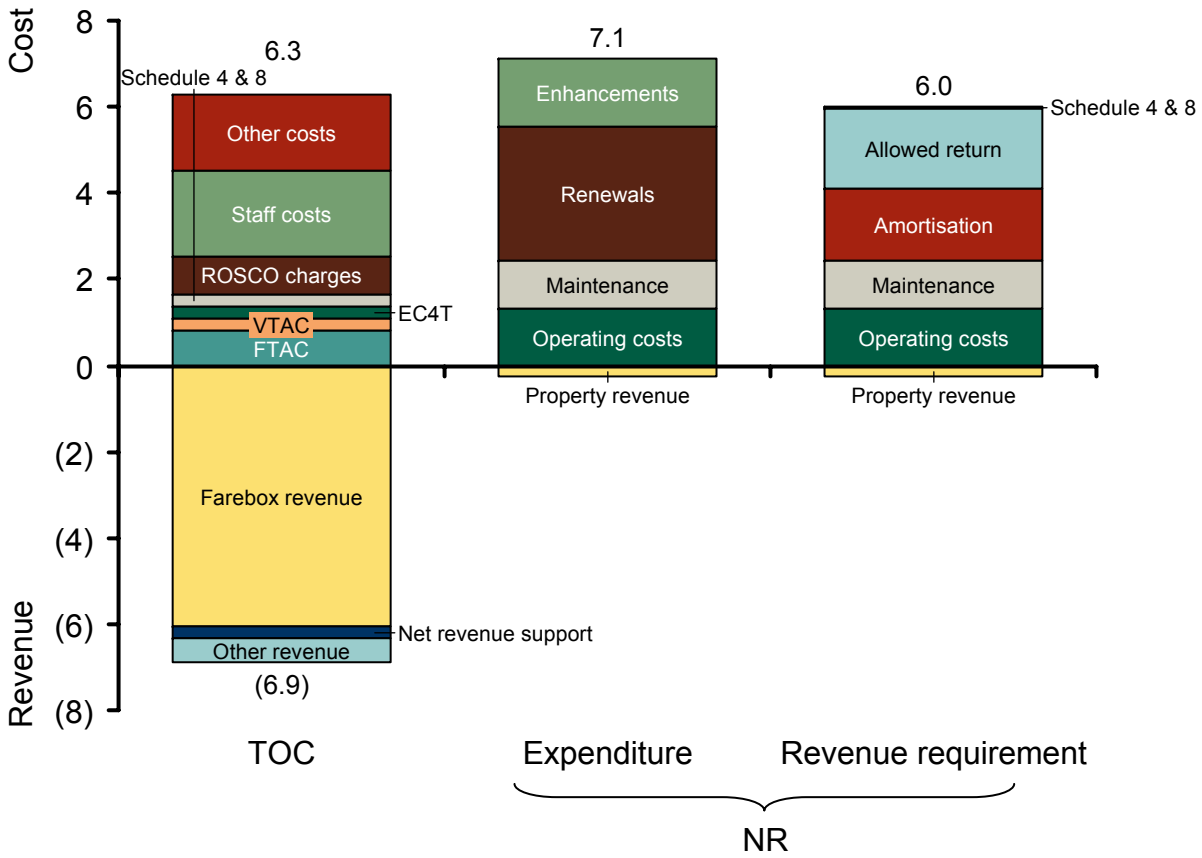
Starting point for "full scope" option

- **NR cost** out/underperformance
- **NR property revenue** out/underperformance
- **TOC cost** out/underperformance
- **TOC revenue** out/underperformance

- Whether to use NR expenditure or revenue requirement is discussed later

GB rail industry cost and revenue (2008/09)

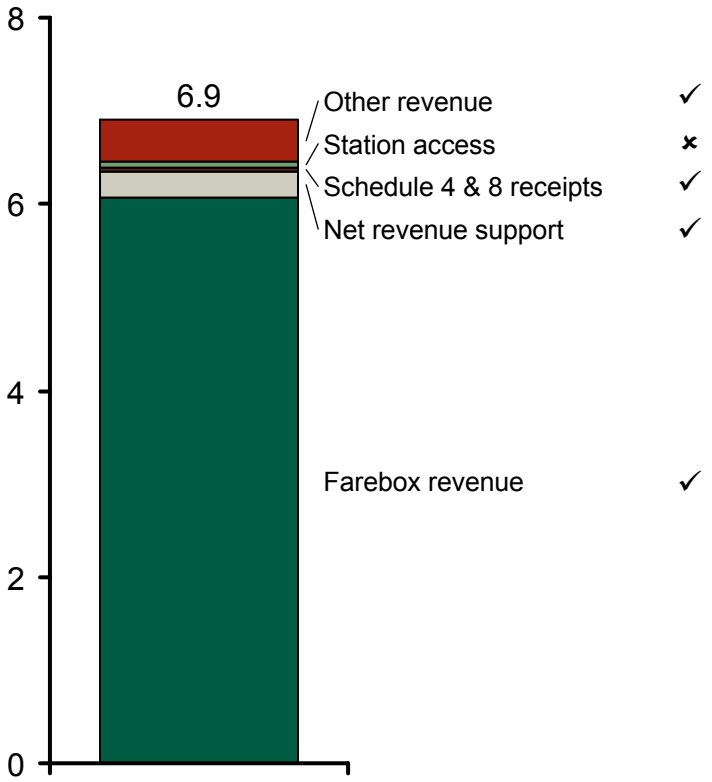
Billions of pounds



Source: NR: Annual Returns, Regulatory Financial Statements; DfT TOC Cost Database; Railfin Database; ORR: National Rail Trends; TOC and ROSCO accounts

1 – Scope: TOC revenue (1 of 3): Treatment of franchise subsidy, Schedule 4/8 and other non-passenger revenue

TOC revenue* (2008/09)
Billions of pounds



- The rationale for including TOC revenue in the sharing mechanism is to give NR an incentive to help TOCs to grow revenue thereby improving industry VfM
- Franchise subsidy payments from the DfT and other funders should be excluded as this would weaken NR's incentive to help grow TOC revenue or reduce TOC costs
- However, any revenue risk related payments between TOCs and funders should be included in the sharing mechanism with NR in order to keep incentives aligned between TOCs and NR
  - this would include the current revenue share / support mechanism and any new approach introduced by the DfT as part of its radical franchise reform
- Schedule 4 and 8 receipts from NR should be included in the sharing mechanism for the reasons explained on the next slide
- Secondary station access LTC receipts should be excluded as the associated cost is excluded as explained later
- Other non-passenger revenue items should generally be included as that would make it easier to ensure that the scope of TOC revenues and costs included in the mechanism are aligned

Note: * Excludes franchise subsidy receipts
Source: NR: Annual Returns, Regulatory Financial Statements; DfT TOC Cost Database; Railfin Database; ORR: National Rail Trends; TOC and ROSCO accounts

1 – Scope: TOC revenue (2 of 3): Not including TOC schedule 8 receipts would cause perverse incentives. However, NR's corresponding schedule 8 costs should be excluded to avoid TOCs being worse off than currently

Hypothetical scenario showing cashflows before and after a notional deterioration of NR performance*

			Before			After			Change				
	P&L items	Sharing?	TOC	NR	Total	TOC	NR	Total	TOC	NR	Total	Comments	Outcome ranking
No sharing	TOC pax revenue	N	100	0	100	80	0	80	-20	0	-20	If schedule 8 payments from NR to TOCs accurately reflect the actual passenger revenue impact of delays then TOCs would receive the same total revenue irrespective of NR performance	2
	TOC sch. 8 revenue	N	0	0	0	20	0	20	20	0	20		
	NR sch. 8 cost	N	0	0	0	0	-20	-20	0	-20	-20		
	Total		100	0	100	100	-20	80	0	-20	-20		
Full sharing	TOC pax revenue	Y	80	20	100	64	16	80	-16	-4	-20	If TOC revenue, NR sch. 8 revenue and NR sch. 8 costs were included then TOCs would be out of pocket if NR's performance deteriorated	3
	TOC sch. 8 revenue	Y	0	0	0	16	4	20	16	4	20		
	NR sch. 8 cost	Y	0	0	0	-4	-16	-20	-4	-16	-20		
	Total		80	20	100	76	4	80	-4	-16	-20		
TOC pax and sch 8 revenue shared only	TOC pax revenue	Y	80	20	100	64	16	80	-16	-4	-20	If NR sch. 8 costs are excluded then TOCs would again receive the same income under different NR performance scenarios. The benefit vs the no sharing scenario is that TOCs would be less reliant on sch 8 revenue to achieve this - so it reduces the impact of imperfections in the sch. 8 payment rates	1
	TOC sch. 8 revenue	Y	0	0	0	16	4	20	16	4	20		
	NR sch. 8 cost	N	0	0	0	0	-20	-20	0	-20	-20		
	Total		80	20	100	80	0	80	0	-20	-20		
TOC pax revenue shared only	TOC pax revenue	Y	80	20	100	64	16	80	-16	-4	-20	If TOC revenue is included but all sch 8 items are excluded then TOCs have the perverse incentive to make NR performance worse	4
	TOC sch. 8 revenue	N	0	0	0	20	0	20	20	0	20		
	NR sch. 8 cost	N	0	0	0	0	-20	-20	0	-20	-20		
	Total		80	20	100	84	-4	80	4	-24	-20		

- The conclusions are similar for Schedule 4

Note: * Based on an indicative sharing rate of 20%

1 – Scope: TOC revenue (3 of 3): Analysis of the drivers of TOC passenger revenue suggest that there is an economic case for NR to take a minority share in TOC revenue

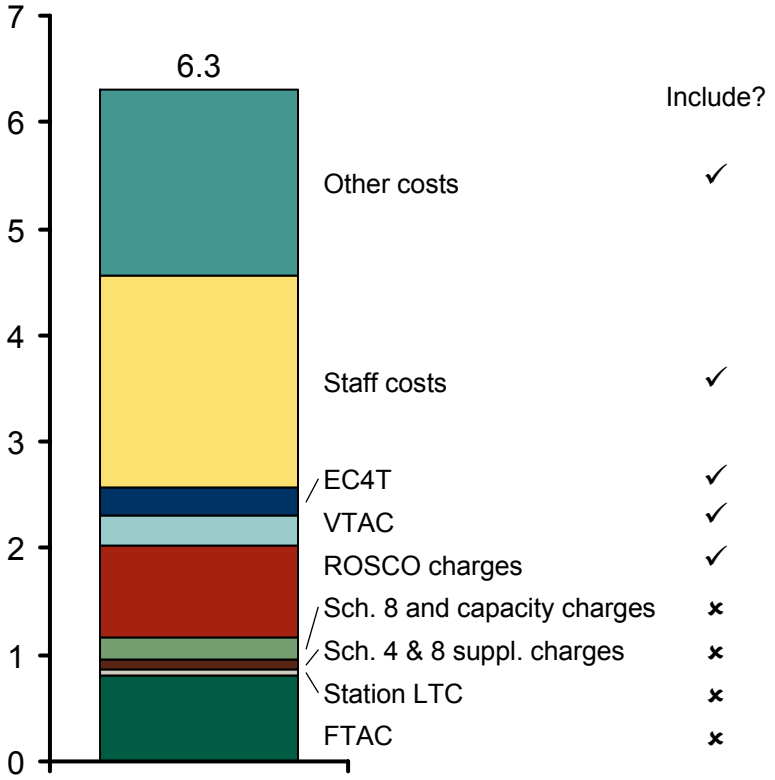
Categorisation of revenue drivers

Category		Revenue drivers
1	Exogenous	GDP, employment, population Inflation Car, bus, air competition One-off events (sporting events, terrorist attacks)
2	Impacted by TOCs (but not NR)	Marketing Revenue protection Service quality
3	Impacted by NR (and TOCs)	Operational performance Engineering access Timetable / crowding

- The drivers of TOC passenger revenue can be grouped into three categories according to whether TOCs and / or NR are able to influence the revenue driver
- Exogenous factors which are outside the control of both TOCs and NR have by far the largest impact on TOCs' revenue. As such, the issue of "who is best placed to manage this risk" boils down to who has the strongest balance sheet. Even after the DfT has introduced its radical franchise reform proposals, this is likely to remain NR so there is some economic rationale for a degree of risk transfer to NR
  - it should be noted that funders also takes a significant proportion of this risk through the revenue risk mechanisms in the franchise agreement (the nature of this mechanism is currently under review by the DfT)
- Categories 2 and 3 are of broadly similar magnitudes, although the precise relativity will vary on a case by case basis depending on the specific circumstances of each franchise. It should also be noted that there is a blurred boundary between categories 2 and 3
- NR is already incentivised on all three drivers in Category 3 to some extent but a revenue sharing mechanism would improve alignment – in the case of timetabling, to a significant extent
  - engineering access and performance are incentivised through Schedules 4 and 8. However, as noted on the last slide, NR sharing in TOC actual revenue (inc. Sch. 4 and 8 payments) would further improve alignment in this area to some extent
  - the PR08 Volume Incentive is intended to incentivise NR to accommodate additional trains in the timetable. However, it is widely seen as being ineffective. A revenue sharing mechanism would be far more effective in this area

1 – Scope: TOC costs (1 of 3): Treatment of franchise premiums, access charges and Schedule 8 payments

TOC costs* (2008/09)
Billions of pounds



- There are two arguments for including TOC costs in the sharing mechanism
  - to help maintain alignment of incentives if TOC revenue is included in the mechanism. If TOCs shared a proportion of their revenue with NR but did not share some of their cost then they would have a reduced incentive to invest in revenue growth through initiatives such as marketing
  - to incentivise NR to help TOCs to reduce their costs and minimise any adverse effects that NR might have on TOC costs
- Franchise premium payments to funders should be excluded as this is not a cost of the industry. Including it would:
  - reduce NR's incentive to help to reduce TOC costs (to some extent)
  - be inconsistent with the treatment of franchise subsidy receipts
- FTAC and station LTC charges should be excluded. These are the prices that TOCs pay NR for track and station access rather than a cost of the rail industry. Furthermore, they are fixed for each control period through the periodic review process and are generally subject to full pass through to funders via Clause 18.1 adjustments (or similar mechanisms)
- The same argument applies to other fixed regulated access charges, including schedule 4 and 8 supplemental charges
- However, VTAC and other usage based charges (e.g. EC4T) that are linked to variable NR costs should be included in order to give NR an incentive to help TOCs to reduce these costs – see next slide
- TOC schedule 8 payments to NR should be excluded as the corresponding cost to NR of making these payments to affected TOCs is also excluded (as discussed earlier). Capacity charge payments should be excluded for similar reasons

Note: * Excludes franchise premium payments
Source: NR: Annual Returns, Regulatory Financial Statements; DfT TOC Cost Database; Railfin Database; ORR: National Rail Trends; TOC and ROSCO accounts

1 – Scope: TOC costs (2 of 3): Including all VTAC related items in the sharing mechanism would give NR an incentive to help TOCs to reduce the cost impact of rolling stock on NR's infrastructure

Hypothetical scenario of impact of a notional reduction in VTAC due to a change in rolling stock*

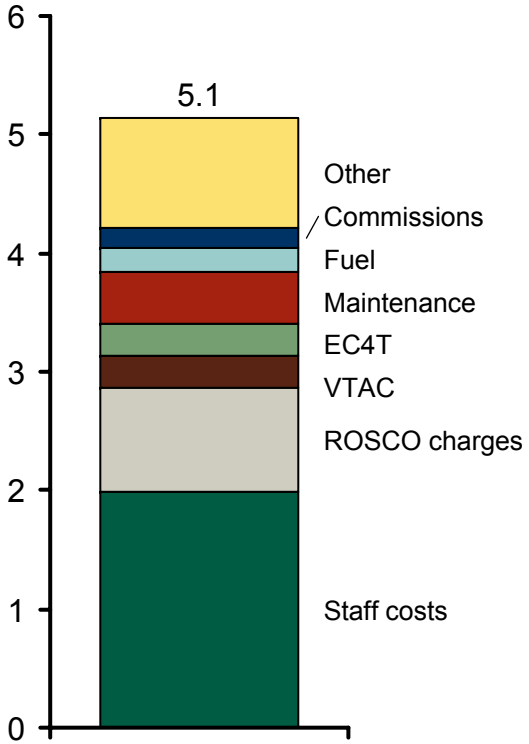
			Before			After			Change				Outcome ranking
	P&L items	Sharing?	TOC	NR	Total	TOC	NR	Total	TOC	NR	Total	Comments	
No sharing	TOC revenue	N	0	0	0	0	0	0	0	0	0	Assuming that VTAC is broadly cost reflective then TOCs are fully incentivised to reduce the marginal cost on NR of running rolling stock but NR is indifferent to these costs and has no incentive to help TOCs to reduce them	=2
	TOC cost	N	-100	0	-100	-50	0	-50	50	0	50		
	NR revenue	N	0	100	100	0	50	50	0	-50	-50		
	NR cost	N	0	-100	-100	0	-50	-50	0	50	50		
	Total		-100	0	-100	-50	0	-50	50	0	50		
Full sharing	TOC revenue	Y	0	0	0	0	0	0	0	0	0	TOCs and NR are jointly incentivised to reduce the impact of rolling stock on the fixed infrastructure	1
	TOC cost	Y	-80	-20	-100	-40	-10	-50	40	10	50		
	NR revenue	Y	20	80	100	10	40	50	-10	-40	-50		
	NR cost	Y	-20	-80	-100	-10	-40	-50	10	40	50		
	Total		-80	-20	-100	-40	-10	-50	40	10	50		
TOC and NR cost sharing	TOC revenue	Y	0	0	0	0	0	0	0	0	0	If NR's VTAC income is excluded from the mechanism then NR becomes indifferent to rolling stock costs (as per the no sharing scenario)	=2
	TOC cost	Y	-80	-20	-100	-40	-10	-50	40	10	50		
	NR revenue	N	0	100	100	0	50	50	0	-50	-50		
	NR cost	Y	-20	-80	-100	-10	-40	-50	10	40	50		
	Total		-100	0	-100	-50	0	-50	50	0	50		
NR cost sharing only	TOC revenue	Y	0	0	0	0	0	0	0	0	0	If TOCs' VTAC costs and NR's VTAC revenue are excluded from the mechanism then NR has the perverse incentive to increase TOCs' rolling stock costs	4
	TOC cost	N	-100	0	-100	-50	0	-50	50	0	50		
	NR revenue	N	0	100	100	0	50	50	0	-50	-50		
	NR cost	Y	-20	-80	-100	-10	-40	-50	10	40	50		
	Total		-120	20	-100	-60	10	-50	60	-10	50		

Note: * Based on an indicative sharing rate of 20%

1 – Scope: TOC costs (3 of 3): Analysis of the drivers of TOC costs suggest that there is an economic case for NR to share in TOC costs. However, TOCs have highlighted that this could encourage gaming

TOC costs potentially included in sharing mechanism (2008/09)

Billions of pounds



- There are a number of drivers of the costs shown opposite but the single largest driver is the timetable. The efficiency of the timetable can have a major impact on staff and rolling stock resource levels for a given output level (number and type of train services operated). As such, NR can materially impact a number of TOC costs (positively or adversely)
- NR can also impact TOC costs in other areas where there are working interfaces such as schedule 8 delay minutes attribution, control and incident management and engineering possessions
- There may be some efficiency gains from transferring work between TOCs and NR, and including TOC costs in the sharing mechanism would make this easier
- Furthermore, if TOC revenue is included in the sharing mechanism then including TOC costs helps to reduce the risk of unintended consequences (e.g. reduced incentive for a TOC to invest in revenue growth if it is exposed to the full cost but does not receive the full revenue)
- However, during our workshops stakeholders highlighted that including TOC costs in the sharing mechanism will encourage gaming

  "… If you include our costs then I can tell you exactly what will happen. We'll put all our group costs through our franchise accounts so that Network Rail pays a share of our bills …"

Source: NR: Annual Returns, Regulatory Financial Statements; DfT TOC Cost Database; Railfin Database; ORR: National Rail Trends; TOC and ROSCO accounts

1 – Scope: Network Rail costs (1 of 6): L.E.K. would recommend a cash expenditure approach rather than a revenue requirement approach for Options 1,2 and 4. However this would require the baseline to be adjusted to reflect changes in renewals scope to the extent that these are not efficiency related

- The scope of the PR08 Efficiency Benefit Sharing Mechanism is:

  "… all operating, maintenance and renewals expenditure and a number of revenue elements (variable track access charges associated with additional traffic, retail and property rental and schedule 4) … our efficiency benefit share mechanism does not cover outperformance in respect of enhancement projects …"

  ORR, PR08, paras 27.31 and 27.53

- As such, the current mechanism is based on cash expenditure rather than revenue requirement. The key difference between them relates to expenditure items that are capitalised (i.e. renewals and enhancements)
  - *cash expenditure:* This is a good measure for the efficiency of delivery of a defined scope of work (e.g. a specific known project) but is less suitable for changes in the scope of work. For example, if an asset is found to be in worse condition than expected and needs to be renewed then this could lead to a major cash overspend in the current year but the long economic life would need to be taken into account in any calculation of "underperformance". It could lead to short term behaviour (e.g. use of maintenance to postpone major renewals) particularly towards the end of a franchise, and potentially towards the end of control periods – even if a renewal were the optimal whole life solution
  - *revenue requirement:* NR capitalises renewals and enhancements expenditure, adds this to its RAB and receives revenue to cover amortisation of the RAB and an allowed return on the RAB. This has the clear benefit of matching industry costs to the economic life of assets. As such, it overcomes the main issue with cash expenditure described above. The downside is that reward for TOCs helping NR to deliver a specific renewals project more efficiently is potentially spread over a long period of time rather than occurring in the year in which the efficiency gain is made. It could also encourage some maintenance work to be reclassified as renewals work in order to spread the P&L charge over multiple years
- On balance, L.E.K. would recommend a cash expenditure approach for the sharing of cost and revenue out/underperformance relative to a defined baseline (i.e. Options 1, 2 and 4) but this would require the baseline to be adjusted to reflect changes in renewals scope to the extent that these are not efficiency related

1 – Scope: Network Rail costs (2 of 6): NR CP4 expenditure by major category

	ORR PR 2008 assessment	NR Delivery Plan Update, March 2010	
Units	*£m (06/07 prices)*	*£m (06/07 prices)*	*£m (10/11 prices)*
Controllable opex	3,368	4,227	4,682
Non-controllable opex	1,781	1,995	2,210
Maintenance	5,016	4,515	5,001
Renewals	10,760	10,790	11,952
Enhancements	7,612	6,988	7,741
Total	**28,537**	**28,516**	**31,587**
Non PR08 funded enhancements		4,517	5,004
Expenditure deferred from 2008/09		328	363
Total expenditure	**28,537**	**33,362**	**36,955**

Source: ORR Periodic Review 2008 (Oct 08); NR Delivery Plan Update (Mar 10)

1 – Scope: Network Rail costs (3 of 6): NR CP4 expenditure breakdown

Operating expenditure (CP4)

£m (2010/11 prices)	**Total**
Controllable opex	
Operations	1,855
Support	2,828
Non-controllable opex	
Electric traction	1,146
Cumulo rates	562
British Transport Police	350
Railway safety charge	44
ORR fee*	108
Total opex	**6,892**

Renewals expenditure (CP4)

£m (2010/11 prices)	**Total**
Track	3,535
Signalling	2,153
Civils	1,755
Operational property	1,252
Electrification	633
Telecoms	1,089
Plant and machinery	383
IT and other	1,152
Total renewals	**11,952**

PR08 Enhancements (CP4)

£m (2010/11 prices)	**Total**
England and Wales	
Thameslink Programme	2,395
East Coast Main Line improvements	582
Crossrail and Reading	539
West Coast Main Line committed schemes	514
King's Cross	374
Other	2,896
Scotland	
Tier 2	403
Tier 3 Development Fund	15
Small Projects Fund	23
Total enhancements	**7,741**

Non PR08 funded enhancements (CP4)

£m (2010/11 prices)	**Total**
DfT sponsored RAB funded	2,040
TS sponsored RAB funded	363
Third party RAB funded	584
Third party funded	1,793
NR sponsored	216
NR Outperformance Fund	8
Total Non PR08 funded enhancements	**5,004**

Note: * Including CIRAS fee
Source: NR, Delivery Plan Update, March 2010

1 – Scope: Network Rail costs (4 of 6): TOCs can influence NR's costs and property revenue through three mechanisms

Mechanism	Description	Appropriateness of cost / revenue sharing mechanism?
Output specification	In a normal commercial market a customer will specify the outputs required from its supplier and this will be a key driver of the cost of delivery However, in the GB rail industry most of NR's required outputs are specified by the DfT, other funders or ORR	Yes, in principle However, to be fully effective funders/ORR would have to give train operators greater freedom to specify NR's outputs. For example, to ensure that renewals and enhancements are focussed on meeting train operators' needs and end customers' needs
Working interfaces	As highlighted in the "analysis of current situation" appendix, there are several business processes which involve a working interface between NR and train operators. Train operators actions can directly impact NR's costs in these areas	Yes
External challenge	Competition is normally the most effective mechanism for forcing a company to become and remain efficient. NR is a monopoly supplier so does not face competitive pressure. Instead it is regulated by the ORR, albeit without the benefit of close comparators to inform its determinations The situation is exacerbated by the fact that NR does not have any equity (or other risk capital) so is not subject to financial pressure from its owners (or other capital providers) Exposing TOCs to NR's costs could incentivise them to help drive down NR's costs through an external challenge process	It is the DfT/ORR's duty to satisfy themselves that NR has appropriate governance and regulatory arrangements in place to provide sufficient incentive for NR's management to strive for efficiency It is questionable whether the DfT/ORR should rely extensively on TOCs to provide external challenge of NR's cost. TOCs are very lean organisations and do not typically currently have the resources available to review NR's plans, activities and financials in areas where there is no major working interface – particularly given that NR is a very different type of business to a TOC. Furthermore, it is unlikely to be efficient for 19 franchised TOCs all to have the resources required for this task – nor is that likely to be particularly effective as TOCs may not have ready access to high quality benchmarking information Some form or horizontal separation of NR, whereby the ORR is able to compare the relative performance of each region based on a range of standardised measures is likely to be far more effective at achieving this objective, particularly if there are multiple owners of the regional infrastructure management businesses

1 – Scope: Network Rail costs (5 of 6): L.E.K. has identified four main options for the scope of NR's costs. There are pros and cons to each

Option title		Description	Evaluation
1	All OMRE	All NR costs	Pros: Minimises the scope for gaming or perverse incentives Cons: TOCs are unable to directly influence a significant proportion of NR's costs (except through an external challenge role)
2	TOC facing OMRE	All NR costs that TOCs can directly influence through output specification or working interfaces	Pros: Focuses mechanism on costs which TOCs are better placed to influence Cons: Greater risk of gaming or perverse incentives. For example, some costs are of an indirect nature and NR would have an incentive to allocate a higher share of these costs to the cost categories included in the sharing mechanism
3	All OMR	All NR costs except enhancements – as per PR08 regime	Pros: Allows enhancements to be dealt with through a different mechanism, e.g. a JV between train operators and NR Cons: Train operators unable to influence a significant proportion of NR's OMR costs except through external challenge. Risk of gaming as the dividing line between renewals and enhancements is blurred so NR would have an incentive categorise work according to which mechanism gave them the most favourable outcome
4	Bespoke packages	Packages of costs agreed between NR and train operators on a case by case basis	Pros: Focuses the sharing mechanism on a set of costs which meet three requirements: 1) TOCs can influence through output specification or working interfaces; 2) are overwhelmingly direct costs, thereby reducing the impact of cost allocation methodologies and the associated risk of gaming; 3) internalise key trade-offs and interfaces, e.g. between maintenance and renewals, or between renewals and minor enhancements Cons: Could be significant work required to develop and maintain accounting rules, processes and systems if this were to be attempted on a widespread basis

1 – Scope: NR costs (6 of 6): L.E.K.'s report on Alternative Railway Structures highlighted that there could be significant benefits in some regions from Vertical Integration due to improved alignment of incentives. A cost sharing mechanism could secure some of these benefits

Incremental benefits of VI over horizontal separation and applicability to cost and revenue sharing

Advantages		Vertical Integration	Cost and revenue sharing
Reduced interface management costs		• Academic research estimated this to be 1-2% of total costs • Unlikely to exceed 1% for VI in GB as a range of contractual interfaces will still be required (e.g. with freight operators, secondary passenger operators and any central functions organisations)	• Much smaller for cost and revenue sharing as all contractual interfaces still exist • Some savings likely though from reductions in man-marking and more relationship-based / less contractual management approaches
Give overall operational control to train operators		• Assume 1ppt increase in PPM delivered over the first five years • Cost savings assumed to be included in the "reduced interface management costs" item above	• Some benefits from joint working in control rooms but train operators unlikely to be given overall operational control
Align incentives and facilitate market driven whole-system optimisation	Asset management	• Atkins and GHD have highlighted that savings of 30% are possible from achieving good industry practice in asset management • The overwhelming majority of that benefit should be achieved through NR's Transformation programme and multiple owners horizontal separation • L.E.K. has assumed that the incremental benefits from VI facilitating whole system alignment of incentives is 1-5% of NR's M&R expenditure	• Some benefits but much less than for VI because: -Incentives much less well aligned -The organisation closest to the market does not have control over asset management decision making
	Enhancements	• NR's Transformation programme and multiple owners horizontal separation should also deliver significant improvements in enhancements expenditure • The incremental benefits from VI facilitating whole system alignment of incentives should be higher for enhancements than for NR's M&R expenditure due to the importance of train operators' input to enhancement specifications. L.E.K. has assumed that the incremental benefits would be 5-10% of NR's enhancement expenditure	• Some benefits but much less than for VI because: -Incentives much less well aligned -The organisation closest to the market does not have control over specification of enhancements

1 – Scope: Network Rail revenue

- The ITT for this project only includes property related income in the NR revenue category. TOCs have some, but limited, ability to influence this income
- A significant proportion of the property income relates to NR's managed stations. There are trade-offs to be made between optimising stations from an railway operations / passenger experience perspective and optimising their property and retail income generating potential. There is some value in including property revenue in the cost and revenue sharing mechanism to facilitate optimisation of these trade-offs
- As highlighted earlier, L.E.K.'s analysis shows that NR income relating to variable cost recharges should also be included in the sharing mechanism. This includes: VTAC, EC4T and electrification asset usage

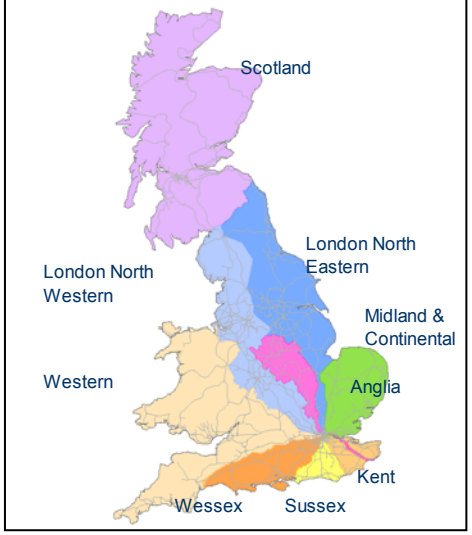
1 – Scope: The relative attractiveness of an outperformance-only mechanism and a symmetrical mechanism depends on how TOCs price these two mechanisms, and this is uncertain

- There are two significant disadvantages of an outperformance-only mechanism relative to a symmetrical mechanism
  - First, if train operators believe that NR is going to under-perform its baseline then they may simply ignore the NR components of a cost and revenue sharing mechanism as there would be no reward for contributing to NR efficiency improvements
  - Second, it becomes more difficult for TOCs to value the mechanism because the value becomes more sensitive to the variability of NR's performance versus baseline. This concept is described in more detail later but in essence, the train operators would benefit from this underlying variability because they receive a share of any outperformance but do not have to make any payments in the event of underperformance. This phenomenon is often referred to as "option value"
- The existence of the option value would make it more difficult to secure VfM through implementing an outperformance-only mechanism during existing franchises. Train operators would be unlikely to agree to pay for the option value (or at least to pay for its full value) so there would be a negative VfM impact unless the train operators made a large enough contribution to NR efficiency improvements to offset this
- It is uncertain how train operators would price the option value if an outperformance-only mechanism were introduced through a franchise bidding competition. However, L.E.K. thinks it likely that bidders would price this conservatively due to the uncertainty over the level of variability of NR's costs and train operators lack of control over this item
- The main advantage of an outperformance-only mechanism over a symmetrical mechanism is that bidders would not have to charge a risk premium to protect themselves against the potential downside risk. However, it should be noted that the mechanism could include caps and tapered sharing percentages to limit the downside exposure to train operators and therefore limit the risk premium charged by TOCs
- In summary, the relative attractiveness of an outperformance-only mechanism and a symmetrical mechanism depends on how train operators price these two mechanisms, and this is uncertain. If both mechanisms were priced competitively based on good information then the symmetrical mechanism would be the more attractive because TOCs would be less likely to ignore the mechanism. However, the uncertainty over the pricing of this mechanism should not be underestimated

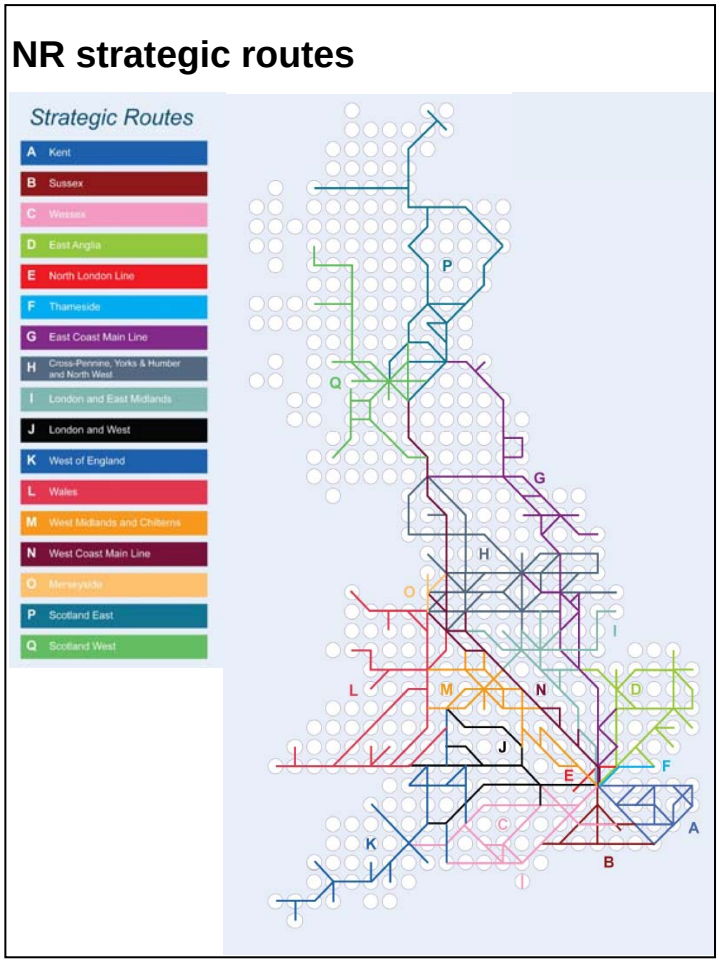
2 – Geography: NR currently manages its business using a number of different geographical structures and does not produce integrated regional P&Ls as part of its standard reporting process

- NR has historically had a functional based organisation structure with operations, maintenance and renewals managers reporting to separate head office directors
- Furthermore, it uses different geographic structures for different functions and purposes:
  - 9 operating routes and 16 operational areas
  - 10 maintenance routes (these are the same as the operating routes but with one operating route split in two)
  - 17 strategic routes
  - c.305 strategic route sections
- There is a reasonably good mapping from the 17 strategic routes to the 9 operating routes
- NR has not historically produced regional P&Ls as part of its standard reporting
- However, NR has recently started to generate regional P&Ls for the 9 operating routes

NR operating routes



NR strategic routes



Source: NR, Annual Return 2010

2 – Geography: The geographical structure used for the cost and revenue sharing mechanism must give TOCs confidence that there will be a strong link between their actions and the financial outcomes

- For a cost and revenue sharing mechanism to be effective there needs to be a sufficiently direct link between the actions of each train operator and the resulting financial outcomes for that operator

- This is clearly not the case for the PR08 EBS mechanism because it is a national scheme. As such, the link between each operator's actions and the financial outcomes is very weak (even if the DfT had agreed to suspend Clause 18.1 and similar provisions)

- More specifically, the following features need to be in place for a cost and revenue sharing mechanism to be effective:
  - there needs to be detailed and reliable financial information available for each NR geography
  - someone in NR needs to be responsible for that geography and have sufficient delegated authority to implement any changes agreed with the train operators
  - there needs to be at least one train operator with a sufficiently high share of the geography that they perceive the link between their actions and outcomes to be sufficiently direct

- Regarding the last of these points, it is difficult to be precise as to the necessary "market share". There were mixed views at the stakeholder workshops and some stakeholders thought it should be very high

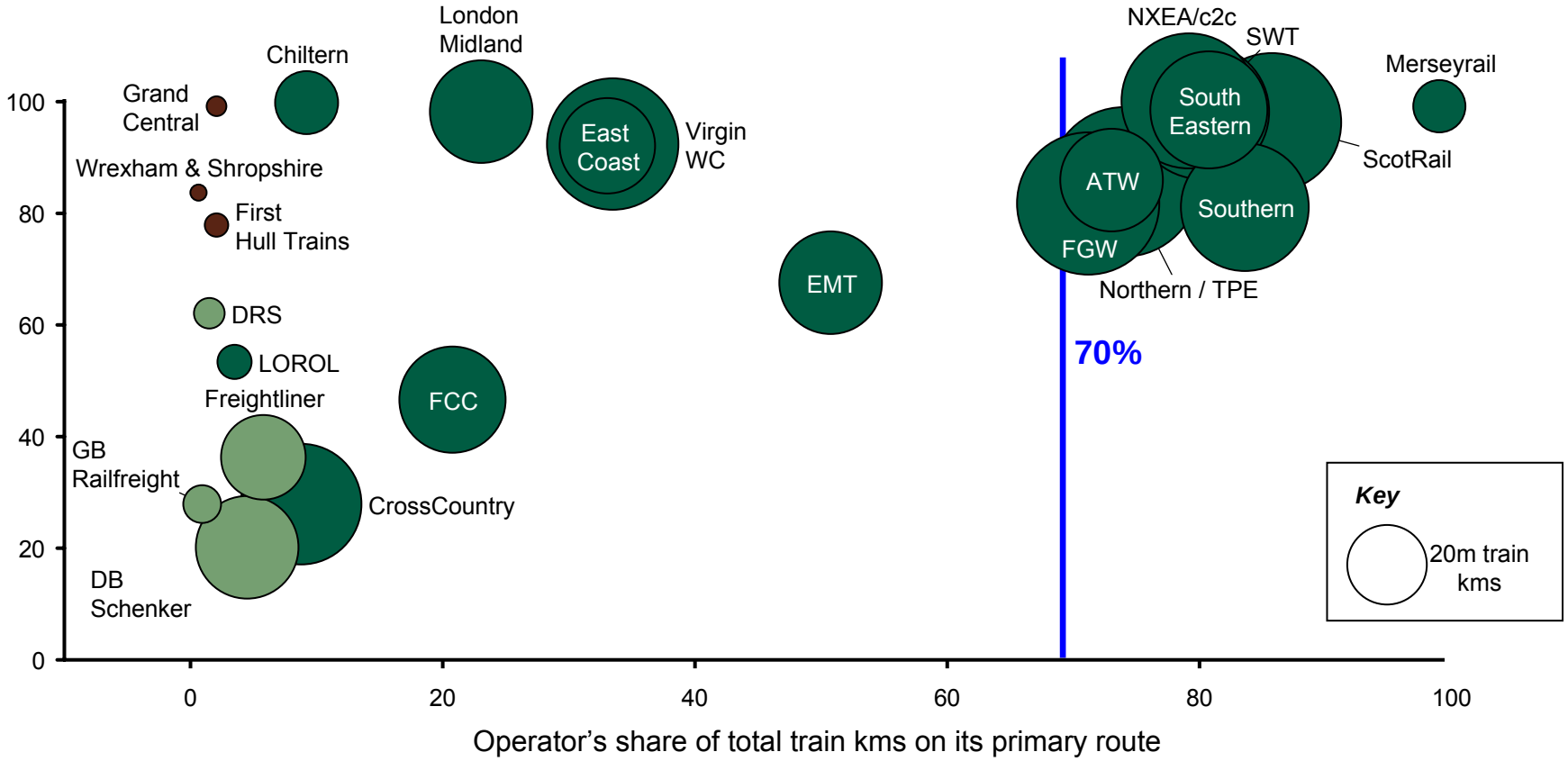
2 – Geography: Five of NR's existing nine operating routes already have a single dominant TOC. Mapping between TOCs and NR regions could be further improved by splitting Wales out of the Western operating route and by splitting a Northern route out from LNE and LNW

- Five of NR's existing nine operating routes already have a single TOC with at least a 70% share of train km
- The mapping between TOCs and NR's operating regions could be further improved:
  - By splitting Wales out of the Western operating route
  - By splitting a Northern route out from LNE and LNW. The east coast and west cost main lines would remain in LNE and LNW respectively
  - By splitting Merseyside out of LNW
  - By transferring the east and west coast mainlines from the Scotland route to LNE and LNW respectively
- The four potential changes listed above would need to be analysed in more detail before a final decision is taken. However, early implementation would be advantageous as it would enable a financial and managerial track record to be established for these regions
- The chart overleaf shows the mapping between train operators and the 12 NR operating regions that would result from these changes
- It should be noted that further improvements to the mapping between train operators and NR operating regions could be made through minor changes to either the scope of each franchise or the precise boundary between NR routes

2 – Geography: Nine TOCs would have at least a 70 percent share of the train km of their primary NR operating route if NR implemented the four changes to its current route boundaries

Operator vs. primary operating route*

Percent of operator's train kms on its primary route



Note: * Train kms are allocated based on mapping of operating route to strategic route section by track km

Source: NR; L.E.K. analysis

2 – Geography: The cost and revenue sharing mechanism could be reported using individual TOCs as the "regions" rather than any NR geography. However, this is unlikely to make a significant difference in practice

- The last slide implicitly assumes that a refined version of NR's operating routes would be the geographical entity for which a cost and revenue sharing calculation would be performed
- That would require NR to start accounting using its refined operating routes and it could require ORR to make separate determinations of efficient expenditure at that level. However, it would also require train operators to split (or allocate) their costs and revenue by NR's operating routes. This is discussed later in this presentation
- As an alternative, the cost and revenue sharing calculations could be performed using individual train operators as the "regions" rather than any NR geography. I.e. NR would allocate its costs to individual train operators
- However, this is unlikely to make a significant difference in practice because it still requires a mapping between NR geographies and train operators. If the basis for the mapping (e.g. VTAC) is the same then the outcome would be the same
  - the calculation would effectively involve summing the rows of a matrix rather than the columns but the values in each cell of the matrix would remain the same
- Irrespective of whether the calculation is carried out using NR's operating routes as the geographic entity or individual train operators, the following key requirements still hold:
  - there needs to be detailed and reliable financial information available for each NR geography
  - someone in NR needs to be responsible for that geography and have sufficient delegated authority to implement any changes agreed with the train operators
  - there needs to be at least one train operator with a sufficiently high share of the NR geography that they perceive the link between their actions and outcomes to be sufficiently direct

3 – Baseline: Introduction

Network Rail

NR's own cost and revenue targets are set by ORR through the five yearly periodic review process

The resulting determination is the most natural baseline for a cost and revenue sharing mechanism and was used by the ORR for its PR08 EBS mechanism

However, there are significant challenges with this as discussed on the next slide

Train operators

The main options for train operator baseline are:

- Franchise bid
- Business plan

The pros and cons of these options are explored in this section

3 – Baseline: There is a large range of uncertainty over the achievability of ORR's assessment of NR's efficient expenditure

- The ORR assesses NR's efficient expenditure for each five year control period through its periodic review process. This is used to determine NR's revenue requirement for the control period given the required outputs
- This is the natural baseline to use for NR for a cost and revenue sharing mechanism and was used by the ORR for its PR08 EBS mechanism
- The ORR and NR both carried out a significant amount of work during PR08 in order to assess NR's current level of efficiency. This led to a very wide range of estimates for the efficiency gap between NR and top quartile infrastructure managers

  "… the efficiency gap given by the various studies lies in a broad range, with a central range of 30% to 50% …"
  PR08 Determination, Para 7.85

- The ORR analysed the rate of improvement achieved by companies in other regulated industries and made a high level judgement that "Network Rail should be able to catch-up two thirds of the efficiency gap during CP"
- Assessing NR's efficiency is inherently difficult as a result of it being the only national rail infrastructure manager in the country. Many other regulated industries include a number of similar companies which facilitate comparisons and the assessment of relative efficiency (e.g. electricity and gas distribution, and water)
- As such, there is a large range of uncertainty over the achievability of ORR's assessment of NR's efficient expenditure. Indeed, NR's Executives considered appealing against the ORR's determination

  "… I am extremely concerned that the funding settlement outlined today will put our plans to meet rising demand at risk …"
  Iain Coucher, Chief Executive, Network Rail, June 2008

  "… The move by ORR, following three years of deliberations over Network Rail's next 'control' period from next April, could lead the infrastructure company to make an appeal to the Competition Commission, the final 'court of appeal' …"
  Railnews.co.uk, Oct 2008

3 – Baseline: Using the ORR's assessment of NR's efficient expenditure as the baseline for a cost and revenue sharing mechanism would expose TOCs to potentially significant regulatory risk (1 of 2)

- Train operators are currently very different types of business to NR. They do not currently have their revenue set through a regulatory process. Using ORR's periodic review determination as the baseline for cost and revenue sharing with NR would expose them to a whole new category of risk
- It is possible that the nature of TOCs could change radically as a result of the McNulty Rail VfM review. For example, they could become much more asset intensive and become subject to their own ORR periodic review price determinations. The DfT's January 2011 franchising policy statement does raise the possibility of the DfT introducing review points for some new franchises
- If this were to happen then they would become more similar to NR and it would be a smaller incremental step for them to be given an exposure to the risk around NR's baseline
- However, as stated in the introduction section, we have assumed for the purposes of this study that the nature of rail franchises does not fundamentally change

3 – Baseline: Using the ORR's assessment of NR's efficient expenditure as the baseline for a cost and revenue sharing mechanism would expose TOCs to potentially significant regulatory risk (2 of 2)

- Given the "central range of 30% to 50%" from the ORR's PR08 efficiency work and the requirement for NR to catch-up two thirds of this gap in CP4, the uncertainty over the efficiency gap in the final year of CP4 could easily be 15% to 35%, i.e. +/-10% vs the baseline. It is highly unlikely that TOCs could have that much impact on NR's cost base. As such, the risk transfer to TOCs would be disproportionate to the impact they could have during CP4
- It should be noted that the uncertainty over the baseline could be much smaller in CP5 if NR has closed two thirds of the efficiency gap. However, a transition to regional regulation could introduce additional uncertainty
- The regulatory risk is further exacerbated by the fact that franchises are longer than NR's control periods. Indeed, the DfT has announced that 15-22.5 year franchises will become the norm, i.e. 3 - 4.5 times the length of an NR control period. Franchise bidders would have to make assumptions about how future determinations will take account of the cost and revenue sharing mechanism, i.e. will the ORR assume that this mechanism will drive significant efficiency benefits and therefore factor this into NR's baseline, thus making it harder to achieve?
- TOC stakeholders expressed serious concerns about regulatory risk during our workshops and queried how they could price this risk into their bids

  "… Forget that. It's all too complicated. The things we can control are swamped by things we can't …"

  "… There would be three periodic reviews in a franchise term, so how would you judge the risk? … what risk premium would you build into your bid? …"

3 – Baseline: A mechanism may also be required to incentivise efficiency improvements across control periods. Furthermore, TOCs could be incentivised to side with NR during periodic reviews

- In the early years of RPI-X type regulation the incentive to achieve efficiency gains reduced towards the end of each control period. Companies responded to this lack of incentive by not implementing changes in those years
- In response, the regulators introduced balancing mechanisms to ensure that companies get a fixed proportion of the underspend from any year regardless of when the efficiency occurs
- In most regulated sectors companies are allowed to keep c.40% of any efficiently incurred capex underspend for 5 years. This is implemented through an increase in the RAB balance at the start of the next control period
  - this mechanism has led to a significant amount of management time being devoted to reclassifying opex as capex, because companies are allowed to retain 100% of the opex savings
- The ORR has adopted a similar mechanism for NR, except that NR is only allowed to keep 25% of the underspend. As a result, NR has an even greater incentive to classify costs as capex
- A similar type of arrangement could be used as part of a cost and revenue sharing mechanism in order to incentivise TOCs to seek NR cost reductions irrespective of the stage in the control period. However, this would make the mechanism more complicated and would lead to management time being devoted to an activity that is non-value adding from the rail industry's perspective
- One of the ORR's objectives for the cost and revenue sharing mechanism is to encourage TOCs to engage more constructively with them during the periodic review process. However, if the ORR determination is used as the baseline then TOCs would have a perverse incentive to encourage the ORR to set an easily achievable baseline. They would try to convince the ORR that NR needs to carry out a large volume of work and that it has already achieved a high level of efficiency
  - This perverse incentive could be counteracted by giving TOCs a partial exposure to the ORR's periodic review determinations (i.e. Options 5 and 6)

3 – Baseline: The cost and revenue sharing mechanism could either use franchise bids or TOC business plans as the TOC baseline. If franchise bids are used then they would almost certainly require a number of adjustments at various stages during the franchise to take into account emerging developments

- The key benefit to using franchise bids as the TOC baseline is that they are developed under competitive pressure but in the knowledge that the company will have to deliver them if they succeed in winning the franchise. As such, they should be efficient but achievable
  - The DfT's revenue share / support mechanism is thought to have led to some overstated bid revenue lines but the DfT has announced that it will not include any cap and collar based mechanisms in future franchises

- The DfT is currently undertaking a review of franchising policy and has announced a move to longer franchises (typically 15 – 22.5 years). However, many important features of its new approach to franchising remain to be finalised as it will determine many things on a franchise-by-franchise basis. As a result, there is currently a state of uncertainty so it is difficult to be definitive over the suitability of franchise bids for use as the TOC baseline for a cost and revenue sharing mechanism

- The further forwards one looks the more difficult it becomes to forecast accurately. As such, for long franchises there would be very significant uncertainty at the time of bidding regarding the costs, revenues, train services and management initiatives that will actually occur during the later years of franchises

- If franchise bids are used as the TOC baseline then it would almost certainly require a number of adjustments at various stages during the franchise to take into account emerging developments

- As such, there may not be a big difference between TOCs' (re-stated) franchise bids and their ongoing business plans

4 – Causes: Stakeholders generally favoured including all causes in the mechanism in order to avoid the cost of a Schedule 8 style cause attribution industry

- It is important to draw a distinction between three types of variance:
  - changes in scope procured by government and other funders
  - reduction in expenditure as a result of not delivering the required outputs
  - variances due to efficiency being above or below baseline
- The ORR (or whoever sets the baseline) should alter the baseline to account for the first two items. This is in line with ORR's annual assessment of NR's performance for the PR08 EBS mechanism
- In terms of the third item, the cost and revenue sharing mechanism could either include all variances from baseline or it could exclude variances that have occurred due to a specified set of causes
- Excluding certain causes has the benefit of increasing the focus of the mechanism on items within the control of each party. However, a recurring theme during the stakeholder workshops was the cost and adversarial nature of the Schedule 8 delay minutes attribution process. Excluding certain causes from the cost and revenue sharing mechanism could have similar consequences. It could undermine the cooperation and trust that the cost and revenue sharing mechanism is intended to foster

  "… You don't want to create another Schedule 8 style fault attribution industry …"

- However, it may be appropriate to exclude a few, clearly defined, distinct and easily recognisable causes in order to limit the downside risk transferred to counterparties relating to items outside their control. If the causes meet the requirements underlined above then it would not significantly add to the administrative burden or lead to adversarial dynamics

5 – Percentages: L.E.K. has identified two key principles for determining the appropriate sharing percentages

Principles for determining sharing percentages

Principle		Description and rationale
1	Revenue percentage = cost percentage	For a given organisation the percentage of revenue shared should ideally be the same as the percentage of cost shared (e.g. a TOC shares X% of its revenue with NR and X% of its cost). This would minimise the risk of creating perverse incentives within an organisation For example, if a TOC is deciding whether to spend an additional £1 on marketing then the sharing mechanism would not change its decision because NR would take a share of the additional revenue but pay the same share of the additional cost. This reasoning holds irrespective of a TOC's own ratio of revenue to cost
2	Significant minority	The party with management control should retain the overwhelming majority of the risk (i.e. the sharing percentage should be significantly less than 50%) and each organisation should be reasonably capable of withstanding the downside risk from their counterparty without having to charge a large risk premium or materially change their financing This will also help to ensure that the investor community does not perceive the nature of TOCs to be fundamentally changed by the sharing arrangement However, a reasonably significant exposure to the organisation is required in order for there to be a meaningful alignment of incentives

Government's share of benefits is discussed in the "9 – Governance" section

5 – Percentages: There are precedents of train operators taking an interest in NR's costs. These can be used to inform the setting of sharing percentages

Examples of where train operators have been actively involved with NR costs and charges

Freight operator access charges

- In 2009/10 freight train operators paid c.£50m p.a. of access charges to NR, which is equivalent to 6% of their revenue
- FOCs are not protected from changes in these access charges via Clause 18.1 or similar provisions because they are open access operators (and therefore do not have franchise agreements)
- FOCs exposure to NR access charges was sufficient for them to play an active role in PR08 in order to help drive down these charges
- FOCs provided a range of evidence to the ORR, including benchmarking of GB infrastructure costs with those of the US Class I railroads. They hired external consultants to assist with preparing this evidence

EC4T

- Electricity for traction (EC4T) is procured by NR and the cost is passed on to train operators based on usage. As a result, NR is responsible for buying electricity but is largely indifferent to the cost of it
- Franchised TOCs pay a total of c.£250m p.a. for EC4T. This is equivalent to c.4% of total TOC revenue. However, the percentage varies significantly by TOC because the mix between diesel and electric traction varies – indeed some TOCs only operate diesel rolling stock
- Industrial electricity prices increased by over 20% in real terms from 2006 to 2009 and this caused EC4T charges to increase by £40m. This resulted in several TOCs experiencing an increase in their overall cost base of around 2% of total costs
- This caused TOCs to actively engage with NR to help manage these costs. In particular, they persuaded NR to use hedging to reduce the level of uncertainty over these costs

Source: Rail VfM team

5 – Percentages: L.E.K. has carried out some high level quantitative analysis to help inform the setting of sharing percentages

Summary of TOC financial forecasts and ORR PR08 determination for CP4

TOCs

£m (2006-07 prices)	Annual CP4 average	
Revenue		
Passenger revenue	5,567	
Other	506	
Total revenue	6,073	
Cost		
Staff	1,467	
ROSCO charges	1,085	
Other costs	1,537	
Schedule 4&8	(142)	1,441
NR access charges	1,583	
Total cost	5,531	
Net franchise payments	387	
Profit	155	
Profit margin	2.6%	
Normalised profit	273	
Normalised profit margin	4.5%	

Network Rail

£m (2006-07 prices)	Annual CP4 average	
Cash expenditure		
Opex	1,030	
Maintenance	1,003	
Renewals	2,152	
Enhancements	1,522	
Total expenditure	5,707	
Revenue requirement		
Opex	1,030	
Maintenance	1,003	
Schedule 4 and 8	142	
Amortisation	1,458	
Allowed return	1,712	
Total revenue requirement	5,346	
Components of allowed return		
Debt service / FIM	1,012	
Ring-fenced investment fund	492	8.6%
Risk buffer	208	3.6%
Total allowed return	1,712	

Source: ORR; Rail VfM team; L.E.K. analysis

5 – Percentages: The PR08 EBS mechanism uses a 25% sharing rate. Whether or not this would give TOCs sufficient incentive would depend on TOCs' views on the degree to which they are able to influence NR's costs and the resources required to do so

TOC profit gained / lost due to NR performance* (£m)

TOC share of NR outperformance (percent)	Change in NR cash expenditure (percent)										
	1	2	3	3.6	4	5	6	7	8	9	10
5	1	3	4	5	5	7	8	10	11	12	14
10	3	5	8	10	11	14	16	19	22	25	27
15	4	8	12	15	16	21	25	29	33	37	41
20	5	11	16	20	22	27	33	38	44	49	55
25	7	14	21	25	27	34	41	48	55	62	68
30	8	16	25	30	33	41	49	57	66	74	82
35	10	19	29	35	38	48	57	67	77	86	96
40	11	22	33	40	44	55	66	77	88	99	109
45	12	25	37	45	49	62	74	86	99	111	123
50	14	27	41	50	55	68	82	96	109	123	137

Impact on TOC profit margin* (PPT)

TOC share of NR outperformance (percent)	Change in NR cash expenditure (percent)										
	1	2	3	3.6	4	5	6	7	8	9	10
5	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.2
10	0.0	0.1	0.1	0.2	0.2	0.2	0.3	0.3	0.4	0.4	0.5
15	0.1	0.1	0.2	0.2	0.3	0.3	0.4	0.5	0.5	0.6	0.7
20	0.1	0.2	0.3	0.3	0.4	0.5	0.5	0.6	0.7	0.8	0.9
25	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0	1.1
30	0.1	0.3	0.4	0.5	0.5	0.7	0.8	0.9	1.1	1.2	1.4
35	0.2	0.3	0.5	0.6	0.6	0.8	0.9	1.1	1.3	1.4	1.6
40	0.2	0.4	0.5	0.7	0.7	0.9	1.1	1.3	1.4	1.6	1.8
45	0.2	0.4	0.6	0.7	0.8	1.0	1.2	1.4	1.6	1.8	2.0
50	0.2	0.5	0.7	0.8	0.9	1.1	1.4	1.6	1.8	2.0	2.3

NR risk buffer of £208m represents 3.6% of average OMRE spend in CP4

- If NR were to outperform or underperform by an amount equal to its annual risk buffer then a 25% sharing percentage would result in £25m of TOC exposure to NR costs
- This is equivalent to 0.5% of total TOC costs or 9% of normalised TOC profit
- This level of risk transfer is not so large that it would have a material impact on the nature of TOCs, providing that caps are used to protect TOCs from more extreme levels of NR out/underperformance
  - As highlighted earlier there is significant uncertainty over NR's current level of efficiency so a variance of significantly greater than NR's risk buffer is entirely possible
- Whether or not this level of exposure would be sufficient to incentivise TOCs to actively engage with NR to help improve NR's efficiency would depend on TOCs' views on the degree to which they are able to influence NR's costs and the resources required to do so. Horizontal separation of NR would significantly improve the chances of this level of exposure being sufficient to make a difference
- The sharing percentage should be no higher than 25% as the infrastructure manager should retain the overwhelming majority of the infrastructure related risks

Note: * Assuming TOCs share 65% of total outperformance (based on TOC share of variable track access charges across TOCs, freight and open access)
Source: ORR; Rail VfM team; L.E.K. analysis

6 – Caps: Caps should be used to limit the downside exposure of each organisation to its counterparty

- NR is protected from major unplanned expenditure through its risk buffer and ring fenced fund, which average 3.6% and 8.6% of ORR's assessment of NR's overall efficient expenditure respectively
- Furthermore, NR can request a re-opener to the CP4 determination if it expects to be unable to finance itself efficiently within the next 18 months in the absence of additional funding or reduced outputs
- However, it should be noted that NR's predecessor, Railtrack, did go into administration following the Hatfield crash and WCRM cost overrun
- It should also be noted that the variations in NR's over- or underspend would be greater in percentage terms at the level of NR's operating routes. Results at the national level are less volatile due to the portfolio effect (this is discussed in more detail later)
- TOCs are thinly capitalised and do not benefit from any re-opener provisions. When NXEC experienced financial distress due to a recession occurring in the period before its revenue support mechanism became activated, the DfT made it clear that it did not renegotiate rail franchises and took the business back into public ownership
- Caps should be used to limit the downside exposure to each company resulting from the cost and revenue sharing mechanism

6 – Caps: We would recommend that caps are used but that they are applied through a tapering down of the sharing percentage to create a soft cap

- The introduction of a cost and revenue sharing mechanism would create uncertainty for all organisations. Nobody knows exactly how each party would behave under the new arrangements or how easy it would be to achieve efficiency savings over and above those assumed in the baselines
- As a result, it is difficult to accurately assess the degree of risk transfer. This is particularly an issue for TOCs because:
  - Franchise bidders have to price this risk / opportunity into their bids
  - The investor community will price the risk / opportunity into the share price of transport operator groups
- As such, even if the actual level of risk transfer from the cost and revenue sharing mechanism is set at a manageable level (through the percentages and causes items), there would still be value in using caps to give all parties confidence that there is a limit to the downside exposure
- The major disadvantage of caps is that incentives change when caps are reached. A current example of this is the lack of incentive on many train operators to grow revenue because they are in 80% revenue support with little prospect of escaping from that arrangement
- Consequently, we would recommend that caps are used but that they are applied through a tapering down of the sharing percentage to create a soft cap. The tapering would need to occur much more gradually than the DfT's revenue share / support mechanism. If the starting sharing percentage is 25% then this could tapered down in 5 percentage point intervals. For example:
  - Sharing percentage of 25% for variances of up to 5%
  - Then 20% sharing for variances of 5-10%, 15% for variances of 10-15%, 10% for 15-20% and 5% for 20-25%
  - This would cap TOCs' total potential downside at 2.4% of NR's baseline costs, or c.£100m p.a. or 37% of TOCs' normalised profit

7 – Secondary users: Stakeholders generally considered existing industry arrangements to be effective in protecting their rights. However, there was a concern that a cost and revenue sharing arrangement could disadvantage secondary users

- The geographic analysis presented earlier highlighted that the "market share" of the primary user varies significantly by NR geography. However, there are secondary users in every NR geography and there was unanimous agreement during stakeholder workshops that the interests of secondary users need to be protected
- There are three categories of secondary users:
  - Freight operators
  - Open access passenger train operators
  - Franchised passenger train operators – who will often be the primary user in other NR geographies
- The rights of all train operators are currently protected through a number of mechanisms:
  - NR's Network License conditions
  - NR's Network Code
  - Individual Track Access Agreements
  - Right to appeal to ORR
- Stakeholders generally considered these existing arrangements to be effective in protecting their rights. However, there was a concern that a cost and revenue sharing arrangement could disadvantage secondary users
  - Primary users taking a greater role in making decisions which (negatively) impact other train operators
  - NR being incentivised to favour some operators over others
- Secondary users rights should continue to be protected through the existing industry arrangements described above. However, in addition, secondary users should have the right to participate in the governance arrangements described under Practicality 9: Governance

7 – Secondary users: L.E.K. considers that it would be unreasonable to make financial participation mandatory for secondary users. However, they ought to have the option to participate, subject to a materiality threshold

Options	Assessment
Requirement to participate	A number of secondary users, particularly FOCs, expressed concern about being required to participate in the cost and revenue sharing mechanism because their tight margins would make it difficult for them to withstand the risk Furthermore, it is likely that secondary users would have less ability to influence decision making and therefore less ability to control the risk Finally, there are a number of network wide operators such as FOCs and Arriva Cross Country. They would be secondary users in many, or all, of NR's geographies. As a result, financial participation could impose an unacceptable administrative burden on these operators As a result, L.E.K. considers that it would be unreasonable to make financial participation mandatory. However, secondary users ought to have the option to participate, subject to the materiality threshold described below
Materiality threshold	Within each NR geography there are likely to be a number of secondary users with a wide range of "market shares". Some of these market shares are likely to be very small and relate to the operator running an occasional service through the geography (e.g. as a diversional route) In order to reduce the administrative complexity L.E.K. would recommend setting a materiality threshold of a market share of somewhere in the range of 1-3%. Below this threshold, operators are automatically excluded from the financial aspects of the mechanism
Terms of participation	Those secondary operators who choose to financially participate in the cost and revenue sharing mechanism should do so on the same financial terms as the primary operator i.e., savings are not assigned on a case-by-case basis. This would help to keep incentives aligned as far as possible

8 – Information: An open book approach would be required in order for a cost and revenue sharing mechanism to be fully effective. However, train operators are very sensitive about sharing financial information with other parties, particularly competitors

- There are a number of important reasons why an open book approach would be required in order for a cost and revenue sharing mechanism to be fully effective:
  - partnerships are built on openness and trust
  - full visibility of revenues and costs would facilitate identification of whole system improvement opportunities
  - the costs and benefits of improvement opportunities may not be distributed equally between the parties, e.g. all of the costs could accrue to one party and all of the benefits to a different party. As such, even if a comprehensive cost and revenue sharing mechanism is in place, additional transfer payments might be required to ensure that all parties benefit from a particular change. In the absence of a full open book approach this could lead to counterproductive game-playing behaviour as each party tailors the information that it provides in order to achieve a favourable negotiated outcome. A fully open book approach would limit the scope for game playing

- Train operators are generally very sensitive about sharing their financial information with other parties. This is a significant barrier to implementing this scheme
  - some operators indicated that they might be willing to work with NR on an open book basis, but others were wary of this in case of information becoming visible to other operators

    "… I don't see a problem with sharing our business plan with NR …"

    "… If we provide information to Network Rail, it will leak …"
  - all operators stated that they would be very uncomfortable sharing their revenue and cost information with competitors – particularly in the lead-up to franchise bids

    "… Would I share information? That depends what it is for – I'm not happy for another TOC to see my information …"

- A requirement for TOCs to follow an open book approach could be implemented through the franchise re-letting process if necessary

8 – Information: ORR would have to provide separate price determinations at the level of each NR geography and the industry would need to prepare whole industry P&Ls for each NR geography

- If cost and revenue share payments are calculated at the level of each NR geography then robust financial information must be available at this level and baselines must be set at this level
- To facilitate this, the ORR would need to provide separate determinations of NR's efficient expenditure for each NR geography
- NR would also need to significantly change the way it manages its business to measure and report costs and revenues separately for each of the geographies used for the cost and revenue sharing mechanism
  - NR's current initiative to generate regional P&Ls has highlighted the scale of the challenge. This project has been ongoing for many months and involves a significant number of cost allocations. This is not surprising because NR is attempting to report financials in a way that is not aligned with how it actually manages its business
  - in order for TOCs to have the necessary level of confidence in NR's geographic financials then NR would have to align its management approach much more closely to the cost and revenue sharing geographies. This would reduce, but not eliminate, the need to allocate costs between geographies. A clear set of rules would need to be developed and agreed for items which still need to be allocated

8 – Information: We would not recommend that TOCs be required to align any of their management practices with NR's geographies. However, train operators should be required to split their P&Ls by NR geography

- The geographic reporting challenge is generally lower for TOCs because in most cases TOCs would be predominantly in a single NR geography. It is recognised that there are several operators for which this is not the case, but a number of these might elect not to be full financial participants in the cost and revenue sharing mechanism
- We would not recommend that TOCs be required to align any of their management practices with NR's geographies. TOCs should continue to manage their businesses in a way that best meets customer needs and drives revenue at the lowest cost
- However, if a full cost and revenue sharing mechanism were to be implemented then train operators should be required to split their P&Ls by NR geography. There are a number of ways in which this could be done
  - using a single high level allocation metric such as VTAC charge. It would be important for all operators to consistently use the same metric. This approach would give an 80:20 answer with very little effort
  - bottom-up review and allocation of each P&L line item. For example, revenue could be allocated reasonably easily using ORCATs type assumptions. Direct station costs would not need to be allocated, they would simply need to be mapped to the correct NR geography
  - alternatively, a hybrid of these two approaches could be used
- L.E.K. would recommend the hybrid approach, but a consistent set of rules on the preparation of geographic P&Ls should be used by all TOCs. This would reduce the scope for gaming but some potential would still exist

9 – Governance: We would recommend a two level approach to governance of the cost and revenue sharing mechanism - management level and supervisory level

- The cost and revenue sharing mechanism would sit over the top of existing industry arrangements. It would not replace existing arrangements
- For example, the legal frameworks and responsibilities that are currently in place to govern the timetable development process would remain in place. The cost and revenue sharing mechanism could conceivably lead to some improvements in the timetable development processes, but governance of those processes would remain separate from governance of the cost and revenue sharing mechanism
- We would recommend a two level approach to governance of the cost and revenue sharing mechanism - management level and supervisory level
- At the management level there would be a joint steering committee of NR and the financially participating train operators. This would be responsible for:
  - ensuring that information sharing, production of whole system geographic P&Ls and calculation of cost and revenue share payments are carried out according to the agreed principles
  - identifying potential changes that would require approval by the supervisory level
  - maintaining an active dialogue with secondary users who are not financial participants to ensure that they are kept fully informed of developments which could potentially impact them and to obtain their input
- The supervisory governance level would include representatives from the ORR and funders. This level would be responsible for:
  - Overseeing that the management level joint steering committee is operating within the overall framework developed by the funders and the ORR. However, the supervisory governance level should allow the management governance level complete freedom of action providing that it stays within the agreed framework
  - approving any changes which require a change to funders or ORR specified outputs or to existing rail industry legal / regulatory frameworks. Input from L.E.K.'s stakeholder workshops indicates that this could be the key to unlocking significant VfM improvements
  - adjusting baselines where necessary and auditing the cost and revenue sharing accounts to verify the annual payments
  - dispute resolution, for example where a secondary user believes that they would be disadvantaged by a proposed change

9 – Governance: Safeguarding economic benefits and preventing leakage of NR funding

Safeguarding economic benefits

- The ORR's ITT for this project highlights a concern regarding the "potential to focus attention on most profitable services, rather than services with greatest economic benefits"
- It is government's duty to specify and fund any rail industry outputs that would not be delivered by a purely commercial railway. The cost and revenue sharing mechanism would not change this
- The mechanism would incentivise NR and train operators to identify where they can work together to improve VfM by either increasing revenue or reducing costs. This would naturally lead them to focus on the areas where they consider that they have the best chance of making the biggest impact
- In the course of their work, it is entirely possible that they would identify that significant VfM improvements could be facilitated by changing some of the required outputs specified by funders or the ORR. In these situations a small reduction in economic benefits could be more than offset by a large improvement in VfM
- However, as noted on the last slide, we propose that changes to the required outputs could only be made with funders and ORR's approval

Preventing leakage of NR funding

- The ORR's ITT also highlighted a concern regarding "Network Rail funding going to train operators via sharing mechanisms being lost to the railway in dividend payments (cost to government)"
- First, in the event that savings are made as a result of funders agreeing to a material reduction in outputs then the relevant funders should receive a direct share of the savings from that specific change – as they would currently through the franchise change mechanism
- Second, the risk of leakage of NR funding could be minimised by making the cost and revenue sharing mechanism symmetrical, i.e. including both outperformance and underperformance
  - This is discussed further during the evaluation of Options 1 and 2 – symmetrical and outperformance only Regional EBS mechanisms

10 – Implementation: Horizontal separation of Network Rail is an essential enabler of all of the cost and revenue sharing options (1 of 2)

- During L.E.K.'s workshops, train operators were generally not supportive of any cost and revenue sharing mechanisms which gave them exposure to NR's costs
- The one exception to this was Option 8, bespoke line-of-sight deals, where train operators were able to take on exposure to a tailored package of NR's costs and risks on a willing buyer basis – i.e. they would be structuring the deal in a way that gives them sufficient control, or at least influence, over the costs and risks
- Train operators put forward a number of reasons for why they were not comfortable taking on a broader exposure to NR's costs and risks through a prescriptive regional cost and revenue sharing framework
  - TOCs were not confident that robust financial information was currently available at a regional level. This would hamper their ability to identify opportunities and make decisions on a whole system, whole life optimisation basis. It would also expose them to changes in NR's cost allocation policies
  - NR's highly centralised management approach would hamper TOCs' ability to work with NR's regional managers to innovate and implement changes locally
  - Some TOCs even questioned whether NR responds to financial incentives in the same way as a normal commercial organisation given its position as a single monopoly supplier and its CLG ownership and governance structure

10 – Implementation: Horizontal separation of Network Rail is an essential enabler of all of the cost and revenue sharing options (2 of 2)

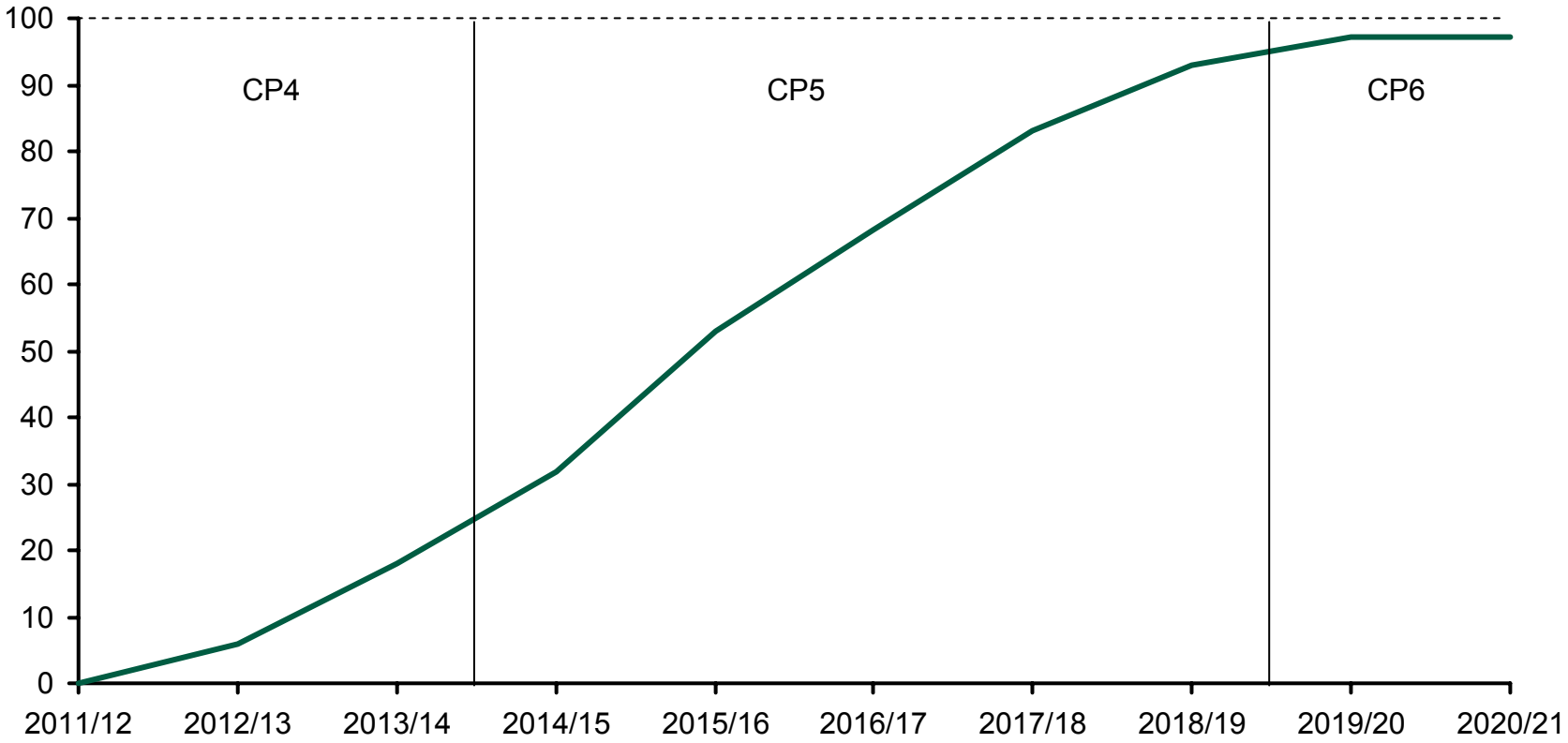
- L.E.K.'s 28 January report on Alternative Railway Structures strongly recommended horizontal separation of NR. Horizontal separation should go some way towards overcoming train operators' concerns
  - Gives train operators much better information on their, and other, Regional Infrastructure Managers (Regional IMs). This greatly strengthens train operators' ability to help deliver cost savings through a number of mechanisms, including external challenge of the Regional IMs
  - Gives more accountability and decision making authority to the regional managers with which train operators have the closest working relationships
  - Introduces indirect competition between Regional IMs through comparative regulation. This, together with the publication of a range of KPIs (financial and non-financial) on their performance, greatly strengthens their incentives to seek continuous improvement
- L.E.K.'s Alternative Railway Structures report highlighted that there are a range of options for horizontal separation which span from devolution within NR ownership to multiple owners of the Regional IMs (with NR potentially retaining ownership of several of the Regional IMs)
- Any move towards horizontal separation would help to address some of the downsides associated with prescriptive regional cost and revenue sharing mechanisms. However, experience from other regulated sectors has shown that having multiple owners of the Regional IMs improves comparative regulation and strengthens the incentives on Regional IMs to seek continuous improvement. As such, horizontal separation with multiple owners would be the strongest enabler of cost and revenue sharing mechanisms
- Horizontal separation could be implemented through a phased approach between now and the end of CP5
  - NR devolution implemented in CP4 (NR has already announced its intention to implement devolution)
  - ORR regional regulation from the start of CP5
  - Three or four Regional IMs become independently owned during CP5

10 – Implementation: There are three options for introducing a cost and revenue sharing mechanism into TOC franchise agreements

Implementation option	Evaluation
Gradual roll-out at franchise re-lets	This would help funders to achieve a competitive price for the introduction of the mechanism However, it would take a very long time for the mechanism to be fully rolled-out given the staggered end dates of current franchises, some of which extend out beyond 2020 This would lead to a lengthy period when some TOCs are included in the mechanism and some are excluded. This could lead to NR's incentives being skewed against those TOCs outside the mechanism Furthermore, a number of franchises are due to be re-let before the end of CP4 but the NR baseline information is unlikely to be available in time for the mechanism to be priced during the bidding phase for these franchises. As such, funders would either have to extend the current franchises, let short term franchises, implement the change mid franchise or wait for the end of the next long term franchise
Big bang introduction through change mechanisms	All franchise agreements include change mechanisms which enable funders to implement mid franchise changes. This would enable funders to implement the mechanism across all TOCs at the same time as soon as robust NR baselines become available However, this mechanism involves a significant change to the risk profile of train operators and pricing this risk would be difficult If the mechanism were implemented through the change mechanism then it would be extremely difficult for funders to achieve VfM as train operators would demand very high risk premiums Funders could use their powers to try to impose their "reasonable determination" on train operators but this would result in a high risk of legal challenge
Combined	The two approaches outlined above could be combined, whereby the mechanism is implemented through franchise re-lets where these are due to happen over the next few years and a mid-franchise big bang for other franchises. This would remove the key downsides from the gradual roll-out option but would introduce some of the downsides from the big bang introduction instead

10 – Implementation: There is likely to be a fairly steady rate of re-franchising between 2012/13 and the end of CP5, by when new, long term franchises will account for c.95% of FTAC payments

Refranchising profile*
(Percent of FTAC^)



Note: * Chiltern (31st Dec 2021) and Merseyrail (31st Jul 2028) are refranchised after the period shown in the chart above; ^ Scotrail, Merseyrail and LOROL FTAC estimated using FTAC apportionment from PR08 CP4
Source: ORR; NR; DfT; L.E.K. analysis

10 – Implementation: Summary of assumed franchise end dates

TOC	Contracted franchise end date	Assumed franchise end date	Comments on differences between contracted and assumed
Virgin West Coast	31-Mar-12	31-Mar-12	
East Coast	N/A	30-Nov-12	Estimated based on DfT's announcement in January 2011
C2C	29-May-11	31-May-13	Two year extension has been agreed
National Express East Anglia	31-Mar-11	31-Jul-13	Short term franchise currently being secured. Long franchise would not start before mid 2013
Northern Rail	12-Sep-13	12-Sep-13	
TransPennine Express	28-Feb-12	12-Sep-13	Too late to re-let by current end date. Possibility of 5 year extension or could be re-tendered alongside Northern Rail
Scotrail	30-Nov-14	30-Nov-14	
LOROL	30-Nov-14	30-Nov-14	
East Midland Trains	01-Apr-15	01-Apr-15	
London Midland	20-Sep-15	20-Sep-15	
Arriva Cross Country	31-Mar-16	31-Mar-16	
First Great Western	31-Mar-16	31-Mar-16	
South West Trains	04-Feb-17	04-Feb-17	
First Capital Connect	31-Mar-15	31-Jul-17	DfT statement that long term franchise cannot be awarded until London Bridge station reconstruction completed
Southeastern	31-Mar-14	31-Jul-17	DfT statement that long term franchise cannot be awarded until London Bridge station reconstruction completed
Southern	22-Jul-17	22-Jul-17	
Arriva Trains Wales	14-Oct-18	14-Oct-18	
Chiltern Railways	31-Dec-21	31-Dec-21	
Merseyrail	31-Jul-28	31-Jul-28	

Source: DfT; NR; ORR

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There are 27 potential options for the sharing of cost and revenue performance relative to a baseline trajectory. L.E.K. has analysed the building blocks necessary to evaluate all of these, but we have focussed our evaluation summaries on 4 of the options

Options for sharing performance relative to a baseline trajectory

Options		Cost and revenue components		
		NR costs and revenue	TOC revenue	TOC costs
1 / 2	Regional EBS	Included	Excluded	Excluded
3	NR shares TOC revenue	Excluded	Included	Excluded
4	Full scope	Included	Included	Included

The Regional EBS can be either symmetrical (option 1) or outperformance only (option 2). Options 3 and 4 are based on symmetrical sharing of outperformance and underperformance. However, the impact of asymmetrical mechanisms has also been evaluated

- The ITT for this project focuses on *"the sharing of cost and revenue outperformance and underperformance (against a baseline trajectory) between Network Rail and train operators at a local/route level"*
- There are 27 potential cost and revenue sharing options if every combination of the following variables is considered:
  - NR / train operators / both
  - Costs / revenue / both
  - Outperformance only / underperformance only / both
- L.E.K. has analysed the building blocks necessary to evaluate all of the potential options, and details of that analysis have been included in this report. However, for presentational purposes we have focussed our evaluation summaries on the four combinations shown opposite

Summary of the 4 options for sharing cost and revenue performance relative to a baseline trajectory that have been included in L.E.K.'s evaluation summary

Options for sharing cost and revenue performance relative to a baseline trajectory

Options		Description
1	Regional EBS (symmetrical)	L.E.K. has assumed the following changes to the existing PR08 EBS for the purposes of the evaluation summary - Separate EBS calculations are performed for each of NR's (modified) Operating Routes - The DfT does not apply any 'no net loss, no net gain' mechanisms to any EBS payments - Covers both underperformance and outperformance (i.e. it is symmetrical) - Includes mechanisms to limit the risk exposure of TOCs (i.e. caps and the exclusion of a few specific causes of variances) - Applies to new franchises only, via the franchise letting process L.E.K. has assumed that the EBS would continue to be carried out on a cash expenditure basis rather than a revenue requirement basis
2	Regional EBS (upside only)	As above, but applying only to outperformance by each of NR's Operating Route
3	NR shares TOC revenue	NR takes a share of total TOC passenger revenue in exchange for a fixed reduction in FTAC
4	Full scope	Symmetrical Regional EBS as described above, plus NR shares in under/outperformance of TOC revenue and cost relative to a defined baseline

L.E.K. has evaluated a further 4 options for changing incentives which do not (necessarily) involve the sharing of cost or revenue under/outperformance relative to a defined baseline. This results in a total of 8 options

Other options for changing incentives evaluated by L.E.K.

Category	Options		Description
Partial exposure to ORR's periodic review determinations	5	Delta FTAC	Changes in FTAC at periodic reviews no longer a full pass-through via Clause 18.1 (or similar provisions) but operators would still have some level of protection. This could incentivise train operators to engage more actively during periodic reviews, e.g. by critically reviewing NR's business plan to ensure that all planned expenditure is justified
	6	Delta OMR baseline	Similar to the "Delta FTAC" option but instead based on the ORR's assessment of the efficient OMR expenditure for the next control period – i.e. this still relates to changes in an ORR determined baseline between control periods. This does not relate to actual NR expenditure relative to the baseline (that is Option 1)
Regulated transaction charges	7	Higher VTAC rates	Increasing the variable usage charge could provide an incentive for NR to accommodate additional trains as its incremental revenue could exceed its incremental cost – although this would depend on a number of factors including whether enhancements would be required
Non-prescriptive	8	Bespoke, line-of-sight deals	Bespoke commercial deals made between NR and train operators, typically (but not necessarily) in situations where specific, tangible opportunities have been identified. These deals could take many forms, which may or may not involve a cost and revenue sharing mechanism This option assumes that funders and the ORR adopt a much more flexible approach in how they deal with train operators and NR

L.E.K. has taken into account 13 different criteria in its evaluation of the 8 options

Category	Criterion	Key question / test
A. Stakeholder support	A1. Primary operators	Did the scheme have support (in workshops and consultation) from operators who are potentially primary operators in a route/region? (Would they be a willing participant?)
	A2. Secondary operators	Did the scheme have support from operators who would expect to be secondary operators?
	A3. NR	Did the scheme have support from NR?
B. Effective incentive	B4. Scope	Does the scheme cover a substantial part of the revenue and cost within the industry? Will the incentive apply in a wide range of situations?
	B5. Alignment of incentives	Does the incentive align the interests of all parties in a way that drives improvements in VfM? Does it avoid creating any perverse incentives?
	B6. Avoidance of gaming	Does the scheme avoid creating opportunities for gaming?
C. Simplicity	C7. Simplicity	Is the scheme easy enough to communicate that the incentive can be understood and internalised throughout all relevant organisations – including people responsible for making day-to-day decisions that impact other organisations?
D. Focus	D8. Controllability	Does the scheme only cover cost, revenue and risk items that parties are able to control, or at least influence?
	D9. Directness	How direct is the link between action and outcome? (For example, are the benefits certain and near term?)
	D10. Free-riders	Does the scheme prevent any party benefiting from it without having participated in improving VfM?
E. Scheme costs	E11. Scheme costs	Will costs of the scheme (e.g., negotiation, monitoring and settlement) be reasonable? To include counterparties, other operators and wider industry costs (e.g. ORR/funders)
F. Implementation	F12. Implementation cost	Can the scheme be implemented without excessive costs?
	F13. Implementation speed	Can the scheme be implemented across a substantial part of the network quickly?

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Assessment: Option 1: Symmetrical Regional EBS – based on implementation in the short term

Category	Criterion	Score	Comments
A. Stakeholder support	A1. Primary operators	--	Very negative reaction. TOCs put forward a number of reasons why they were not comfortable taking on a broader exposure to NR's costs including NR's highly centralised management approach hampering their ability to work with NR's regional managers to implement change and the lack of robust financial information at a regional level
	A2. Secondary operators	--	Question whether they would have sufficient influence over outcomes. Freight operators stated that they could not take the downside exposure
	A3. NR	+	Strong support from NR head office. More mixed reaction from regional managers
B. Effective incentive	B4. Scope	+	Base case assumes all NR costs and property revenue included. However, all TOC cost and revenue is excluded
	B5. Alignment of incentives	+	Reasonable alignment of incentives, however, 1) incentives not fully aligned due to exclusion of TOC cost and revenue; 2) perverse incentive on TOCs to encourage the ORR to set a soft baseline for NR; 3) incentives not necessarily aligned across control periods or towards the end of franchises. These could potentially be addressed by adding additional features to this mechanism or by combining it with other incentive mechanisms
	B6. Avoidance of gaming	+	Inclusion of all NR costs would reduce scope for gaming. However, NR may be able to manipulate the outcome by bringing forward or deferring work to achieve desired financial outcome rather than for sound asset management reasons. NR would also be able to influence the outcome by changing categorisation of work between opex and capex
C. Simplicity	C7. Simplicity	0	The mechanism is based on the ORR's existing annual process for assessing NR's efficiency. However, that process is not simple and TOC managers are generally not very familiar with how it works. Further complexity lkely to result from risk limitation measures such as caps and exclusion of certain causes. Likely need to combine with Option 5 to overcome potential perverse incentive on TOCs
D. Focus	D8. Controllability	--	A significant proportion of NR's cost base can only be influenced by TOCs through external challenge. Furthermore, there would be significant risks outside TOCs' control. "The things we can control are swamped by things we can't". "There would be three periodic reviews in a franchise term, so how would you judge the risk? … what risk premium would you build into your bid?"
	D9. Directness	--	Although performing separate calculations for each region is a significant improvement on the current national EBS mechanism, still no direct link between specific actions and outcomes. Payments based on ORR's assessment of NR's overall regional efficiency
	D10. Free-riders	-	NR's out/underperformance in a region will result from a wide range of factors and each operators' contribution will be aggregated within the overall outcome. There would be a significant risk of train operators making a token effort to drive VfM improvements in order to qualify for a share of the benefits that have been generated by other companies
E. Scheme costs	E11. Scheme costs	0	Although the scheme is based on the ORR's existing annual processes, the EBS could impose fairly significant costs on TOCs as they would need to have significant engagement with NR's cost base and ORR's regulation of NR
F. Implementation	F12. Implementation cost	+	Relatively limited if NR implements regional accounting anyway. Assume that scheme would not be implemented mid-franchise - incumbent TOCs would probably charge a large risk premium for mid-franchise implementation against their will
	F13. Implementation speed	--	Probably only applies to new franchises due to cost of implementation as a mid-franchise change. Furthermore, could only be implemented from start of CP5

Potential ways of addressing the Option 1 negative scores

Category	Criterion	Score	Potential ways of addressing negative scores
A. Stakeholder support	A1. Primary operators	--	Implement horizontal separation of NR first – discussed in more detail on the following slides Introduce private sector equity ownership of the Regional IMs Make the Regional EBS outperformance only Give train operators greater freedom to decide what they wish to procure from NR, including the right to source some services from alternative suppliers
	A2. Secondary operators	--	Make the Regional EBS outperformance only Make participation in the Regional EBS optional
	A3. NR	+	
B. Effective incentive	B4. Scope	+	
	B5. Alignment of incentives	+	
	B6. Avoidance of gaming	+	
C. Simplicity	C7. Simplicity	0	
D. Focus	D8. Controllability	--	As per criterion A1
	D9. Directness	--	EBS payments based on the direct impact of each train operator's activities
	D10. Free-riders	-	This would require a detailed diagnostic of causes and effects. This would be very time consuming and would require a significant amount of subjective judgement. There would likely be significant differences of opinion and there could be a large number of disputes, which could be costly to resolve
E. Scheme costs	E11. Scheme costs	0	
F. Implementation	F12. Implementation cost	+	
	F13. Implementation speed	--	Implement through franchise change mechanisms. This is likely to be very costly because this scheme would be difficult to value and incumbent TOCs would be in a strong negotiating position

L.E.K. has concerns that a Symmetrical Regional EBS would not deliver VfM in the short term due to a number of factors such as TOCs' limited ability to influence NR's costs. If a Symmetrical Regional EBS mechanism were to be implemented then a phased approach aligned with horizontal separation of NR would be best

- In L.E.K.'s opinion, many of the concerns raised by train operators regarding a prescriptive cost sharing mechanism are valid. These concerns include the limited ability of TOCs to influence NR's costs under NR's current, highly centralised management approach. As such, L.E.K. has concerns that a Symmetrical Regional EBS mechanism would not deliver VfM in the short term
- Horizontal separation of NR would improve the attractiveness of a Symmetrical Regional EBS mechanism, so if it were to be implemented then it should follow a phased approach which is aligned with horizontal separation of NR:
  - Include in new franchises from the point that government announces horizontal separation. This would improve the likelihood of achieving VfM through the franchise letting process as train operators would have greater confidence that their current concerns would be addressed
  - Could become active from the start of CP5 but with a low starting sharing percentage (e.g. 12.5%). This would enable all parties to get used to the mechanism in a relatively low risk environment (half way between a "wooden dollars" introduction and a big-bang introduction). It also reflects the fact that there could be quite a high level of uncertainty over the CP5 regional efficient expenditure determinations
  - Full sharing percentage of 25% applies from the start of CP6 when both horizontal separation and the EBS mechanism have had a chance to bed down
- If an EBS mechanism were implemented then it could create a perverse incentive whereby TOCs would try to persuade ORR to set soft targets for the Regional IMs during periodic reviews. To overcome this, any EBS mechanism should be combined with a mechanism that gives TOCs a partial exposure to ORR's periodic review determinations (i.e. Option 5 or 6)

Horizontal separation of NR would improve the attractiveness of Option 1, Symmetrical Regional EBS, but some significant issues would remain

Criteria	1: Regional EBS (sym)		Comments
	Now	After implementing HS with multiple owners	
A1. Primary operators	--	-	TOCs would probably still prefer not to be given broad exposure to a Regional IM's costs. But HS would go some way to addressing their concerns
A2. Secondary operators	--	--	No significant change: Secondary operators would still have limited influence over outcomes and freight operators would have limited ability to take the downside exposure
A3. NR	+	+?	Unclear. Currently strong support from NR head office but more mixed reaction from regional managers
B4. Scope	+	+	No change
B5. Alignment of incentives	+	+	No change
B6. Avoidance of gaming	+	+	No change
C7. Simplicity	0	0	No change
D8. Controllability	--	0	There would be greater scope for TOCs to work with Regional IMs to innovate and implement changes locally. It would remain the case that TOCs can only influence a significant proportion of the Regional IM's cost base through external challenge, but they would have significantly better information with which to do this
D9. Directness	--	--	No change. Although performing separate calculations for each region is a significant improvement on the current national EBS mechanism, still no direct link between specific actions and outcomes. Payments based on the ORR's annual assessment of the Regional IM's overall regional efficiency
D10. Free-riders	-	-	No change. Regional IM out/underperformance will result from a wide range of factors and each operators' contribution will be aggregated within the overall outcome. Significant risk of train operators making a token effort to drive VfM improvements in order to qualify for a share of the benefits that have been generated by other companies
E11. Scheme costs	0	0	No change. Could impose fairly significant costs on TOCs as they would need to have significant engagement with NR's cost base and ORR's regulation of NR
F12. Implementation cost	+	+	Relatively limited if horizontal separation occurs anyway. Assume that scheme would not be implemented mid-franchise - incumbent TOCs would probably charge a large risk premium for mid-franchise implementation
F13. Implementation speed	--	--	No change: Probably only applies to new franchises due to cost of implementation as a mid-franchise change. Furthermore, could only be implemented from start of CP5

Given the uncertainty over whether a Regional EBS would deliver VfM for taxpayers, in might be best to include it as a priced option during franchise bids rather than as the base case

- Even if a phased approach were used to implement a Regional EBS mechanism, significant uncertainty remains over whether such a mechanism would deliver VfM for taxpayers
- Overall VfM would depend on a number of factors including how train operators price a Regional EBS mechanism into their franchise bids. Bidders would have to take a number of factors into account including:
  - The Regional IM's likely cost and revenue performance relative to the regulatory target in the absence of train operators' input (i.e. the average outturn vs target)
  - The range of uncertainty around the outturn vs target (i.e. the variability of outcomes)
  - The extent to which train operators are able to influence NR's costs
- Franchise bidding has been very competitive in recent years and this could indicate that taxpayers would secure VfM through a Regional EBS mechanism being implemented through a bidding process. However, there is significant uncertainty regarding all of the factors listed above and that, combined with train operators negative reaction to cost sharing mechanisms during L.E.K.'s workshops, could lead to conservative pricing in this area
- A Regional EBS could be included as a priced option in franchise bids rather than the base case. This would have the advantage of providing transparency of train operators' views of the cost and benefits of the mechanism, thereby facilitating an assessment of VfM. However, bidders have limited capacity to price options during the bidding process so funders need to be careful in the prioritisation of options

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One of the potential issues with an outperformance only Regional EBS mechanism is that TOCs could benefit from the underlying uncertainty over NR's costs and efficiency target. L.E.K. has carried out some high level analysis to investigate this issue

- We highlighted earlier that there is significant uncertainty over the current size of the efficiency gap between NR and top quartile infrastructure managers

  "… the efficiency gap given by the various studies lies in a broad range, with a central range of 30% to 50% …"
  PR08 Determination, Para 7.85

- There will also be a number of other causes of underlying uncertainty over NR's costs, including imperfect asset condition knowledge, the impact of innovations and other management initiatives, and unforeseen events such as extreme weather and terrorist attacks. These factors could result in quite a wide range of outcomes for NR's actual costs relative to the ORR's efficient expenditure determination

- If the ORR has set its efficient expenditure determination at the level where it judges that NR is equally likely to outperform and to underperform then the underlying uncertainty over NR's cost outturn would not lead to a systematic bias in the outcome of a symmetrical Regional EBS mechanism – i.e. NR outperformance and underperformance resulting from underlying uncertainties would lead to positive and negative EBS mechanism payments which would broadly cancel each other out

- However, the same underlying uncertainty would have a potentially significant impact on an outperformance-only Regional EBS mechanism because even if NR outperformance and underperformance were equally likely to occur, the former would lead to EBS mechanism payments whereas the latter would not – hence the EBS mechanism payments would not average out at zero

- There is a risk that this systematic bias could lead to leakage of NR funding to train operators, unless:
  - Train operators pay for this benefit (e.g. by factoring it into their franchise bids)
  - Train operators make a large enough contribution to improving NR's efficiency to more than offset the impact

- L.E.K. has carried out some high level analysis to investigate this issue

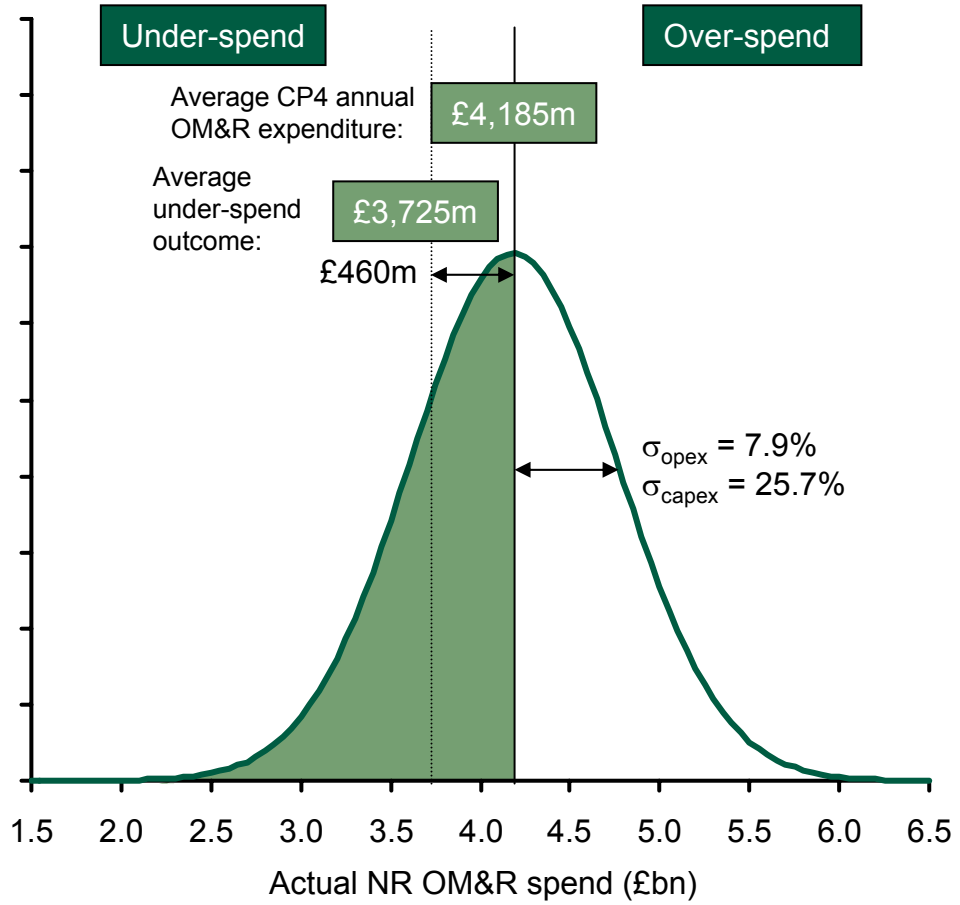
L.E.K. has used Oxera's PR08 analysis of underlying cost volatility to evaluate the impact of this uncertainty on an outperformance only Regional EBS mechanism

- The ORR's PR08 assessment of NR's required risk buffer was informed by a report commissioned from Oxera in 2006, "What is the necessary margin for Network Rail to accommodate risk?"
- Oxera analysed actual cost performance against the regulatory assumption for companies in a range of utility sectors over the six year period 1999/2000 to 2005/06
- Oxera identified that its base case overstated volatility for two reasons and implemented adjustments to address these two issues:
  - truncated the distribution to exclude extreme events
  - removed the profile of systematic variations during a control period (e.g. lower capex at start, higher capex at end)
- L.E.K. has applied the smallest standard deviations of cost expenditure derived by Oxera to the PR08 efficient expenditure determination for OM&R in order to estimate the potential impact of underlying cost volatility on EBS payments
- The underlying cost volatility includes a number of items
  - NR efficiency vs target
  - Deferral of expenditure for a variety of reasons, some of which are not directly linked to efficiency
  - Additional work carried out for a variety of reasons, some of which might be efficient
- It should be noted that the ORR would not necessarily categorise all of any under-spend as "outperformance" in its annual efficiency assessment

Source: What is the necessary margin for Network Rail to accommodate risk? Oxera, October 2006; Periodic Review 2008, ORR

The average under-spend of NR as a result of underlying cost volatility is expected to be £460m averaged across the under-spend outcomes, or £230m averaged across all outcomes

Probability distribution of average CP4 annual OM&R expenditure



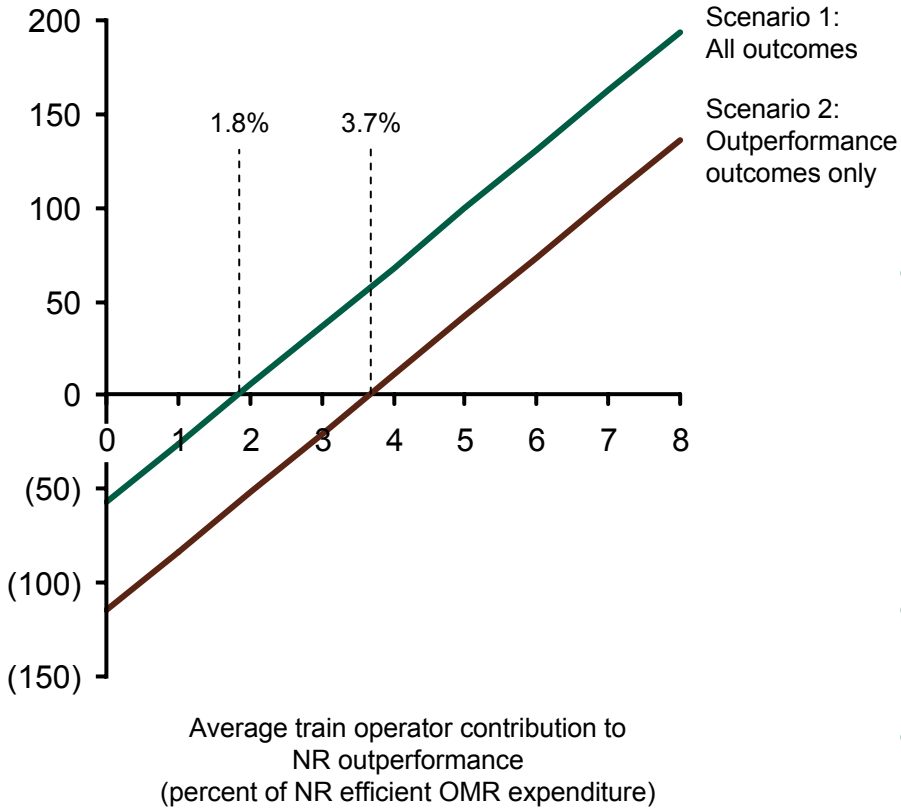
- The smallest standard deviations of cost expenditure derived by Oxera were 7.9% for opex and 25.7% for capex. L.E.K. has applied these standard deviations to the PR08 average annual efficient expenditure determination for OM&R (£4,185m) in order to estimate the potential impact of underlying cost volatility on EBS payments
- If the EBS mechanism covered both NR outperformance and underperformance then the underlying volatility in NR's costs would not have a significant impact on the ex-ante expected EBS payment – although it could have a significant impact ex-post in individual years
- However, if the EBS mechanism covered outperformance only then NR's underlying cost volatility would have a significant impact on the average EBS payment as NR over-spend outcomes would not cancel out NR under-spend outcomes
- Based on Oxera's view of underlying volatility, average under-spend in the under-spend outcomes is £460m p.a.
- However, this represents only 50% of outcomes, so the overall expected under-spend (averaged across all outcomes) is half this, i.e., £230m p.a.
- Caps or tapers could be used to limit train operators' exposure to large variances in NR's performance

Source: L.E.K. analysis

In order for NR to breakeven from a national level outperformance-only EBS, train operators would have to help improve NR's performance by 1.8-3.7% – assuming that all NR under-spend is categorised by the ORR as outperformance

Net impact on NR of national level outperformance-only EBS with 25% sharing rate

Millions of pounds



- The lines in the chart opposite show the net impact on NR from a national level EBS mechanism with a 25% sharing rate for different average levels of train operator contribution to NR performance
  - The chart assumes that all under-spend is categorised by the ORR as outperformance. Both lines would move up if this is not the case
  - In order to qualify for any EBS mechanism payments train operators have to demonstrate to the ORR that they are contributing to generating savings
- The two lines represent two different scenarios:
  - Scenario 1: Train operators make the same contribution to improving NR's performance irrespective of whether the final outcome is that NR outperforms or underperforms
  - Scenario 2: Train operators only contribute to improving NR's performance if the final outcome is that NR outperforms (i.e if they think that NR will underperform then they ignore the EBS mechanism)
- In order for NR to breakeven from a national level outperformance only EBS, train operators would have to improve NR's performance by 1.8% and 3.7% in Scenarios 1 and 2 respectively
- NR would not have to breakeven for an EBS mechanism to generate VfM for taxpayers if the mechanism is introduced through competitions for new franchises

Source: L.E.K. analysis

ORR/ATOC/Network Rail. Rail industry cost and revenue sharing.

Moving from a national level EBS mechanism to a regional level mechanism would increase the level of underlying cost volatility. However, the impact of this depends on the covariance between the costs in different regions

- L.E.K. has used statistics to estimate the regional level cost volatility that is consistent with the national level cost volatility used by Oxera
- If two or more sets of data are added together data-point by data-point, then the standard deviation of the result can be calculated if the standard deviation of each data set and the covariance between each pair of data sets is known (covariance is a measure of how much two variables change together)

$$\sigma_X = \sqrt{\sum_i \sigma_{X_i}^2 + \sum_{i,j} \mathrm{cov}(X_i, X_j)}$$

- Covariance is closely related to a more intuitive parameter, the correlation coefficient (corr)
  - if two variables are independent then corr = 0
  - if there is a perfect positive linear relationship between two variables then corr = 1

$$\mathrm{corr}(X,Y) = \frac{\mathrm{cov}(X,Y)}{\sigma_X \sigma_Y}$$

Indicative

Percentage increase in cost volatility at regional level compared to national level

Number of equal sized geographies	Correlation coefficient				
	0.00	0.25	0.50	0.75	1.00
1	0	0	0	0	0
2	41	26	15	7	0
3	73	41	22	10	0
4	100	51	26	11	0
5	124	58	29	12	0
6	145	63	31	12	0
7	165	67	32	13	0
8	183	71	33	13	0
9	200	73	34	13	0
10	216	75	35	14	0

Source: L.E.K. analysis

Moving from a national level EBS mechanism to a regional level mechanism could increase the percentage improvement in NR performance that train operators would need to drive in order for NR to break even from an outperformance-only EBS

Indicative

Expected EBS payments to train operators as a result of underlying volatility of NR's costs (Scenario 1)

Number of geographies	Correlation coefficient				
	0.00	0.25	0.50	0.75	1.00
1	57	57	57	57	57
2	81	73	66	61	57
3	99	81	70	63	57
4	115	87	73	64	57
5	128	91	74	64	57
6	139	94	75	64	57
7	149	96	76	65	57
8	157	98	76	65	57
9	165	100	77	65	57
10	171	101	78	65	57

Percentage improvement in NR performance driven by train operators for NR to break even (Scenario 1)

Number of geographies	Correlation coefficient				
	0.00	0.25	0.50	0.75	1.00
1	1.8	1.8	1.8	1.8	1.8
2	2.6	2.3	2.1	2.0	1.8
3	3.2	2.6	2.2	2.0	1.8
4	3.7	2.8	2.3	2.0	1.8
5	4.1	2.9	2.4	2.0	1.8
6	4.4	3.0	2.4	2.1	1.8
7	4.7	3.1	2.4	2.1	1.8
8	5.0	3.1	2.4	2.1	1.8
9	5.2	3.2	2.5	2.1	1.8
10	5.4	3.2	2.5	2.1	1.8

Chart assumes that all under-spend is categorised as outperformance. All values would reduce if this is not the case

Scenario 2 values would be double the Scenario 1 values

Source: L.E.K. analysis

The relative attractiveness of an outperformance-only EBS mechanism and a symmetrical mechanism depends on how TOCs price these two mechanisms, and this is uncertain

- There are two significant disadvantages of an outperformance-only Regional EBS mechanism relative to a symmetrical mechanism
  - First, if train operators believe that NR (or other Regional IM) is going to under-perform their baseline then they may simply ignore the EBS mechanism as there would be no reward for contributing to efficiency improvements
  - Second, it becomes more difficult to value the EBS mechanism because the value becomes more sensitive to the variability of the Regional IM's performance versus baseline. As highlighted earlier, the train operators would benefit from this variability because they receive a share of any outperformance but do not have to make any payments in the event of underperformance. This phenomenon is often referred to as "option value"
- The existence of the option value would make it more difficult to secure VfM through implementing an outperformance-only Regional EBS during existing franchises. Train operators would be unlikely to agree to pay for the option value (or at least to pay for its full value) so there would be negative VfM impact unless the train operators made a large enough contribution to Regional IM efficiency improvements to offset this
- It is uncertain how train operators would price the option value if an outperformance-only Regional EBS mechanism were introduced through a franchise bidding competition. However, L.E.K. thinks it likely that bidders would price this conservatively due to the uncertainty over the level of variability and train operators lack of control over this item
- The main advantage of an outperformance-only EBS mechanism over a symmetrical mechanism is that bidders would not have to charge a risk premium to protect themselves against the potential downside risk. However, it should be noted that the EBS mechanism could include caps and tapered sharing percentages to limit the downside exposure to train operators and therefore limit the risk premium charged by TOCs
- In summary, the relative attractiveness of an outperformance-only EBS mechanism and a symmetrical mechanism depends on how train operators price these two mechanisms, and this is uncertain. If both mechanisms were priced competitively based on good information then the symmetrical EBS mechanism would be the more attractive because TOCs would be less likely to ignore the mechanism. However, the uncertainty over the pricing of this mechanism should not be underestimated

Assessment of Option 2, outperformance only Regional EBS, and comparison with symmetrical EBS mechanism

Category	Criterion	Option 1 (sym.)	Option 2 (upside only)	Comments
A. Stakeholder support	A1. Primary operators	--	0	No negative reaction but not convinced it would drive VfM. Low awareness of existing EBS
	A2. Secondary operators	--	0	No negative reaction but not convinced it would drive VfM. Low awareness of existing EBS
	A3. NR	+	-	Prefer symmetrical option. Concern that underlying cost volatility could lead to NR making payments to train operators when NR is not outperforming at an overall national level
B. Effective incentive	B4. Scope	+	-	Only likely to be effective in NR's regions where train operators think NR is likely to outperform its baseline
	B5. Alignment of incentives	+	+	As per Option 1 except that if NR is likely to underperform then TOCs' incentive to help improve NR's efficiency is weakened
	B6. Avoidance of gaming	+	+	No change
C. Simplicity	C7. Simplicity	0	0	No change
D. Focus	D8. Controllability	--	--	No change
	D9. Directness	--	--	No change
	D10. Free-riders	-	-	No change
E. Scheme costs	E11. Scheme costs	0	-	TOCs could benefit from NR's underlying cost volatility. This could be considered as a scheme cost to the extent that this benefit is not fully priced into franchise bids
F. Implementation	F12. Implementation cost	+	+	No change
	F13. Implementation speed	--	--	No change. Implementation would probably need to be through the letting of new franchises in order for the option value to be priced through a competitive process. This might also help if there are state aid clearance issues

Assessment based on implementation in the short term (before implementing horizontal separation)

Potential ways of addressing the Option 2 negative scores

Category	Criterion	Score	Potential ways of addressing negative scores
A. Stakeholder support	A1. Primary operators	0	
	A2. Secondary operators	0	
	A3. NR	-	Increase the size of the NR risk buffer to cover the potential cost of making EBS payments to TOCs in some regions in the scenario where NR is under-performing at a national level
B. Effective incentive	B4. Scope	-	Set the efficient expenditure determination at a level which NR would be expected to outperform Or revert to Option 1, symmetrical Regional EBS
	B5. Alignment of incentives	+	
	B6. Avoidance of gaming	+	
C. Simplicity	C7. Simplicity	0	
D. Focus	D8. Controllability	--	Implement horizontal separation of NR first Introduce private sector equity ownership of the Regional IMs Give train operators greater freedom to decide what they wish to procure from NR, including the right to source some services from alternative suppliers
	D9. Directness	--	EBS payments based on the direct impact of each train operator's activities This would require a detailed diagnostic of causes and effects. This would be very time consuming and would require a significant amount of subjective judgement. There would likely be significant differences of opinion and there could be a large number of disputes, which could be costly to resolve
	D10. Free-riders	-	
E. Scheme costs	E11. Scheme costs	-	The cost primarily relates to the option value of the underlying volatility of NR's costs. Try to obtain full payment for this option value from train operators by introducing EBS mechanism through franchise bid competitions after the DfT announces horizontal separation. Ideally also have a low starting percentage sharing rate in CP5
F. Implementation	F12. Implementation cost	+	
	F13. Implementation speed	--	Implement through franchise change mechanisms. This is likely to be very costly because this scheme would be difficult to value and incumbent TOCs would be in a strong negotiating position

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Stakeholders at one of L.E.K.'s workshops suggested that NR could take a share of TOC revenue in exchange for a reduction in FTAC

- A proposal put forward by TOC stakeholders was for NR to take a share of TOC revenue in exchange for a reduction in FTAC. This would increase NR's exposure to end user market demand and incentivise NR to help TOCs to grow their revenue
- It would be relatively simple to administrate because a fixed percentage would be applied to all TOC revenue – i.e. it would operate as a revenue toll or tax. There would be no need to try to unpick the sources of revenue growth. However, there would be a need to set a baseline at various points in order to calculate the magnitude of the fixed FTAC rebate
- A further benefit of this mechanism is that it would reduce TOCs' exposure to fluctuations in revenue, thereby helping them to cope with recessions and other unexpected exogenous events. However, NR's exposure to exogenous events would increase accordingly
- It should be noted that the reduction in FTAC is simply a mechanism to compensate TOCs for the value of revenue shared with NR. This financial offset does not need to be implemented through FTAC – NR could simply make a separate fixed payment to train operators instead
  - however, this fixed offset would still not be appropriate for open access passenger and freight operators otherwise they might choose not to operate any services and simply collect the offset payment
- L.E.K. has not investigated whether there would be legal issues associated with this approach, for example through NR having a financial interest in railway undertakings or through the possibility that it would be incentivised to prioritise some train operators over others. It is difficult to see how open access passenger train operators could be included in this type of scheme

A percentage revenue share rate in the range of 5-20% might be appropriate to provide sufficient incentive to NR without unduly blunting TOCs' incentives

- If the percentage revenue share rate were set at too high a level then the incentive on TOCs to grow revenue would be blunted because they would pick up 100% of any incremental cost of driving revenue growth (e.g. marketing expenditure) but would receive less than 100% of the revenue uplift. This blunting of incentives is already visible for TOCs that are currently receiving revenue support payments from the DfT (although in those situations TOCs are only receiving 20/50% of the marginal revenue)
- However, the percentage revenue share rate would need to be high enough to give NR a meaningful incentive to help TOCs to grow revenue. A value in the range of 5-20% might be appropriate
  - 5% of total franchised passenger TOC revenue of c.£6.1bn p.a. equates to c.£305m, or c.6% of NR's total revenue requirement
  - 20% equates to 23% of NR's total revenue requirement
- If the sharing percentage was 20% then NR's risk buffer would be equivalent to a 17% shortfall in revenue
- If a revenue share scheme were to be introduced then it would be preferable for the same percentage to apply to all operators – including both passenger and freight. This would ensure that NR values £1 of industry revenue equally irrespective of the train operator
- This would lead to NR favouring the most commercially valuable services. However, if government values £1 of revenue more highly on some services than others due to broader economic benefits then government could always make a top up percentage payment to NR to reflect this broader value
- Freight operators highlighted that their margins are not high enough to make revenue share payments to NR. If this scheme were to apply to freight operators then the payment could be made by government to reflect the broader economic benefits of moving freight by rail instead of road. An alternative rationale for a government top up payment to FOCs would simply be as an enabler for securing the passenger TOC benefits of this mechanism

TOCs' schedule 4 and 8 receipts from NR should be included in the revenue share arrangement. This would minimise the risk of perverse incentives

Hypothetical scenario showing cashflows before and after a notional deterioration of NR performance*

	P&L items	Sharing?	Before			After			Change			Comments	Outcome ranking
			TOC	NR	Total	TOC	NR	Total	TOC	NR	Total		
No sharing	TOC pax revenue	N	100	0	100	80	0	80	-20	0	-20	If schedule 8 payments from NR to TOCs accurately reflect the actual passenger revenue impact of delays then TOCs would receive the same total revenue irrespective of NR performance	2
	TOC sch. 8 revenue	N	0	0	0	20	0	20	20	0	20		
	NR sch. 8 cost	N	0	0	0	0	-20	-20	0	-20	-20		
	Total		100	0	100	100	-20	80	0	-20	-20		
Full sharing	TOC pax revenue	Y	80	20	100	64	16	80	-16	-4	-20	If TOC revenue, NR sch. 8 revenue and NR sch. 8 costs were included then TOCs would be out of pocket if NR's performance deteriorated	3
	TOC sch. 8 revenue	Y	0	0	0	16	4	20	16	4	20		
	NR sch. 8 cost	Y	0	0	0	-4	-16	-20	-4	-16	-20		
	Total		80	20	100	76	4	80	-4	-16	-20		
TOC pax and sch 8 revenue shared only	TOC pax revenue	Y	80	20	100	64	16	80	-16	-4	-20	If NR sch. 8 costs are excluded then TOCs would again receive the same income under different NR performance scenarios. The benefit vs the no sharing scenario is that TOCs would be less reliant on sch 8 revenue to achieve this - so it reduces the impact of imperfections in the sch. 8 payment rates	1
	TOC sch. 8 revenue	Y	0	0	0	16	4	20	16	4	20		
	NR sch. 8 cost	N	0	0	0	0	-20	-20	0	-20	-20		
	Total		80	20	100	80	0	80	0	-20	-20		
TOC pax revenue shared only	TOC pax revenue	Y	80	20	100	64	16	80	-16	-4	-20	If TOC revenue is included but all sch 8 items are excluded then TOCs have the perverse incentive to make NR performance worse	4
	TOC sch. 8 revenue	N	0	0	0	20	0	20	20	0	20		
	NR sch. 8 cost	N	0	0	0	0	-20	-20	0	-20	-20		
	Total		80	20	100	84	-4	80	4	-24	-20		

TOCs benefit from reduction in NR performance
if Schedule 4 and 8 receipts were excluded from TOC revenue share

Note: * Indicatively based on a 20% cost and revenue sharing rate

L.E.K. tested the revenue share concept at two subsequent stakeholder events. The response was mixed but generally positive

- L.E.K. described this proposition to a broader group of TOC owner group representatives at ATOC's Franchise Working Group meeting on 10 December. It received support from those present
  - the main cautionary comment was that it would require DfT to waive the Clause 18.1 / Schedule 9 clawback of the FTAC reduction
  - no other negative feedback was received
- L.E.K. further tested the concept at one of the LNE workshops
  - the reaction was generally fairly positive

  "… For a commercial TOC it has a degree of value …"

  "… it potentially has merit, but the current incentive regime is quite complicated. We don't want to just add another incentive …"

  "… There are two ways to grow revenue. You can grow the number of trains, or you can also improve the performance of the current timetable. The revenue sharing mechanism can deal with both scenarios, increasing VTAC only works with the one where you grow the number of trains …"
  - the main concern raised by stakeholders was that it could cause NR to favour high commercial value services over some other services

  "… It's a slippery slope. You would find yourself in a situation where you have to tell customers that they are waiting in a siding because they are a low value customer base and you have to let higher value customers go past …"
- NR did not raise any objections to this mechanism at either of the workshops in which it was discussed (Chiltern and LNE)
- The TOC owning group that originally proposed the revenue sharing mechanism at the Chiltern workshop has subsequently redefined its proposals through its comments on L.E.K.'s Alternative Railway Structures report. It now describes this as "TOC revenue above a threshold" or "incremental TOC revenue derived from an enhancement". The first of these alternatives is not materially different to the original proposal in terms of its economic impact. The second is more akin to a bespoke, line-of-sight deal (i.e. Option 8)

Assessment: Option 3: NR shares TOC revenue

Category	Criterion	Score	Comments
A. Stakeholder support	A1. Primary operators	+	Proposed by TOC stakeholders at one workshop and received a generally favourable reaction at other stakeholder events. None of the TOC stakeholders were against the proposal. However, the TOC that proposed the mechanism subsequently adjusted its description of how the mechanism would work
	A2. Secondary operators	0	No strong views expressed, expect that freight operators cannot afford to share any revenue with NR. This would have to be provided as some form of government subsidy
	A3. NR	+	Welcomes alignment with industry growth, but some concern that this would give NR some exposure to GDP/CLE risks
B. Effective incentive	B4. Scope	+	Assumed to apply to total franchised TOC passenger revenue. However, TOC costs and NR cost / revenue excluded. Uncertain whether open access passenger and freight revenue would be included
	B5. Alignment of incentives	+	Although Schedules 4 and 8 already provide some alignment of incentives, Option 3 improves alignment by using revenue directly rather than relying on contractual payments which are intended to proxy revenue impacts. However, incentives still not fully aligned. Furthermore, some blunting of TOC incentive to grow revenue through some initiatives (e.g. marketing)
	B6. Avoidance of gaming	++	Low risk of gaming as passenger revenue relatively easy to track and all of this revenue is included. Only potential issue is over setting revenue baseline for calculating reduction in FTAC
C. Simplicity	C7. Simplicity	++	Revenue is well tracked and understood. A simple sharing mechanism can support this option
D. Focus	D8. Controllability	-	NR's activities can influence some important revenue drivers such as timetable, operational performance and engineering access. They can not influence some of the largest drivers such as exogenous factors (GDP, employment) and TOC actions. However, it should be noted that TOCs are no more able to influence exogenous factors than NR
	D9. Directness	++	NR activities can have a direct impact on TOC revenue (albeit that the magnitude of the impact is somewhat uncertain). It does not rely on a regulator's assessment of the impact
	D10. Free-riders	++	No free-rider problem providing that compensating reduction in FTAC is calculated based on unbiased forecast of revenue
E. Scheme costs	E11. Scheme costs	++	Very little additional administration required
F. Implementation	F12. Implementation cost	++	Very low cost if implemented through franchise letting process. In order to obtain VfM from a mid-franchise change the DfT / NR would have to be confident that TOCs have given them an unbiased forecast of passenger revenue
	F13. Implementation speed	0	Could be implemented through new franchises or, given TOC support for this, mid-franchise changes. However, obtaining VfM for the latter could be challenging (as described above). Furthermore, mechanism would be ineffective for any TOC that is in 80% revenue support (although it might be worth the DfT seeking to negotiate a move across to its new macroeconomic parameters based risk sharing approach in any event)

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The sharing of TOC out/underperformance is an additional feature of Option 4 which is not included in Options 1-3. There are a number of significant issues with this aspect of the mechanism

- A full scope cost and revenue sharing mechanism would include both outperformance and underperformance of both NR and train operator revenue and cost
- As such, most of the evaluation commentary for Option 1, Regional EBS (symmetrical), would also apply to the full scope option
- The TOC revenue component of the full scope option is slightly different to Option 3, NR shares TOC revenue. The full scope option would include NR sharing out/underperformance versus a baseline rather than NR sharing total TOC revenue – this would be necessary to make this component of the full scope option consistent with the other components of the mechanism. However, making this technical change in the way the TOC revenue sharing mechanism operates does not materially alter the points made in the evaluation of Option 3
- The sharing of TOC out/underperformance is an additional feature of the full scope option which is not included in Options 1-3. There are a number of significant issues with this aspect of the mechanism:
  - An open book approach would be required in order for this mechanism to be fully effective. However, train operators are generally very sensitive about sharing their financial information with other parties
  - There would be significant risk of gaming by TOCs through their approach to cost accounting (e.g. inclusion of more group costs in franchise P&Ls)

TOC stakeholders are very strongly against the imposition of a full version of the cost and revenue sharing mechanism

- L.E.K. carried out extensive stakeholder consultation to solicit stakeholder feedback on a full version of the cost and revenue sharing mechanism. Franchised TOCs, open access passenger train operators and FOCs were unanimous in opposing any form of full cost and revenue sharing mechanism

  "… The thing we're interested in is getting more people to use the trains. I think this is overkill, massively. LNE is too complicated a route to do this. I think the chances of this working are close to zero …"

  "… It would be hard to get freight operators interested in this or to get them to play a big part in it since they're quite small …"

  "… Is this mechanism a very complicated version of making all costs variable instead of having a fixed access charge? …"

  "… Network Rail and operators are radically different sorts of organisations that you're trying to get to work together. How would Network Rail behave across three or four control periods? Network Rail's behaviour could be even harder to predict than revenue. The private sector might decide not to bid on franchises but to invest shareholders' funds elsewhere. The risk would need to be priced into the bid. Your indicative incentive mechanism looks very complicated …"

  "… If Network Rail overruns by 10% on a major capex project, say an overrun of £40m on the King's Cross enhancement, and we take 10% of that impact then we're dead in the water …"

  "… Forget that. It's all too complicated. The things we can control are swamped by things we can't …"

  "… We need to concentrate on what we can do rather than flogging this very dead horse. Some of us have spent a lot of our very expensive time discussing this …"

- The key learnings from L.E.K.'s alliancing best practice review were:
  - partner selection and senior management commitment are the two most important success factors for alliances
  - effective partnering needs to be developed over time. Often successful partnerships will begin with a simple contracting relationship then evolve through increased dependency
- As such, attempting to implement a full version of the cost and revenue sharing mechanism in the near term against the wishes of train operators would go directly against the key learnings from the alliancing best practice review
- It would be far better to start with a much more limited form of partnership working then to gradually deepen the arrangements when both parties are comfortable to do so

Assessment: Option 4: Full scope for performance relative to a defined baseline

Category	Criterion	Score	Comments
A. Stakeholder support	A1. Primary operators	--	Very negative reaction from TOCs. "We need to concentrate on what we can do rather than flogging this very dead horse"
	A2. Secondary operators	--	Option 1 comments also apply to Option 3. In addition, FOCs are very reluctant to share their financial information with competitors
	A3. NR	+	Strong support from NR head office. More mixed reaction from regional managers
B. Effective incentive	B4. Scope	++	Covers very broad range of costs and revenues
	B5. Alignment of incentives	++	Better alignment of incentives than Options 1 and 3 separately. However, incentives still not completely aligned. In particular, would need to be combined with Option 5 to avoid perverse incentive on train operators to encourage ORR to set a soft target for NR
	B6. Avoidance of gaming	--	Similar issues to Options 1 and 3. In addition, significant risk of gaming by TOCs through their approach to cost accounting (e.g. inclusion of more group costs in franchise P&L)
C. Simplicity	C7. Simplicity	--	TOCs certainly perceive this to be very complicated. The complexities of Option 1 would still apply, together with those required to include TOC costs in the framework whilst safeguarding against gaming
D. Focus	D8. Controllability	--	As per Options 1 and 3. In addition, NR can influence some but not all of TOC costs
	D9. Directness	--	As per Option 1
	D10. Free-riders	-	As per Option 1
E. Scheme costs	E11. Scheme costs	-	Similar to Option 1 but increased costs associated with including TOC costs
F. Implementation	F12. Implementation cost	0	Similar to Option 1 but increased costs associated with including TOC costs
	F13. Implementation speed	--	Only applies to new franchises, so gradual roll-out. Could also only go live from the start of CP5

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TOCs could be given a partial exposure to changes in FTAC charges (Option 5) in order to incentivise them to proactively engage with the ORR during periodic reviews

- TOCs are currently held harmless to changes in FTAC and other regulated access charges through the Clause 18.1 provisions (or similar provisions in other types of franchise agreement). As a result, TOCs have little incentive to engage with the ORR during periodic reviews as they are largely indifferent to the outcome of the reviews
- By contrast, freight operators have full exposure to changes in access charges and this led to them actively engaging with the ORR during PR08 in order to help secure lower access charges
- Giving TOCs partial exposure to changes in FTAC by only applying Clause 18.1 to a proportion of the change in FTAC (say 75%) could potentially achieve the same outcome
  - FOCs currently pay NR c.£50m p.a. in access charges
  - TOCs currently pay NR c.£800m p.a. in FTAC (c.15% of TOCs' total cost base), so a 25% exposure to these charges would equate to £200m p.a. (c.3.5% of TOCs' total cost base). TOCs are likely to consider this level of exposure to be significant but it would not fundamentally change the risk profile of TOCs providing that the FTAC changes are calculated on a like-for-like basis, as discussed further on the next slide
- Giving TOCs partial exposure to FTAC would help to make the relationship between train operators and NR more of a normal customer-supplier relationship. Furthermore, it would be relatively simple to understand and easy to administrate

… However, there would be a number of implementation challenges with the partial FTAC exposure approach

- Many of the issues with Options 1 and 2 that were listed earlier would still apply for the partial FTAC exposure approach. In particular, train operators would still be exposed to significant regulatory risk regarding NR's baseline as this would feed through into FTAC charges, and train operators would only be able to influence a significant part of NR's cost base (e.g. its cost of capital) through external challenge
- In addition, there would be a number of FTAC specific issues:
  - FTAC is the residual amount that NR needs to meet its revenue requirements after all other sources of revenue have been taken into account – it is therefore potentially impacted by policy changes relating to the other NR revenue items (e.g. the direct grant and charges to freight operators)
  - the way in which the total FTAC charge is allocated between TOCs could have a material impact on the charges paid by individual TOCs. NR made significant changes to the allocation methodology as part of the PR08 process to move some way towards adopting an avoidable cost principle. However, 30% of costs are still national level common costs which are allocated to franchises using a high level approach
  - TOCs would need to have confidence that efficiency improvements which have resulted from their own actions would directly lead to a reduction in their own FTAC charge rather than being spread across multiple TOCs based on a set of high level allocation principles. It is unclear whether the FTAC allocation methodology is sufficiently well developed at this stage to achieve this
  - NR's revenue requirement is impacted by government decisions regarding the outputs it is looking to procure. These include outputs aimed at securing broader economic benefits which would not be delivered by a purely commercial railway. TOCs would need to be held fully harmless to any changes in FTAC resulting from government changing the specification for non-commercial outputs
- There is a risk that giving TOCs partial exposure to changes in FTAC would act as a barrier to cooperation between NR and train operators as the latter would be incentivised to use any information which they obtain from NR to help the ORR make more challenging price determinations

TOCs could be given partial exposure to changes in the ORR's efficient expenditure determination for OMR (Option 6) as an alternative to partial exposure to FTAC. On balance, L.E.K. has a preference for Option 6 over Option 5

- As highlighted on the last slide, the ORR calculates FTAC charges based on NR's revenue requirement. An alternative way of incentivising TOCs to actively engage with the ORR during the periodic review process would be to give TOCs a partial exposure to changes in the ORR's determination of efficient OMR expenditure (Option 6)
- Options 5 and 6 are very similar and have many pros and cons in common
- The key additional issue with Option 6 is that it could give TOCs too great an exposure to changes in the required level of renewals expenditure
  - There could be significant variations between control periods in the efficient level of renewals expenditure in a particular region as a result of asset condition considerations. TOCs would not have very good visibility of these future variations at the time of bidding for the franchise so it would be difficult for them to price these variations into their bid or manage them during the course of the franchise
  - However, this could be overcome by using a longer term average level of renewals expenditure instead and in this respect would make Option 6 more similar to Option 5
- There are two key advantages of Option 6 over Option 5:
  - it avoids train operators being exposed to NR's cost of capital, which is outside train operators' control (except through external challenge)
  - It is likely to be easier to calculate like-for-like changes that overcome the issues listed on the last slide (e.g. excluding the impact of policy changes on the sources of NR's revenue)
- On balance, L.E.K. has a preference for Option 6 over Option 5 due to the two key advantages mentioned above

Assessment: Option 5: Partial exposure to changes in FTAC at periodic reviews

Category	Criterion	Score	Comments
A. Stakeholder support	A1. Primary operators	-	Initial reaction from operators was much less negative than for Options 1 and 4. However, some of their concerns with those options would still apply (e.g. regulatory risk exposure, ability to control outcome, TOCs are lean businesses which do not have the resources for this)
	A2. Secondary operators	-	Franchised passenger TOCs - as above. Not relevant to freight operators
	A3. NR	+	Welcome alignment of operators to achieving efficiency targets
B. Effective incentive	B4. Scope	+	Covers a significant proportion of NR's cost base. However, excludes TOC cost and revenue
	B5. Alignment of incentives	0	Aligns TOCs' incentives with taxpayers' interests but could act as a barrier to co-operation between NR and operators as NR might be nervous about sharing information for fear of it being used against it during periodic reviews. Combining this with Option 1 could help to align interests between NR and TOCs and to overcome the perverse incentive created by Option 1 Impact on TOC behaviour likely to be greatest during periodic review process. Significantly weaker incentive at other times – particularly if franchise ends during current control period or early in the next period
	B6. Gaming	++	Relatively minor risk of gaming as ORR would still have sole responsibility for setting access charges. They would evaluate any evidence provided by TOCs on its merit
C. Simplicity	C7. Simplicity	+	Periodic reviews are well established processes. However, some complexity associated with ensuring that changes in FTAC are due to real efficiency changes rather than 1) changes to the methodology for calculating FTAC or any of the underlying inputs, 2) changes in outputs specified by government to meet broader policy objectives
D. Focus	D8. Controllability	--	TOCs could potentially have more influence than under Option 1 because the ORR is actively seeking input from TOCs. However, this is offset by the fact that FTAC is impacted by a number of additional factors that are outside TOCs' control (e.g. NR's cost of capital)
	D9. Directness	-	The ORR would have sole responsibility for setting FTAC so TOCs could only have an indirect impact. However, TOCs could provide specific and focussed input to the ORR. Furthermore, TOCs could make commitments directly to the ORR which would enable it to set lower FTAC
	D10. Free-riders	--	Significant free-rider problem for any NR cost impacts that are not location specific because ORR could apply savings highlighted by one TOC to other areas
E. Scheme costs	E11. Scheme costs	+	Very little additional cost to ORR or NR. Potentially significant additional cost to operators, particularly in light of lean cost base
F. Implementation	F12. Cost	++	Very little cost if implemented through franchise letting process
	F13. Implementation speed	+	Probably only applies to new franchises because incumbent TOCs would probably charge a large risk premium for mid-franchise implementation against their will. However, given the potential for many of the learnings to be applied in other areas it probably would not be necessary to implement this mechanism on all franchises. Furthermore, some of the benefits could come before the start of CP5 as TOCs engage in the PR13 process

Assessment: Option 6: Partial exposure to changes in OMR baseline at periodic reviews

Category	Criterion	Score	Comments
A. Stakeholder support	A1. Primary operators	-	Not discussed as a separate option, but similar to Option 5: Delta FTAC
	A2. Secondary operators	-	Not discussed as a separate option, but similar to Option 5: Delta FTAC
	A3. NR	+	Not discussed as a separate option, but similar to Option 5: Delta FTAC
B. Effective incentive	B4. Scope	+	Applies to full OMR cost base. Excludes enhancements, and TOC costs and revenue
	B5. Alignment of incentives	0	Similar to Option 5
	B6. Avoidance of gaming	++	Similar to Option 5
C. Simplicity	C7. Simplicity	+	Initially harder to grasp than Option 5 because OMR baselines are less familiar to TOCs than FTAC. However, calculation methodology would be slightly less complex than FTAC as fewer steps and inputs are required
D. Focus	D8. Controllability	-	Similar to Option 5 but by focussing directly on NR operating expenditure (and capex) it would exclude a number of factors which are outside train operators' control but which impact FTAC (e.g. NR's cost of capital)
	D9. Directness	-	Similar to Option 5
	D10. Free-riders	--	Similar to Option 5
E. Scheme costs	E11. Scheme costs	+	Similar to Option 5
F. Implementation	F12. Implementation cost	++	Similar to Option 5
	F13. Implementation speed	+	Similar to Option 5

Potential ways of addressing the Option 6 negative scores

Category	Criterion	Score	Potential ways of addressing negative scores
A. Stakeholder support	A1. Primary operators	-	Implement horizontal separation of NR first Introduce private sector equity ownership of the Regional IMs Give train operators greater freedom to decide what they wish to procure from NR, including the right to source some services from alternative suppliers
	A2. Secondary operators	-	
	A3. NR	+	
B. Effective incentive	B4. Scope	+	
	B5. Alignment of incentives	0	
	B6. Avoidance of gaming	++	
C. Simplicity	C7. Simplicity	+	
D. Focus	D8. Controllability	-	As per Category A
	D9. Directness	-	It is difficult to overcome this negative score whilst keeping NR as a regulated business
	D10. Free-riders	--	Ring fence the input of each TOC such that it is not used in the determination of efficient expenditure in other regions. This would not appear to offer VfM
E. Scheme costs	E11. Scheme costs	+	
F. Implementation	F12. Implementation cost	++	
	F13. Implementation speed	+	

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VTAC rates could be increased to give NR an incentive to accommodate additional train services

- Train operators pay a number of variable track access charges to NR including:
  - Variable usage charge: designed to recover NR's OMR costs that vary with traffic (in reality this only covers M&R). Franchised TOCs pay c.£150m p.a., which is equivalent to c.2.7% of their total cost base
  - Capacity charge: recovers additional Schedule 8 costs of additional traffic on the network. Franchised TOCs pay c.£150m p.a., i.e. a further c.2.7% of their total cost base
- Variable usage charge rates are currently intended to reflect NR's efficient, short run marginal cost of wear and tear to its infrastructure from the operation of rolling stock. As a result, NR incurs a net disbenefit from accommodating additional train services if its costs exceed the ORR's assessment of the efficient level
  - Basing variable usage charge rates on NR's expected actual costs rather than ORR's assessment of the efficient costs would go some way towards addressing this perverse incentive against accommodating additional services
- Furthermore, NR suffers the downside of worse operational performance because there is a higher likelihood of secondary delays and fewer free train paths to facilitate timetable recovery. Although the financial impact of this should be mitigated by the capacity charge, operational performance is a very high profile measure so there are additional non-financial impacts that are not captured by the capacity charge
- The ORR recognised this lack of incentive on NR to accommodate additional services and introduced the Volume Incentive to try to overcome this. The Volume Incentive is generally not thought to have been successful for the reasons discussed in the "Analysis of Current Situation" appendix
- A potential alternative to the Volume Incentive would be to increase VTAC rates such that NR receives a net benefit from accommodating additional traffic. There are a number of ways in which this could be achieved, including increasing the variable usage charges or the capacity charges

A VTAC based incentive mechanism could be an improvement on the status quo. However, Option 3 appears to be a more attractive way of incentivising NR to accommodate additional traffic

- The biggest advantage of increasing VTAC rates as a way of incentivising NR to accommodate additional train services is its simplicity. It is easy to understand and to administrate
- The ultimate objective of this incentive is to maximise rail industry revenue within the current network capabilities, and to enhance the network where there is a VfM case for doing so
- Higher VTAC charges would be equivalent to train operators giving NR a share of the incremental revenue earned by operating additional services
- However, it should be noted that there is no direct link between VTAC and revenue. As a result, NR's effective percentage share of the additional revenue would vary on a case by case basis
  - two services could use the same rolling stock and lead to the same VTAC charge but have very different incremental revenue
  - similarly, two services with the same incremental revenue could have very different VTAC charges
- A VTAC based incentive regime could also lead to a perverse incentive on NR whereby it could favour rolling stock which causes more damage to its infrastructure (that would be the case if the increase in VTAC was achieved through a uniform percentage uplift to the current variable usage charge rates)
- Providing that the higher VTAC rates are appropriately set to avoid perverse incentives then this type of incentive mechanism could be an improvement on the status quo because it would be a step towards aligning incentives with train operators
- However, Option 3 appears to be a more attractive way of incentivising NR to accommodate additional traffic as it provides better alignment of incentives and covers a much broader range of circumstances
- Furthermore, there could be legal issues associated with this option. There is an EU requirement that infrastructure managers can only charge a mark-up in markets where the train operator can bear the cost

Assessment: Option 7: Higher VTAC rates

Category	Criterion	Score	Comments
A. Stakeholder support	A1. Primary operators	0	Mixed views. TOCs could see the potential benefit from incentivising NR to accommodate more traffic. However, this indirect proxy for revenue was seen as less effective at aligning incentives than a revenue sharing mechanism
	A2. Secondary operators	-	As above for passenger operators. Freight cannot afford higher VTAC rates
	A3. NR	0	No strong views expressed
B. Effective incentive	B4. Scope	--	Very narrow scope. Only incentivises NR to accommodate additional traffic, and even that is through an indirect proxy
	B5. Alignment of incentives	+	Partial alignment of incentives in a single area
	B6. Avoidance of gaming	++	Transaction charge based system would be very difficult to game
C. Simplicity	C7. Simplicity	++	Very simple
D. Focus	D8. Controllability	++	Mechanism focussed on a single item which NR and train operators can both influence
	D9. Directness	++	Usage based transaction charge is very direct
	D10. Free-riders	++	NR only benefits if more services are run and it will need to provide the capacity
E. Scheme costs	E11. Scheme costs	++	Very little additional administration required
F. Implementation	F12. Implementation cost	++	Very little additional administration required
	F13. Implementation speed	+	Could be partially implemented very quickly through the franchise change mechanisms. This would place the incentive on NR but could hold TOCs harmless to the change (i.e. the incentive would not operate in a back-to-back way). Full implementation would either require single party negotiations with each TOC (from which it could be difficult to secure VfM) or wait for franchise re-letting

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At four workshops, stakeholders put forward the proposal that the cost / revenue sharing mechanism should be based on bespoke, "line-of-sight", deals rather than a more comprehensive sharing mechanism

- The overwhelming reaction from TOC stakeholders to a full cost and revenue sharing mechanism (Option 4) was negative
- At four workshops, stakeholders put forward the proposal that the cost / revenue sharing mechanism should instead be based on bespoke, "line-of-sight", deals:

  "… You're more likely to get benefits through a willing buyer, willing seller approach. Start by identifying a tangible opportunity and if that works then move onto the next one. You'll build trust that way …"

  "… Why not just focus on line-of-sight deals where you can see an opportunity? …"
- The key benefits of this type of approach are:
  - there would be a strong sense of purpose because the mechanism would be focussed on tangible opportunities
  - there would be a direct link from each party's actions to the rewards
  - deals could be structured to focus solely on the costs, revenues and risks that are directly relevant to the identified opportunity. Stakeholders would not be exposed to the much broader set of risks that are outside their control
  - it would be a consent based approach. Nobody would be forced to do anything against their will. L.E.K.'s alliancing best practice review highlighted the critical importance of senior management buy-in
  - it would allow trust and partnership behaviours to develop over time, thereby opening the door to more comprehensive joint working in due course
- It should be noted that the bespoke line-of-sight deals approach could be combined with any other the options. It is not an alternative to other options

The term "bespoke, line-of-sight deals" really refers to having the flexibility to reach whatever commercial agreement is appropriate to achieve the optimal joint outcome in a specific situation

- Legal contracts are an absolutely essential enabler of commercial activity. However, they can also restrict flexibility and lead to sub-optimal outcomes. The more complex the situation and the greater the level of interdependence between different organisations, the greater the importance of relationships and trust in achieving the optimal outcome for all parties
- The GB rail sector is a classic example of the type of complex situation described above. It comprises a large number of different public and private sector organisations which interact through a complex set of contractual, regulatory and governance arrangements. Flexibility is required to achieve optimal outcomes in this situation

  "… for the first 5-7 years we found it difficult to cooperate [with the infrastructure manager] but things have improved over the last 3-4 years. A year ago we started to have weekly meetings with the infrastructure manager where we co-ordinate everything at the interface. These are very open discussions where we tell each other all our problems to get a common understanding … the infrastructure manager is now adopting a similar approach for other operators, including freight … the discussions often lead to us overriding the contract because you need the flexibility … the local commuter service operator is much more contract focussed and they have lots of problems which could easily be resolved …"

  European train operator
- The well documented South West Trains Desiro rolling contact fatigue problem is a classic example of a problem where all parties agreed on the right solution very quickly but it took a long time to implement due to contractual inflexibility. A bespoke, line-of-sight deal would solve this very quickly
  - A new procedure for dealing with vehicle modifications has now been introduced

There are many different types of "bespoke, line-of-sight deals" ranging from a simple handshake to agree a different way of working through to a joint venture or other form of alliance

- Verbal agreements over non-contractual matters
  - co-ordination of activities and processes
  - prioritisation of work
- Co-location of resources
- Joint teams for shared activities
  - could be staffed by one or both organisations
  - range of options for documentation / formalisation of agreement
  - may or may not involve financial payments or agreements over sharing of benefits
- Subcontracting / outsourcing of specified activities
- Agreement to override or alter existing contracts
  - may or may not be formalised in writing
- Contract for new investment projects
  - could be through ORR's Investment Framework
- Broader joint ventures and other forms of alliance

- Bespoke, line-of-sight deals also vary significantly in terms of their breadth of scope (i.e. the range of activities, costs and risks included in the deal)

Bespoke, line-of-sight deals are not a new concept. There are many examples of where NR and train operators have reached commercial agreements on issues of common interest

Examples of bespoke, line-of-sight deals

- During L.E.K.'s workshops some train operators reported that they had reached a local agreement with NR regarding the attribution of responsibility for small delays
  - both parties recognised that the level of resources being used to attribute responsibility for these minor delays was disproportionate to the resulting Schedule 8 financial flows particularly given that the end result was a fairly constant percentage split between NR and the TOC
  - their commercial agreement enabled both organisations to reduce staffing levels while still obtaining the information required for root cause analysis
- Southeastern is currently in discussions with NR about 7 areas where cost savings could be made if the two organisations worked more closely together and cut out "man-marking". Areas of study include:
  - joint management of London termini
  - joint train planning
  - single delay attribution resources
  - co-location or joint team for performance management
- East Midlands trains also has a number of joint working arrangements
  - alliancing of NR maintenance team and EMT
  - joint management of station development
  - co-location of EMT and NR control and performance teams in the East Midlands Control Centre

Most current examples of bespoke, line-of-sight deals relate to on-the-day operations where NR and TOCs have the most significant interface. There are far fewer instances of these deals relating to NR's maintenance, renewals or enhancements expenditure

Stakeholders highlighted that many of the larger VfM improvements would require some change or override to contractual or regulatory mechanisms. It is often very difficult to obtain the necessary approvals from the DfT or ORR

- Many bespoke, line-of-sight deals can be implemented by train operators and NR without the need for approval by the DfT or ORR, particularly if they do not require any changes to access agreements or involve a flow of money between organisations
- However, a recurring theme raised by stakeholders during L.E.K.'s workshops was that many of the larger VfM improvement opportunities would require some change or override to franchise agreements, track access agreements, or some other contractual or regulatory mechanism
- Stakeholders highlighted that the DfT currently follows a very contractual approach to managing franchises and that that severely restricts train operators' flexibility to implement VfM improvements
  - for example, stakeholders stated that it is very difficult to persuade the DfT to agree to any relaxation of the service level commitments no matter how compelling the argument (e.g. Southern was required to maintain quarter hourly Gatwick Express frequency to Gatwick Airport even when the airport was shut due to volcanic ash)
  - L.E.K. understands that public sector procurement rules could limit the extent to which output specifications can be changed after contract award. There may also be concerns over leakage of state aid if train operators benefit financially from output specification changes. As highlighted later, funders would need to receive an appropriate, direct share of any savings from changes in specifications
- There was also a perception amongst train operators that the ORR discourages bilateral deals between individual train operators and NR. However, it is recognised that the ORR has a range of legal obligations which are aimed at protecting the rights of all current and potential users of the rail network. For example, through the UK Rail Act 1993 and Article 30 of Directive 2001/14/EC (EU First Package)

A cultural change would be required in order for bespoke, line-of-sight deals to make a significant contribution to improving rail industry VfM. The industry needs to move from a centralised, contract based approach to a more devolved, relationship based approach

Centralised, contract based approach

Interactions between different rail industry participants are currently managed using a very contractual approach

Whilst a range of contractual and regulatory protections are absolutely necessary, the inflexible way in which these are currently applied stifles innovation and the adoption of new ways of working. It also discourages industry participants from challenging the status quo, which leads to specifications and standards becoming ossified

This problem is compounded by NR's highly centralised management approach

Cultural change

Devolved, relationship based approach

Many other industries which require close cooperation across the supply chain have moved to more relationship based management approaches

These management approaches were initially pioneered in Japan but have subsequently been embraced across Western Europe and North America. Some European railways have started to adopt these approaches, e.g. Denmark

Relationship based approaches provide much greater flexibility to implement the right solution for each situation and to evolve over time as circumstances change and innovations occur. Contractual and regulatory protections will still be required, it is a question of how they are applied

Devolved decision making is an absolutely critical enabler of relationship based management approaches

Horizontal separation of NR would be an important enabler of bespoke line-of-sight deals. However, funders and the ORR would also need to carry out a number of actions

Funders / ORR actions to facilitate bespoke, line-of-sight deals

- Clear statement from the leadership of the DfT, other funders and ORR encouraging a move towards more devolved, relationship based management approaches and the development of bespoke line-of-sight deals
- Publication of a principles paper that describes funders / ORRs new, more flexible approach to managing the various contractual and regulatory arrangements. This would include details of:
  - The types of areas and circumstances where funders / ORR will be more flexible, and the likely degree of flexibility in these areas. This would include details of materiality thresholds to help identify where a "light touch" approach is appropriate
  - Key principles for ensuring that third parties are no worse off as a result of a deal. This would include principles for determining funders share of any savings which have been facilitated by a relaxation of an output specification. It would also include details of the minimum requirements for involving third parties in decisions that could impact them (this could be a light touch version of existing industry arrangements)
  - the delegated authority of funders / ORR staff who will have the closest relationships with NR and train operators
- Ensure that funders / ORR have the right number of people, in the right positions, with the right skills to:
  - Use the delegated authorities to effectively manage the various contractual and regulatory arrangements in line with the new more flexible management approach
  - Help overcome specific roadblocks and other barriers to implementing change
- Publically celebrate any bespoke line-of-sight deals that improve VfM
  - This would help to create momentum across the industry. Once a few deals have been successfully completed, TOC and NR managers in other regions are likely to feel the pressure to implement similar deals

Option 8 is a carrot-based option not a stick-based option. Allowing train operators and NR to develop their own approach to bespoke line-of-sight deals would maximise the scope for innovation

- A number of stakeholders have expressed the view that some form of target or obligation would be required in order to push TOCs and NR into making bespoke, line-of-sight deals, otherwise nothing will happen. However, the whole point of these deals is that they are carried out on a willing buyer basis. These deals should be initiated by train operators or NR because they perceive an opportunity to achieve mutual benefit by working together. The role of funders and the ORR is to create the right environment for these opportunities to be worth pursuing. As highlighted earlier, this includes:
  - Horizontal separation of NR
  - A more flexible approach to managing regulation and contracts
  - Allowing train operators and NR to achieve commercial gain from the deals (i.e. Option 8 is a carrot-based option not a stick-based option)
- Allowing each region to develop its own approach to bespoke line-of-sight deals would maximise the scope for innovation, and would allow regional managers to take account of both the specific circumstances of each region and the preferred approach / experience / skills of the local managers. L.E.K.'s alliancing best practice review highlighted that each alliance is unique and develops over time
- Experience from other industries shows that successful partnerships often start with relatively simple contractual arrangements and then evolve through to increased dependency. Therefore, it is quite likely that in some of the regions the partnerships would evolve into formal joint ventures or comprehensive cost and revenue sharing mechanisms. However, the critical point is that the end state and transition arrangements would not have been mandated. Instead, they would have been achieved through steady development of the following:
  - Individual and corporate relationships and trust, together with the necessary alliancing skills
  - A commercial model which each party is comfortable with - including the allocation of accountabilities, responsibilities and risks
  - Supporting systems and business processes
  - Senior management commitment

Assessment: Option 8: Bespoke line-of-sight deals

Category	Criterion	Score	Comments
A. Stakeholder support	A1. Primary operators	++	Very strong support. Proposed by TOC stakeholders in four workshops
	A2. Secondary operators	+	General support, but some secondary operators concerned that NR/Primary operator deals would not always be in their interest
	A3. NR	++	Very strong support. The expression "line-of-sight deals" was coined by an NR representative at one of L.E.K.'s workshops
B. Effective incentive	B4. Scope	0	Can include all cost and revenue items where stakeholders perceive an opportunity to improve VfM. However, scope is likely to start narrow and only expand slowly over time
	B5. Alignment of incentives	+	The nature of these deals (i.e. bespoke and voluntary) should ensure that NR and primary operator incentives are aligned – providing that both parties are sufficiently profit motivated. However, mechanism required to ensure alignment with / protection of other stakeholders' (secondary operators, passengers and taxpayers) interests. Furthermore, "small numbers problem" could lead to unproductive behaviours (with a monopoly supplier and a monopoly buyer there is no equilibrium price – it depends on bargaining)
	B6. Avoidance of gaming	+	The bespoke nature of these deals should help to reduce the risk of gaming– at least in terms of the relationship between NR and the primary operator. However, it is recognised that some deals might require approval/permission from parties who are in a position to extract some economic rent
C. Simplicity	C7. Simplicity	+	The bespoke, line-of-sight deals option is intended to allow NR and train operators to proceed with normal commercial activity in whatever way suits them best. They would have every incentive to keep things appropriately simple. The only barrier to this is the need to protect third parties as described above
D. Focus	D8. Controllability	++	Rationally, parties would only include relevant costs in deals
	D9. Directness	++	"Line-of-sight" is a reference to the fact that these deals would typically be driven by the identification of specific tangible opportunities. The parties would rationally structure the deals in a way that makes the link to the benefits as direct as possible
	D10. Free-riders	+	The parties to a deal would rationally structure it such that the benefits go to the parties who have carried out the actions required to secure the benefits. However, some deals (e.g. enhancements) may well benefit third parties who have not actively participated in the deal. The extent to which this occurs would vary significantly across the network
E. Scheme costs	E11. Scheme costs	0	Parties would largely be free to structure the deals however they wish, and keeping scheme costs down to an appropriate level would be a key consideration in this – e.g. some deals might not need to be contractualised and some could be handled through an overarching framework. However, there would be some cost associated with the third party protection mechanisms referred to above. Scheme costs will to some extent depend on how flexible funders / ORR are willing to be
F. Implementation	F12. cost	+	Relatively minor cost of DfT/ORR developing principles paper which would set the framework for bespoke, line-of-sight deals
	F13. Implementation speed	+	Some bespoke, line-of-sight deals are already happening. Announcements from DfT/ORR and publication of principles paper / framework (before the end of 2011/12) can accelerate this process. However, it will take time for partnership behaviours to develop and for the scope of bespoke line-of-sight deals to broaden

Agenda

- Executive summary
- Introduction
- Analysis of sharing mechanism practicalities
- Option evaluation and implementation
  - Introduction
  - Option 1: Symmetrical Regional EBS
  - Option 2: Outperformance only Regional EBS
  - Option 3: NR shares TOC revenue
  - Option 4: Full scope
  - Options 5 and 6: Partial exposure to periodic reviews
  - Option 7: Higher VTAC rates
  - Option 8: Bespoke, line-of-sight deals
  - Summary and implementation
- Appendix

Options 3, 7 and 8 appear to be the most attractive in the short term. However, Options 3 and 7 are focussed on the same objective

High level summary of option evaluation – for implementation in the short term

Criteria	Sharing of cost and revenue out/underperformance vs baseline				Other options for changing incentives			
	1: Regional EBS (sym)	2: Regional EBS (upside)	3: NR shares TOC revenue	4: Full scope	5: Delta FTAC	6: Delta OMR baseline	7: Higher VTAC rates	8: Bespoke L-of-S
A1. Primary operators	--	0	+	--	-	-	0	++
A2. Secondary operators	--	0	0	--	-	-	-	+
A3. NR	+	-	+	+	+	+	0	++
B4. Scope	+	-	+	++	+	+	--	0
B5. Alignment of incentives	+	+	+	++	0	0	+	+
B6. Avoidance of gaming	+	+	++	--	++	++	++	+
C7. Simplicity	0	0	++	--	+	+	++	+
D8. Controllability	--	--	-	--	--	-	++	++
D9. Directness	--	--	++	--	-	-	++	++
D10. Free-riders	-	-	++	-	--	--	++	+
E11. Scheme costs	0	-	++	-	+	+	++	0
F12. Implementation cost	+	+	++	0	++	++	++	+
F13. Implementation speed	--	--	0	--	+	+	+	+

This table is a high level summary of the option evaluation process. Individual scores should be treated as indicative and may vary across regions, over time or depending on the package of options

Achieving better alignment of incentives should be viewed as a journey. It is important that the industry makes the first steps on that journey imminently in order to set expectations for industry participants

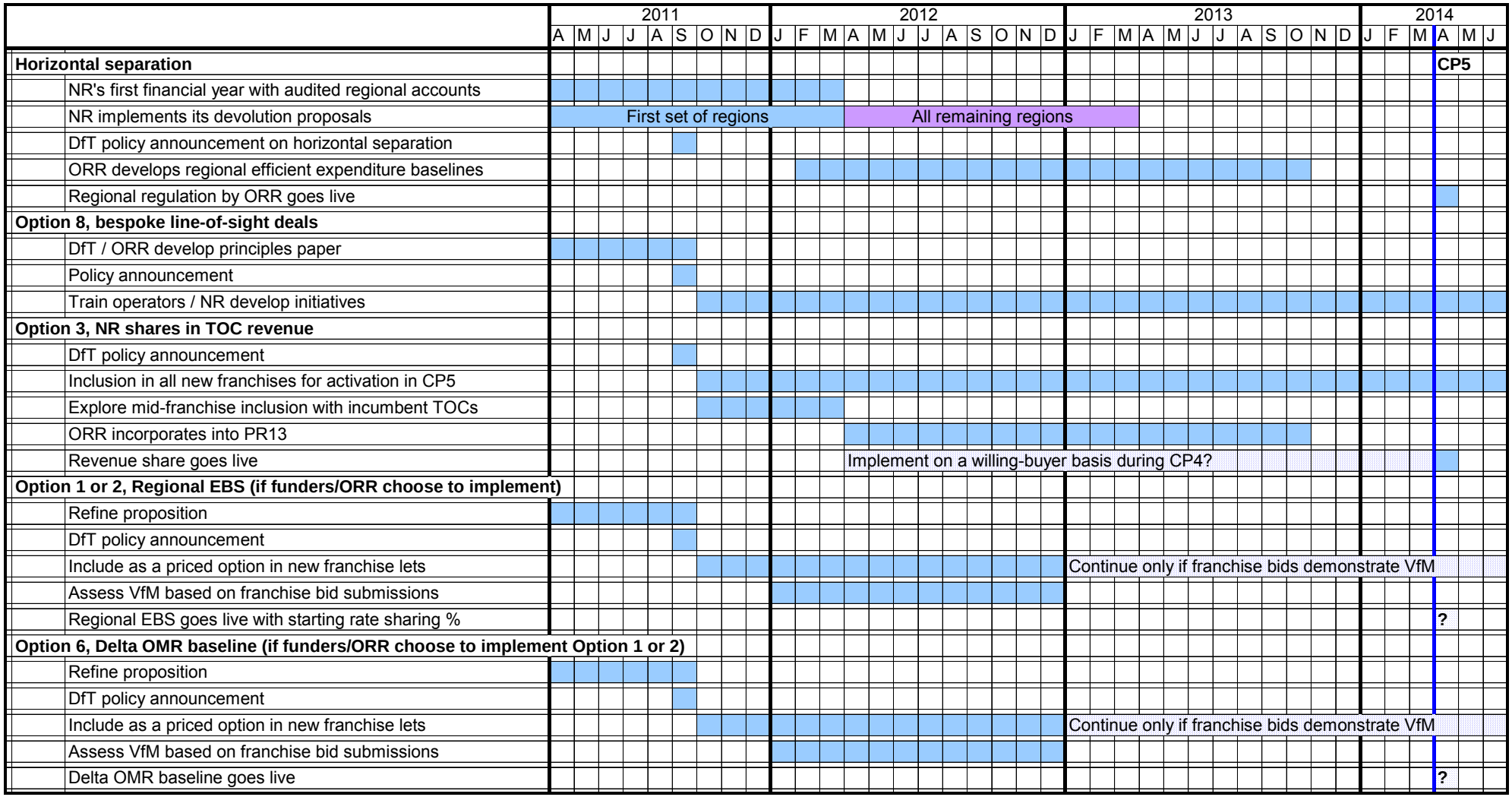
- There is broad agreement that rail industry VfM would benefit from better alignment of incentives between NR and operators. However, our assessment suggests that a number of the options considered in this project have significant weaknesses that would be hard to overcome
- This should be viewed in the context of comparing the options against true alignment of incentives that would be achieved in a vertically integrated railway. The options may still have significant merit when compared with the existing system in which there is very poor alignment of incentives
- Achieving full or even good alignment may require several steps of reform and involve cultural change in order to lead to behavioural change
- A key enabler of such cultural change is taking a first, public, step towards better alignment of incentives
  - this would send a signal to industry participants about the direction of travel
- We therefore recommend a “bias towards action”, i.e., that the industry takes at least some imminent steps to improve alignment of incentives

Summary of recommendations

Option	Implement?	Comments
1: Regional EBS (symmetrical)	?	L.E.K. has concerns that a Regional EBS would not deliver VfM in the short term due to a number of factors such as TOCs' limited ability to influence NR's costs. If a Regional EBS were to be implemented then a phased approach aligned with horizontal separation of NR would be best – horizontal separation would significantly improve train operators' ability to influence NR's costs A Regional EBS could create a perverse incentive on TOCs to try to persuade ORR to set soft targets for NR during periodic reviews. To overcome this, any Regional EBS mechanism should be combined with a mechanism that gives TOCs a partial exposure to periodic review determinations, i.e. Option 5 or 6 Given the uncertainty over whether a Regional EBS would deliver VfM for taxpayers, in might be best to include it as a priced option during franchise bids rather than as the base case The relative attractiveness of an outperformance-only EBS mechanism and a symmetrical mechanism depends on how TOCs would price these two mechanisms, and this is uncertain **All of the above points are discussed further in this Executive Summary**
2: Regional EBS (upside only)	?	
3: NR shares TOC revenue	✓	Implement through franchise re-lets. Also explore with incumbent TOCs whether it can be implemented mid-franchise in a way that delivers VfM for the taxpayer
4: Full scope	X	Implementing a full version of the cost and revenue sharing mechanism in the near term against the wishes of train operators would go directly against the key learnings from the alliancing best practice review. It would be far better to start with a much more limited form of partnership working and then to gradually deepen the arrangements when both parties are comfortable to do so
5: Delta FTAC	(X)	Many of the issues with Options 1 and 2 would also apply to Options 5 and 6. However, in one respect they create an opposite issue to Options 1 and 2 – they could act as a barrier to cooperation between NR and train operators because the latter would be incentivised to use any information which they obtain from NR to help the ORR make more challenging price determinations. If Option 1 or 2 is implemented then it should be combined with Option 5 or 6. As with Options 1 and 2, horizontal separation of NR would significantly improve train operators' ability to influence NR's costs Options 5 and 6 are very similar. However, L.E.K. has a preference for Option 6 as it is more directly linked to NR's operational expenditure (and is therefore less impacted by additional factors which are outside train operators' control)
6: Delta OMR baseline	?	
7: Higher VTAC rates	(X)	Seeks to achieve the same objectives as Option 3 but is less attractive because it has a much narrower scope and incentives are less well aligned. This option should not generally be implemented but there might be a few franchises where Option 3 cannot be implemented within a reasonable timeframe where Option 7 could be considered
8: Bespoke line-of-sight deals	✓	**Implementation requirements discussed further in this Executive Summary**

Horizontal separation of NR is an essential enabler of all cost and revenue sharing options

Indicative timeline for implementation programme



Agenda

- Executive summary
- Introduction
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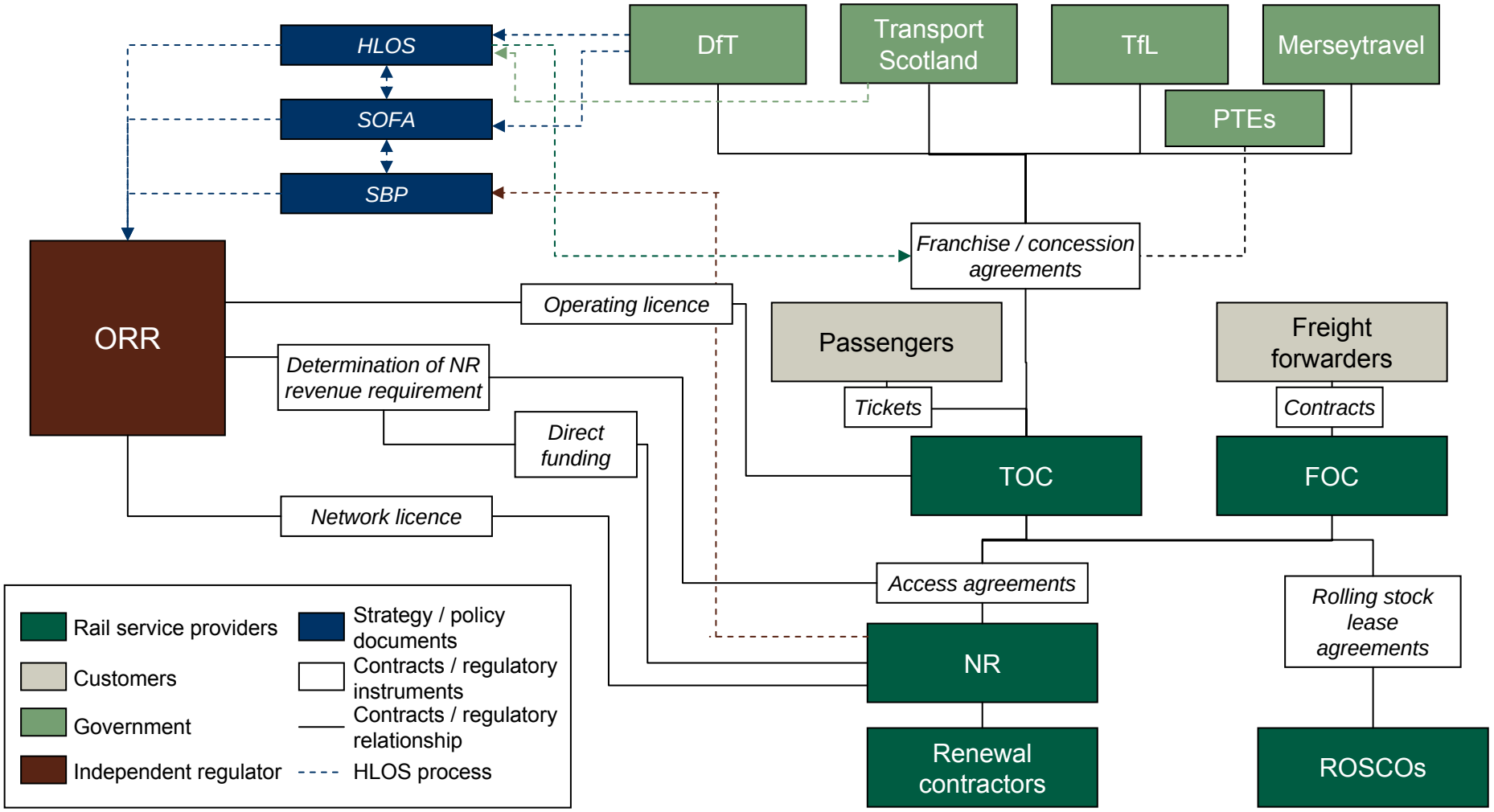
- Option evaluation and implementation
- Appendix
  - analysis of current situation
  - alliancing best practice

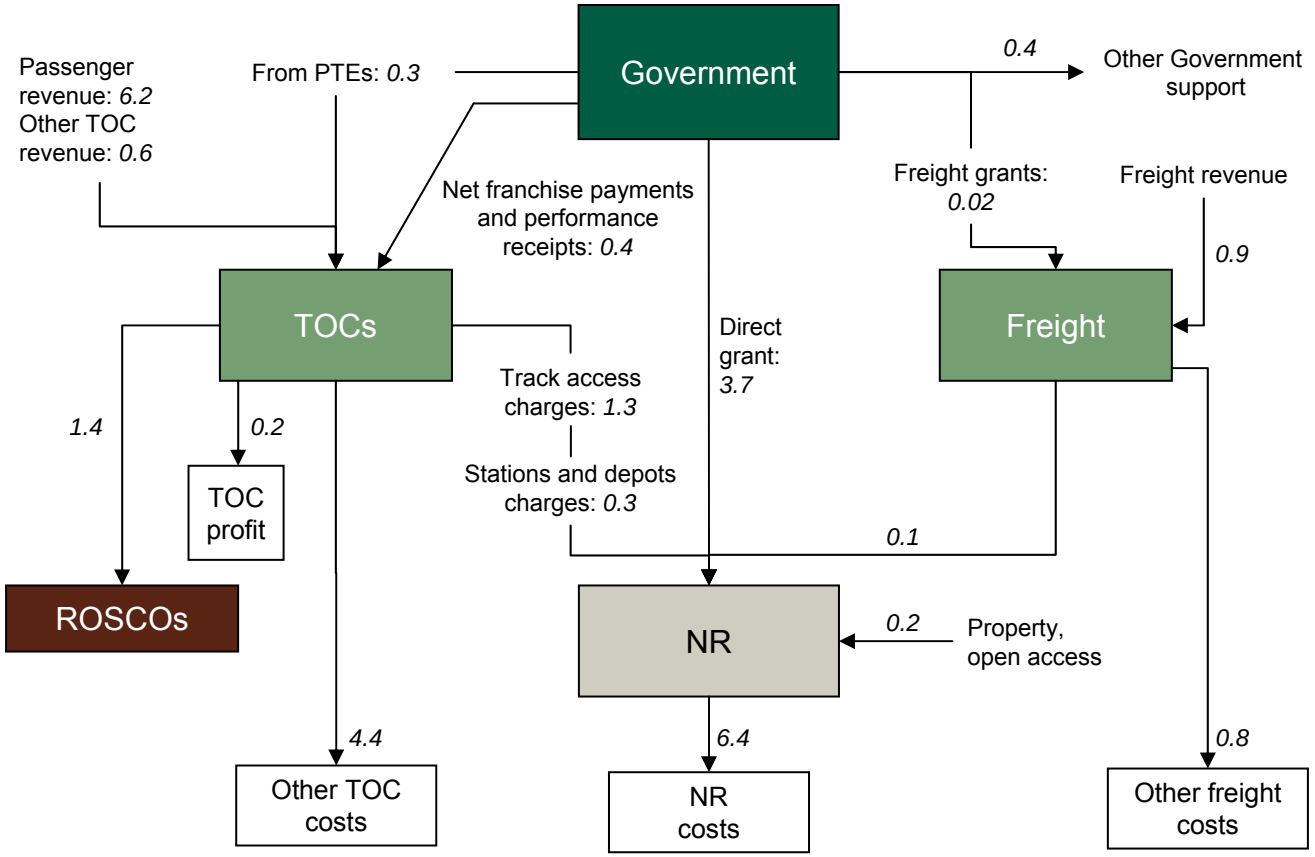
The GB rail sector is relatively complex. It comprises a large number of public and private sector organisations which interact through a complex set of contractual, regulatory and governance arrangements



ORR/ATOC/Network Rail. Rail industry cost and revenue sharing.

Total GB rail industry revenue is c.£7.9bn and costs are c.£12.9bn p.a.

Rail industry money flows (£bn) (2009/10)



Note: Total industry cost excludes Network Rail debt finance costs and TOC profit
Source: Whole Industry Money Flows Study; DfT; L.E.K. analysis

This section of L.E.K.'s presentation is not intended to a comprehensive description of the current GB rail industry arrangement. Instead, it summarises the key features of the existing arrangements that have greatest bearing on a potential cost and revenue sharing mechanism

Organisations and their governance arrangements	PR08 incentive regimes	Cross industry processes
Passenger train operators Freight train operators Network Rail	Efficiency benefit sharing mechanism Volume incentive	On the day operations Capacity allocation and timetabling Long term planning and enhancements Asset management, access management and delivery of MRE Stations and depots Rolling stock selection

Passenger train operators: There are 19 franchised passenger rail operators and a further 4 open access passenger rail operators. All operators are private sector except East Coast which is temporarily in public ownership

Passenger rail franchises

Logo	Operator	Owning group
First Capital Connect	First Capital Connect	FirstGroup (TPE in JV with Keolis)
First Great Western	First Great Western	
First TransPennine Express	First TransPennine Express	
ScotRail	ScotRail	
London Midland	London Midland	Govia
southeastern	Southeastern	
Southern	Southern	
East Midlands Trains	East Midlands Trains	Stagecoach
South West Trains	South West Trains	
Merseyrail	Merseyrail	Serco / Abellio
northern	Northern	
c2c	c2c	National Express
national express	NXEA	
crosscountry	Arriva Cross Country	Arriva
ARRIVA Trains Wales	Arriva Trains Wales	
Chiltern Railways	Chiltern Railways	Deutsche Bahn
LOROL	LOROL	Deutsche Bahn / MTR
Virgin trains	Virgin Trains	Virgin / Stagecoach
EAST COAST	East Coast	UK Government

Open access operators

Logo	Operator	Owning group
eurostar	Eurostar	Eurostar Int.
First Hull Trains	First Hull Trains	FirstGroup / Renaissance Trains
GRAND CENTRAL	Grand Central	Grand Union Railway
Heathrow express	Heathrow Express	BAA Ltd.

Passenger train operators: The franchising system has changed a number of times since privatisation. The current system is based on tightly specified 7-10 year franchises but the DfT has announced its intention to move to longer, more flexible franchises

Privatisation to 2003

The initial franchises started on various dates in 1996/97 with franchise terms of 7 to 15 years

The longer durations were typically granted where the rolling stock fleet was to be replaced

The franchises included Passenger Service Obligations which specified the minimum service provision. This left scope for operators to run additional services

A number of franchises were re-let prior to 2004 based on a range of different franchising models

2004 to 2010

The SRA introduced a new franchising approach in 2004. Key features included:

- 7-10 year franchise terms with the final 2-3 years subject to achieving performance targets
- Prescriptive train service specifications which left operators with relatively little flexibility over the timetable
- Revenue share and support mechanism
- Franchises awarded based on NPV of base case subsidy / premium provided that bidder meets deliverability threshold

The DfT continued with this approach when it took over responsibility for rail franchising

2011 onwards

The DfT announced the conclusions of its review of franchising policy in Dec 2010 and Jan 2011

- Longer franchises of 15 to 22.5 years duration
- Less detailed specifications
- Residual value mechanism to encourage private sector investment
- Single party responsible for stations management
- Franchisee either takes all revenue risk or DfT shares risk through link to macroeconomic factors (e.g. GDP)
- Profit share mechanism
- Consideration of a review mechanism to re-set important elements of longer franchises

Many of the details of the DfT's new approach are still unclear as they will be developed on a franchise-by-franchise basis

Freight train operators are open access users of the network and pay only variable charges

- After a long period of decline, the amount of freight carried by the railway started to grow in the mid-1990s
  - several factors have driven this growth, including increasing road congestion and growth in certain sectors such as larger distance movements of imported coal, which rail is particularly well placed to carry
  - rail's quality of service has also improved, driven by competition and investment
- Competition between road and rail has always been strong, and competition within the rail industry between different operators has intensified
  - the position is further complicated by the nature of the freight market, where service providers need flexibility to respond to customer demand, which can vary at short notice. This means that NR's timetable planning must allocate more space for freight than is actually used on a day-to-day basis
  - rail is most competitive for high-volume flows over longer distances, and tends to become less attractive as volume and distance decline
- There are currently four major FOCs: DB Schenker, Freightliner, GB Railfreight and Direct Rail Services
- All FOCs are open access users of the network
- FOCs pay variable access charges but not fixed charges
  - EU legislation requires access charges to be based on short run marginal cost plus a mark-up value where the market can bear it. In the case of freight, the mark-up only applies to the coal and nuclear markets and is applied to the variable access charge
- FOCs also pay a coal spillage charge, a capacity charge and EC4T
- FOCs receive flow specific freight grants from the Government (£21m in 2008/09)

Source: DfT, "Delivering a Sustainable Railway"; ORR, Periodic Review 2008; ORR, National Rail Trends 2009-10 Yearbook

Network Rail is the owner-operator of the national network

- NR is the monopoly owner and operator of the national rail network, including track, signalling, power, civils and stations
  - it was launched in Oct 2002 when it bought out Railtrack which entered administration in Oct 2001 (in large part a consequence of spiralling costs following the Hatfield crash and West Coast Main Line modernisation)
  - it took a far more centralised approach than Railtrack in order to regain control over the business
- NR has Company Limited by Guarantee (CLG) status, which means it operates as a private company but profits are reinvested in the network. It does not have any equity and all of its debt is currently guaranteed by government
- NR's board is accountable to about 100 members. It has two general classes of members: Public Members, who are drawn from the general public, and Industry Members from certain rail industry companies. In addition, the DfT is a member with special rights, such as to appoint a Director of NR (not currently exercised). A majority of the members must be Public Members
- NR's "members" based governance regime is widely considered to be ineffective

  "…Members with significant experience and interest in the industry were in close agreement that the current membership structure and approach is flawed. The views of the remaining members differed both from this view and from one another. The divergence of views between members interviewed seems to stem from a lack of consensus between members about their role. This is not conducive to the exercise of effective governance and suggests that there is a case for further review and potentially, some change to the current arrangements …"

  Network Rail: Membership aspects of governance, KPMG, August 2008

  "…There's clearly conflicts of interest in the structure as it is… This is a unique structure and, at the heart of it, accountability, we are being told, is by individual members of Network Rail. We are not sure that is that effective …"

  Evidence given to the Committee of Public Accounts for "Increasing Passenger Capacity", September 2010
- Regulation, monitoring and reporting by ORR is currently the main mechanism through which NR is held to account

  "…I have made up the accountability deficit with the increased licence conditions, the stronger, streamlined and simplified access contracts and many other things …"

  Tom Winsor, Rail Regulator, The Future of the Railway, House of Commons Transport Committee, March 2004

Source: NR; ORR; Gourvish, "Britain's Railways 1997-2005 - Labour's Strategic Experiment"

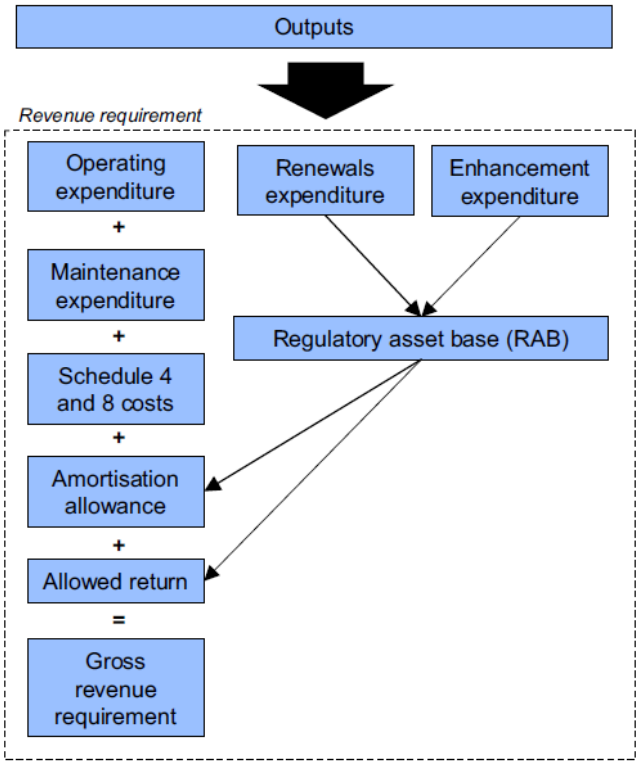
Network Rail's required outputs and funding for Control Period 4 were set by the ORR's 2008 Periodic Review

- The ORR's 2008 Periodic Review determined, for Control Period 4 (Apr 09 - Mar 14):
  - the outputs that NR must deliver and its revenue requirements
  - the track access charges to be paid by train operators for use of its infrastructure
- This was the first review since the passing of the Railways Act 2005, which introduced the process of the Secretary of State and Scottish Ministers issuing High Level Output Specifications (HLOSs) and Statements of Funds Available (SOFAs). This introduced the need for an understanding of whole industry costs and revenues
- NR's output obligations include:
  - top-level output obligations covering safety, train service performance, capacity, network capability, station condition and network availability
  - HLOSs targets for selected performance measures in 2013/14 and major specified enhancement projects
- The ORR carried out extensive work during the PR08 process to assess NR's efficiency. It concluded that there was a significant efficiency gap between NR and top quartile comparators, but that the range of uncertainty over the size of this gap was significant

  "…the efficiency gap given by the various studies lies in a broad range, with a central range of 30% to 50% …"
  PR08 determination
- The ORR analysed the rate of improvement achieved by companies in other regulated industries and made a high level judgement that "NR should be able to catch up two thirds of the efficiency gap during CP4"

Source: ORR, Periodic Review 2008

NR's capex on renewals and enhancements is added to its regulatory asset base (RAB). The RAB amortisation allowance and allowed return are used to calculate NR's revenue requirements



PR08 Expenditure assumptions

£m (2006-07 prices)	**CP4 total**
Opex	5,149
Maintenance	5,016
Renewals	10,760
Enhancements	7,612
Total expenditure	28,537

PR08 Revenue requirement

£m (2006-07 prices)	**CP4 total**
Opex	5,149
Maintenance	5,016
Schedule 4 and 8	712
Amortisation	7,290
Allowed return	8,561
Gross revenue requirement	26,728

- The amortisation allowance is based on long-run steady-state renewals expenditure (with a further small addition to amortise the non-capex additions made to the RAB at the start of CP4)
- NR will be provided with an allowed return for CP4 that reflects its risk-adjusted cost of capital, judged by the ORR to be 4.75% in real terms

Source: ORR, Periodic Review 2008

Network Rail will be provided with an allowed return for CP4 that reflects its risk-adjusted cost of capital. After meeting financing costs, this is split between a risk buffer and a ring-fenced investment fund

Components of allowed return

	Description	CP4 baseline total (£m)
Debt service	Actual expected cost of raising and servicing debt	5,061
Financial indemnity mechanism (FIM) guarantee fee	Fee payable to the DfT to reflect the long-run value of the credit quality enhancement received as a result of the FIM guarantee The FIM fee has been set at 0.8% of the outstanding FIM-backed debt	
Risk buffer	Enables NR to manage business risk and normal fluctuations in cash flow To the extent that NR does not use this risk buffer to meet fluctuations in cash flow, it has discretion over its use	1,040
Ring-fenced investment fund (RFF)	A ring-fenced investment fund which is earmarked to fund HLOS outputs except in instances where profits fall short of expected levels and NR decides that it needs to defer capex in order to finance its business	2,460

Source: ORR, Periodic Review 2008

NR's Management Incentive Plan for Executive Grades includes annual and long-term incentive components. The annual component rewards performance based on a range of measures

Weighting of bonus incentive measures (%)

			Executive Directors	Senior Executives	Other Senior Executives	Route-based Executives
Annual incentive component	'Mechanistic' measures	Public Performance	20	15	15	10
		Asset Stewardship Indicator	20	15	15	10
		Cost Efficiency Index	20	15	15	10
		Passenger Satisfaction	20	15	15	10
	'Judgemental' measures	Customer Satisfaction	10	7.5	7.5	10
		Renewals Progress	10	7.5	7.5	10
	Additional measures used	Financial measure (specific to department)	-	25	25	-
		4 measures of local performance	-	-	-	10 each
Long term incentive component	Long term measures (3 year period)	Financial Value Added	Calculated based on the difference between ORR's determination and NR's actual income and expenditure			

Bonus as a percentage of base salary (%)

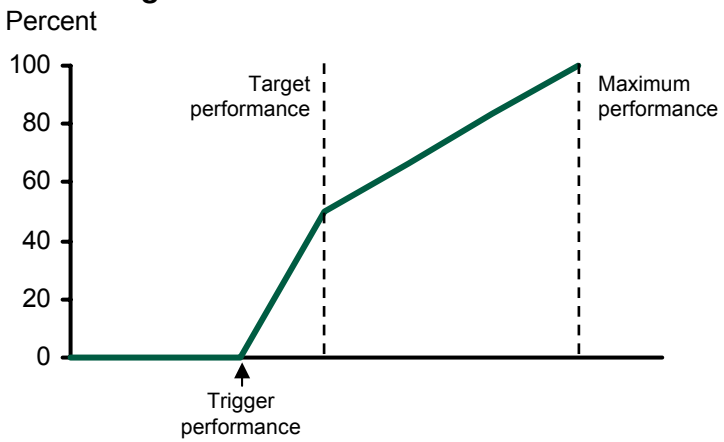
If NR meets target level for all measures	50	40	30	30
If NR meets maximum level for all measures	100	80	60	60
Number of eligible staff	6	8	25	13

Note: Commercial Property management have a different MIP linked to profit from property
Source: Network Rail Management Incentive Plans 2009/10

A "percentage achievement" score is awarded for each performance measure

- For each performance measure, actual performance is compared to the target performance to calculate a "percentage achievement"
  - bonuses become payable at a 'trigger' point
  - if targets are met, the percentage achievement is usually 50%
  - "maximum performance" is awarded if targets for the year ahead are met, usually getting 100% achievement

Percentage achievement



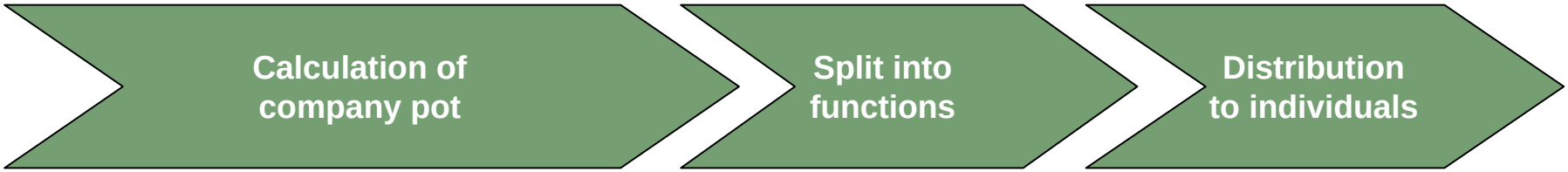
- The calculation of the incentive is as follows:

$$\sum_{\text{Summed for all performance measures}} (\text{Percentage achievement} \times \text{Weighting}) \times \text{Base salary} \times \text{Base salary percentage} + \text{Long term incentive component}$$

- If maximum performance is achieved for all measures, the overall percentage achievement is 100%
  - an Executive Director can therefore achieve a maximum annual incentive of 100% of base salary
- The long term incentive component has the potential to be the same amount as the annual incentive component

Source: Network Rail Management Incentive Plans 2009/10

The Management Incentive Plan for Bands below Executive Grades has a different format



- Company pot is calculated in a similar way to the Executive Grade bonuses
  - the base salary percentage decreases with seniority of Band
  - each 'mechanistic' measure is weighted twice that of 'judgemental' measures
- All Bands have an annual incentive component
- Only Bands 1 and 2 have a long term incentive component

- The total company pot is split between functions to create a function bonus pot
- Functional Directors can split this at their discretion and distribute to Performance Pay Leaders

- Performance Pay Leaders allocate bonus awards from the function bonus pot to individuals based on individual performance

Source: NR Management Incentive Plans 2009/10

Network Rail has launched a Transformation Programme to help it deliver the required efficiency savings in CP4

Programme	CP4 Target net benefit (£bn)	Example initiatives
Asset Management	1.3	• Track renewals to be based on asset condition and network criticality • Route Asset Management Plans under development for c. 305 strategic route segments • Revised workbook volumes for all assets
Efficient Infrastructure Delivery	2.2	• Introduce Maintenance 2b/c organisation and changes to maintenance working patterns
Access Management	0.2	• Reducing possession time to install modular switches and crossings from 54 hours to 21 hours • Reduce take-up and hand-back times for possessions from 90 minutes to 60 (aim is 30)
Network Operations	0.2	• Streamlining the organisation by reducing staff numbers by more than 500
Total*	3.3	

Note: * Net of duplications and incremental costs
Source: NR Management Incentive Plans 2009/10

Summary

TOCs

- There are 19 franchised passenger rail operators and a further 4 open access operators. Almost all are owned by the private sector
- The current franchising system is based on tightly specified 7-10 year franchises but the DfT has announced its intention to move to longer, more flexible franchises which would give TOCs greater scope for innovation

FOCs

- There are currently four major FOCs, all of which are owned by the private sector and are open access users of the network
- Rail freight operators face intense competition from each other and with road freight
- FOCs pay variable access charges but not fixed charges

Network Rail

- NR is the monopoly owner and operator of the national rail network, including track, signalling, power, civils and stations
- NR has Company Limited by Guarantee (CLG) status, which means it operates as a private company but profits are reinvested in the network. It does not have any equity and all of its debt is currently guaranteed by government
- NR's board is accountable to about 100 members. This members based governance regime is widely considered to be ineffective
- Regulation, monitoring and reporting by ORR is currently the main mechanism through which NR is held to account
- The ORR carried out extensive work during the PR08 process to assess NR's efficiency. It concluded that there was a significant efficiency gap between NR and top quartile comparators, but that the range of uncertainty over the size of this gap was significant

The ORR included two incentive regimes in its PR2008 determination with a view to aligning incentives between NR and train operators

Organisations and their governance arrangements	PR2008 incentive regimes	Cross industry processes
Passenger train operators Freight train operators Network Rail	Efficiency benefit sharing mechanism Volume incentive	On the day operations Capacity allocation and timetabling Long term planning and enhancements Asset management, access management and delivery of MRE Stations and depots Rolling stock selection

An Efficiency Benefit Sharing scheme was included in PR08 to provide an incentive for operators to work with Network Rail to improve its efficiency. However, two key issues have undermined its effectiveness

Overview of PR08 Efficiency Benefit Sharing scheme

Objective

- The Efficiency Benefit Sharing scheme is intended to provide an incentive for train operators to work with NR to improve its expenditure decisions and efficiency

Method

- NR shares 25% of outperformance in certain areas with all train operators
  - outperformance on all operating, maintenance and renewals expenditure is shared
  - a number of revenue elements are also shared (variable track access charges associated with additional traffic, retail and property rental income and schedule 4)
- Payments are divided between the operators in proportion to the variable track access charges paid
- Train operators have to demonstrate to the ORR that they have assisted in NR's outperformance in order to qualify for any payments
- The mechanism covers outperformance only. Train operators are not exposed to any NR under-performance

Issues

- Open access passenger and freight operators may keep the payments, but the DfT and Transport Scotland recoup any payments to franchised operators via Clause 18.1 or similar contract change provisions for most franchises (Southern is an exception to this)
- The mechanism is national, so individual TOCs are not confident that they can influence it sufficiently

"… If the government didn't claw it all back we'd be more interested, but we still might not have the confidence that we could impact it. If it were on a more local level it would be more interesting …"

Volume Incentive: Network Rail receives a bonus payment for providing capacity growth beyond a baseline annual growth rate

Objective

- VTAC is intended to cover NR's efficient cost of wear and tear caused by trains. As a result, NR receives no net benefit from accommodating additional traffic and could experience a negative impact through the knock on impact of additional traffic on operational performance (although the Capacity Charge should cover this)
- The volume incentive is intended to provide an incentive on NR to accommodate additional train services

Method

- NR receives a bonus payment for providing capacity growth beyond a baseline annual growth rate derived from the HLOS outputs and the freight route utilisation strategy
- The payment is made at a specified rate for outperformance in each of four volume metrics:
  - passenger train miles
  - percentage increase in passenger revenue
  - freight train miles
  - freight gross tonne miles
- NR receives a lump sum cash payment at the beginning of the next control period for outperformance in this control period

Issues

- Some stakeholders have commented that the volume incentive is opaque and does not really have an impact on Network Rail's behaviour, and in addition the level of payment (even if reached) is too small to adequately incentivise the company

Cross industry processes

Organisations and their governance arrangements	PR2008 incentive regimes	Cross industry processes
Passenger train operators Freight train operators Network Rail	Efficiency benefit sharing mechanism Volume incentive	On the day operations Capacity allocation and timetabling Long term planning and enhancements Asset management, access management and delivery of MRE Stations and depots Rolling stock selection

On-the-day operations (1 of 2): Responsibilities are shared between TOCs and NR. There are several different mechanisms through which both parties are incentivised to improve operational performance

- On-the-day operations include:
  - running trains
  - signalling and control
  - responding to incidents as they occur

- In the current setup:
  - NR is responsible for signalling and overall control. Operators also have controllers, who communicate with NR controllers, who in turn communicate with signallers
  - NR respond to infrastructure-related incidents and operators respond to rolling stock related incidents

- TOCs and NR have a variety of incentives to run on-the-day operations efficiently:
  - TOCs are incentivised by increased passenger revenues that follow from improved performance
  - NR is required to deliver improvements in PPM* and cancellations, set out in the HLOS
  - the ORR also sets a target maximum number of delay minutes that should be attributable to NR
  - NR and TOCs are incentivised by Schedule 8, under which they have to pay each other for delay minutes for which they are responsible. They also specify targets in JPIPs**
  - PPM statistics are published every period in the form of a TOC league table. This leads to competition between TOCs to move up the rankings
  - there is also significant political pressure applied to both TOCs and NR to improve performance

Notes: * Public Performance Measure, the proportion of trains less than 5/10 minutes late; ** Joint Performance Improvement Plan

On-the-day operations (2 of 2): Operational performance is one of the industry success stories over the last few years. However, stakeholders raised concerns about the design of Schedule 8

- Operational performance is one of the industry success stories over the last few years. Overall performance has reached record levels, although significant variations in performance do still occur across the network. The existing incentives have generally been successful in driving improvements
- The main complaint from stakeholders is regarding the design of Schedule 8
  - delay minute attribution process absorbs too much resource and drives counterproductive behaviours – although the importance of data collection for root cause analysis purposes was recognised

    "…There is a lot of unproductive time spent allocating blame …"

    "…It is cheaper to shift delay minutes to someone else than to find out the root cause …"
  - Although Schedule 8 payment rates are based on PDFH parameters, they do not accurately reflect revenue impacts in many situations. In particular, the varying value of a delay minute or the knock on impact of delays to other TOCs

    "…Schedule 8 never compensates us for all our losses …"
  - a revenue based system might be preferable, but it would need to take some account of responsibility for delays
- TOCs and NR have agreed to override Schedule 8 in some regions in order to reduce the level of resources spent on unproductive fault attribution activities
- Some TOCs do not think that NR is properly incentivised to minimise train cancellations

  "… TOCs can lose their franchise on cancellations, but NR has no direct incentive on cancellations …"
- There is also an issue with train prioritisation for signallers. Nearly all trains are given the same Class 1 prioritisation which makes it difficult to prioritise trains when responding to incidents. Prioritisation often depends on the relationship between TOCs and NR

Source: L.E.K. stakeholder workshops

Capacity and timetabling (1 of 2): NR has overall responsibility for capacity allocation and timetabling, but there are well established industry processes whereby train operators input into the timetabling process

- NR has overall responsibility for capacity allocation and timetabling, but there are well established industry processes whereby train operators input into this process
- TOCs have service level commitments (SLC) which specify in detail the minimum number and type of services that they are required to operate. The precise level of detail of the SLC varies between franchises but will often include: frequencies, journey times, minimum stops, and first and last trains
- TOCs are incentivised to maximise revenue from the services specified in their SLC so will communicate its preferences to NR. TOCs may also wish to operate additional services which are not specified in the SLC if it thinks that these are commercially viable
- FOCs need flexibility to respond to customer demand, which can vary at short notice. As a result, they need more train paths in the timetable than they will actually use on a day-to-day basis
- NR has to try to reconcile any conflicting train operator requirements. NR's first responsibility is to ensure that it provides train paths to each operator that are in accordance with the firm rights specified in their Track Access Agreements
- In practice, the annual timetable development process is an incremental process whereby the previous year's timetable is used as a starting point and incremental changes are made. It is very rare for major timetable recasts to take place. Major timetable changes are very difficult to implement in certain parts of the network (e.g. Birmingham) due to the number of constraints
- The Track Access Agreements do not provide any incentive on NR to accommodate requests for additional train paths. The incremental access charges that NR receives are only intended to recover NR's efficiently incurred short run marginal costs. Furthermore, additional services would make it more difficult for NR to achieve its operational performance targets
- As a result, ORR included a Volume Incentive in PR08 to provide an incentive on NR to accommodate additional train services

Capacity and timetabling (2 of 2): NR is generally considered to be not properly incentivised to maximise industry revenue by optimising the timetable

- Stakeholders have commented that the Volume Incentive is opaque and does not really have an impact on NR's behaviour. Furthermore, the level of payment (even if reached) is too small to adequately incentivise the company. As such, NR is generally considered to be not properly incentivised to accommodate additional train services beyond the level required by HLOS
- Some stakeholders think that NR is not sufficiently flexible in its approach to timetable development. In particular, it does not make full use of the flexibility contained in Track Access Agreements to adjust the timing of established services in order to optimise across the network as a whole. This is a particular issue for multi-user routes
- Some stakeholders do not think that NR should be responsible for timetabling due to its lack of commercial incentives to grow industry revenue
- The timetabling process is also thought to be hampered by political interventions and prescriptive SLCs
  - there is a tension between the DfT and ORR regarding the allocation of train paths to open access operators
  - it has taken 10 years to develop the new Eureka timetable for the East Coast Mainline

Planning and enhancements (1 of 2): Network Rail and the DfT take the leading roles with planning and enhancements

- NR is responsible for developing Route Utilisation Strategies (RUSs). These are medium-to-long term strategies for each route. They tend to focus mainly on identifying capacity bottlenecks and options for addressing these
- The DfT uses the RUSs to inform its High Level Output Statement (HLOS) of the outputs that it is seeking to procure from the rail industry during each control period. HLOS is accompanied by a Statement of Funds Available (SoFA) and a high level 30 year strategy
- CP4 HLOS enhancement schemes are being delivered through two main routes
  - the ORR's PR08 determination included an allowance for fixed infrastructure related schemes and these are being delivered by NR
  - the DfT is negotiating changes to franchise agreements to implement timetable and rolling stock capacity related schemes
- NR, the DfT and other stakeholders also specify a few major enhancement schemes which are outside the HLOS process (e.g. Reading station)
- The ORR / NR have developed an Investment Framework to facilitate investments by other parties
- Enhancements can be initiated by TOCs but this is relatively unusual under the DfT's current franchising system due to the prescriptive specifications, the relatively short franchise terms and the franchise award criteria. One of the key objectives of the DfT's radical franchise reform proposals is to encourage more TOC led investment
- In many cases rail enhancements are not commercially viable in terms of their financial return, but government may be willing to fund them due to their broader economic benefits

  "… One reason that the railway is so expensive is that there are lots of projects with no commercial benefit …"
- However, there are exceptions to this. Chiltern Railways' Evergreen 3 enhancement is proceeding on a purely commercial basis. It should be noted that Chiltern Railways operates under a very different form of franchise agreement to the DfT's current system

Planning and enhancements (2 of 2): There are a number of issues with how enhancements are planned and delivered

- Some stakeholders think that giving NR responsibility for developing RUSs leads to them favouring infrastructure solutions over other forms of solution
- Train operator involvement in developing the CP4 HLOS schemes was relatively limited. It mainly happened indirectly through their input to NR's RUSs. ATOC has initiated a process ("planning ahead") to increase TOC involvement for CP5
- Some HLOS enhancement packages have been undermined by DfT only procuring part of the package. For example, platform lengthening has gone ahead without procuring the rolling stock that would use the enhancement

  "… Network Rail have millions to spend on platform lengthening, but we have no vehicles yet …"
- There have also been instances of the DfT delaying schemes by changing its mind

  "… The government decides what it wants to buy. Then we go through the process of writing the Strategic Business Plans. Then the government changes its mind. This stop start planning process doesn't allow any smoothing of the supplier base …"
- One of the key issues with enhancements is that the industry sees enhancements as a free good. Neither NR nor TOCs normally have an incentive to value engineer schemes to ensure that they deliver the required capabilities and other outputs at the lowest cost. Delivery of value for money in terms of scope is largely dependent on ORR oversight
  - NR is happy for the cost of enhancements to be added to its RAB as it receives an allowed return on its RAB
  - TOCs are generally held harmless to changes in FTAC so do not end up paying for RAB funded enhancements (there are some exceptions to this such as TOC self-financing schemes where the TOC payments are ring fenced outside periodic reviews for enhancements)
- Although NR is incentivised to deliver enhancements below budget many TOC stakeholders think that TOCs could deliver schemes much more efficiently (particularly for stations and depots)

Network Rail is responsible for asset management, access management, and delivery of maintenance, renewals and enhancements (MRE): (1 of 2)

- Network Rail is responsible for:
  - Asset management: Deciding what MRE work needs to be done, where and when
  - Access management: Taking possession of sections of the network in order to carry out engineering works
  - Deliver: Managing delivery of the work. Maintenance is carried out in-house, whereas renewals and enhancements are mainly contracted out

- Efficiency in asset management and MRE delivery are incentivised through the ORR's periodic review process and the resulting price determination. NR also has a licence obligation to manage assets sustainably
  - the ORR's PR08 assessment was that NR was relatively inefficient at both asset management and deliver of MRE. NR recognises this and has made Asset Management and Efficient Infrastructure Delivery two of the key workstreams of its CP4 Transformation Programme

- A number of mechanisms are in place to incentivise the efficient planning and use of engineering possessions
  - the ORR introduced new targets for NR in PR08 – these are called possessions disruption indices (PDI)
  - NR pays financial compensation to train operators for taking disruptive possessions via the Schedule 4 and Network Change mechanisms
  - PR08 also introduced the concept of Joint Network Availability Plans (JNAPs) which are intended to build on the success of JPIPs

Network Rail is responsible for asset management, access management and delivery of MRE (2 of 2)

- Although the possessions planning process involves a number of TOC consultation stages, TOC stakeholders at L.E.K.'s workshops reported that they felt as though the consultation mainly involved TOCs being informed of what NR had decided
- NR should in theory be able to optimise possessions from a whole system perspective based on Schedule 4 payment rates. However, many TOCs reported that these rates did not accurately reflect the impact on their business, particularly for a lengthy series of possessions
  - one of issues is that ORR adjusted the Schedule 4 payment rates in PR08 but the DfT has clawed back the change from TOCs through the Clause 18.1 change mechanism

  "… 18.1 means that we pay everything back to the government, which isn't doing the industry any good …"
- TOCs that have prepared JNAP are relatively positive about them. JNAPs have given them the opportunity to explain to NR the true revenue impact of different types of possessions in different areas – for example through a ranking of their routes by revenue

  "…our JNAP has driven improvement between Didcot and Oxford. It has helped engineers to understand what the customer wants …"
- However, it was clear from our workshops that very few TOC managers were even aware of the existence of the JNAP concept – a full 20 months after it was introduced

  "… what is a JNAP? …"
  Two TOC MDs, in separate workshops
- The high profile announcement by government of a 7-day railway was considered to be unhelpful as it reduces flexibility. There are some situations where TOCs highly value a 7-day railway but there are other times when they would prioritise other objectives

  "… A good infrastructure is in everyone's interest. A seven day railway is fine in principal but is not currently in our interest: Sunday can be used for works! …"

Stations and depots (1 of 2): Network Rail manages some stations, but most are leased from Network Rail and managed by an operator

- NR manages some stations, but most are leased from NR and managed by an operator, referred to as the Station Facility Owner (SFO)
  - NR is responsible for major maintenance work
  - light maintenance and repairs are carried out by the SFO
- NR leases depots to Depot Facility Owners (DFOs)
  - NR is typically responsible for renewals
  - the DFO is responsible for repair and maintenance, and occasionally also for renewals
- SFOs are primarily incentivised by commercial considerations
  - SFOs are incentivised by retail revenues
  - some operators are incentivised through their franchise agreements, for example
    - NPS targets form part of Southern's franchise agreement
    - the Service Quality Incentive Regime (SQUIRE) is part of ScotRail's franchise agreement

Stations and depots (2 of 2): There is widespread dissatisfaction with the current split of responsibilities at stations and depots

- Stakeholders at L.E.K.'s workshops were unanimous in declaring that the current contractual arrangements for stations and depots are far more complicated than they need to be. For example, there are several areas of split responsibilities including for station development, maintenance, repairs and renewals

  "… How on earth did they come up with the current arrangements? You couldn't invent a more complex system …"

- Moving to normal full repairing leases would greatly simplify the arrangements and address many of the current issues

- However, concern was raised over how stations would be funded under the new regime. For example, TOCs might be incentivised to "patch and mend" when renewal might be the better whole life solution

  "… You have to be aware that we cannot afford big lumpy expenditure such as a new roof for Marylebone. We would just tape the roof. However, most other things you could do …"

- Stakeholders also reported that depots were largely overlooked during PR08 and are in need of significant investment

  "… ORR didn't give Network Rail any money to enhance depots. There is no incentive for a TOC to invest in depots because then they have to pay a higher lease charge, even if they used their own money to invest …"

  "… Depots aren't viewed as something which contributes to delivering outputs …"

Rolling stock selection (1 of 2): TOCs procure new vehicles, but the rolling stock to be used is sometimes specified by DfT in franchise agreements

Note: This slide focuses solely on rolling stock issues relating to the interface between train operators and NR

- TOCs used to be responsible for deciding what rolling stock to use on their franchise and procuring new build vehicles if that is their preferred strategy
- However, the DfT has become increasingly involved with rolling stock selection and procurement over recent years. This has occurred through a number of mechanisms:
  - specification of required fleet in the franchise bid ITT. This could either be directly, or more typically, indirectly through the required characteristics of the fleet
  - direct procurement of rolling stock. Examples include the Southeastern Javelins and IEP
  - management of rolling stock cascades. For example, to facilitate HLOS capacity enhancements
- Train operators pay Variable Track Access Charges (VTAC) to NR for operating rolling stock on its infrastructure. These charges are intended to compensate NR for the short run marginal cost of the wear and tear to its infrastructure
- Rolling stock selection also impact NR through the timetabling process because the acceleration and speed characteristics of rolling stock varies significantly

Rolling stock selection (2 of 2): Current arrangements appear to work fairly well from a train operators – NR alignment perspective

Note: This slide focuses solely on rolling stock issues relating to the interface between train operators and NR

- Train operators have to take a wide range of factors into account when selecting or procuring rolling stock. The relative importance of VTAC charges to the decision making process varies significantly depending on the type of service being operated. In some cases VTAC is immaterial, whereas in other cases it is one of the key factors
- However, VTAC rates are generally considered to be cost reflective. As such, train operators have an appropriate incentive to select rolling stock which is less damaging to NR's infrastructure

  "… VTAC is probably the right mechanism to incentivise efficient rolling stock procurement …"

  - but it can take a number of years for the damage characteristics of new rolling stock designs to be fully understood

  "… Having a price list like at present is probably the right approach, although there are a few "funnies" in there …"
- There have been a few situations where commercially attractive opportunities to improve the track-friendliness of trains have been identified but industry contractual arrangements have acted as a barrier to implementation. One of the key barriers is the risk to TOCs of the DfT clawing back any VTAC savings through Clause 18.1

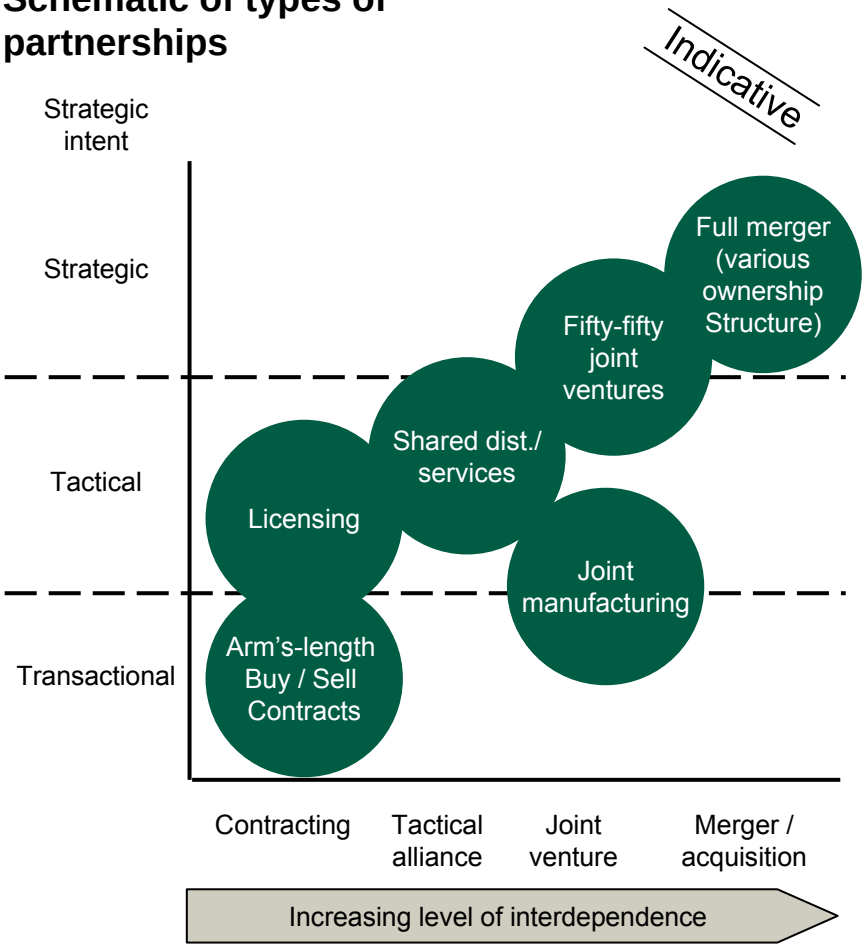
  - the South West Trains Desiro fleet is a well documented example of a modification being delayed as a result of contractual concerns. A commercial agreement has now been reached for the SWT Desiro fleet and a new procedure has been introduced for dealing with vehicle modifications

Agenda

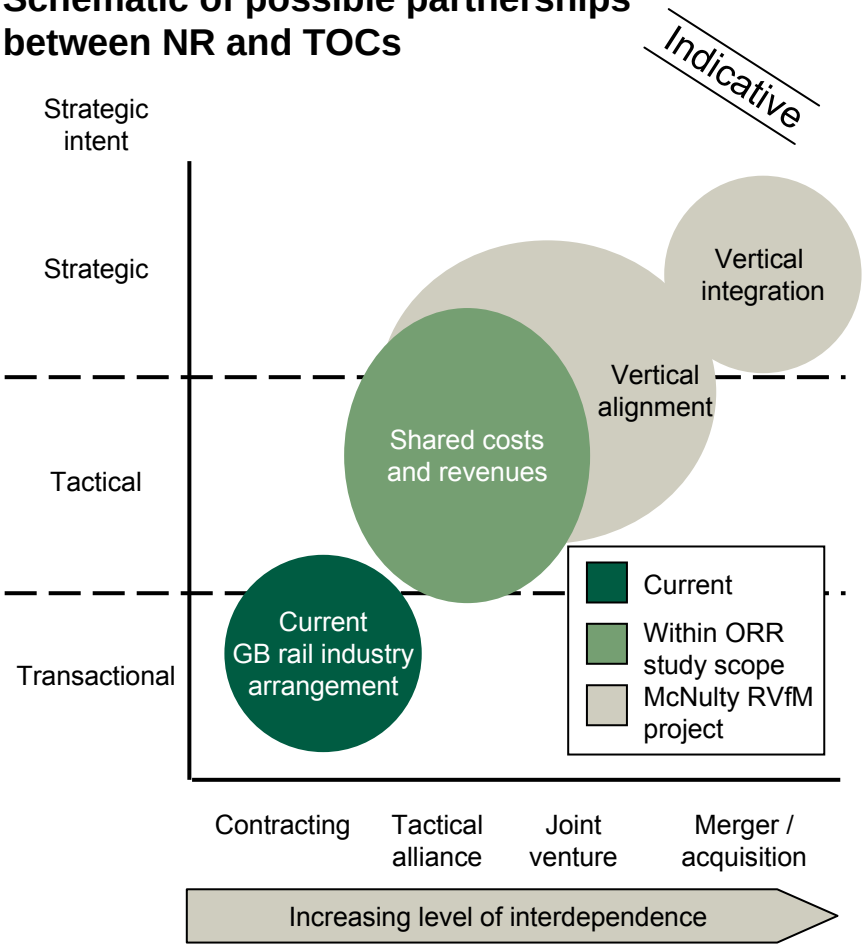
- Executive summary
- Introduction
- Analysis of sharing mechanism practicalities
- Option evaluation and implementation
- Appendix
  - analysis of current situation
  - alliancing best practice

Alliances comprise of a broad spectrum of relationships that differ by strategic intent and degree of interdependence. A number of options are being explored for GB railway in this project and the McNulty RVfM project

Schematic of types of partnerships



Schematic of possible partnerships between NR and TOCs

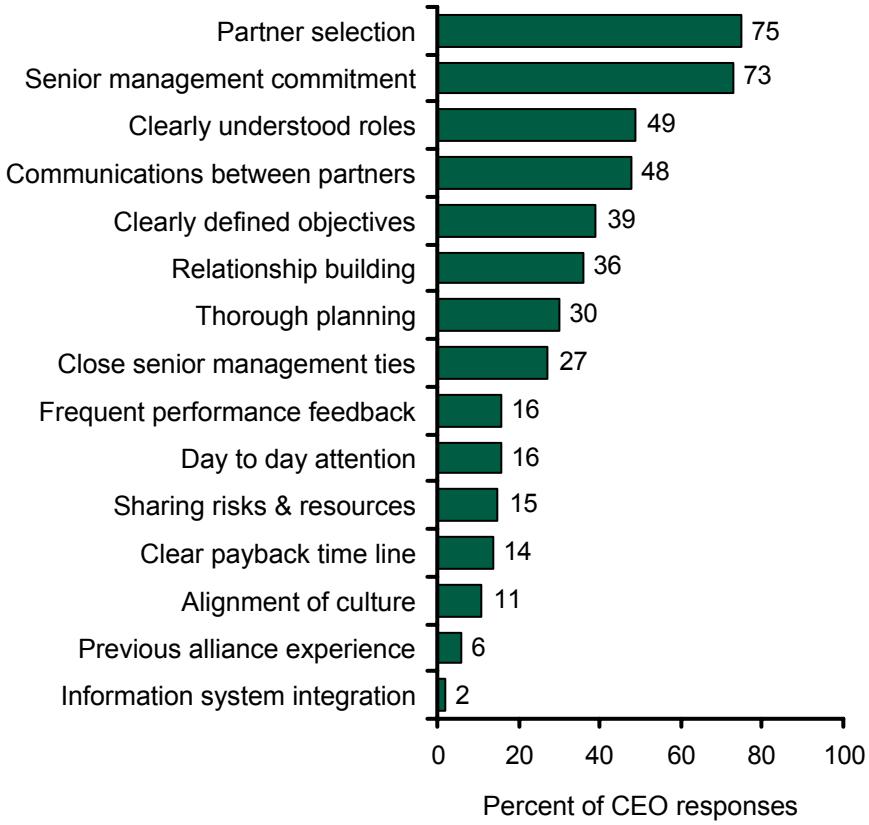


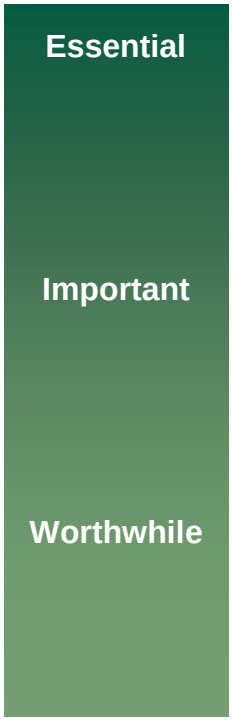
Source: L.E.K. Research

ORR/ATOC/Network Rail. Rail industry cost and revenue sharing.

Partner selection and senior management commitment are the two most important success factors for alliances

Reasons for the success of alliances (n=450 CEOs)



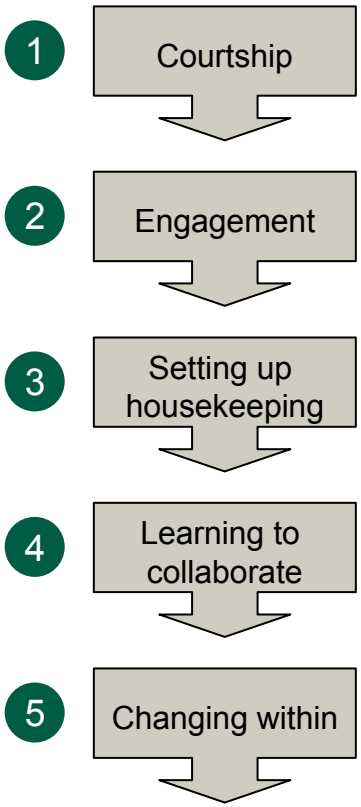


- Partner selection and senior management commitment are the two most important success factors for alliances
- If a cost and revenue sharing arrangement between NR and train operators was mandated through the regulatory framework then there would be no freedom over partner selection
- This further increases the importance of achieving buy-in from senior managers at both NR and train operators before mandating a cost / revenue sharing arrangement

Source: Data Quest

Effective partnering needs to be developed over time. Often successful partnerships will begin with a simple contracting relationship then evolve through increased dependency

Development of a successful partnership



Two companies meet, are attracted and discover their compatibility

Draw up plans and close the deal

Two companies discover that they have different ideas about how the business should operate

Devise mechanisms for bridging those differences and develop techniques for getting along

Each company discovers that it has changed internally as a result of its accommodation to the ongoing collaboration

- The formation of an alliance, like real relationships, are unique and need to be formed over time

  "…Relationships between companies begin, grow, and develop – or fail – in ways similar to relationships between people, No two relationships travel the same path…"

  Harvard Business Review, August 1994

- The implications for a GB Rail alliance is that results will not necessarily be revealed immediately after any structural change. The success very much relies on the building of relationship between the parties which is likely to take time and be an iterative process

- Depending on the success of the relationship, the type of partnership may evolve and can lead to other similar agreements
  - for example, an alliance between the two largest players in a speciality medical device segment, Red Cell Corporation and White Cell Incorporated, progressed from an arm's length purchasing union, to a manufacturing-supply relationship and finally to a jointly owned NewCo

Source: Collaborative Advantage: The Art of Alliances, Harvard Business Review, August 1994

Examples of good and bad alliancing

Tubelines Public Private Partnership

- 30 year, highly-specified contract covering activities, KPIs and required outputs
- PPP structure was highly political and put in place against TfL's wishes, resulting in a perceived lack of commitment to development of a working partnership from the outset
- Tubelines sub-contracts were awarded following open competition, with the objective of securing good value delivery of maintenance and renewals activity
- However, over time an adversarial approach between Tubelines and TfL, reinforced by difficulties in completing an ambitious programme of work, led the situation to deteriorate
- Changing requirements for the network led to TfL buying out Tubelines and conducting significant re-programming of work to reduce activity and save cost

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AgustaWestland / MoD Integrated Merlin Operational Support contract

- AgustaWestland heavily incentivised to commit to a partnership strategy with the MoD, in support of its procurement strategy, through conditional award of Future Lynx construction contract
- Principles of the partnership laid out in a non-contractual Strategic Partnering Agreement, reinforced with separate contract governing outputs
- Significant time and investment in developing the partnership had taken place before the formal contract was signed
- Co-location and joint teams resulted in improved data availability on both sides, eliminating disagreements on data, and fostering trust and collaboration
- Overall, the partnership has delivered increased outputs and lower costs than originally anticipated
- Partnership also had sufficient resilience and resources to respond to unexpected events, e.g., Merlin airframe corrosion issues