Capacity & performance planning framework
Origins of review

Our review of the end-to-end capacity and performance planning framework was in response to a number of factors:

- Demand growth is increasingly driving competition for network capacity
- Evidence of process disconnects such as those outlined in ORR’s East Coast Main Line ‘lessons learned’ report
- Opportunity for a review of long term planning the national programme of Route Utilisation Strategies was completed in 2011
- Strategic Outcomes developed and adopted by Network Rail relevant to this area
  - (2014) capacity and timetabling processes and tools enable transparent tradeoffs
  - (2024) optimise the use of capacity and address key tradeoffs
- McNulty and Rail Delivery Group work on rolling stock utilization
- Opportunity from information projects e.g. ORBIS

Activity overview

- KPMG report into whole-system planning autumn 2011
- McKinsey input winter 2011/2
- Review of Route Utilisation Strategies 2011/2
- Capacity Planning & Timetabling workstream 2012
  - Cross-functional team identified priorities
  - Agreed to focus on process linkages and supporting analysis
End-to-end process alignment

The planning process has recognised sub-processes, but they are not adequately joined up.

- Each stage is effectively a constrained optimisation where the previous stage is either taken as a given or re-opened.
- Currently there are ‘gaps’ between the processes where the context of previous decisions can be lost; the process is not subject to change control so strategic purposes and goals do not flow through from one stage to the next.

Changes to improve line of sight

Change to improve how the goals and decisions are passed from strategy to operations:

- Clarification of accountabilities within Network Rail
- Long Term Planning Process (LTPP)
- Widening of the Event Steering Group (ESG) process
- Introduction of a Sale of Access Rights Panel
- Improvements to information and tools
Capacity and performance planning accountabilities

Within Network Rail, accountability for these activities is agreed between Group Strategy and Network Operations as shown:

- Regulatory and Contractual framework
  - Long Term Planning
  - Sale of Access Rights
  - Annual Timetable
  - Operations

Network Operations accountability
Group Strategy accountability
Long Term Planning Process
Route Utilisation Strategies: Strengths & Weaknesses

A national programme of Route Utilisation Strategies was undertaken between 2005 and 2011. The review of this programme in 2011 identified both positive and negative features:

- Success in informing investment decisions, e.g.
  - CP4 settlement
  - Electrification
- Basis of CP5 plans
- Consultative process generating support within & outside the industry
- Recommendations based on funders appraisal criteria
- Less good at examining trade-offs in the use of existing capacity
- Need for consensus can lead to “no or minimum change” solutions
- Imperfect alignment with franchising
- ‘One size fits all’ approach
- Slow

Why maintain RUSs?

- Because we need to:
  - Evidence base for future control periods – initially CP6 in 2019 but out to 2043
  - Changing context
- Because we have to:
  - Network Rail’s Licence Condition requires it to “establish and maintain route utilisation strategies… for the use and development of the network… consistent with the funding that is, or is likely to become, available…”
Changing context

- McNulty Rail Value for Money report:
  - Reducing net cost of/subsidy to the industry
  - Making best use of the existing network

- Emphasis on supporting economic growth

- Increasing commitment to long term investment in rail:
  - High Speed 2, electrification, Crossrail, SFN

- Network Rail devolution

- Department for Transport Consultations and Command Paper:
  - Less prescriptive, longer franchises
  - Devolution of Rail Powers

- Transport Scotland Corporate Plan and Rail 2014 consultation paper:
  - Boost productivity, delivering economic benefits
  - Facilitate greater connectivity and integration
  - Promote a low carbon, environmentally sustainably, economy

Implications for planning

- Do not limit options to incremental changes on existing services. Consider step changes where appropriate, e.g.:
  - Making best use of the existing network
  - Stakeholder aspirations to support economic growth
  - Opportunities presented by HS2 and other investments

- More emphasis on affordability and wider economic benefits when generating & assessing options

- Less need to (be seen to) plan short-term service changes

- Stronger links to asset management plans, for integration and efficient delivery of changes to the network
RUS process to date

Demand Forecasts

Stakeholder aspirations

Options

RUS 1
- Freight
- L & SE
- Regional
- Long Dist.

RUS 2
- Freight
- L & SE
- Regional
- Long Dist.

RUS 3
- Freight
- L & SE
- Regional
- Long Dist.

Gaps

Capacity issues

Options
- Option 1
- Option 2
- Option 3
- Option 4
- Etc ...

Network Rail
Proposed Long Term Planning Process

**Market studies**
- Freight
- L & SE
- Regional
- Long Dist.

**Stakeholder aspirations**
- Freight
- L & SE
- Regional
- Long Dist.

**Cross-boundary analysis**
- Demand forecasts
- Conditional outputs

**Route Studies**
- Option 1
- Option 2
- Option 3
- Option 4
- Etc ...

**Route Study**
- Study 1
- Study 2
- Study 3
Market Studies
- Develop demand forecasts for 10 & 30 years, with scenarios to capture key uncertainties.
- Formulate conditional outputs (e.g. service frequency, journey times, capacity) for key flows/corridors.

Cross Boundary Analysis
- Ensures consistent treatment of cross-boundary services.

Route Studies
- Similar process to gaps & optioneering in existing RUSs.
Market Studies – Passenger

- Market sectors (not train services):
  - Long distance (inter-urban)
  - London & South East
  - Regional urban
  - Scotland domestic

- Develop demand forecasts for 10 & 30 years, with scenarios to capture key uncertainties.
  - Forecasts for “local” flows may be done in Route Studies

- Formulate conditional outputs (e.g. service frequency, journey times, capacity) for key flows/corridors:
  - Not constrained by network capacity, but should have a reasonable chance of being value for money.
  - May be similar to current services, but not necessarily

Market Studies – Freight

- Take a strategic view of the potential development of key freight markets, e.g.:
  - Electricity generation (coal and/or biomass)
  - Intermodal (ports, channel tunnel, domestic)
  - Construction materials
  - Other (metals, petroleum, …)

- Demand forecasts for 10 and 30 years, with scenarios to capture key uncertainties

- Understand capability requirements (e.g. train lengths, gauge)

Update of existing SFN work in many respects.
Market Study Governance


- Regional Urban Market Study Working Group
- Long Distance Market Study Working Group
- London & SE Market Study Working Group
- Freight Market Study Working Group

**Regional Groups** – Representation from Local Authorities, Local Enterprise Partnerships, PTEs, and local service operators for the major UK rail nodes (North East, North West, Yorkshire, West Midlands, East Midlands, South West).

1-1s as required
Cross-boundary analysis

- Ensures consistent treatment of cross-boundary services
- Identify strategic issues and options for cross-boundary services, e.g. how to get freight to Scotland post-HS2?
- Gives assumptions re cross-boundary services to Route Studies:
  - Specified services to be accommodated; and/or
  - Options to be assessed by the Route Study in more detail (e.g. impact on other services)
- Feedback from Route Studies to cross-boundary analysis will be essential
- Seen as a standing group to be called upon when required

Route Studies

- Similar process to gaps & optioneering in existing RUSs
- Gaps = can conditional outputs from all sectors be accommodated on the existing network?
- Options in two stages:
  - Making best use of the existing network (with committed changes)
  - Options with infrastructure investment
- Options assessed against funders’ criteria:
  - “Traditional” economic appraisal; but also
  - Wider economic benefits, strategic fit, affordability
- Options to present choices to funders
- To align with Devolved Routes
Associated Studies and Specifications

Network-wide studies

- As now following Network RUS workstream principles
- Current programme includes:
  - Light rail
  - Low cost alternatives to conventional electrification
  - Community rail

Network & Route Specifications

- To inform maintenance and renewal decisions
- To inform shortlist of proposals for changes to be funded (e.g. via HLOS)
- 10 and 30 year capability statements (Devolved Route and Strategic Route)
- Basis of decision making
- 1st iteration published on Network Rail website September 2011
- LTPP to provide further evidence base
Industry input

- Market Studies will provide demand forecasts for 10 & 30 years and will identify “Conditional outputs”
- Cross-boundary analysis will identify and assess strategic issues nationally and provide assumptions for services that cross a number of routes
- Devolved Route input to provide local expertise and alignment with route strategic objectives and plans – key to successful delivery of Route Studies
- Train Operator (passenger and freight) input in both Market Studies and Route Studies through Industry working groups

LTPP Governance

- Planning Oversight Group charged by Rail Delivery Group with oversight of railway planning issues
- LTPP governance will be via Rail Industry Planning Group
- Market Studies will be led by cross-industry working groups consisting of funders, relevant train operators, ORR, ATOC with input from wider stakeholders through regional groups
- Cross-boundary analysis will be led by a working group with cross industry input as required
- Route Studies will be led by working groups consisting of input from Devolved Route, relevant train operators and funders and specifiers, taking outputs from Market Studies, Cross boundary analysis and relevant Network and Route specifications
- Wider Stakeholder Briefings and 1-1s as required
# LTPP timeline

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- **Market Studies commence - May**
- **Publication of Draft Market Studies for Consultation - by April**
- **Publication of final Market Studies – by December**
- **ORR Establishment – by February**
- **Cross boundary analysis – ongoing from Q1, 2013**
- **Route Studies (Tranche 1) commence - 18 month duration**
- **Route Studies (Tranche 2) commence - 18 month duration**
- ORR has agreed that LTPP outputs should be completed in time to inform September 2016 Initial Industry Plan (IIP) for Control Period 6
LTPP Progress to Date

- Endorsement from ORR to proceed received April 2012
- Long Distance, Freight, Regional Urban and LSE Market Studies underway with first Industry working groups held for each
- Regional groups with Local Authorities, Local Enterprise Partnerships held to understand local strategic priorities to deliver economic growth held
- Consultations in Scotland not yet commenced
- Wider Stakeholder Briefings and 1-1s as required
Event Steering Groups
**Event Steering Groups**

We are expanding an existing process – Event Steering Groups for major timetable change – to join up the elements of capacity allocation.

**Process linkage**

- This initiative utilises the current Network Code process for Calendar of Events and Event Steering Groups.
- The existing process has been widened and builds on project development concepts such as GRIP-style stage gates.
- The widened process focuses on defining output goals to support the clear line of sight from strategy to operations:
  - Starts with the strategic context and service output goals for the ‘event’ (i.e. outputs from franchising or other investment decisions)
  - Applies high-level analysis of train service concepts (similar to that done in RUSs)
  - Only then moves into detailed timetable solutions.
- Establishes governance arrangements for timetable change.
Calendar of Events

- The Calendar of Events is the process for managing the initial definition of each event and its relationship to other events.
- Each Route will develop its own calendar, comprising:
  - Commercial changes, e.g. those driven by an existing Franchise Agreement or Track Access Agreement.
  - Infrastructure changes.
  - Standards driven changes.
  - Review of capacity allocation.
- Events will be ranked in importance/complexity.
- A single list of all Events will be collated centrally for publication purposes.
- It will be necessary to develop a process for dealing with access applications that do not coincide with an Event – e.g. by each ESG setting explicit rules for the treatment of such applications until the next Event.

Governance arrangements

- Internal governance for the Calendar of Events and Event Steering Groups will be provided by the Sale of Access Rights (SoAR) Panel.
- The cross-industry Event Submissions Review Group for the Calendar of Events will be continued as a means of coordinating industry input to the programme of ESGs.
- A programme team is being established within Operational Planning to:
  - work with Routes to create/update the Calendar of Events optimise events nationally for submission to SoAR Panel for publication in line with the Network Code.
  - develop/review ESG remits.
  - manage the pool of potential ESG Chairs.

ESG composition

- Each ESG will comprise:
  - a Chair (usually but not always a Network Rail senior manager).
  - one representative from each timetable participant and funder.
  - the Route MD or representative for each affected route.
  - a Project Manager from the new programme team in Operational Planning.
  - and a support team from across the industry based on the requirements of the ESG remit.
ESG Chair

- Potentially drawn from the pool of Executive Leaders
  - Owner of the goals of the change
  - Primarily external focus, mostly face-to-face meetings
  - Stakeholder engagement, expectation setting, conflict resolution
  - Part-time role in addition to ‘day job’

Capabilities
- Thorough knowledge and understanding of the GB rail industry including legislative, regulatory and contractual framework
- Seeing the wider picture – able to see issues in perspective, and to think both long and short term
- Influencing skills and gravitas; able to engage at senior levels internally and externally, including Managing Director level; diplomatic yet assertive
- Credibility – the capacity to inspire confidence in what one says
- Building excellent relationships – track record in cross-industry collaborative working
- Passion for excellence, energetic and enthusiastic – able to infect others with these qualities and to ensure barriers are overcome
- Strong commercial and financial awareness, including socio-economic analysis techniques
- Excellent communication skills (verbal and written) – able to translate complex concepts into something understandable
- Comfortable dealing with ambiguity, remaining focused on the key business deliverables

Programme team

- New team within Operational Planning

- Project Manager for each ESG
  - Investigator/procurer of packages of evidence to support decisions
  - Internal and external working-level focus; meetings and project management
  - Support and coordinator to the Chair
  - Dedicated resource, usually full-time

Capabilities required for Project roles:
- Degree holder or of graduate calibre intellect
- Verbal communications – informal (influencing); formal (presentations)
- Written communications – drafting significant documents
- Analytical skills and numeracy – able to see the big picture from the detail
- Project management – deadlines, complexity, trade-offs, stakeholder lobbying
- Leadership skills – able to direct, develop and motivate teams
- Strong results orientation, focused on organising and bringing people and resources together to achieve objectives
- Establishing and leading effective cross-functional/cross-industry teams
- Broad experience of rail industry
ESG process summary

The diagram summarises the process for a complex ESG.

- Activities on the left are to be driven by the new programme team in Operational Planning.
- Governance group (SoAR Panel) activities are on the right.
- Each of the numbered stages is examined in more depth in the following pages – although of course thes process is subject to change as a result of experience gained through the pilot ESGs.
- It is assumed that lesser events would have a less rigorous governance/approval process.
1. Rationale for change

- **Purpose**
  - Manage the Calendar of Events
  - Understand the purpose and context of each Event
  - Identify appropriate scope boundaries (geographical and other)

1. Definition and scope of event(s)
2. Description of inputs/schemes and the outputs they were funded to provide
3. Check of current applicability with funders/clients
4. Today’s context – current outputs in scope area
5. Tomorrow’s context – plans affecting scope area but not part of the event (strategic fit)
6. Draft project plan

2. Definition of outputs

- **Purpose**
  - Identify a hierarchy of goals driven by the purpose of the Event

1. Invitation to participate in ESG
2. Collection of participants’ aspirations
3. Assessment of aspirations
4. Discussion with participants
5. Identification of primary goals (critical success factors)
6. Identification of secondary goals (conditional outputs)
7. Final project plan
3. Option selection

- **Purpose**
  - Consider a variety of substantially different approaches to deliver the identified goals
  - Assess the full range of effects of each alternative
  - Select a single preferred option

1. Identification of alternative ways to deliver goals
2. Creation of alternative high-level service structures
3. Initial impact assessment of high-level service options
4. Identification of any unacceptable impacts (showstoppers)
5. Refinement of remaining options
6. Second impact assessment of options
7. Preferred option

4. Single option development

- **Purpose**
  - Develop and refine the selected option, strengthening positive effects and reducing and/or mitigating negative effects, to the point where a concept timetable could be contractualised between Network Rail and operators

1. Detailed impact assessment of preferred option
2. Refinement of preferred option
3. Mitigation plans for remaining negative impacts
4. Principles for restrictions of use
5. Arrangements for monitoring and review
6. Identification of new/amended access rights
7. Sale of access rights (through the normal processes)
5. Implementation

- **Purpose**
  - Oversee development of the timetable through the regulatory process into delivery, including appropriate support measures and policies

  1. Network Code D2 process
  2. Mitigation measures
  3. Alignment of ‘restrictions of use’ plans
  4. Alignment of regulation policy and service recovery plans
  5. Timetable change

6. Operation

- **Purpose**
  - Record actual delivery of the outputs of the change (capacity, performance, cost)

  1. Monitoring of actual impacts against predicted

7. Review

- **Purpose**
  - Interpret the data obtained from the monitoring activity and identify any appropriate recommendations for change

  1. ESG review of impacts of the change in accordance with plan
  2. Recommendations
Sale of Access Rights Panel
SoAR Panel: purpose

- To approve the proposed sale of access rights where:
  - Sales could have a material effect on the deliverability and performance of other services
  - There is a risk of sub-optimising network efficiency
  - There are competing applications from operators or prospective operators

- Panel approval is required for:
  - new track access contracts;
  - extensions to contract duration;
  - any regulatory bespoke requirements; and
  - proposals not consistent with RUSs or other known strategies and investment plans

SoAR Panel: arrangements

- Panel composition
  - Chaired by Robin Gisby
  - Representatives from Group Strategy, Network Operations, Asset Management and Group Investment

- Sponsor(s) for access rights sale:
  - Route Managing Director(s)

- Meetings
  - 4-weekly, with minutes to Investment Panel for noting
  - First meeting was in May 2012
SoAR Panel: role in the sale process
Information and tools
Informing decisions

Accurate and timely information is required for effective decisions on complex trade-offs. Some of the tools, skills and techniques underpinning the planning system are either no longer suitable or not sufficiently developed to perform the tasks required.

- Some effects are not currently modelled, and there is a lack of quantitative understanding to enable suitable tools to be developed.
- Modelling tools are not linked together so impacts of proposed changes can be missed.
- There is no structured feedback from actual behaviour to improve accuracy.

Analytical capability

We will support decision making in the Event Steering Group activity by:

- bringing together Network Rail’s functional analysis specialists,
- joined by equivalent key people from train operators,
- to scope out achievable improvements in the analysis of the impacts of train service change.
Where are we now
Where are we now? – Timeline

- **Spring 2012**
  - LTTP approvals and communication; Market Studies begun
  - SoAR Panel commenced

- **Summer 2012**
  - Calendar of Events/Event Steering Groups process approvals and communication

- **Autumn 2012**
  - Event Steering Groups initial resources identified and mobilized

- **Winter 2012/3**
  - Pilot Event Steering Groups begun (West Coast and East Coast)

- **Spring 2013**
  - ESG permanent resource in place; first Calendar of Events produced through new process; other ESGs begun