Steve Curtis

Current Position	Partner
Profession	Rail Consultant
Years of Rail Experience	20

Professional Background

Steve Curtis is an experienced rail professional with specialist skills in commercial timetable development, capacity & crowding analysis, demand and revenue forecasting, cost modelling, operational and performance analysis. Steve has employed these skills across the rail industry working in commercial and operational teams, including historical franchise competitions / direct awards and, more recently, National Rail Contracts and Annual Business Plans, working for operators and DfT. Steve's strong analytical skills are often used to simplify and resolve complex operational or commercial problems, enabling clients to gain clarity and to help them make the correct decisions. Steve has experience of leading teams and projects, communicating clearly with individuals of all disciplines and technical capability.

Prior to joining Winder Phillips Associates in 2016, Steve was Service Group Manager for Transport Strategy and Planning at GHD, where he successfully grew its UK franchise offering, delivering winning bids for clients

Key Skills

- Sound understanding of both the commercial and operational considerations required during timetable development
- Understanding of the key drivers of rail demand
- Thorough understanding of Annual Business Plan / National Rail Contract processes
- Strong analytical skills
- Vast experience in the modelling of rail crowding and capacity
- Expert user in MOIRA and MOIRA2
- Sound understanding of the key drivers of passenger satisfaction

Projects

Capacity and demand optimisation, Greater Anglia (2020-2023)
Reductions in demand as a result of the Covid pandemic led to tight cost control by DfT to ensure operators weren't running more capacity than required. Steve worked with the Greater Anglia commercial, train planning and customer service teams to ensure that the right service frequency and distribution of capacity was deployed. This included advising on short-term timetable enhancements to manage capacity pinch-points. Steve initiated a regular meeting whereby he informed GA's key decision makers of the prominent issues, accounting for matters including customer satisfaction and operating budget, enabling them to make the right decisions. The pandemic coincided with the hand-back of GA's legacy fleet and Steve's forecasting of mid-term demand allowed GA to hand-back legacy fleet early, saving millions of pounds of lease cost.

Commercial Advisor for Timetable development, Greater Anglia (2020-current)
Greater Anglia's timetables required review to maximise the benefit of an entirely new fleet. Steve's role as commercial advisor required review of market data to propose service frequency and capacity provision. Steve's key role in the project team also led to advice on: generation and application of a new set of Train Planning Rules, SOAR applications, performance modelling, general project management, and managing relationships with DfT and Network Rail. Steve also provided commercial insight into the proposed Beaulieu station.

Peer review of BML timetable review, DfT (2021)
In this role a Steer/WSP project team was required to develop timetable options on the Brighton Mainline (BML) in order to generate a better understanding of the potential end state timetable following the Brighton Mainline Upgrade Programme (BMUP). The work considered the benefits delivered by different aspects of BMUP and the trade-offs with long-term capacity. Steve acted in a peer review capacity, advising on demand and revenue implications of the proposed timetable changes. Rather than simply review the end report, Steve requested to be part of the regular team meetings, enabling him to a) get a better understanding of the project and b) offer guidance throughout. This gave more opportunity for Steve's recommendations to be adopted.

South West Railway Dwell time analysis, Network Rail, (2021)
This project considered the risks posed by station dwell times as a result of post-pandemic demand increases. Steve quickly calibrated a version of MOIRA1 to enable a forecast of the number of borders and alighters at each location. This was used to forecast the likely dwell times and highlight which services were likely to exceed their planned time.

Performance Lead, National Rail Contract Technical Advisor Team, DfT (2021)
As the performance lead, Steve was responsible for agreeing a set of Operational Performance (OP) Performance Based Fee (PBF) targets for Great Western. Steve worked collaboratively with Steer and the DfT in-house team to ensure the targets were aligned with DfT's wider policy, and also consistent with GWR's business plans and budgets. Rather than engage in a difficult negotiation with GWR, Steve commenced a fully collaborative approach whereby weekly meetings, attended by GWR and NR, discussed the concerns of GWR and NR, and using the insight of the Operations leads, challenged whether GWR's forecasts were challenging enough. These discussions ensured that robust but achievable targets were agreed for all six metrics, including short-formations.

Train Service Operations Author, National Rail Contract / Annual Business Plan, Greater Anglia (2020-22)
For Greater Anglia's National Rail Contract submission and both of its subsequent Annual Business Plans, Steve has been the author for the Disciplined Operations and Performance / Train Service Operations chapters. This required input to, and collation of, material covering timetable, fleet, NR collaboration and organisation initiatives. Steve was also responsible for the production of numerous business cases, and for feeding inputs such as vehicle mileage into the finance team. As DfT's focus of cost-saving has increased, Steve quickly devised and assessed dozens of cost saving timetable initiatives including the impact of shortening trains or running Friday specific timetables. Steve also assisted with the in-life implementation of aspects of the business plans including the deployment of cost saving initiatives, helping to shift Greater Anglia's mentality from running a franchise to running a concession.

Expert Witness, UK TOC / Burges Salmon (2020-23)
Steve acted as the independent expert for all revenue matters in a rail claim raised by a UK TOC. The role included the review of a revenue forecast including all supporting files to ensure it complied with PDFH guidance. Steve was required to review hundreds of files and models, including the Statement of Claim and Statement of Defence, which required a structured and auditable approach. Steve engaged with the opposing revenue expert, critiquing the validity or interpretation of certain aspects of PDFH guidance. The role required detailed understanding of all aspects of PDFH and its application to real world scenarios, and required review and critique of PDFH research papers. While such aspects of the claim were theoretical in nature, Steve regularly benchmarked the modelling against wider industry data to ensure it was defensible. The client was ultimately successful with its claim.

Equity Investment Due Diligence, IPEX (2020):
This was a confidential due diligence role for financier seeking technical and commercial advice on major rail equity investment. Steve's focus was on Commercial issues covering forecast demand levels, and an overview of the industry structure including the impact of changes to franchising.

Revenue Forecasting, CrossCountry Direct Award, CrosCountry (2019-20)
Steve developed and calibrated the bid crowding model using it to calculate crowding suppression for the CrossCountry bid. The model needed to be extremely complex due to the quantity of urban centres that need to be considered for CrossCountry. Steve also acted in a peer review capacity for the bid revenue forecast.

Revenue Forecasting Peer Review, South Eastern Technical Advisor Team, Steer (2020)
Steve reviewed aspects of the TA Revenue Forecast, focusing on areas of dispute between the incumbent and the TA team. His advice centred around the complexity relating to Crossrail assumptions.

Technical Advisor, Markets and Passenger Lead, DfT (2019-2020)
Steve advised DfT on the passenger and market implications of changes to franchise structure. This included consideration of the impact on different passenger types regarding fares, crowding, competition and performance, as well as the knock-on impact on revenue. Steve worked effectively in a multi-consultancy team to produce comprehensive documents to aid in policy decisions.

Operational Advisor, Jerusalem (J-Net) Light Rail Bid (2019)
As part of this PPP concession, Steve led the analysis of a range of operational benchmarks, ranging from availability of ticket machines and inspectors, to the opening hours of call centres. The requirement was to

specify the number of ATMs, Inspectors and Call Centre Staff to ensure the benchmarks were not breached. Steve also took the lead to establish a demand forecast for the concession term, ensuring that benchmarks relating to crowding levels were not breached. With limited data available and an ever-changing project scope, Steve had to be agile in his approach.

Review of Passenger Information During Disruption (PIDD), Office of Rail and Road (2019-2021)
This project, providing insight into the nationwide provision of valuable information to passengers during periods of disruption, required Steve to carry out some mystery shopper activity to assess existing standards. He then used the findings to design and develop a PIDD Maturity Model, which is to be implemented nationwide to allow TOCs to assess TOCs compliance with PIDD expectations.

Revenue Forecasting Peer Review, West Coast Partnership Technical Advisor Team, DfT (2019)
Steve acted as an independent reviewer to provide challenge and assurance to the Technical Advisor team that their proposed risk adjustments were robust and evidence-based. This required a detailed understanding of the risk adjustment process, and comprehensive knowledge of revenue forecasting techniques.

Timetable, Crowding and Commercial Advisor, East Midlands Franchise Bid (2016 – 2018)
In this franchise role, Steve's responsibility was for assessing the markets and daily demand profiles to determine the most commercially attractive and operationally robust service offering. Steve also carried out capacity analysis to determine the fleet size required for the full franchise term. Finally, Steve supported the commercial team in developing a robust, deliverable and evidence-based revenue forecast. Throughout this role, Steve worked closely with the train planning team to ensure outputs from their systems (ATTUne and TRACS-RS) were error-free and consistent. Steve also gave significant input to the developers of ATTUne to help get the system ready for franchise bidding. Steve has performed similar roles on bids for Greater Anglia, West Coast, and Great Western.

MOIRA2.2 Rolling Stock Upgrade, Rail Delivery Group (2017-2018)
Steve worked with GHD in a review and advisory role on a project to develop a methodology to allocate rolling stock to the national MOIRA2.2 timetable. Steve's experience and knowledge of the national network, the intricacies of rolling stock diagrams and MOIRA2.2 resulted in an approach being devised that can allocate rolling stock to 100% of rail services within MOIRA2.2.

Northern Rail Franchise Change Support (2018-2019)
In response to delays to infrastructure work in the North of England, Steve supported Northern in assessing the revenue impact relating to timetable and rolling stock, including the impact on crowding. This was followed by support in Northern's Direct Award submission, focussing on forecasts of crowding, NRPS and Service Quality Regime. Steve used historical trends and performance trajectories to forecast NRPS scores. For Service Quality, Steve was restricted by a new Service Quality system and limited dataset, but was able to forecast SQ scores for the duration of the Direct Award.

Chiltern Railways timetable review (2016 – 2018)
Working within a client team with the remit to carry out a wholesale review and improvement of the current Chiltern timetable, Steve oversaw large parts of the project, liaising directly with the Managing Director. He was responsible for the initial market review, including railheading analysis to understand the potential impact of the Crossrail timetable. This led onto timetable optioneering, specifically the assessment of numerous timetable changes with the aim of increasing revenue and capacity, while reducing crowding, operating cost and improving performance. In the latter stages of the project, as the number of options reduced, the level of detail increased, including detailed MOIRA2.2 modelling of peak crowding. Steve supported Chiltern through successful consultation with DfT.

Investigation into the impact of unplanned disruption on operator revenue, PDFC (2017)
Steve worked with Oxera in delivering this project for the Passenger Demand Forecasting Council. The aim of the project, along with determining what type of direct relationship exists, was to understand what other factors influence the relationship. Steve's role centred on the selection of the flows to ensure a representative, but large enough sample for analysis, and supplying relevant information to determine if crowding has an influence on the relationship.

DfT Technical Advisor, West Midlands Direct Award and Full Franchise (2014 – 2016)
As technical advisor for both projects, Steve was responsible for the content of the crowding and revenue forecasting models. Working as part of a multi-consultancy team, Steve oversaw the production of the market review, and the development, population and calibration of the suite of models and supporting documentation. Steve also advised the DfT on the specification of the Full Franchise, which fed into the ITT.

Train Services Delivery Plan for Northern and Scotrail bids (2014 – 2015)
For both franchise bids, Steve was responsible for the content of the train services delivery plan, producing a commercially viable timetable and feeding in relevant inputs into the revenue forecasting model. This required extensive knowledge of both the Northern and Scotrail networks including capacity pinch points and areas of growth potential. Steve also produced business cases for train service enhancements, ensuring that the additional rolling stock and associated operational costs related to service enhancements were covered by generated revenue. Following the submission of the winning Northern bid, Steve supported Arriva in responding to CMA analysis of flows where Arriva had interests through other rail and bus operations. Finally, as part of mobilisation, Steve supported the mobilisation team in determining the platform extensions that required prioritisation to be able to deliver the planned capacity increases.

Capacity and crowding analysis for ORR East Coast open access assessment (2015)
Applications for the East Coast open access paths were assessed for financial viability. This included an assessment of the amount of crowding relief/suppression experienced in each option. Steve oversaw the crowding analysis.

National Rail Passenger Satisfaction (NRPS) Analysis, Transport Focus (2015)
Steve led the team investigating the relationship between passenger satisfaction and punctuality, using NRPS and Bugle data at a train level to determine the lateness – and subsequent satisfaction – experienced by each respondent.

DfT Bid Evaluator, East Coast Bid Evaluation Team (2014)
Steve was one of four people evaluating the train services delivery plans. This required review of three delivery plans, each with over 100 pages, and supporting timetables, diagrams and technical reports in just three weeks. This culminated in a consensus meeting where observations were compared to determine the final scores for each bidder.

Capacity & Crowding Modelling for Greater Anglia, Great Western and West Coast bids (2010 – 2013)
Steve led the capacity and crowding work on numerous franchise bids, focussing primarily building the crowding model and using it to determining the required fleet size to meet the specified crowding metrics. Different bids provided different challenges, including: testing MOIRA2 to determine if it was appropriate for use; building fares-driven passenger redistribution into the crowding suite; specifying bespoke MOIRA models; ensuring the daily timetable and fleet requirement were sufficient to carry passenger loads during the Olympics.

MOIRA2 Calibration Lead, Chiltern Railways (2013)
While MOIRA2 is calibrated at a national level, the datasets within are too disaggregate for individual TOCs to use reliably. Steve worked with Chiltern to update MOIRA2, enabling its full functionality to be used, specifically the various fare and train service options between London and Birmingham.

Capacity & Crowding Modelling, Arriva Trains Wales (2013)
Led the team that built a crowding and capacity viewer to improve the way Arriva Trains Wales visualise its count data and communicate the effectiveness of their rolling stock and timetable strategies.

Operational Analysis for Capacity Utilisation Study, Office of Rail Regulation (2012)
Utilised MOIRA and train planning skills to investigate where spare capacity exists on the railways. Case studies were developed to demonstrate the spare capacity available if service patterns and stock types are regulated.

National MOIRA2 Calibration, ATOC & DfT (2010)
Assisted in the national calibration of MOIRA2, the replacement for the widely used revenue forecasting tool, MOIRA. Adjusted to the new functionality before making key changes to demand profiles to reflect how passengers in different parts of London have different arrival times.

Timetable Modelling for West Coast Open Access application, Grand Central (2010)
Assessed the impact of various stopping patterns between the North West and London. Analysis focussed on the number of passengers who would railhead to a new station following the introduction of alternative direct services.

Data Analysis for Network Modelling Framework (NMF), Department for Transport (2009 – 2010)
Managed the support team for the NMF; a strategic tool used by DfT to assess the overall impact of rail schemes. Liaised with the DfT to discuss current and future developments, and with the rest of the support

team to verify that the all model updates met client requirements. Steve also undertook the first full NMF data update, making the model fit for the purpose of assessment of HLOS2 schemes.

Capacity & Crowding and Cost Modelling for HLOS capacity schemes, DfT (2007-2009)
Seconded at DfT to assist in the first phase of analysis of the capacity schemes. Audited and developed the DfT's in-house crowding model, including adjusting some industry standard assumptions on crowding costs to improve the accuracy of the model. This model was then used to assess the benefit cost ratio of each of the proposed HLOS schemes. Steve was then part of DfT's negotiation team for the first of the HLOS schemes to be signed by both parties in what proved to be a difficult time in creating business cases for capacity increases. Steve developed and maintained the cost comparator model, which was used to interrogate National Express costs before both parties coming to an agreement.

CMS Passenger Model Calibration, Various TOCs (2005 – 2009)
In his role as technical expert for the CMS Suite, Steve calibrated numerous of CMS Passengers models; a tool built to model train loadings, taking into account of movement between services due to overcrowding. The calibration process, entailed analysing green book counts against modelled loads and adjusting demand profiles/ volume data to get a good match.

Performance Modelling for East Midlands Franchise Bid (2006)
Carried out the performance plan for the bid, ensuring that all operational proposals were assessed for performance impact. Carried out detailed analysis of East Midlands' historic performance using large volumes of TRUST data and used this to report to the bid team.

Train Planning for Great Northern/Thameslink Franchise Bid (2005)
As part of the operational modelling team, Steve created and validated timetable options and rolling stock diagrams using the CMS Suite for this successful bid.

Software Development & Testing, Network Rail (2003 – 2005)
Steve has experience in software development, having carried out development and testing on MERIT, a simulation tool used by Network Rail and throughout the rail industry.

Previous Positions Held

- Service Group Manager – Transport Strategy and Planning; GHD, formerly CDL (2010 - 2016)
- Senior Consultant; DeltaRail (now Resonate), formerly AEA Technology Rail (2003 - 2010)

Qualifications and Professional Associations

- MSc Operational Research; Lancaster University
- BSc (Hons) Mathematics with Engineering; University of Nottingham
- Member of the Chartered Institute of Logistics and Transport (CILT)