
Rail Digital
Summit
2017

How the Digital Railway is affecting suppliers

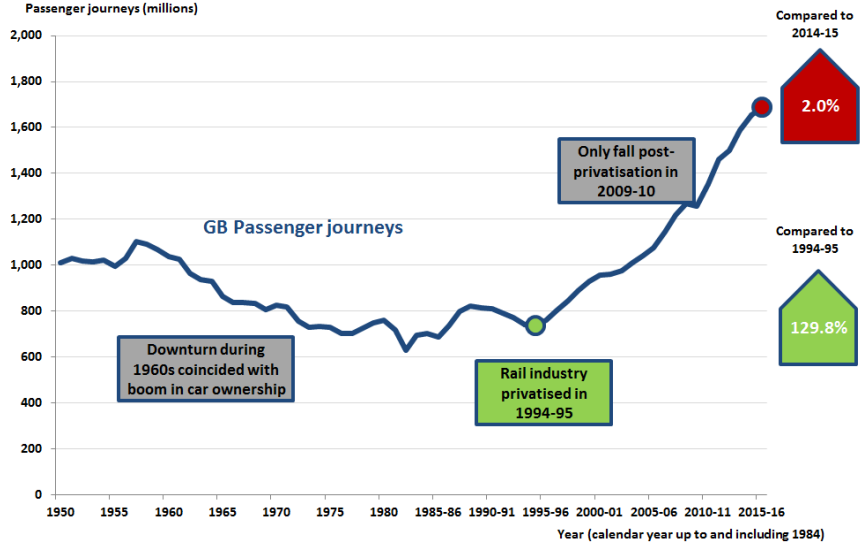
Alstom Transport

26th April 2017

ALSTOM
Designing fluidity

The Headlines

Passenger Demand Growth

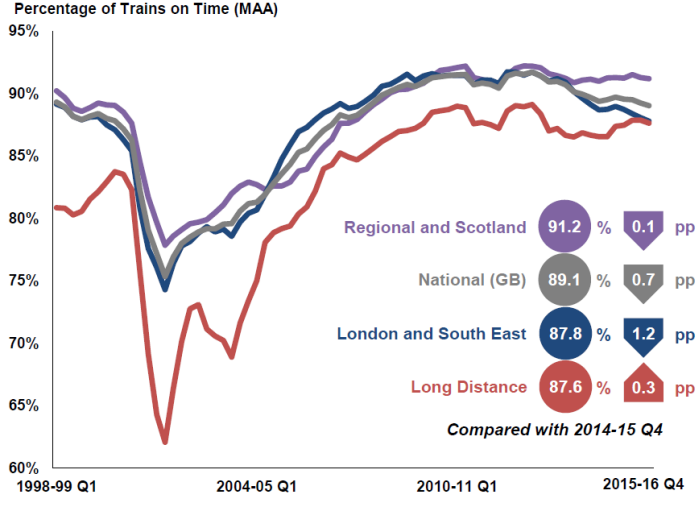


Increased overcrowding & adverse impact when things go wrong

The Headlines

Financial & PPM performance

£m (2015-16 prices)	Actual	Allocated CP4 Rollover	Adjusted Actuals	PR13	Over-spend before adjusting for deferrals	Deferral/ (acceleration) of work	Gross Financial out/under performance
	(A)	(B)	C=(A+B)	(D)	E=(D-C)	(F)	G=(E-F)
Track	984		984	710	-274	42	-316
Signalling	647		647	792	145	425	-280
Civils	622		622	476	-146	70	-216
Buildings	221	10	231	188	-43	13	-56
Electrification & Fixed Plant	144	43	187	224	37	85	-48
Telecoms	53	13	66	96	30	38	-8
Wheeled Plant	90		90	118	28	28	0
IT	127		127	86	-41	-41	0
Property	15		15	30	15	15	0
Other renewals	174	-66	108	4	-104	-96	-8
Total renewals expenditure	**3077**		**3077**	**2724**	**-353**	**579**	**-932**



Deteriorating financial & passenger performance

The Digital Railway Challenge

Capacity

- Demand continues to grow
- Unlocking capacity removing constraints at key points
- Improve utilisation of theoretical capacity

Customer Experience

- Real time information
- Customer decision support
- Improved journey times
- Less disruption
- Management of impacts to passenger & freight customers

Performance

- Lower costs
- Improved PPM
- Enhanced timetable planning
- Conflict detection / resolution
- Management of stock & crew
- Faster recovery
- Cyber security

Asset Condition

- Support renewals programme
- Improve asset condition
- Improve reliability & safety performance
- Asset management

- **No** Digital Railway Silver Bullet
- **No** overnight 'Big Bang'
- Industry ***'tool kit'*** of interventions
  - Conventional & Digital

Interventions

Conventional

Station remodelling | **Track improvements** | **Traction Power upgrades**

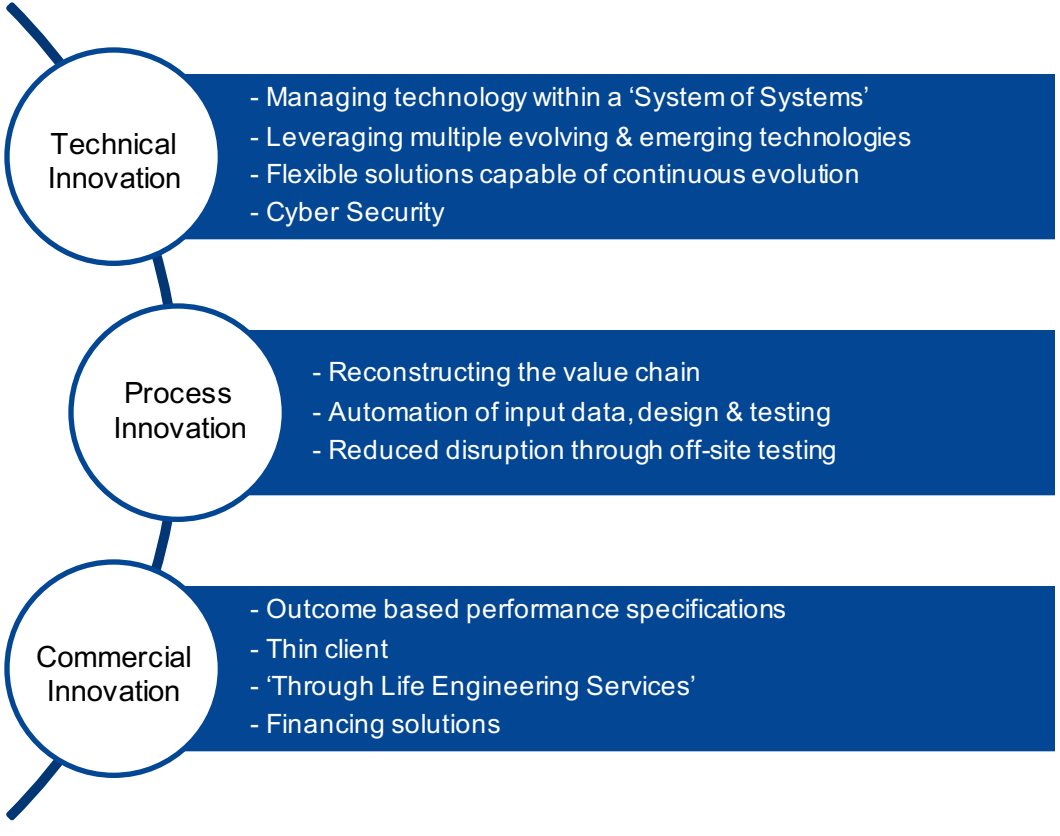
Digital Railway

ETCS | **Traffic Management** | **C-DAS** | **ATO**

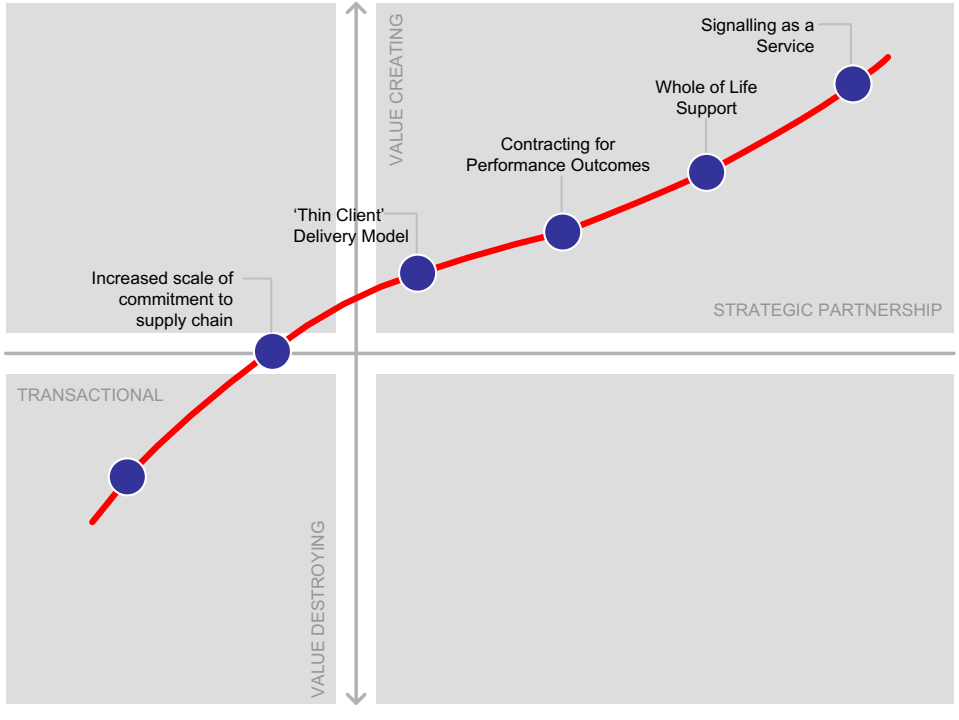
- Key is selecting the right interventions to deliver the maximum benefit

Meeting the challenge

- More capacity
- Improved performance
- A better customer experience
- Lower cost



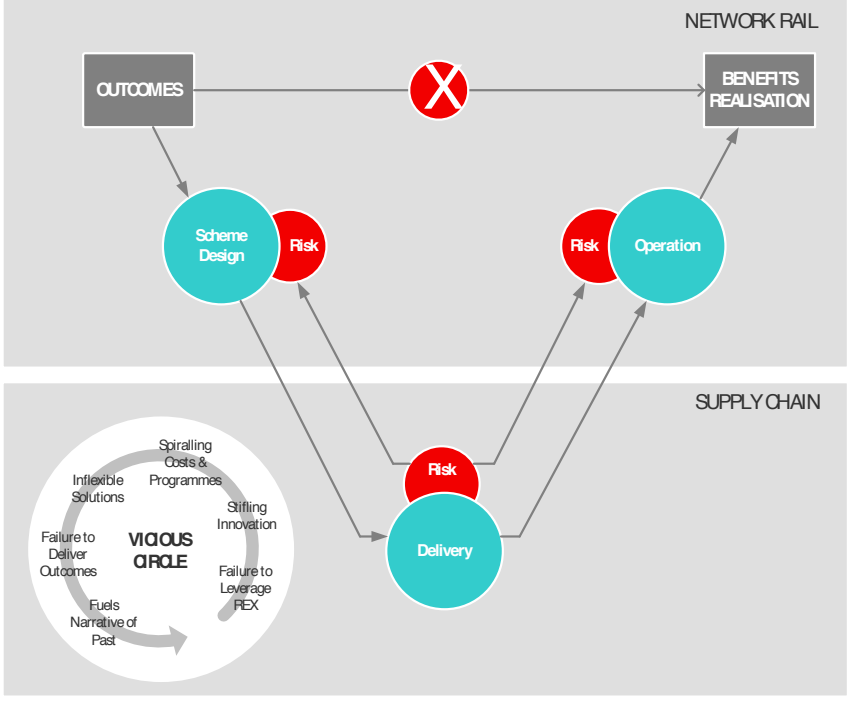
The Value Journey



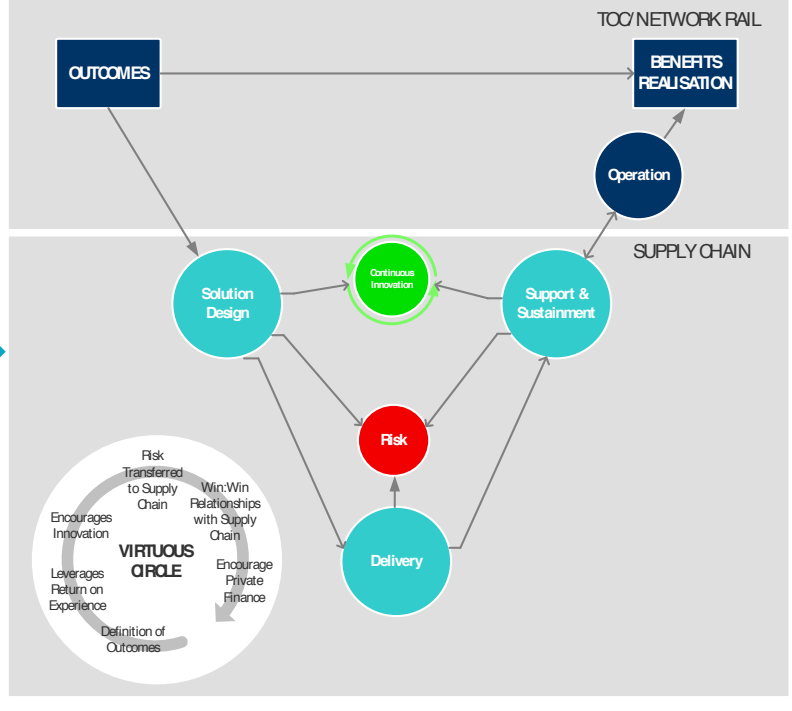
- Scale
  - *Route wide large-scale long term commitment*
- 'Thin Client' delivery model
  - *Light touch leveraging supplier's 'Return on Experience'*
- Contract for performance outcomes
  - *Capacity, Throughput, Security etc.*
- Whole of life engineering support
  - *In service sustainment & continuous improvement*
- Signalling as a Service
  - *Off balance sheet private sector financing*

New business model

From this....

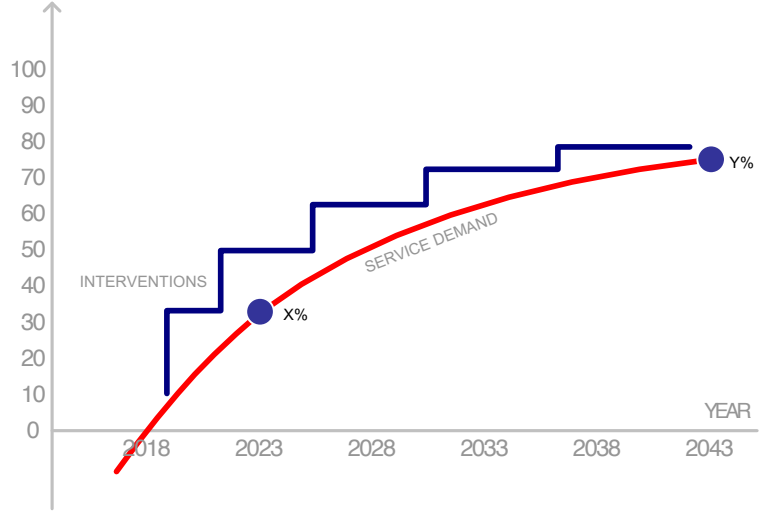


To this



Realising the Digital Railway

- Multiple Phases – “bring suppliers closer to the customer”
  - Solution development, intervention & migration planning
  - Design, delivery & through life engineering services – 25+ years
- Throughput, capacity & performance requirements evolve
- Delivered through incremental performance improvement
  - Interventions & migration states eliminate constraints over 25 year period
  - Interventions move the “efficient frontier” & stay ahead of service demand
  - TLES enables continuous innovation
- Performance, delivery & technology risk with supplier
- Transformational route modernisation through incremental change
  - Broken down into deliverable projects & refreshes over extended period
- Long-term strategic alliance between route, TOC & supplier



Key takeaways

1. Today's industry approach will not enable the future

2. Targeted interventions, leveraging supplier's return on experience & connecting payment & performance creating the potential to take off-balance sheet

3. Aligned incentives around service performance to drive continuous improvement & innovation

4. Placing the supply chain closer to customer, combining core competencies will create new sources of value