

TOP TEN

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Category: Rail

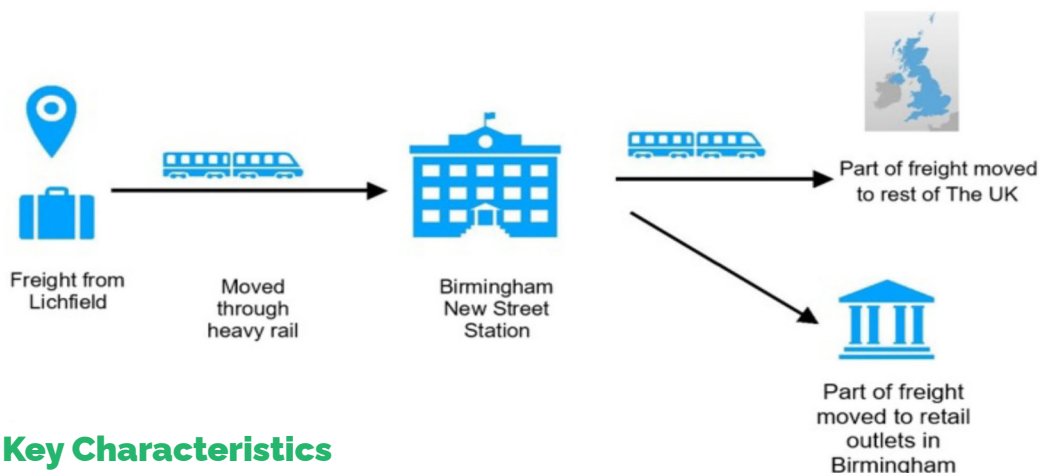
Country: United Kingdom

Research Area 8: Planning, Modelling and System Design

Idea Number: 121

A simulation study on the potential of moving urban freight by a cross-city railway line

This study analyses the scope for moving urban freight through the existing rail network. This is achieved by first evaluating the utilisation levels of the Cross-City line in The United Kingdom (UK), running between Lichfield Trent Valley and Birmingham New Street. A simulation model of the current railway system is implemented using the SIMUL8 computer software. The results from the simulation model suggest that the Cross-City railway line is being under-utilised, and thus new services could be introduced that exploit the existing infrastructure and improve the utilisation levels of the railway line. This paper presents three scenarios that have the potential to carry urban freight by rail on the above-mentioned line. These scenarios not only enhance the current utilisation levels of the line, but also reduce the amount of Green House Gases emitted by Heavy Goods Vehicles (HGVs) on the motorways and highways. The total number of services operated on the line is varied among different scenarios. In our best-performing scenario, the number of train services running in a day increases by 108, corresponding to a raise in utilisation levels by 341.71% compared to that of actual system. In the proposed scenario, 5400 HGVs per day are removed from the road, with a consequent reduction in Carbon Dioxide emissions by approximately 5.4%. All the scenarios presented in the study assures a sustainable way to move urban freight by rail, which can potentially reduce congestion and emission on roads in the West Midlands region.



Key Characteristics

AC traction power system • High-speed trains