Whole System Performance

Project B7: Rail Industry System Cost Model

Partners:

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UNIVERSITY OF BIRMINGHAM
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Researchers:

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Motivation

• Given the recent sharp rises in rail industry costs, it is crucial for the industry and policy makers to maintain pressure to improve efficiency. New technology has an important role to play in this respect.

• However, currently there does not exist a system-wide model that enables the cost impact of technology changes to be assessed. There are also concerns that the fragmented structure inhibits the industry's ability to make optimal investment decisions.

Novel aspects

• Building on project B4, development of new cost model to quantify the system-wide cost impact of technology change. Model operation to be demonstrated through two examples of technology change.

• New econometric models for passenger train operations (to inform cost-causation relationships and efficiency comparisons). Little in the literature to date specifically on train operating cost functions.

• Detailed work on the processes of formulating, developing and introducing new technology into the railway system.

Progress

• Two possible technology change scenarios suggested (light weighting of trains and hybrid trains).

• Operational concept for the model developed.

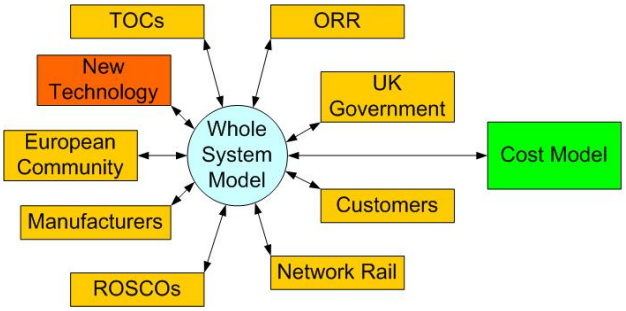
• Development of a high-level rail system model is underway using specialist CORE software.

• New database for TOC costs, other inputs, outputs and quality measures completed (1996-2006) – extending B4 database.

• Cost and efficiency econometric model development strategy completed, and estimation work nearing completion. Results disseminated to industry.

• A programme of interviews with industry members, to investigate technology development and introduction processes, is underway

• Literature reviews on train light weighting and train operations econometric cost studies completed.



The Rail Industry System Cost Model envisages a systems engineering model of the railway as a whole interfacing with a railway cost model. Development of the systems engineering model requires input from all principal stakeholders as shown

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