



Client: Network Rail
Assignment: Six Sigma Performance improvement and training

Six Sigma speeds up the rail network

When Network Rail took on the UK infrastructure in 2002 it faced many demands. But there was one big issue at the top of the agenda: train delays, severely affecting customers and costing hundreds of millions of pounds a year in penalties.

The team rapidly identified five areas causing over 50% of the delays: Points; Track Circuits; Signalling; Seasonal Preparedness; and Operational Procedures. Now they needed to get to the root cause of problems in these areas.

They knew Six Sigma would provide the right approach to identify and improve failing processes. But with the scale of the challenges they faced, they also wanted a consultancy that could transfer capability to give the organisation complete self-sufficiency for the future.

Our Approach

We designed a programme to achieve large-scale transfer of knowledge and skills and, in the process, identify potential projects and implement a wide range of performance improvements.

This meant the role of our consultants changed over time – from one of ‘hands-on’ leadership in the early stages, to support for the first wave of internal Six Sigma specialists, and then as coaches and mentors from a distance as the organisation established its own capability to implement process improvements and deliver its own training.

Getting Started

Network Rail was going through a period of significant change and it was important to ensure Six Sigma improvement didn’t get lost in a busy agenda. To begin, we worked with the senior management team to raise awareness and secure their buy-in. A range of measures were agreed to get the organisation as a whole on-board – notably, a set of behaviours and objectives that were written into the job descriptions of every member of staff.

Building Capability

We worked with Network Rail staff to establish strong leadership for the programme and introduce an infrastructure for rolling out Six Sigma capability across 1,200 people. Senior managers became Champions to drive projects. Full-time leaders of business improvement projects trained as Black Belts to help them coach others to use Six Sigma tools and techniques. Leaders of smaller-scale projects trained as Green Belts while part-time project team members became Yellow Belts. We also developed internal Master Black Belts to offer expertise for all project teams.

Process Improvement

All classroom training was supported by real projects to identify and improve areas causing train delays. This was delivered through supported tutorial sessions and project reviews, both formal and informal. In total, client-consultancy teams outlined 300 projects and over half were fully implemented. Across various functions, targeted projects delivered initial productivity improvements of 12% and one single project alone reduced material costs by £400,000.

Managing for Success

We set up and ran a national programme office to manage events and internal communication, and track progress towards benefits realisation. This gave Network Rail a one-stop shop for all deployment and training activity, plus a resource to maintain the focus and pace of the programme.

Value delivered

- £60m of efficiency savings
- Six Sigma improvements recognised as a key contributing factor behind 50% reduction of train delay minutes pa.
- Over 1,200 people trained to manage and build upon improvements
- Full self-sufficiency and capability in Lean Sigma process improvement

“There is an innate integrity to the business and a refreshing flexibility of response from everyone. They do what they say they’re going to do. They have good contacts, great skills, real competence and a fantastic attitude.”

Rob Freeman, Network Rail

Typical performance improvements:

Severe Weather Management

Focusing on operational processes for activating emergency plans and restoring train service, we reduced severe weather delays by 1.56m minutes p.a.

Purchase to Pay Project

Working with Network Rail's Information Management team, we improved the performance of their Purchase to Pay process. This led to a 50% reduction in Goods Received notices on hold and led to £220k operational cost savings p.a.

Hotel and Travel Provisioning Process

With a significant budget for accommodation and travel, Network Rail needed to improve and consolidate its processes in this area. In this project we advised on new booking and payment processes, resulting in savings of £1m p.a. and additional recovery of £200k in VAT p.a.

Freight Train Despatch Times

The team helped to reduce passenger train delay caused by the movement of freight on the network by introducing new processes and controls for the despatching of trains from the freight yards. The changes made resulted in an increase of passenger train performance by more than 10% on affected routes.

Track Points Failures

By identifying and addressing the root causes of variation in the time taken to operate and set track points the team were able to increase the operating capability, resulting in the reduction of points failures due to slow operation and saving of several thousand delay minutes.

Bolt Failures

Investigation into the reasons for bolt failures on a safety critical component enabled the team to supply supporting data for the initiation of a design change and the implementation of new manufacturing controls to eliminate potential failure modes. The improvements resulted in a reduction of bolt failures and the consequential need to replace.