Context of railways:

One major characteristic of modern civilization is the availability of efficient transportation systems.

<<ver info sobre impacto/percentagem/contribuição da ferrovia para a mobilidade>>

The railway transportation system (RTS) has a very substantial importance and utility for the society.

The RTS can be divided in two major classes: Rolling stock and Infrastructure.

The rolling stock comprises the moving part of RTS. His type can be divided into passenger and freight trains. Rolling stock components are listed as following:

Mechanical moving parts: Wheels, bogies, strings, etc

Doors

Power unit

Pantograph

Coupler

Wagons

The unmovable part of the RTS is the infrastructure. His components are listed in above:

Track: rail, ballast, sub-grade, sleeper

Bridges, Tunnels, structures, switches and crossings

AC overhead and traction substations,

Stations, Depots and Workshops

Context on maintenance:

* Major part of life cycle cost
* Types of preventive:
  + Routine inspection
  + Reliability centered
  + Risk based
  + Condition-based
  + Computerized maintenance management system

Context on energy efficiency