



ASSET MANAGEMENT IN THE RAIL INDUSTRY

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For many years the Rail Industry has been relatively stable with progressive evolution and development, however more recently significant changes have been seen. The recent development and technological advancements have resulted in numerous efficiencies with more transportation being undertaken on the rail network. Passenger traffic and freight movement is increasing due to convenience, comfort and value for money, thus making Rail an attractive means of transportation. If this progress is to be sustained focus must be on the Rail Assets.

The Rail Industry is not directly comparable to any other industry regarding Asset Management. One primary factor being, that we have two very different Asset Classes, Infrastructure Assets (Infra Assets) and

It is absolutely imperative that Evolution and Developments of all interrelating / interacting assets are co-ordinated, harmonized, integrated, optimized, maintained

Rolling Stock; each with their own specific requirements regarding Asset Management.

Asset Management activities enable Assets to deliver planned/expected results against planned/expected costs. Results not only from a financial perspective but also from other perspectives, like availability, safety, etc.

Now let us look at the infrastructure (termed as Linear Asset). The tracks must cope with the various types of loads transmitted by freight traffic, normal passenger trains and high speed trains. However Rolling Stock is being developed to carry more and heavier freight and more passengers at higher speeds. As a consequence wheel, axle and bogie maintenance / management are critical. However the bottom line is that a train can still only operate within the limitations of the infrastructure.

The New ISO 55.000 standard, which was launched in January, professionally lays out the principles of Asset Management.

Essentially this standard has been accepted within the Utility Industry, primarily by Power Generation and Transmission and Distribution, the expectations is that ISO 55000 will be adopted by the majority of industries. The Rail Industry will no doubt benefit by adopting this standard.

What is the basic principle of PAS55 & ISO 55000?

Asset Management is systematic and coordinated activities and practices through which an organization optimally and sustainably manages its assets and asset systems, their associated performance, risks and expenditures over their life cycles for the purpose of achieving its Organizational Strategic Plan.

What are the comparisons between the Utility industry, especially T&D and the Rail industry?

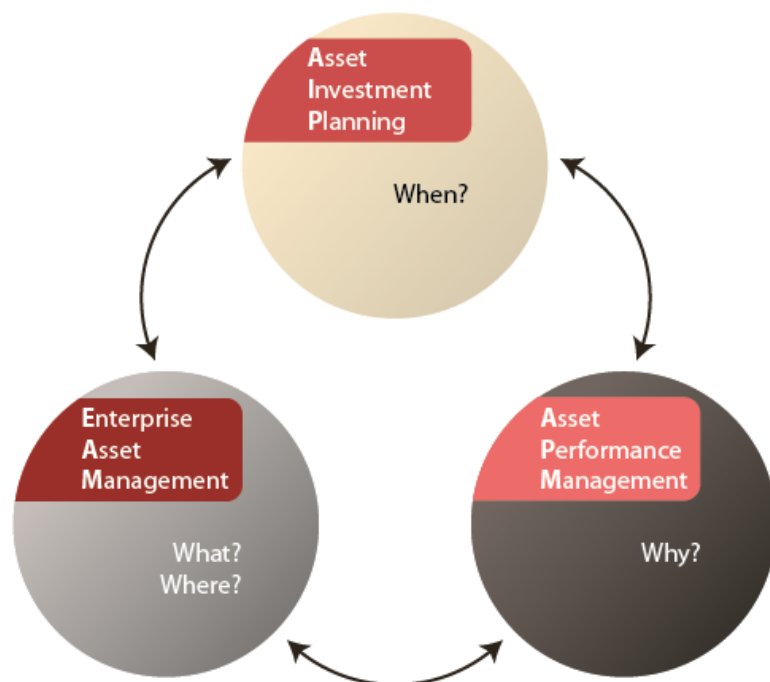
Both industries are heavily regulated, often owned by the government, both industries having to deliver in accordance with their contractual requirements, unlike much of the "Commercial/Private Sector" who can basically decide to cease to produce / deliver a certain product overnight.

From a cost and risk management perspective both T&D and the Rail industries have aging Assets that are now displaying new failure modes. Knowledge of these failures is limited, let alone the experience re detection / prevention. Another aspect is the ageing workforce. Limited funding available for Asset Maintenance is another problem. This lack of funding is in effect building up a huge debt over the asset base, decreasing asset efficiency and increasing the risk of assets failure.

How can we implement and comply with the Management part of ISO 55000?

There are three main systems that deal with Asset Management. The most well

known is the Enterprise Asset Management system. IBM's MAXIMO and SAP's EAM are the leading systems in the market. Basically the function of these systems is to register all the Assets, their individual relationship to each other and the activities to be performed to maintain the assets, either by corrective, preventive or predictive maintenance. The second system is Asset Performance Management, the system that defines the Asset Strategy for the maintenance activities and the Asset Condition. Many types of Condition Monitoring can be applied along with new technologies allowing us to learn more about our Assets Health, these being at affordable costs due to their



ability to reduce maintenance costs.

Last but not least is Asset Investment Planning & Management, e.g., Copperleaf's C55. This system identifies all the investments needed to

- Align the Asset Strategy with the Business Strategy,
- Manage the lifetime costs and revenue of the Assets and the individual investments made regarding Assets,
- And manage the risk portfolio of the Assets.

It is the combined support that these three systems give that supports the ISO 55000 concept and give organizations unparalleled capability to optimize their

*Asset Management investment
Reduces Costs and Raises Efficiency*

Asset Management.

Many Rail companies struggle in defending their Asset Management Policy / Budget to the Regulators and therefore do not get the required or appropriate budget. This has resulted in budget reductions over the years,

resulting in minimal maintenance being performed.

Therefore early replacements of aging parts or condition monitoring to detect potential failures are not possible.

ISO 55000 will assist Rail Companies in getting better visibility of the realistic requirements for Asset Maintenance and to subsequently justify the budget requirements to the regulators. It will support achieving the highest result with the given resources / funds and will identify the potential risks and related costs with insufficient maintenance.

Note: Not performing the required maintenance will only increase costs and the Risks of Failure in the future.

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