

A deep understanding

Designed with the rail worker in mind, Trapeze's EAM is a solution built for the transportation industry.

On the walls of the asset management facilities for the Massachusetts Bay Transportation Authority's (MBTA) commuter rail services a sign in 2-inch high font reads, "If it's not in Trapeze it never happened".

Across the 13 commuter rail lines that operate under the MBTA, asset management is conducted through Trapeze's enterprise asset management (EAM) platform. Used by six of the top ten largest rail networks in the US, the program provides a single source of truth for all assets within a rail organisation. Making this system successful, however, depends on it being adopted by all stakeholders throughout a rail network operator, making the second line in the MBTA banner even more important: "FEED TRAPEZE".

Having maintenance workers, technicians, and engineers use a system such as Trapeze by nature, is one of the top three issues for the successful deployment of an enterprise asset management solution, noted Brett Koenig, industry solutions manager (enterprise asset management) at Trapeze.

"It's a tool that at a large rail property will directly be used by, in many cases, hundreds of staff, if not thousands of staff," said Koenig. "If we take one example in North America, Chicago

Transit have 2,000 technicians that use our system every day to fix rollingstock assets, so that topic of what we call 'change management' or 'cultural change' is a really important one."

To make the use of EAM second-nature, Trapeze has been designed with the rail worker in mind.

"The first thing, from a product perspective, is having a system built for the industry that is just drop dead simple for end users. If we talk about a technician fixing a railcar, most people in maintenance would agree they don't want those guys messing around in computer systems any longer than necessary. What they want is for the system to help them do their job, by telling them about repeat problems, by quickly showing them the work history, by looking up parts, but then to be able to swiftly get back to fixing the asset itself."

Trapeze provides EAM specifically to the rail and transportation industry and is designed to ensure that all rail network assets are operating in a state of good repair through intelligent asset management. The solution allows asset managers, owners, and capital planners to evaluate their equipment from a whole-of-lifecycle perspective and make evidence-based decisions about when to repair an asset, when

to upgrade and when to decommission.


"The capital planning tools allow asset owners to be able to see where this physical infrastructure is in terms of its remaining useful life and then make good business decisions around whether it is cost effective for us to rehabilitate this particular series of railcar to extend their useful life, or should we replace them all together, based upon how they've been performing," said Koenig.

In a shorter timeframe, Trapeze can also monitor and schedule daily maintenance through work and materials management to keep safety critical assets in safe working order.

While these and other similar functions are common to many asset management tools, Koenig highlights that Trapeze is built by and for the rail industry.

"What sets us apart is understanding the workflows and the roles within a rail enterprise at a deep level. If you take our work management capabilities, we built from the ground up screens designed specifically for rail supervisors, technicians, materials management, and parts clerks based upon how they interact."

Beyond the workshop, Trapeze also has mobile capability for track workers and facilities maintenance. This enables Trapeze



In Denver, Colorado, Trapeze was able to deploy the EAM at the outset, increasing efficiency.



Keolis Boston has made Trapeze second nature to rail maintenance staff.

to encompass the complexities of a railway organisation, with both discrete and linear assets which can be at various stages of digital maturity.

“It’s not only just the vehicle side, as critical as the vehicles are, but it’s also the track and wayside infrastructure and the facilities and building maintenance. Across all of those areas you’ve got smart infrastructure and what we do at Trapeze is define the assets properly from the get-go, not only defining their master asset records, but the full engineering-approved configuration of those assets,” said Koenig. That gets into things like the parent/child relationships, the serialisation, and the other types of attributes that are critical for the assets to operate safely.”

Across such a broad array of different assets, made by any number of OEMs, Trapeze has a flexible tool that can receive data and interface with the digital components to provide real-time information on an asset’s health.

Recently, Trapeze was deployed on the Denver commuter rail network, and, being a greenfield deployment, was able to notify operations management in real time of any emerging faults in the system.

“We built a full integration with all of their SCADA systems as well as their onboard fault codes,” said Koenig. “The beautiful part about that is they’re being notified in real time about these problems before the component failure happens. As the fault occurs, it’s triggered into the EAM, the appropriate maintenance personnel are notified, and they can immediately get on it.”

A SINGLE SOURCE OF TRUTH

Until recently, preventative and corrective maintenance was often carried out in silos. This limited the ability of railway operators to see trends within their maintenance data that could be used to schedule risk-based maintenance

programs in rollingstock and track assets.

Having a system such as Trapeze in place combines asset divisions, whether it be rollingstock, track, signalling, or facilities management to be able to extend the life and value of an asset.

“All of that data can be used to make better decisions around risk based maintenance, which assets are performing better than other series or other manufacturers’ assets, which ones should we be decommissioning sooner, versus which ones should we be extending the life of because it’s a high-quality piece of infrastructure that we want to keep going,” said Koenig. “All of that comes down again to the single source of truth and underscores why you really want to start with a solution that has the ability to track everything.”

To improve financial outcomes, maintenance workflows can be linked to purchasing decisions through integration with an enterprise resource planning (ERP) system. To improve operational outcomes, ensuring that maintenance is being conducted in a synchronised fashion stops bottlenecks from occurring when a system reaches a critical safety threshold.

For Australian commuters, this was illustrated in 2019 when an escalator linking platforms 9 and 10 at Southern Cross Station, in Melbourne, broke down, causing overcrowding as the escalator took over a week to fix. According to Michael Scollo, industry solutions manager (enterprise asset management) at Trapeze, this can happen when a system doesn’t have a holistic view and interface with all of the asset classes that need to be managed and maintained in a rail network.

“You can have great business processes for maintenance of way and rollingstock but overlooking a mechanical asset such as a lift can cause downtime for two weeks in a specific train station.”

Understanding that these systems are inextricably linked in a system such as a rail network is what distinguishes Trapeze, said Koenig.

“In rail, the assets and workflows are so complex that the model that we see working most effectively is a best-of-breed model where the folks in asset management and maintenance get a tool that is tailor made for what they do and then that tool set is integrated with the ERP system.”

In contrast, said Ben Dvoracek, general manager of rail, Australia and New Zealand for Trapeze, attempting to apply a non-rail specific ERP system to manage maintenance won’t cover the complexity of rail maintenance. In addition, while the system may be up to date when deployed, a non-rail specific solution cannot account for the changes within the rail industry.

“One of the things that we have seen is when an ERP system is deployed for finance or HR a decision can often be made to customise the ERP solution to support rail maintenance and asset management activities. Although the system can be adapted to do good things, when you’re not investing consistently into rail maintenance functionality and because it isn’t built for rail maintenance staff, the system usage and operational efficiency drops.”

DEVELOPING FUTURE CAPABILITIES

To keep users up-to-date with the latest Trapeze has to offer, the company provides regular updates that draw on the best practices of global rail organisations. User organisations are able to vote on the most needed upgrades, which are released in new versions of the software. In addition, to keep users making the most of the improvements in functionality, Trapeze delivers training and refresher courses for new staff as generations turn over within a rail organisation.

Currently, said Koenig, Trapeze is looking into releasing a network restrictions capability before the end of 2020.

“Essentially it’s a capability for maintenance and operations to both track any areas along the alignment that need to be operating at a slower speed than it was normally designed for. We’re going to provide the ability to track those slow zones on the screen of the track manager who can see the assets in the linear reference system including all of the work laid out on an embedded map.”

Other future rail-specific improvements include track possession modules, linear visualisations based on geometry measurement, all highlighting how the tool is an EAM designed for rail. 