

Continuous Improvement in the Rail Industry

Information Sheet

A Changing and Continuously Improved Process

By now, every leader in manufacturing has heard of Continuous Improvement (CI), and how it can provide models to articulate the value and work plan of specific improvement initiatives. We all understand how to plan, do, check and act on an incremental change, but the irony is the hard part often turns out to be making sure those changes are continuous (and, sometimes, making sure they are improvements!).

Any conversation about the sustainability of continuous improvement usually starts and ends with a question of culture. It can be a further irony to find out that a notoriously nebulous and unmeasurable property of your organisation is what is holding back the potential of a programme fundamentally designed to bring rigor and specificity.

No matter how mature your lean management operations are, there will always be people in the organisation who want to do things the old way, even if you can demonstrate with a scientific level of certainty that the new way is better for your organisation, your customers and your employees.

The conventional wisdom is that attitudes like this persist when continuous improvement initiatives are forced out from the centre rather than growing organically from the grassroots. This is especially true when that comes in waves, like specific CI projects or Kaizen events. We don't dispute that, but it can feel like a catch 22 when the problem is precisely that a proportion of your employees aren't engaging with the CI journey.

There is a subtle difference between empowering your employees and just letting them get on with it. Empowering your employees is about giving them the tools and the skills they need to take a personal interest in the initiative, and making it feel like it is something they have ownership over. And making it easy for them to do that certainly doesn't hurt, either.

Continuous improvement is fundamentally a scientific exercise, concerned with hypotheses (plan; "we would be more efficient if we did it this way"), experiments (do; "let's try it out in controlled circumstances"), measurements (check; "were we actually more efficient?"), and publishing theories, (act; "this is better and it should be generally accepted and promulgated").

Throughout all this, evidence is king, just like in science, and you can't empower your employees to take a scientific attitude to your process without giving them ownership of and access to the evidence. If you can't measure performance, you can't improve performance, or at the very least it becomes difficult to say if your performance has improved or not.

By giving employees real-time access to your continuous improvement metrics, properly documented and measured, you can give them the information they need to make continuous improvement experiments a routine, straightforward and interesting part of their day.

Being able to see weak points in your process through data can stimulate your employees into having ideas for incremental improvements, and focus attention on those areas most in need of change. Cross-team transparency can also foster an attitude of collaboration and healthy competition with respect to CI objectives.

But most of all, robustly and efficiently measured metrics allow a decentralised CI culture to increase performance without increasing risk. The key to derisking change is information: knowing where you are, where you're going, and what's happening along the way. This is as true for your business process as it is for your products

Malaysia High Speed Rail: Progressive Assurance



Although the proposed Kuala Lumpur-Singapore high speed rail link, which promises to cut the journey time between the two cities to 90 minutes, has been beset with political problems, a lack of engineering sophistication has certainly not been holding the project back.

Using IBM® Engineering Lifecycle Management tools has enabled the project not just to manage a complex set of hierarchical requirements, but also track progress and process with ad hoc intelligent metric and analytic reports, which are able to handle the evolution of metrics used as the project advances.

Project-wide hazard logs, assumptions and departure registers were included in the platform, which allowed the establishment of workflow controls and traceability relationships. This allowed impact views to be created so that every change in every register could be assessed before implementation.

The 'MyHSR' project dashboard consisted of a series of widgets, including shortcut links to specific modules and the project metrics. There was also a personal dashboard for each user that could be tailored for their own specific 'to do' list.

By providing transparent and real-time access to project data and metrics, the project is set to make an empowered continuous improvement philosophy accessible to the whole team.

Transparency as an Agent of Change

The key to unlocking this level of transparency is in tools which enable an instantaneous real-time view of your project at every stage of its life cycle: integrating a single source of truth across requirements, design, configuration, workflow management and all aspects of quality, as well as generating repeatable templates that allow you to retain improvements between as well as within projects.

Transparency is ensured by providing access to those features through a dashboard that gives you a real-time view of what's going on at every stage of the life cycle across specialised and fully integrated applications.

IBM® Engineering Lifecycle Management is designed with these objectives in mind. Breaking down walls between your engineering teams and your engineering data can help ensure that the continuous improvement journey really is continuous, and brings everyone in to making it a reality.

This information sheet is an excerpt from SyntheSys Technologies White Paper about Embracing Change in Rail Supply. [Read the full White Paper \[here\].](#)

About SyntheSys

SyntheSys provides defence systems, training, systems and software engineering and technical management services over a spectrum of different industry sectors. Along with distinct support and consultancy services, our innovative product range makes us first choice provider for both large and small organisations. Established in 1988, the company focus is on fusing technical expertise with intuitive software applications to solve common industry challenges.

