



Tackling Productivity Losses: Machine Monitoring

www.seikisystems.co.uk

SeikiSOFTWARE by
Advanced Manufacturing



Tackling Productivity Loss: Availability

In this article, we'll focus on how Machine Monitoring software can build greater integrity into your measurement of manufacturing equipment Availability as a critical OEE factor and focus area for tackling productivity loss.

Using the "Six Big Losses" framework^(Table 1), which breaks down the OEE categories into an actionable level of detail, we'll explain how to significantly improve your measurement accuracy of downtime, specifically unplanned and planned stoppages.

Availability	Unplanned stoppages
	Planned stoppages
Performance	Small stoppages
	Slow cycles
Quality	Production defects
	Startup defects

Table 1: The Six Big Losses

You've made significant investments in your machines and production resources but can you see what they are doing right now?

If you can't see what they are doing, how can you maximise their utilisation? And if they aren't running they're not making you money.

Seiki Machine Monitoring can help you:

- Have real time visibility of all events occurring on your machines/resources.
- Enable people to identify potential problems and take a proactive approach to maximising throughput.
- Confidently undertake unmanned operations/lights out manufacturing.
- Eliminate inaccurate and time consuming manual data collection methods.
- Maximise the utilisation of your resources and base decisions for investment on real data.
- Keep your finger on the pulse of your machine shop.



Finding Competitive Advantage on the Shop Floor

In the digital age, competitive advantage is more frequently rooted in the added value that you can build into products and services. You need to find ways to increase the time spent on value adding activities that will differentiate you from the competition and exceed customer expectations with a more customised service offering. So, whilst we often talk about machine activity monitoring as a means of maximising the utilisation and efficiency of your resources, it is equally as important to recognise its role in uncovering time wasted on non-value adding activities. Not just because of the insight the data can provide to drive near real-time action but also because it engages a wider group of people by providing the focal point for a collaborative approach for improvement initiatives.

Clarity and transparency are the keys to success

The Seiki solution combines both automatic data collection via signals from the machine tool and a simple user interface that enables the operator to manually select downtime reason codes recording the categorisation of the losses. The automated data capture provides measurement accuracy and speed benefits, whilst the operator input enriches the data with a fuller picture of your resource availability for the real insight.



Getting staff buy-in is one of the most important ways to achieve the full benefits of any improvement programme. In our experience, the introduction of any form of monitoring solution needs to be done with the end-user involved as early as possible. This helps to create a positive perception of the planned change to their work routine, demonstrates from the start that you value their input and starts to instil a sense of personal ownership of the information from the beginning. It's all about empowering and inspiring your team to embrace the change and actively participate in making the necessary improvements.

Our Recommended Approach



For clarity, consider what KPIs you will use, how frequently they will be reviewed and what business management reports that they will feed into. This will help ensure that the process is supported at senior management level. You can then define what data you will collect and a set of reason codes. To help get you started Seiki Monitoring comes with a standard out of the box matrix. You should then consider what additional non-value adding events and process constraints you wish to monitor and tackle.



For transparency, share your definitions with management, supervisors and operators and agree their roles in capturing and reporting the data. Part of this should be agreeing how the information will be used for improvement actions, both at a tactical and strategic level.

Related content: [Standard Seiki Machine Monitoring Matrix \(available from your account manager\)](#)



Now that you have a standardised process and have started to capture your data, maintaining it is key. We recommend scheduling a regular data audit, particularly in the initial stages of the implementation or following the introduction of any new variables. This will ensure that the logic and definitions have been effective and will help to build confidence in the information being captured, which is important when making strategic decisions. The main benefit of a solution that enables you to define your own loss causes, is that you can more closely align it with your environment. It may be that you need to adjust your reason codes or adapt a process to derive meaningful data as you start to develop a clearer picture of your resource activity.



Machine utilisation analysis will provide the insights you need for continuous improvements. It should be used daily by supervisors to identify and assign tactical improvement actions. We find that discussing and sharing this information with Operators, for example at daily stand up meetings, helps to make those smaller margins of improvement. Both from a deeper level of engagement and by creating a degree of friendly competition. The data should be reviewed regularly at a management level to set and track performance targets and identify strategic improvement initiatives.



Make use of remote access to a live status view on either a tablet or mobile and large format screens located strategically through the building to increase visibility and awareness within the wider team. This will help to keep the whole business focused on keeping your spindles turning.

Related product: Seiki Andon Presenter



Feed your utilisation data into your finite capacity planning and scheduling system as a resource efficiency factor. This will greatly improve the accuracy of your schedules and therefore help with improved on-time delivery performance.

Related product: Seiki Scheduler



Continuous Improvement

Machine Monitoring is a critical element in improving your productivity but it doesn't stop there. Once you have visibility of the significant loss causing events that are having the biggest impact on your throughput capability (potentially a quick win), you can start to address the smaller, often more chronic Performance losses that can take longer to uncover and resolve. This is where the modularity of the Seiki solution helps. You can start building your solution with any of our modules and use the insight that they provide to determine your best next steps for improvement and/or investment.

Call us 01273 666999 or email sales@seikisystems.co.uk

Seiki Systems Ltd
Olivier House
18 Marine Parade
Brighton
East Sussex
BN2 1TL

Tel: 01273 666999
Email: sales@seikisystems.co.uk

About Seiki Systems

Seiki has been specialising in digital manufacturing solutions since 1992. Today our portfolio comprises of a suite of integrated software modules that deliver a live, visual and dynamic picture of the production process. Our production control and manufacturing execution solutions maximise the productivity of production equipment and plant resources by monitoring and managing the complete works order lifecycle.

We provide a complete service that includes planning, installation, implementation, customisation, training and after sales support. Our aim is to work with you as your strategic Industry 4.0 (4IR) operational manufacturing management solution partner to secure your return on investment and support your business as it grows.

www.seikisystems.co.uk

