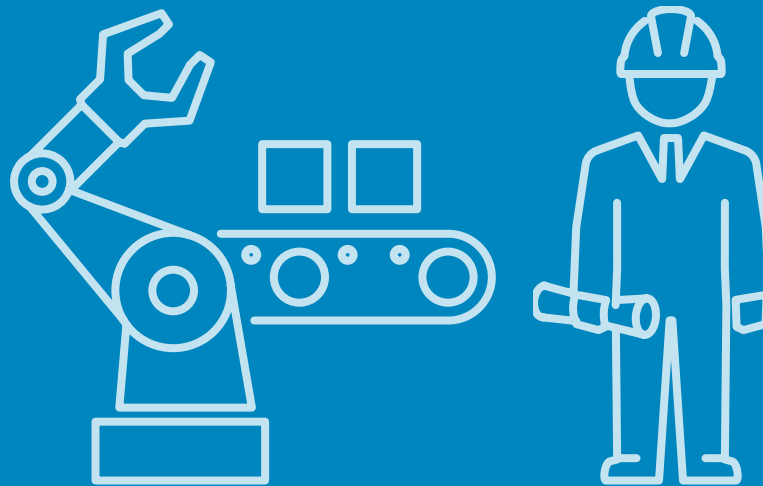


**3 REASONS WHY
HUMANS SHOULD
BE AT THE CENTER
OF OEE FOR CPG
MANUFACTURERS**

EXECUTIVE BRIEF

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CPG companies are facing increasing business pressures on multiple fronts: Consumers are demanding more product choices and customization than ever before, competition is on the rise, and an uncertain regulatory and trade landscape threatens to stall industry innovation and growth.

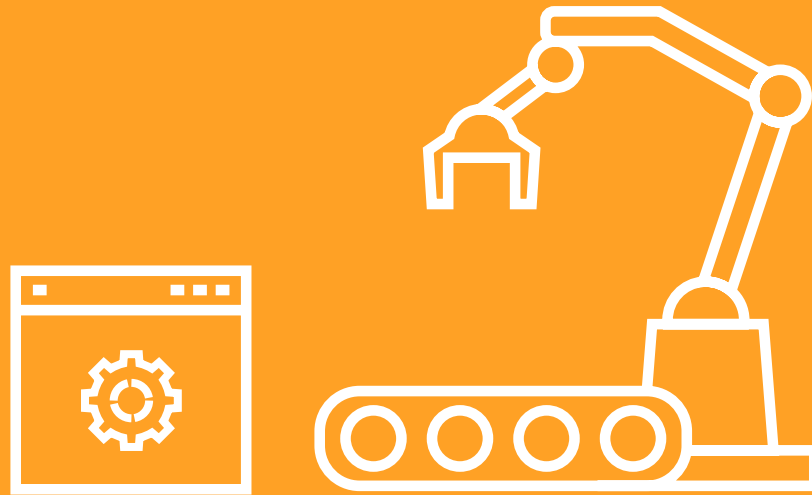
Because of this, calculating overall equipment effectiveness (OEE) is becoming more important, as CPG manufacturers seek to better quantify the true performance of their plants, lines, and machines. The metric offers key insights into how manufacturers can optimize the effectiveness of their operations, with the goal of achieving the highest quality products at the lowest possible cost. An OEE score of 100 percent represents 100 percent quality (only quality products, with zero waste), 100 percent performance (operating at full speed), and 100 percent availability (no production stop time).

Of course, no facility yet has achieved a perfect OEE score. But more importantly, there is another critical component that has an unmistakable impact on OEE: the human worker.

Given that 72 percent of manufacturing tasks are still being performed by humans, we must make sure that they, too, are optimized to do their best work as efficiently as possible. Here are three reasons why humans should be at the center of OEE.

“Consumers want more choice than ever before, they want differentiation, they want personalization—and we have to stay ahead of all these trends.”

Muhtar Kent, chairman, Coca-Cola



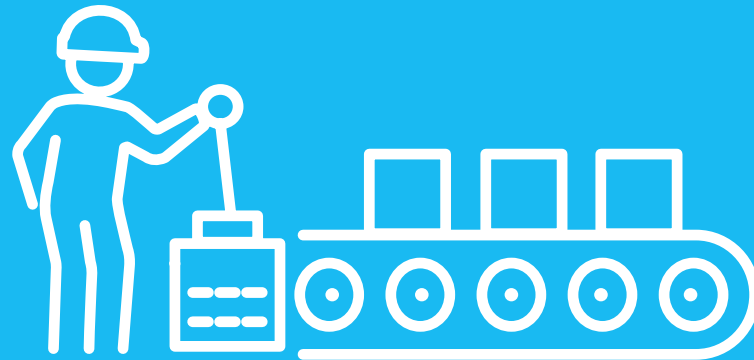
1. EQUIPMENT IS GENERALLY RELIABLE

1. Equipment is generally reliable

According to VLSI Research Inc. as part of a study conducted by the Academies of Sciences, Engineering and Medicine, the meantime between machine failures since 1960 has increased by 20x. Additionally, only 3.4 percent of all industrial motors, new and old, fail in a given year; of that, over half happen in just 17 percent of plants, according to an analysis by *Efficient Plant* magazine of research from the Electric Power Research Institute (EPRI).

The rise of predictive maintenance technologies also is changing the way manufacturers are thinking about equipment lifecycle and efficiency. The decreasing cost of sensors and computing power, along with the widening availability of wi-fi on the factory floor, have made predictive maintenance a viable approach.

The bottom line: Your machines are pretty good at doing what they're set up to do. And as technology gets better and cheaper, the ability to improve OEE by improving your machines diminishes.



**2. THE LEVERS THAT CAN
MEANINGFULLY AFFECT OEE
ARE HUMAN ACTIONS**

2. The levers that can meaningfully affect OEE are human actions

Today, the greatest opportunity to drive OEE lies with your people. There is still a lot left for manufacturers to do to operationally digitize, track, and continuously improve the top human contributors to OEE, including changeovers, maintenance, and safety.

Changeovers As lines produce a greater variety of products to meet consumer expectations, are your workers trained to effectively handle more changeovers? Do incoming shifts have enough context on what happened in the previous shift? Do you have transparency into exactly how much time each person spends on a task, and can you rebalance work to increase efficiency? Working every changeover like a race car pit crew ensures that equipment downtime, which directly affects OEE, is minimized.

Maintenance Can your workers report maintenance issues in real-time? Is there on-demand collaboration and targeted re-training of procedures when equipment breaks down? If procedures aren't standardized or bottlenecks persist, performance and availability go down while waste goes up. Looking holistically at maintenance is the only way to isolate problems in a total operation and prioritize improvements.

Safety Are your workers accurately filing accident reports, and are they filed immediately? Are JSA procedures and recommendations updated regularly as new incidents occur? Most companies don't equate the increasing complexity of the work environment with increases in safety incidents and the corresponding impact on OEE, but the connection is clear.



**3. HARNESSING DARK
(UNTRACKED HUMAN)
DATA IS KEY TO WORLD-CLASS OEE**

3. Harnessing dark (untracked human) data is key to world-class OEE

The concept of a “digital twin” is gaining popularity not just in manufacturing but across verticals; in fact, it was named one of Gartner’s top 10 strategic technology trends for 2017. The idea behind the digital twin is to create a digitized model of systems and devices, usually by collecting continuous, real-time data from the machines that run them. With this pairing of the virtual and physical worlds, companies can better monitor their systems, test out future scenarios before actually making changes, and proactively anticipate maintenance faults – all critical to driving OEE.

What’s missing in this effort is a true digital twin of a whole process or line – not just assets. And that requires data from work performed by humans. While data points from machines are essential, what’s really game-changing is the ability to collect data on often highly variable human actions, and translate it into actionable insight to continuously improve your operations as a complete system. Without this data, massive blind spots persist in your operations.



BRINGING IT ALL TOGETHER: OEE 2.0

Bringing it all together: OEE 2.0

If you combine equipment data and human data from changeovers, maintenance, and safety, you now have a complete, holistic picture of a plant's – or set of plants' – overall operational effectiveness. You get crystal-clear visibility into how humans interact with your system, as well as the true set of variables and levers that you can control.

There is an incredible opportunity for CPG manufacturers to digitize, track, and optimize how human workers impact areas that are critical to improving OEE, especially changeovers, maintenance, and safety. Digitization enables connected workers and management to dynamically trace the impact of line level issues and detailed step improvements directly to the cost, profit, and other business value streams critical to the business. Organizations that leverage technologies to reveal and make visible the entire operations of a factory, including its human operations, are the ones who will succeed in this new Industry 4.0 era.

For more information or a demo on how Parsable can help you combine the human factors of OEE to drive OEE 2.0, contact us at 1-888-681-2119 or www.parsable.com/contact.

About Parsable

Parsable (<http://www.parsable.com>) helps the world's largest industrial firms get jobs done right – every time. Parsable provides a Connected Worker platform so employees can collaboratively execute their work using paperless, modern, and digital work instructions on modern mobile devices. In addition to measuring every step and action, employees can raise issues and provide feedback so that every process is quickly analyzed and improved. With Parsable, teams of Connected Workers know what they need to do and how to do it.

Parsable's customers include Corteva, Green Chef, Procter & Gamble, Schlumberger, Scientific Drilling, Shell, Silgan, Zume, and other category leaders in energy, industrial manufacturing, and consumer packaged goods. Founded by veterans of Accenture, Google, Microsoft, SAP, Oracle, and YouTube, Parsable is headquartered in San Francisco with offices in Austin, New York, Vancouver, Canada, and Dublin, Ireland.

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