

DON'T LET YOUR

SUSTAINABILITY

FOOTPRINT

LEAVE YOU BEHIND

Sustainability reporting is becoming a requirement for enterprises across the world to address climate change and societal issues.



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Sustainability was once primarily associated with green initiatives. Today, the term “sustainability” encompasses several environmental, economic, and societal issues, such as affordable and clean energy, reduced inequality, and zero hunger, that require the world’s immediate attention. As one critical group of actors among many, corporations are on the front lines driving sustainable development across the globe.

One such corporate actor is Ravensburg, Germany-based FORCAM, an information technology and services company focused on digitizing smart factories for customer innovation. SAPinsider had the pleasure to sit down with co-CEOs for FORCAM Andrea Rösinger and Oliver Hoffmann to discuss the criticality of global sustainability and how SAP customers can make an impact.



Q: There are two European initiatives focused on corporate sustainability today. What are the United Nations' (UN) [Sustainable Development Goals \(SDGs\)](#) and the European Union's (EU) [Green Deal](#) initiatives and FORCAM's involvement?

The UN's Department of Economic and Social Affairs oversees the SDG initiative. There are a set of 17 SDGs focused on a variety of environmental, economic, and societal issues. Because of our partnership with SAP and its commitment to and alignment with goal 17, [SDG 17](#), "Partnerships for the Goals," we saw this partnership as a collaborative opportunity and to expand this ecosystem by

working jointly with our customers on sustainability. It's critical that companies map where they can deliver across the 17 SDGs and communicate those efforts to customers.

We're also focused on goal 12, [SDG 12](#), "Responsible Consumption and Production," which ensures that resources are consumed and used sustainably and efficiently to avoid waste. Resource-efficient production is already on the agenda today. Key performance indicators (KPI) such as overall equipment effectiveness help manufacturers measure how efficiently they use their resources and indicate optimization potential.

Furthermore, we have selected goal 8, [SDG 8](#) "Decent Work and Economic Growth," which promotes full and

productive employment and sustains inclusive and sustainable economic growth. Providing transparency on the shopfloor, empowering frontline workers to make informed decisions, and thus, create an inclusive work environment with sustained employment is one of the benefits of data-driven manufacturing.

A continuation of the UN's SDG initiative is the EU's Green Deal. The initiative was established in December 2019 and seeks to achieve a climate neutral continent by 2050. Many companies have signed up for the sustainable development goals of the Green Deal, yet they face many challenges providing transparency as required by the initiative, notably for all their different production facilities worldwide. Companies need to find the right data and make it transparent – that's a key element.

The Green Deal and regulations on the EU and at the global level will demand transparency about the sustainability footprint of goods and efforts to decrease the CO2 impact on the environment. Data-driven transparency will become paramount in transforming production within companies and the world at large.

Q: How are the UN and EU sustainability programs driving change in company operations?

These programs are requiring companies to gain transparency about their own energy consumption as a starting point. With increasing awareness for a sustainable economy, companies are focusing on the CO2 footprint of their purchased and finished goods. The UN and EU programs also speak to the rising consumer demand for sustainable products. The issue is becoming a central purchasing decision criterion driving the need for transparency around equipment efficiency, energy consumption, and waste — all targeting a sustainable production process that includes the end consumer. The ultimate goal for these businesses is to have that transparency across the supply chain (suppliers and customers) about their production processes.

Q: What technological approach must companies take to gain transparency into their production systems and meet sustainability goals and requirements?

Machine data is now the foundation for all technologies and data-driven decision making. Thus, a connectivity solution must provide the capability to connect all machines — regardless of the machine's longevity on the shop floor. Moreover, the connectivity solution must understand the signals and give them meaning.

Sustainability reporting based on valid and actual data requires collecting energy consumption of the production process, and the ability to attribute this to the individual product produced. This provides the transparency needed to uncover potential energy savings and calculate the carbon footprint of each product. Furthermore, it allows the tracking of the company's optimization efforts and its impact on the bottom line.

To achieve the full data picture, it's critical to integrate brownfield machines that are 20, 30, and 40 years old that remain in production. These machines were designed to produce high-quality products at a high volume, not for delivering data. It's a challenge integrating these machines for analytics to gain that global view on sustainability. That's what our solution is designed to do.

As many as 60% of companies still operate using brownfield machines. Replacing these machines with modern equipment enables companies to further innovate. The connectivity layer is critical. It's what we call FORCAM FORCE EDGE connectivity. We include a machine repository template to quickly connect brownfield machines. If you only extract the data from modern machines for the last five or seven years, that's just a subset of data. For this initiative to be successful, you need data from every machine in the network as part of your comprehensive global sustainability report.

Q: How are companies using data from production processes and can they leverage the cloud?

Our customers have been requesting one single source of truth for their shop floor data which allows informed decision-making. The truth for data-driven manufacturing with sustainability data is coming from the machines on the shop floor. Companies can utilize the data for sustainability use cases not only for energy efficiency or energy monitoring, but also waste, material efficiency, and stand still machines.

FORCAM has a partnership with SAP for FORCAM FORCE EDGE, an application for machine connectivity of the shop floor. FORCAM FORCE EDGE is getting deployed from the SAP Business Technology Platform and will support cloud and hybrid environments. In addition to cloud solutions, we also support SAP's on-premise solutions with FORCAM FORCE EDGE, referred to as SAP Manufacturing Suite. The FORCAM FORCE EDGE application is sending data from brownfield machines, including sustainability data from the machines to SAP Digital Manufacturing Cloud. Also, bidirectional production scenarios are supported between SAP Digital Manufacturing Cloud,

SAP Manufacturing Suite, and FORCAM FORCE EDGE. In SAP Digital Manufacturing Cloud personas, we can benchmark the business units and their plants in an enterprise based on the data benchmarking sustainability progress in the facilities. SAP Digital Manufacturing Cloud insight analytics helps us achieve that. With sustainability use cases, we continue our work to address the challenges that manufacturers face. In SAP Digital Manufacturing Cloud, customers can develop a life-cycle assessment, allowing compliant reporting. The goal is to help manufacturing companies start small, achieve initial results, and then scale their efforts through use cases. Most of our clients are pursuing a sustainability strategy with key performance indicators to become CO2 neutral. With FORCAM FORCE EDGE, we are providing machine data for sustainability reporting in production.

Overall, the FORCAM FORCE EDGE solution accelerates the transformation of manufacturers, achieving an end-to-end transformation for data-driven manufacturing or Industry 4.0 with a composition of

FORCAM FORCE EDGE and SAP Digital Manufacturing Cloud and SAP Manufacturing Suite. The architecture of the composition and the use cases have been aligned between SAP and FORCAM on the basis of the reference architecture of the Open Industry 4.0 Alliance.

Q: What are the realizations and lessons learned thus far?

One thing we need to keep in mind is that it's not just about monitoring the energy consumption of machines. That is only one part. It's more important for companies to tie their energy consumption with their products. With SAP technology we can bring machine data from across all the ERP systems and know from the reporting that this product requires X amount of energy to produce per day or product need. The biggest challenge is achieving an overall life-cycle analysis of the product. There are so many customer opportunities with a cradle to grave assessment. It's valuable from both an individual company perspective, but also when the data spans across the supply chain. ■

WHAT DOES THIS MEAN FOR SAPinsiders

- 1 Operate responsibly and report your environmental footprint.** The time is now to ensure critical first-tier suppliers are operating responsibly and reporting on their environmental footprint. The Green Deal and the Sustainable Development Goals initiatives represent a new normal for how global companies and their supply chains will be measured for their sustainable development involvement and progress.
- 2 Expect more corporate initiatives deriving from consumer sentiment.** Consumer expectations are helping to drive corporate and supply chain response to sustainability initiatives and commitments. As end users, people want to know the companies they purchase from are environmentally responsible.
- 3 Upgrade your equipment to ensure accurate and comprehensive machine data analysis.** Companies should invest in modern machines capable of network connectivity and Internet of Things solutions to produce regular data reporting and analysis. Brownfield equipment could be a liability for companies in the coming years.