WHAT'S HAPPENING WITH OUR COBOTS? MONITORING AND MANAGING LIGHTS-OUT AUTOMATION FOR UNIVERSAL ROBOTS

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As manufacturers lean on advanced automation and robotics to deal with labor shortages and increased demand, the need to effectively implement and monitor these technologies has increased in urgency. And even though there are a number of benefits to effectively implementing robotics for unattended and operator assisted automation, there are challenges that impede the ability of manufacturers to get the most out of their robotics.

One of the biggest challenges is understanding factory operations at a granular level so you know where to focus your efforts when automating. Today's production monitoring delivers a more thorough understanding of your CNC operations, providing details on machine utilization and offering insights into overall factory trends as data is collected over time. With more data, factory management has the information to see which jobs would most benefit from automation and lights-out operation, providing a roadmap to implementing more automation and robotics.

But once you implement advanced robotics, how do you monitor their performance? Typical first-gen production monitoring software does not extend beyond the CNC machine, leaving a blind spot for monitoring robot performance. In addition, first-gen production monitoring requires operators to enter reason codes for machine downtime, which is completely useless when running unattended operations, especially with robots. In short, it's been really hard to monitor and manage your robots using traditional methods.

This gap in understanding is why Datanomix and Flexxbotics teamed up to deliver real-time visibility for Universal Robots performance. Universal Robots is a leader in collaborative robot (cobot) automation for precision manufacturers, and by partnering

with Flexxbotics, Datanomix extends its Automated Production Intelligence™ coverage to Universal Robots cells, helping power lights-out and automated operations at precision manufacturers.

With Flexxbotics, Datanomix gains access to real-time operational data for Universal Robots cobots via their FlexxConnect™ platform. Advanced utilization and performance data for Universal Robots is collected and displayed in the Datanomix platform, offering real-time insights into CNC machine cycle times, part counts, and run times, as well as machine and robot status to allow manufacturers to make better-informed decisions around automating their factory. In addition, FlexxConnect provides centralized and revision-controlled cobot and CNC program management, including guided workflows for operators managing cobots and CNC machines.

The combined Datanomix/Flexxbotics solution delivers advantages for manufacturers using Universal Robots in three important areas:

AUTOMATED PRODUCTION INTELLIGENCE™

Understanding the performance of your robotic production cells in real time is a gamechanger. Datanomix provides next-generation production monitoring, showing the performance of every job on every connected CNC machine as parts are being machined. With Flexxbotics, this real-time monitoring is extended to cobots deployed at these connected machines. Operators and supervisors can now see how each of these robotic machine cells is performing, allowing them to react to issues that affect deliverability as they happen. In addition, Datanomix saves all of the performance data, analyzing it to uncover overall factory trends that help with job costing, hiring and personnel decisions, and capital expenditures. CNC shops now gain a

granular understanding of how their work cells are really performing and their capacity for new jobs and equipment.

PROGRAM MANAGEMENT

Managing the programs that run on CNC machines and robots as they produce parts can be a hassle, rife with inefficiencies because a lot of the management and transferring of program files happens manually, either with a USB stick or a DNC system. This means changes in the programs are often not updated across all of the machines, which can result in inconsistent machining and increased waste. The solution offered by Flexxbotics and Datanomix eliminates these issues by providing centralized and revision-controlled program management for both Universal Robots and CNC machines. Manufacturers upload their program, change the program within the work cell, and then update the program in a central database. Now any changes made during one job are automatically updated for future jobs.

GUIDED WORKFLOWS

With rising material costs and longer lead-times, it has been critical for precision manufacturers to build more reliable parts with better quality to reduce waste. In addition, with the current global labor shortage and skilled workers leaving or retiring, minimizing the training time on new capital equipment, like robots, has never been more important. Flexxbotics guided and gated workflows help eliminate defects with digestible work instructions and timely quality control alerts. The intuitive software can be run by operators at all skill levels seamlessly, with a security net in place to ensure correct, timely, and accountable operation. In addition, Datanomix delivers the insights needed to understand if production challenges are the result of

the machine or the operator, allowing management to provide training when operators are unsure of the job tasks.

MORE DATA FOR BETTER DECISIONS

Unattended operations can be a lifeline for precision manufacturers struggling to keep up with demand during labor shortages. Advanced automation with Universal Robots cobots helps address some of the challenges, but not without creating challenges of their own, especially when it comes to monitoring and managing lights out operations. However, most precision manufacturers don't have the advanced analytics capabilities in-house to fully understand their CNC machine operations in real time, let alone the ability to analyze the performance of their automated robotic operations.

With Flexxbotics, Datanomix pools data from Universal Robots with the associated CNC machines, offering real-time performance metrics for these robotic work cells, even during lights-out operations. Long-term trends are uncovered with continual analysis of job data, showing not only the performance of the robotic cells, but also offering insights into which jobs might benefit from robotic automation.

Datanomix is building the data engine for precision manufacturing by centralizing data points from sources across the factory floor and beyond. This begins with a direct connection to CNC machines, but now includes Flexxbotics for Universal Robot performance, Caron Engineering for advanced tool performance, and ProShop ERP for data around job costing and other operational parameters.

When operational data is consolidated and analyzed holistically, a better picture of overall factory performance emerges, allowing precision manufacturers to make better decisions faster, based on actual performance data.
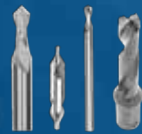
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