

## ARCH Medical Diagnoses Production with Datanomix

Real-time visibility into production helps everyone stay on track to meet their customers' production schedules



ARCH Medical Solutions is a group of 11 business units comprising 13 locations throughout the United States that produce orthopedic implants and instruments, navigated and robotic-assisted surgical devices, and precision components for surgical robotic systems. Part of the ARCH Group, ARCH Medical Solutions is a trusted resource for precision machining, contract manufacturing, and related supply chain integration for customers that require strict adherence to exacting specifications.

Craig Michaud, Director of Engineering at the Seabrook, New Hampshire facility, works with customers to onboard new products, serve as a technical resource, communicate with the customers, and benchmark capital expenditures, among other duties. His job entails delivering prototypes and getting the new projects ready for large-scale manufacturing and then handing it over to the production team. Evaluating and helping implement new technologies that have an impact on the business is also a big part of Craig's responsibilities at ARCH.

### The Drive to Monitor Production

As part of their ongoing technology initiatives, Craig led a cross-functional team that evaluated and implemented machine monitoring at ARCH Seabrook about four years ago. According to Craig, "We went through a pretty large benchmarking of who we thought were the top tier production monitoring companies. We started with a pretty in-depth review of these systems and we landed on a solution that met most of our requirements. At that time, Datanomix wasn't really on the radar because you guys didn't exist yet." (NOTE: Datanomix started onboarding customers in late 2019).

With the new system, ARCH was able to monitor uptime and downtime for their machines, but it required operators to enter machine states into a tablet to provide context as to why a machine was up or down. And even though the solution had a really good reporting structure that was very easy to customize, it required Craig and his team to do the majority of the work to analyze the data. "We could pull all of the data from the monitoring system for analysis, which was nice, but what I found was that not all of the data that was delivered was interesting or even useful."

## ARCH<sup>®</sup>

### LOCATION:

60,000 square foot facility in Seabrook, NH; part of 11 business units with 13 locations in the ARCH Medical Group

### KEY TAKEAWAYS:

- Datanomix production scores are used to quickly understand status in real time and to see which operators may be overburdened on specific jobs
- Actual job data is used to enhance job quoting, helping to improve profitability and customer satisfaction
- Real-time visibility into production helps everyone stay on track to meet their customers' production schedules

## The New Kids on the Block

Since ARCH wasn't getting everything they wanted from their monitoring system, when Craig was contacted by Datanomix to see if ARCH was open to evaluating the Datanomix platform, they jumped at the chance. "The Datanomix team was persistent and asked us to give them a shot," said Craig. "They had been working with a few manufacturers like ARCH and we were impressed by the fact that we could get insights directly from the machine data, instead of having our operators enter a machine state change on a tablet or laptop. So we decided to test Datanomix on a few machines, and if successful, we would consider expanding usage."

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To help with the install, Craig re-assembled the team that were involved in the initial launch of production monitoring at ARCH, including some of the machine operators. "Everybody on the team had already bought into the value of monitoring, and we were over the "big brother" feeling that some people get from machine monitoring." Having this initial buy-in from the implementation team helped make the entire installation process go smoothly.

## When Vendors Listen

As an early customer, ARCH Medical was in a unique position to help Datanomix tweak their installation process. "There were some small hiccups during the installation, mostly due to our IT infrastructure, but the Datanomix customer success team worked with our IT department to iron out the kinks. After that, everything has gone pretty well with no real issues. Once the system is up-and-running, bringing new CNC machines online is very easy."

As part of the initial implementation, ARCH Medical installed Datanomix on some Willemin-Macodel machines, which are fairly specific to the medical industry, and a few Matsuura 5-axis palletized machines. These machines are some of their highest value assets, so ARCH wanted Datanomix to help maximize the value of these machines by delivering insights that would help ARCH increase productivity and profitability.

What was obvious to Craig and the implementation team from the start was the responsiveness of the Datanomix crew. "They really went out on a limb to make sure we were getting the data we needed," said Craig. "We weren't expecting any vendor to have 100% of everything we wanted, but just the fact that the Datanomix team works on the items we consider high priority is amazing, and quite frankly, very rare. Over the past two years, we've seen progress on all of the areas we consider to be important to ARCH's success."

According to Greg McHale, co-founder and CTO of Datanomix, "Craig and the rest of the ARCH implementation team had some great ideas around how to present the palletized machine utilization data when working on multiple jobs. We love it when our customers come to us with insights into how they work and how Datanomix fits into their processes. It's this open relationship with customers that allows us to accelerate innovation within the platform."

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## Production Insights Made Easy

By benchmarking production as parts are being made, Datanomix provides ARCH Medical with a baseline for where production should be, based on their actual parts production instead of just experience and intuition. “With our old system, we knew when our machines were working and we kept track of the parts being made, but Datanomix takes it a step further by scoring what’s happening right now based on their derived benchmark. The easy-to-understand letter grade lets everyone know exactly where we are against where we could be.”



Another factor in ARCH purchasing the Datanomix software was the way Datanomix presents the data. According to Craig. “The actual data we’re receiving—production trends, real-time scoring, TAKT parts, and the automated charts—are all fantastic and relevant to our operations. And the Datanomix web interface is super easy and intuitive to use, allowing just about anyone on our team to see what’s happening in real time, or to dig deeper into any machine or job to uncover trends and solve challenges.”

Every morning at 6:00 am, Craig and a few other key leaders at ARCH are emailed the Coffee Cup Report, an executive level summary of the previous day’s production. “The nice thing about the Coffee Cup Report is that, at a glance, we know what happened during the previous day so we know what we’re stepping into that morning. And because we can drill down into any job or machine, we can do some preemptive troubleshooting to make sure we start the day off right.”

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## Data-Driven Decision-Making

With Datanomix, it’s easier to make better decisions based on the real-time insights automatically delivered from ARCH’s machines. “We have instant feedback on where we are with our production on every job, right now. Everyone can see the TAKT info—how many parts have been made against the expected number so they know where we are in relation to our goals. And with the Datanomix production scores, it’s obvious which jobs need assistance, instead of waiting to diagnose issues the next day.”

Datanomix saves ARCH from looking at work orders and doing the math to calculate the actual production vs. expected production. “Between automatically capturing spindle utilization and its performance benchmarking, Datanomix lets us know exactly where we’re at instead of where we think we are. We know if we’re on track to meet the standards we set, and we can deliver for our customers on time and with the right margins.”

With Datanomix, ARCH can see if a low grade is because there are some issues with the process, or if one of their operators is being stretched too thin to get a decent output for the machine. "Sometimes, a grade of C is OK for a certain job because the operator is running two other machines and that machine happens to be the least important of the three. But at least we know this every day and we can use this historical data to make better planning decisions around scheduling future jobs to help take the stress off of our operators."



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## Better Data for Better Quoting

One important business function that has been enhanced by Datanomix is job costing. ARCH has always done a very good job of capturing the cost of operations, but with the additional operational data from Datanomix, quoting accuracy has increased.

"Job costing is one of the areas where manufacturers have been asking for our assistance, so we developed our Quote Calibration report," said Greg McHale. "Now companies like ARCH can see exactly how each job performs against the quoted shop rate, and the report exposes opportunities to optimize not only quoting, but other areas for improvement including setup and overall machine utilization. At Datanomix, we're looking to make decision-making easier."

The Quote Calibration Report offers an in-depth analysis of every job run, showing how the job performed against the Datanomix performance benchmark. By comparing actual performance to expected performance, it's easy to see whether the job meets the standards needed to justify the job quote, or if there is an opportunity to optimize the job performance or job quote for increased profitability.

*"Having all of the operational data from Datanomix—cycle times, utilization, alarm codes, and more—gives us deeper insights into every job so we can be more efficient when we quote."*

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“When we price our jobs, we always use data from past jobs to make sure we get the margins we need to be successful. When the job is not as profitable as we like, we go back and analyze whether it was a machine issue, the process was bad, or we just made a mistake on the quote. Having all of the operational data from Datanomix—cycle times, utilization, alarm codes, and more—gives us deeper insights into every job so we can be more efficient when we quote.”

## Moving Forward

ARCH Medical is actively connecting more machines to the system to increase velocity using the data from Datanomix. “We will probably add a couple of Swiss machines and maybe one or two wire EDM machines. The more machines we have connected, the better picture we can get for overall factory trends. I don’t see any downside to more data.”

One recommended update to ARCH’s installation was the addition of large-screen TVs to the factory floor. This allows ARCH to display key metrics from the Datanomix system in TV Mode for the operators in the key cells monitored by Datanomix. “The more people that know the whole story about what’s happening right now, the more our efforts will make sense to everybody. Datanomix makes it easier to make well-informed decisions right on the shop floor, which speeds up troubleshooting and accelerates continuous improvement.”

One longer term project Craig is hoping to attack is to use the historical data from Datanomix to compare actual machine times against their engineering masters to help with planning. “The more we repeat jobs, the more refined the data will be. By incorporating the actual job data from Datanomix, we’ll be able to create more accurate and robust scheduling. I don’t have to ask an engineer to pull the data from the last five jobs in the system, dump it into an Excel spreadsheet, and do math. With Datanomix, it’s just a few button clicks away.”



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## Find Out How Datanomix can Power Your Factory

Request a live demonstration by contacting a Datanomix sales representative at [sales@datanomix.io](mailto:sales@datanomix.io)