

IN CONVERSATION WITH

# The Industrialist

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**“Innovation is not a purpose in itself,”** says Caterpillar’s Ogi Redzic. **“It’s a tool to improve business and how customers engage with Caterpillar.”** Digital, he believes, will be a defining accelerator of that change.

**OGI REDZIC**

Chief Digital Officer  
and Vice President  
Caterpillar Inc.





**Read on to find out what Redzic is embedding into the very DNA of Caterpillar.**

**What is the one word that best describes you?**

**Determined.** If I set my eyes on something, I do what it takes to motivate myself and everybody around me to achieve the target.

**Can you tell us about your role and journey with Caterpillar?**

I really have two key roles. I lead Cat Digital as Vice President, ensuring we develop the right digital tools and capabilities to support Caterpillar's business. Think of it as a product development role, where we build digital solutions both in-house and with digital suppliers.

Then as Chief Digital Officer, I help develop and align on a digital strategy throughout the company and our independent global dealer network, which plays a key role in providing the modern digital experience to our customers.

## What is your approach to innovation?

First, for us, innovation is not a purpose in itself. Instead, I look at innovation as a tool to improve business and how customers engage with Caterpillar and our dealers. We look for ways to apply digital technologies to existing opportunities - problems that couldn't be fixed without advances in technology. Then we arrive at a better customer experience, a more effective supply chain, or the ability to be smarter and faster. Digital for us is an accelerator - not a business in itself.

We look at innovation with three lenses.

**First is the customer lens.** We're always looking for ways to support our customers' operations as their needs change - we want to make it easier for them to interact with us, learn about and shop for our products, and engage with our services. For instance, customers can manage their entire fleet in our Cat App or at My.Cat.Com, from ordering replacement parts to booking a service. Anything that makes that journey easier and more compelling is a massive part of innovating in that customer lens.

**The second lens is dealers.** We make it easier for dealers to engage with Caterpillar and to provide services to customers. We developed advanced condition monitoring tools so dealers can be informed about potential system issues on customer machines and engines, and we provide dealers with tools to easily identify parts - even in the most complex engines - so dealers can order replacements. Dealers are integral to creating a compelling and seamless customer experience in e-commerce - and that's the piece of the puzzle where we help.

**The third lens is the Caterpillar enterprise.** My job is to make Caterpillar and my peers more successful in everything they do - from reducing costs and serving customers, to accelerating the time to market and building applications more easily. As an example, my team might help them find new insights from existing data - for instance, comparing fleet utilization data from X period of time to Y period of time, what events can be correlated to explain the difference in fleet utilization?

## Can you highlight groundbreaking innovations at Caterpillar?



**As of this year, we have more than 30 years' experience in autonomy, and 280 autonomous mining trucks that have hauled more than 2 billion tons, with zero injuries.**

That's hugely impressive. The transportation industry is still testing Level 4 and Level 5 autonomous driving on public roads. But in mining, Caterpillar has been in production super early and successfully, resulting in many benefits for our customers. Where there is such a limited possibility of injury in a mine with autonomous mining trucks, customers are more productive - you might not have to worry as much about operator fatigue or distraction in trucks and driving in a mine.

There has also been significant innovation around remote control. The Cat Command suite allows remote dozing, for example. So, if you're on the edge of a pit you can take a human out of the potentially dangerous environment. You can also have an operator remotely operate multiple machines.

Finally, since 2018 we've increased our physics-based analytics models three-fold. We're leveraging data we've collected to develop proprietary machine learning models that predict unplanned downtime for our machines or rebuild schedules for main components.

### Can you give an example of how machine learning can really impact the customer journey?

The analytics driving machine learning broaden the scope of wheel slip detection without a need for additional expensive sensors. It does this by synthesizing data from more commonly available sensors. The value of such alerts may be significant. For example, one such alert to a mine site planner saved \$30,000 to \$50,000 in parts and labor and prevented 48 hours of lost productivity. Over 20 such alerts were recently generated based on Cat analytics.

### How does Caterpillar differentiate itself from competitors?

We have a global dealer network of 165 independent dealers in 191 countries, and we work with our dealer network on new digital solutions. Being able to leverage this network gives us a very nice differentiator, because when you're properly committed, it creates an extremely powerful ecosystem.

Almost every new product is connected, and we connect older assets too. It means our machines and engines tell us day in and day out how they are operating, providing us with information we can use to improve them.

Furthermore, we have several digital tools. For example, Cat Inspect is a tool that digitizes the physical process of machine and engine inspection. The customer can collect information about the health of the machine and automatically send it to their preferred dealer.

A customer can do the inspection before starting a machine for a day's worth of work. More than 50 percent of these inspections result in at least one action, so it creates a very dynamic ecosystem of feedback that is sent to dealers and to Caterpillar. We had more than one million inspections in 2019.

### What technologies are you embedding in Caterpillar's products and services?

We always look at digital through a prism of a three-layer model. It begins with the **physical layer** – working to fit all our machines with the best



**We have one of the largest fleets of connected assets in the industries we serve - more than one million connected assets send information to our platform.**

connectivity possible going forward, whether 4G cellular, satellite, WiFi, or Bluetooth. Then we have the **platform layer**, where we ingest data, process it and make it available for consumption.

And finally, we have an **application layer** where we build applications for a particular segment or need. Throughout the process, we apply machine learning to improve our products and services.

We're engaging with some of the best companies in the world to advance our **machine learning** capabilities, and I think we're making incredible progress. We can process large amounts of data in real-time and validate and improve our machine learning models quickly.

## Where do you see Caterpillar five years from now?

It's hard to predict the exact impact Covid-19 will have on the way our customers do business. What I do know is that digital will be even more important than it is today. I think we're well-positioned to support our customers and innovate as their needs progress in this space.

Customers will engage even more with Caterpillar through our digital tools and e-commerce services. Artificial Intelligence will become an increasingly more important part of many things that we do - and not just in autonomy and remote solutions. It will be vital to how we ensure we have the right part at the right place when the customer needs it, how we help them service machines, and how we make all of this cost effective.

## What inspires you the most?

I'm incredibly inspired by people that lead by example - those that set clear, motivational missions for their teams.

A lot of companies set financial targets, and I think they're necessary. But they're really not enough for people to get truly motivated. When you commit as much time as we all do to work, you have to feel that what you do makes a positive impact in the world. I didn't always have that in my career, but I do at Caterpillar. When power grids fail, Cat Power Systems come in and power hospitals. When we have an earthquake, Cat excavators are immediately helping at the scene. Not too long ago a hospital ship was being towed to New York City by tugboats with Cat engines.

We see Caterpillar helping people when both good and bad things happen. That in itself is quite motivational. At Caterpillar we also have leadership teams that point people toward the mission, and I get positively motivated by that. I also like to look at what's happening in Silicon Valley with Business-to-Consumer (B2C) customers. Once a customer has a good experience in B2C, they'll expect that experience in Business-to-Business (B2B). Good experiences from your personal or consumer life do need to translate into just as good, if not better, experiences in the B2B world. And I think that cycle of time is getting shorter and shorter.

## How will you and your team be game changers and impact the future of Caterpillar?

It's my job to ensure we have the right digital foundation so the company can be just as successful, iconic and remarkable in the next 95 years as it has been in the last 95. We have to keep connecting our assets with the most appropriate technologies available, and we must continue to advance our

consolidated digital platform, which is a trusted enterprise source for data and services. This is really the most important thing for us and what makes it easy and fast for developers to build their own apps and services without having to worry about the underlying technology. In parallel, we need to embed core applications with machine learning and AI capabilities that are the best in the industry.

I will know we're game changers when our internal partners and dealers are plugged into our digital infrastructure and everyone is benefitting from immediate access to our data and services. We'll all be drawing from the same information, depositing into the same repositories and aligned in our development. It's a bold goal - but we have strong support from our executives, a number of global digital hubs, a team of more than 800, and many strong outside companies that are helping us build this. And it's working. The company is no longer just being viewed as a world leader in iron - it's being viewed as a company that produces the most intelligent, most connected iron in the world.

**“At the end, the true success of how well we’ve done will be measured by how digital becomes part of the legendary Cat yellow. Cat yellow is almost like the DNA of the company. People here bleed Cat yellow because there’s such commitment to the company, the brand, our dealers, and our customers. We want to enhance that with digital DNA.”**



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