

# The Industrialist

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**“Caterpillar is a stronger company, the stronger our digital solutions get.”**

**Ogi Redzic**  
Chief Digital Officer, Caterpillar

**July 2023**

# How Caterpillar is outpacing change with continuous innovation

Each month, we speak to a different industry leader about their approach to innovation and emerging trends impacting the industrial sector. For this edition, we talked again with **Ogi Redzic, Chief Digital Officer at Caterpillar**, who was already featured in the Industrialist inaugural edition in July 2020, about the accomplishments to date and his plan for further driving digital innovation at the company.



Driving continuous innovation with connected products and services



Why advanced and emerging technologies stand to improve Cat's offerings, and customer and dealer experience



Delivering business results with the right talent, skills, and culture

## In conversation with Caterpillar's CDO, Ogi Redzic



**Ogi Redzic**  
Chief Digital Officer,  
Caterpillar

Three years ago, we sat down with Caterpillar's Chief Digital Officer Ogi Redzic to talk about his plan for driving digital innovation at the company. In this 3<sup>rd</sup> year anniversary edition of The Industrialist, we are pleased to welcome Redzic back to find out what's been happening at Caterpillar and how his ambitions for new digital-enabled customer offerings and solutions have been brought to life.

"We're proud of our accomplishments and our people are really excited by the possibilities of the future," says Redzic.

From a move to the cloud to a new single equipment management app, Caterpillar is streamlining and optimizing the customer and dealer experience, pre-empting their needs and allocating resources accordingly. "What we've done in the last couple of years speaks for itself – but there's so much more to be done. As technology changes, we can apply new technologies to some of the traditional problems and opportunities that we have had and then create even better solutions."

We spoke to Redzic about the new expectations of a post-COVID, digital-first world, how Caterpillar is driving innovation with a clarity of purpose, and why the next three years of technological advancements stand to improve Caterpillar's offerings as it embraces continuous innovation.

## Can you share some highlights of your digital journey over the last three years at Caterpillar?

**It's amazing to reflect on how far we've come since our first conversation a few years ago.**

Back then it was the early days of COVID, so large parts of the world were still on lockdown. Uncertainty was everywhere. Today, I'm talking to you between a trip to Germany where we discussed digital progress with several dealers, and a trip to Slovakia where we opened a new digital office. Next week I'm going to India, where we do more and more digital work, to meet with our growing team. It's also very clear that digital technologies have only become more important to our customers and dealers, and our investments in our digital portfolio are paying off.

Three years ago, our **equipment management portfolio** was split between three different digital products. Individually they were good products, but we knew that we had an opportunity to create even better customer experiences by streamlining them into a single offering. In parallel, we were also in the early stages of a journey to create a common **cloud platform**, which would be the ultimate source of truth for all our applications. Today, I'm happy to report that we've completed both of those big tasks. We now have a world-class digital platform, and in March 2023 we launched a new version of our equipment management app, [VisionLink](#). It's integrated and brand agnostic, which means it works with equipment from other OEMs as well. It allows our customers to run their business, manage their fleets, but also to arrange services, buy parts and address regular maintenance issues. In terms of digital acceleration, VisionLink is a

powerful example of what can be achieved through an integrated digital portfolio. The app benefits from more than 1.4 million of our connected assets and from our new platform. We rely on this platform to run our advanced analytics models and provide common services that are then connected to VisionLink and many other apps.

One new thing that's even more exciting for our dealers and customers is **e-commerce**. E-commerce continues to be a big focus area for our digital acceleration efforts. The world is changing, and our customers' expectations are that we become even easier to do business with. For that reason we've made significant investments in e-commerce systems. We're targeting large customers and small retail customers with different applications. When COVID began, we all learned how to use QR codes en masse for menus in restaurants. That same technology is now ubiquitous in our daily lives, and at Caterpillar we have QR codes with specific serial numbers in most of our new and existing equipment. So, when a customer scans a QR code, they will be able to find parts based on their particular machine. Our parts store has more than 1.5 million parts available and 120 types of engine oil filters, so you can imagine some customers may be overwhelmed by the choice. When you scan a QR code with your serial number on it, you land on the only parts that will fit your machine. These have been vital improvements. At our Investor Day in May 2022, we forecasted that e-commerce dealer parts sales to users through e-commerce would grow by 50% in 3 years from a baseline of \$10M per business day. Now, we expect e-commerce sales to exceed that target by the end of the three-year period.





**What unforeseen  
challenges  
have you  
faced in the past  
three years?**

The biggest unforeseen challenge was a labor market that was tighter than we expected during COVID. Remote work has been embraced in many parts of the tech community, so we had to deal with some things that we couldn't necessarily have predicted. But we were successful and I'm incredibly proud of the progress that our team has made.



## What impact do your digitally-enabled services and solutions have on the customer and dealer experience?

**Our Caterpillar Service Information Systems (SIS) is an electronic service tool that covers information for Cat products from 1977 to today.**

We have more than 2 million service graphics and 1.5 million part numbers, so this tool is equivalent to 25,000 books and it's just a click away. We made massive changes to how this tool operates in the last few years. It's now cloud-based and drives user efficiency. Since we launched the cloud version, technicians spend significantly less time researching a particular service they want for a machine or engine. On average it saves technicians about two hours per week, which is really important because it is increasingly difficult to find skilled technicians in some places.

We have also integrated our key digital properties to seamlessly transition the customer from SIS and other apps into Caterpillar e-commerce channels, where, using a shopping cart import capability; they can have confidence that they're purchasing the right parts for the job and can verify that the part they're purchasing will fit their machine. Our digital tools are becoming a core part of possessive technicians daily interaction. We're really proud of our progress in this space.

Another quite unique example is in the space of intelligent leads. We're using data driven insights to provide Cat dealers with very specific, actionable intelligence that they can use to proactively reach out to customers and serve them. We take data from more than 1.4 million connected assets and combine that with our engineering knowledge, and with 20 other data sources (anything from engineering recommendations and component life to dealer service invoices and work order history), to provide leads that are specific to an individual asset. For example, when our data tells us a particular asset has been working harder and longer than standard, we can proactively recommend a rebuild and prevent an unexpected breakdown. At the same time, we incorporate AI to create proprietary qualified aftermarket sales leads called "prioritized service events" (PSEs). Then our dealers reach out to customers with commercial offers. We only started to experiment with this concept back in 2019, and by 2021 we had already generated more than \$1 billion in dealer part sales to users from these leads. While not all these sales may be incremental, they allow for more proactive planning and a better customer experience. We're incredibly pleased with the growth we're seeing. In 2022, PSE-based sales grew by another 90%. That's excellent use of digital capabilities and data to get better offers in front of our customers. Our dealers are very happy with us.



# How have you dealt with the transformation requirements when it comes to your diverse customer base and your organization?

**You have to start from people and culture. Digital is moving very quickly, and you need to have the right team in the right setting around you to make that happen.**

We've spent a lot of effort ensuring digital is a part of the bigger Caterpillar team, and ensuring we have the right mindset. We grew the team from just over 600 employees in 2018 to about 1,600 now. We've also had some significant growth when it comes to our responsibilities and the work we do.

Then you need **technology and strong digital foundations**. You must have connected assets – connectivity is critical to everything we do and we already have more than 1.4 million connected assets out there. We've built a new digital platform, as I mentioned, and we have a cutting-edge tech stack, including more generative AI capabilities and an advanced suite of applications.

So, you need to have the right people and you need to have the right technology – but **enterprise collaboration** and a deep understanding of customer needs is essential. In Caterpillar, we serve a range of industries such as construction, mining, energy and transportation. We can be even more successful in serving these customers when we work with our colleagues across Caterpillar to understand what our customers need and expect from us. We're not just judged on the quality of our code or uptime of our services. We're judged on business outcomes from our digital products. It's critical for my whole team to understand that business outcomes really matter, and that's what we need to judge ourselves on. We share KPIs with business units and I find that to be one of the most important success factors for organizations like mine. At the end of the day, it's about alignment with business units and sharing common goals, then making sure you have the right people and tech in place.



## **Do you see benefits for your internal operations coming from improved digital customer solutions and outcomes?**

**Absolutely. On our e-commerce sites, we can tell what customers are prioritizing.**

Separately, we know what kind of jobs dealers have planned and what services. We can then send some of those signals to our logistics people, to ensure that we have the parts in the right place, in the right warehouse. Those early signals can help them optimize our transportation costs, reduce freight, and ensure we have the product and parts in the right place at the right time. This is just one example, but there's a plethora of examples like that.

## **Considering the massive set of industry dynamics from supply chain disruption to talent shortages and more, how does Caterpillar ensure being ahead of the game and continuing to improve and innovate?**

**There's certainly no lack of ideas in this space and there's plenty of potential. But in order for us to be successful, we must focus on what we want to do with our digital ambitions and take a very pragmatic approach to innovation.**

For us, it all starts with a clear intention. Digital is an enabler, primarily for services growth. It's not a product, it's not a business in and of itself. So, we're not trying to create a P&L (Profit and Loss) out of digital. Instead, we are here to help our business partners be successful. This clarity of purpose helps us prioritize which digital solutions to work on.

For example, we're currently focused on digital solutions for rental and used equipment. This is a new area of focus for my team that we've just taken over and is an important business for Caterpillar.

Safety is also important when it comes to autonomy and semi-autonomous technology, which is big in Caterpillar. We have the world's largest fleet of haul trucks, nearly 600 haul trucks accumulating more than 216 million kilometers of autonomous driving with zero injuries and more than 5.5 billion tonnes moved. That number is getting bigger and bigger. We're very proud that there have been zero injuries.

When it comes to advanced and emerging technologies, there's so much opportunity. Generative AI will be center stage, and we've developed some really exciting use cases where we believe our business will benefit. Generative AI is definitely a very hot topic for me and my team.



## Can you talk a little bit about the role of those emerging technologies and some potential use cases for Caterpillar?

**I think it's important to be disciplined in this instance. We're not going to do any technology for technology's sake just so that we can brag about it in an earnings report.**

We want to make sure that technology has application in what we do. **Generative AI** absolutely does. In our case, we think it will have some really exciting outcomes. But it all starts with having clarity of purpose. Digital is an enabler and the world around us is becoming more digital. Driving alignment with the business units is critical. Because if you talk to ten people today about what generative AI is within any company, you're probably going to get some very different answers. It's really important that we get to that core of using the same vocabulary. We're not overcomplicating things.

One of the biggest success factors is keeping things simple. Keep asking, what is the problem we're trying to solve? How

do we define success? How do we measure success? Did we make progress? Those common guardrails need to be applied here, just like with existing technologies. For us, looking at generative AI needs a very clear framework, clear use cases, and then a way to measure success. Because it all sounds great in theory, but you actually have to put something in production and get the results that everybody was hoping for. If you don't get those results, you need to challenge yourself, go back and redo or admit it is not working. There are lots of opportunities in front of us with new technologies. We still believe there are some good use cases for the **metaverse**, and we'll be exploring them – particularly when it comes to making it easier for customers to do business with us, because that ultimately is the driving motivator for almost everything that we do in digital. Can our customers get something done with Caterpillar and its dealers easier than they could before? If the answer is yes, we're likely going to apply digital to it.



# How are you making sure you have the right talent, culture and skills, and embedding that in your organization?

**When we bring new talent on board, the first thing we tell them is our clarity of purpose.**

We explain why in Cat Digital we are doing these things to help Caterpillar on this journey. The second thing is **alignment** – how we operate. We use the same vocabulary to describe things, engage with our business partners and make sure that we communicate clearly and consistently with them. Alignment across our enterprise and with our dealers is essential. We work very closely with our dealers and make sure that they have input into our digital journey as well. We have a very structured way in which we solicit input from them and make sure that we remain aligned in our journey.

Making sure we have the right talent is also essential. We have built a much bigger team and I'm proud of the fact our skills are second to none. We need to continue to invest in our current employees, and we now have early career development programs. We work very closely with a number of universities, especially around the US-Midwest and in India, where we attract top computer science talent from some of the best schools and bring them into our internships. We find a way to engage them, then convert them into employees over time. We have more than 70 interns this summer alone.

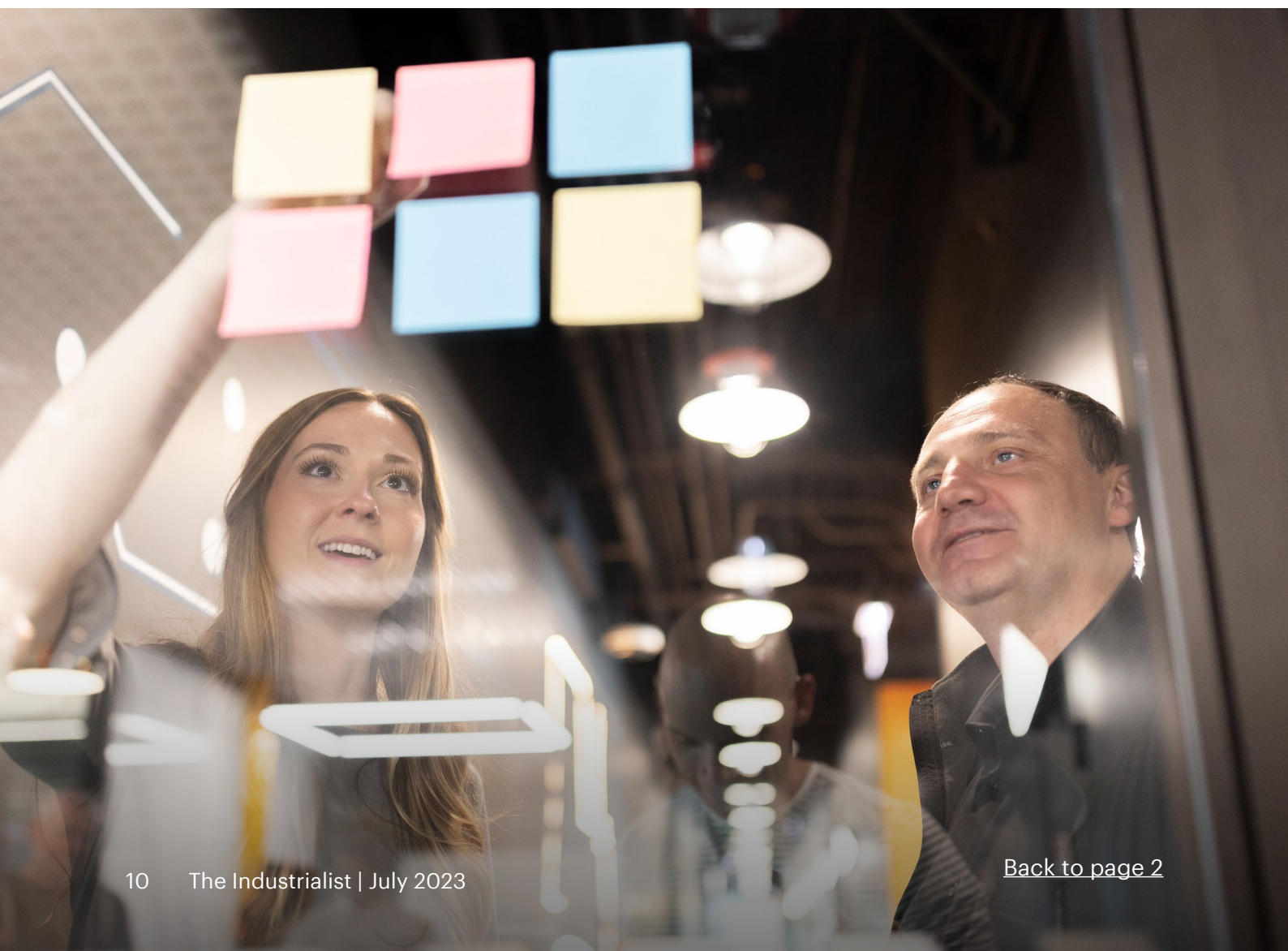
Once you have smart people, purpose and the right alignment across the enterprise, it's just a case of building and nurturing that culture. Our employees strive for accountability, belonging, a sense of purpose and some swag! You need to make sure they have their T-shirts and cups, etc. You bring all this together and you set some bold goals to drive work ethic, accountability and execution. Because our job is ultimately to deliver business results. And to ensure everybody's clear about what role they play in our company's success. We think today is a great time to be part of Caterpillar's digital journey. The importance of digital is very clear in the enterprise, and we're very proud of the progress we've made. Caterpillar is a stronger company, the stronger our digital solutions get.

We're proud of our accomplishments, and our people are really excited by the possibilities of the future. What we've done in the last couple of years speaks for itself. But there's so much more to be done. As technology changes, we can apply new technologies to some of the traditional problems and opportunities that we have had and then create even better solutions. We have a very target-rich environment for continuous improvement for our dealers and our customers – and they're very excited.

## What's the next step in your journey and what gets you most excited about the future?

What gets me most excited is having a fully engaged team who I'm sure will come up with new ways of solving problems I can't even dream of. I'm super motivated by the great ideas that come in from across the organization. And to give you some broad strokes: generative AI will have a great impact; there is no question about it. The way our dealers are engaging with their customers is going to be even more digital. That means some of the tools that we're building right now – that are still in our heads, not even on the drawing boards yet – are probably going to be in use. For example, we envisioned our [Cat Central App](#) 18 months ago, then it was

put into production six months ago, and now people are buying parts and learning about their assets and using our app. Things are continuously progressing, and I'm looking forward to our next conversation three years from now, because I probably don't even know about all the things we're going to have in production by then. That's super exciting, because we don't have a blueprint that we're executing – this is a continuously changing world. And we have plenty of opportunities to get our customers excited about what's coming from Caterpillar and Cat Digital.



# In closing

Change is not new to industrial companies, but what is different now is the magnitude of change driven by a confluence of trends from e.g. recent geopolitical and technological developments to dramatic shifts in customer purchasing behaviors and increasing sustainability demands – all challenging the traditional value chain roles and business models in the industrial sector.

## How can industrial companies embrace continuous change and reinvent themselves?

Historically, industrial players have pursued value creation through a focus on product margin optimization, sales channel excellence, and programmatic M&A. These strategies proved fruitful in the pre-COVID era. Sparked by new technologies, changing customer behaviors, and other key trends, industrial companies however are standing at an inflection point now reassessing their growth strategies, operating models, and approaches to talent. Leading industrial players are increasingly focusing on a common thread to support this journey of transformation and reinvention: the innovation of the engineered connected product that defines the requirements for their technology strategy, organizational structure as well as operating model, and that ultimately drives corresponding capability adjustments. Embracing that continuous change spurred by the engineered connected product can accelerate cross-functional efforts and position industrial companies to better reach new value pools from e.g. servitization in the coming years.

The insights shared by Caterpillar’s Ogi Redzic in this 3rd year anniversary edition of the Industrialist underpin exactly that. “(...) in order for us to be successful, we must focus on what we want to do with our digital ambitions and take a very pragmatic approach to innovation.” It becomes clear that Cat’s relentless focus on continuous innovation centered around a strong digital core and mindset is a critical imperative for transforming products to solutions to outcomes for their customers and dealers; the so-called “innovation core” together with a successfully implemented servitized business model becomes the key capability and source of competitive advantage helping Caterpillar realize resilience and sustainable growth and profitability.

It also becomes clear that enterprise transformation cannot happen overnight; it is often a multiyear journey that requires careful up-front planning and continuous, systematic execution spanning the whole organization and ecosystem. The key is to get started and gain speed. Now is the time for industrial players to zeroing in on their engineered connected product innovation and unlock business value and scale new growth from it.

Best regards,



Thomas Rinn  
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Global Industrial Lead, Accenture





## About The Industrialist

The Industrialist is our monthly digital magazine that puts game-changing perspectives in the spotlight. It combines thought-provoking content and insights, to keep you on top of what's new in the industrial industry.

Featuring different CXOs and diverse views, you can be inspired by leading innovators, explore the latest trends, tools, technologies, and innovations, and ignite your industry interest with transformational thought leadership.

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## About Accenture

Accenture is a leading global professional services company that helps the world's leading businesses, governments and other organizations build their digital core, optimize their operations, accelerate revenue growth and enhance citizen services—creating tangible value at speed and scale. We are a talent and innovation led company with 738,000 people serving clients in more than 120 countries. Technology is at the core of change today, and we are one of the world's leaders in helping drive that change, with strong ecosystem relationships. We combine our strength in technology with unmatched industry experience, functional expertise and global delivery capability. We are uniquely able to deliver tangible outcomes because of our broad range of services, solutions and assets across Strategy & Consulting, Technology, Operations, Industry X and Accenture Song. These capabilities, together with our culture of shared success and commitment to creating 360° value, enable us to help our clients succeed and build trusted, lasting relationships. We measure our success by the 360° value we create for our clients, each other, our shareholders, partners and communities.

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