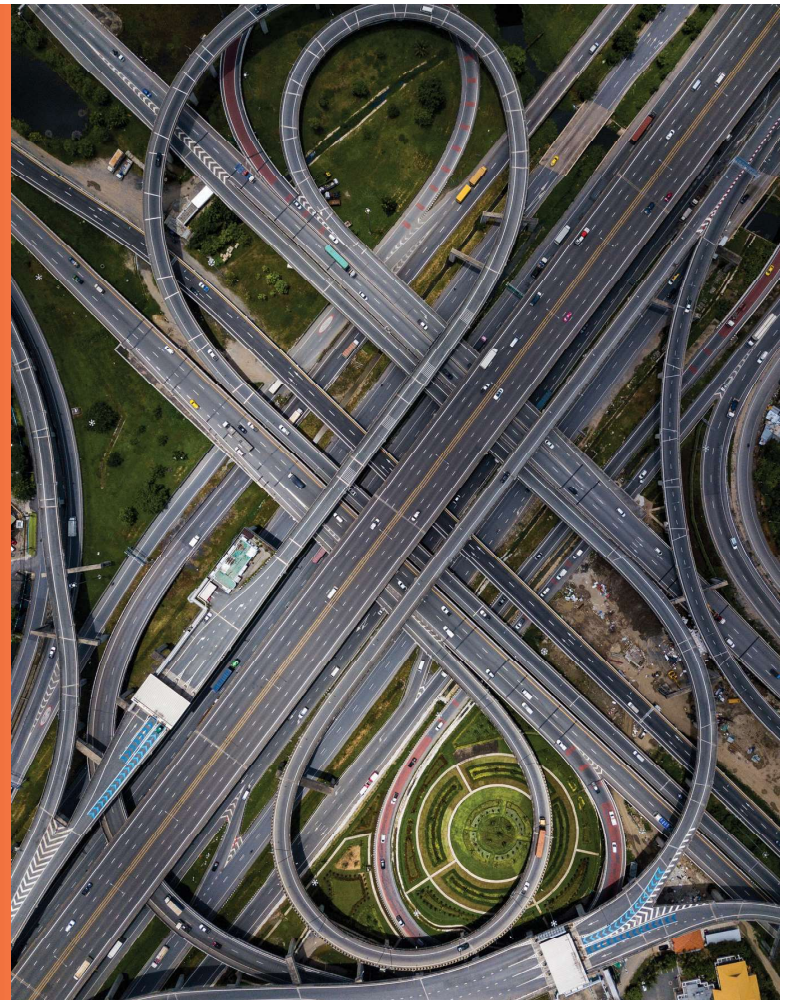# ACHIEVE SIMPLIFICATION THROUGH SENTIENCE

BY OLIVER RATZESBERGER

Think back to a decade ago, when the term "big data" first gained traction. Teradata had recently welcomed five companies into our first-ever Petabyte Club, reserved for customers who ran data warehouses larger than a petabyte. Smart phones were then a novelty, and the first major ride-hailing app was still a year away from launch. The scale of data being generated and moving around the world — 1,200 exabytes a year — was unfathomable to many. As one journalist wrote, "this is the first time I've ever used the word zettabyte."

Fast forward to 2019. It's estimated that 40 zettabytes of data will be created worldwide this year — that's over 33 times the amount created in 2009. With data growing so rapidly and permeating every aspect and micro-moment of human — and artificial — life, it has taken a central role in nearly every business on the planet. To keep up with the endless stream of information this pervasive Internet is creating, organizations are automating data collection and analysis and turning to artificial intelligence and machine learning, all of which injects even more data into this expanding digital environment.

SEIZING CONTROL BUT LOSING AGILITY

However, gathering and even analyzing this data doesn't necessarily result in gaining answers. There's a vicious cycle being created in the enterprise: business leaders know they need to make sense of a barrage of complex data as quickly as possible. They set up restrictive access policies and processes in an attempt to create a company gold standard for data analysis while reducing security risks. But while this approach may help the enterprise collect data, it doesn't help the business remain agile.

Often business executives have an idea or need — such as a hypothesis of what caused recent customer churn — but not a specific idea of the data required to test it. So these executives make valid requests to generate answers to pertinent enterprise-wide business challenges, which in turn can take IT departments months or even years to fulfill. In response to these bottlenecks, non-IT groups attempt to fulfill these requests in a more timely manner

by scrounging together copies of data as best as they can. However, these copies of data are ungoverned and often contain inaccuracies, leading to inconsistent, and — more worryingly — sometimes incorrect results.

Such data silos create thousands — even tens of thousands — of versions of the truth, produce redundant or discordant technologies that slow down processing speeds and result in lengthy arguments between teams about whose data is better and correct. This is the Wild, Wild West. Ironically, the enterprise's attempt to create agility and simplify and streamline analytics creates more complexity, costly delay and inadequacies in actually solving the problem.

DATA ALONE IS NOT ENOUGH

Ensuring that relevant data gets to the right users at the moment they need the information requires adept management and governance. But even then, data alone is not enough. Data is just the raw material that companies manage and analyze. As tools and frameworks used to process, visualize and understand that data, analytics are only a means to an end.

ENTERPRISES MUST STRIVE TOWARDS THE ULTIMATE GOAL OF GETTING ANSWERS TO THEIR TOUGHEST BUSINESS CHALLENGES.

Many enterprise leaders recognize that their analytics processes and platforms are broken. In fact, 74% of enterprise decision-makers say analytics technology is too complex and 81% wish analytics were more pervasive in their organizations. That's why simplification and operational excellence are now board-room-level topics. In 2018, Lloyds Banking Group pledged £3 billion through 2021 toward driving operational excellence, simplification

and modernization of data and IT infrastructure and technology-enabled productivity enhancements.

Many of our customer executives tell us, "We've spent billions of dollars; we have thousands of systems. Help us simplify our ecosystem and consolidate data silos into a single analytics platform."

SIMPLIFICATION THROUGH SENTIENCE

Fortunately, there is a way out of this complexity, and the answer isn't far away — in fact, the answer lies in ourselves. Every second, human beings process 11 million bits of data streaming in from their senses. Of course, our brains autonomously process much of that data for us so that we need only to process 50 bits worth of conscious information per second. Much of this processing is so frictionless that we don't even notice it happening unless our body makes us consciously aware of a problem, such as when we run a fever or stub our toe.

But sentient beings don't just retrieve and act on data reactively, in the present moment. They also take in information and act proactively, thinking ahead about ways to find new opportunities, prevent danger and so on. Sentient beings are also always evolving and learning how to be stronger and more resilient.

If we use human sentience as a model for enterprise intelligence, we see an exciting near-future for organizations across every industry. We are accelerating towards a time where companies will be proactive, scalable, frictionless, evolving and autonomous. Like the human brain, organizations will translate streams of data into a coherent picture of what steps to take next.

THE NEED FOR PERVASIVE DATA INTELLIGENCE

In order to enable the Sentient Enterprise, we must centralize data and decentralize use cases so that data is pervasive and frictionless, just as through the human body. The human body relies on all senses to interpret the world holistically and take precise actions — in other words, without complete sensory input, the body is challenged.

Unfortunately, such a state of partial sensory experience is how many enterprises essentially operate today.

What the human body and enterprise both need is Pervasive Data Intelligence — leveraging all of the relevant data, all of the time, across any infrastructure at scale. Pervasive Data Intelligence must also be omnipresent throughout an organization. Like our nervous system, it never sleeps; it's always available, in real-time, when it's needed.

START WITH THE TECHNOLOGY BACKBONE

Changing your enterprise's approach when it comes to analyzing data may seem daunting. But the path begins with engineering the technology backbone that supports the sentient vision: an Agile Data Platform. This architecture presents information at various levels of complexity to different groups within the enterprise, allowing many kinds of users to work with the same data, whether they're a business analyst or a data scientist. The agile data platform also allows your people to create their own Data Labs, where they can run real-time experiments safely using actual production data without needing to create a 100-page requirements document.

The Agile Data Platform makes Pervasive Data Intelligence possible and profoundly changes an organization's culture when it comes to data. Allowing all groups to test and experiment with data safely promotes continuous learning and collaboration. With silos eliminated, reaching out to other groups throughout the organization becomes second nature. Agreement on numbers and metrics happens far more easily, since everyone is working from the same version of data. This frictionless innovation sets the stage for the next steps in the sentient journey: analyzing more complex behavioral data sets and seamlessly ideating, building and deploying products and processes that span functions, locations and company goals.

LET GO OF MANUAL EFFORTS AND EMBRACE AUTONOMOUS DECISIONING

In the final stage of sentience, the enterprise must leverage Autonomous Decisioning to execute algorithms, machine learning and artificial intelligence (AI) at scale to take the bulk of repetitive data sifting and decisioning away from human shoulders — saving human intervention for critical junctures. The focus in this phase is not on the volume or complexity of analytics and tools. Instead, the enterprise challenges itself to ensure activation of insights, whether simple or complex.

This autonomous decisioning capability is inspired by, and expands on, what's already happening in some industries, such as high-frequency stock trading, manufacturing and self-driving cars. In this final stage, the enterprise connects complex algorithmic processes across the business, enabling these functions to communicate with each other and help the company act more like a proactive organism.

While arriving at a Sentient Enterprise future is no doubt complex and demanding, the pace of data expansion, consumer-driven expectations and technological innovation today all point towards its inevitability. And while no one journey towards sentience will look the same, there is one true north you can stick to as you advance down your own path: align people, processes and technology in service of agility around data. Everything you do should be in service of agility — to establish it, build on it and amplify it. This principle will guide you as you work to make data intelligence pervasive, equipping your enterprise to compete amidst an unprecedented pace of digital growth and innovation real-time, when it's needed. ▮

OLIVER RATZESBERGER IS THE PRESIDENT AND CEO OF TERADATA.

AGILE DATA PLATFORM:

The technology backbone that presents information to different groups, allowing many kinds of users to work with the same data.