Industrial Intelligence: Infrastructure Industry Insights

When **efficiency** becomes **circularity**

Around the world, the rapid urbanization, climate change and aging infrastructure, along with widening talent shortfalls and budget constraints are leaving infrastructure leaders a narrow path to drive efficient operations and accelerate sustainability. The imperatives are clear: to successfully deliver infrastructure projects while navigating supply chain disruption and making measurable progress towards net zero, organizations must find new ways to improve overall efficiency, agility, and resilience. Understanding what you need to do is one thing, finding the right path is far less straightforward.

To bring clarity to this conversation, AVEVA commissioned Wakefield Research to speak with 500 executives at infrastructure facilities in North America, Europe, the Middle East and Australia with at least $50M in annual revenue, including 135 executives in building projects, water utilities, facilities and smart cities.[1] The survey results cast digital adoption and data-sharing imperatives in a new light. While much of the data confirms industry leaders' existing beliefs, it also provides vital new insights into the tools and strategies top executives have identified as the industry's path to improved sustainability, innovation and growth.

When **insight** becomes **impact**

The need:

56%
of infrastructure industry leaders believe new technology needs to empower the workforce will be a top challenge for their organization in 2024.

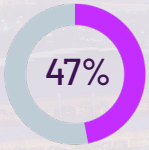
52%
see difficulties sharing data with trusted suppliers, customers, and partners as a top obstacle to maximizing efficiency and impact.

52%
say talent shortages will be a top challenge this year.

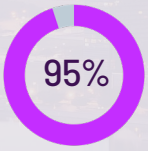
72%
have yet to adopt industrial AI across the full organization.

66%
acknowledge their organizations are making key business decisions without access to reliable, real-time data and insights most of the time. 25% make such decisions without this critical information all the time.

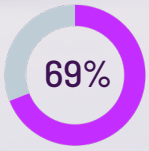
The solution: Industrial intelligence



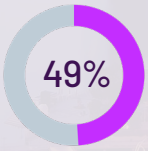
47% see enhancing collaboration across the workforce, as well as with suppliers, partners, and customers, as a key goal of their investments in transformational technologies.



95% agree that industrial AI solutions are required now more than ever to remain competitive in today's challenging business landscape.



69% plan to make investments in industrial intelligence solutions a priority in the next 12 months, including nearly 1 in 5 (19%) that will make this their organization's top priority.



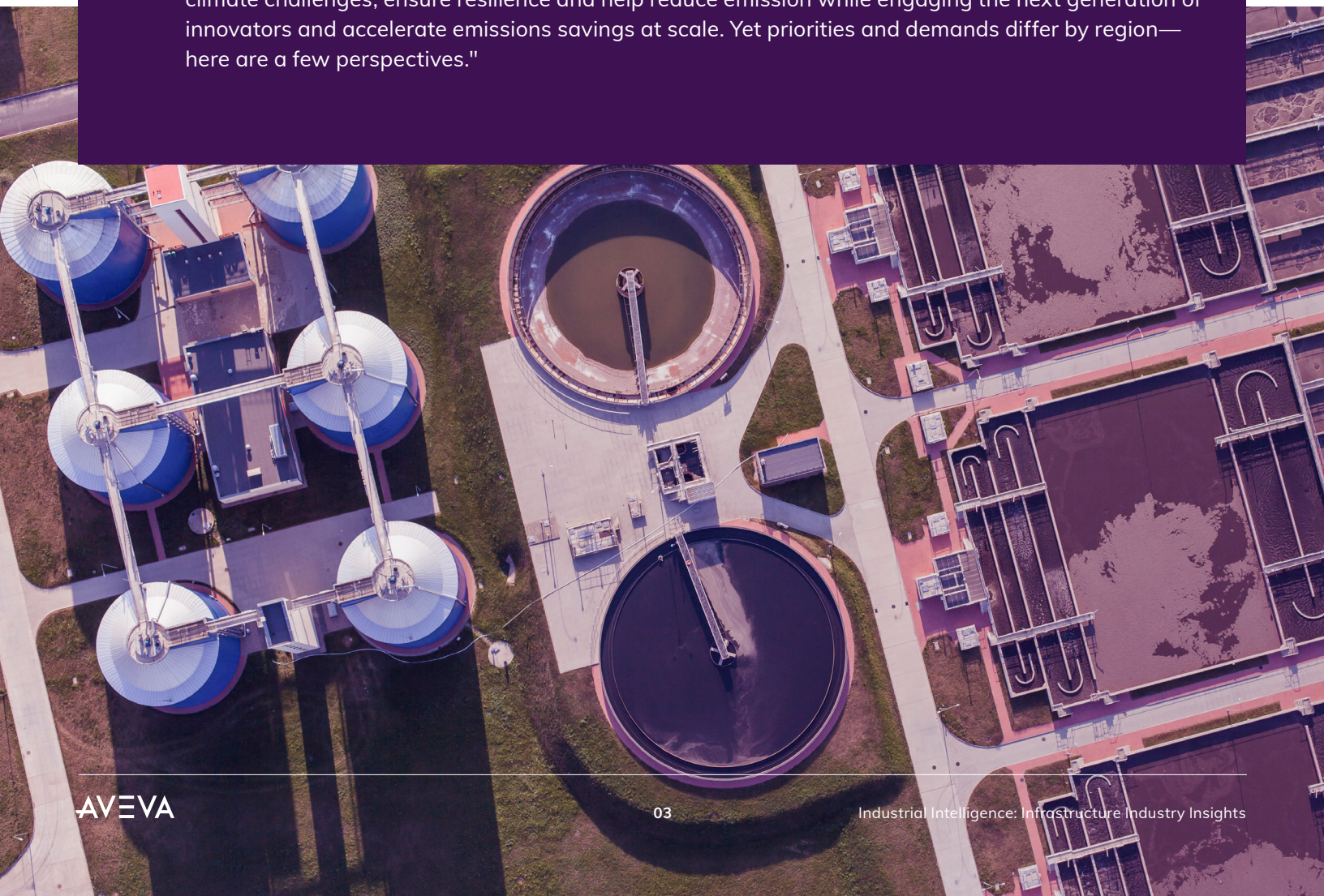
49% cite investment in a platform enabling data sharing and collaboration among the greatest investments to drive opportunity for their organization; 39% say the same of a robust industrial informational infrastructure.

Leaders anticipate that adopting a more-data driven approach at their organizations would provide **increased operational efficiency and process effectiveness (50%), a higher level of innovation and customer satisfaction (46%), better collaboration through shared insight (44%), and greater agility in responding to challenges (41%).**

When **challenges** become **opportunities:** Budget constraints, supply-chain disruptions, and advancing circularity and decarbonization

Interpreting these data and gaining insights and intelligence, Gary Wong, AVEVA's Global Segment Leader for critical infrastructure commented:

> Across the world, infrastructure leaders and governments are under pressure to drive efficiency and embrace new circular and sustainable processes. This requires constant innovation, both to do more with less and to develop entirely new approaches to established processes. With emissions reduction legislation accelerating in Europe and North America and rapid economic development driving systemic change in Asia Pacific, the need for innovation radiates far beyond the immediate needs of cities, water operators and other infrastructure providers to materially affect consumers and industry partners. Digitalization offers solutions that can address rapid urbanization, extreme climate challenges, ensure resilience and help reduce emission while engaging the next generation of innovators and accelerate emissions savings at scale. Yet priorities and demands differ by region—here are a few perspectives."



Digging deeper: When **complexity** becomes **clarity**

	Europe	North America	Asia Pacific
Overview	Thanks to ambitious policy initiatives, such as the European Green Deal and the Fit for 55 Plan, Europe continues to lead the energy transition.[2] Adhering to these commitments, however, presents industry leaders with a narrower window for success as they work to improve the resilience of European infrastructure.	Sweeping legislation, such as the Bipartisan Infrastructure Law in the US, continue to drive new programs that seek to expand and modernize aging infrastructure across North American.[3]	Rapid economic development, urbanization, and population growth are spurring an increasingly urgent need for new and modernized infrastructure across Asia Pacific.[4]
Zoom in	**27%** of respondents in the European infrastructure industry believe that the biggest challenge facing their organization in 2024 is budget constraints.	In North America, **23%** of respondents believe that their biggest challenge ahead in 2024 is supply chain disruption.	Executives in APAC must balance the need for more affordable, but carbon-intensive energies with the relatively higher cost of net-zero initiatives.[5]
Look forward	European companies' main focus of investment is to improve efficiency by fostering data-driven decision making across the workforce and to achieve compliance with sustainability regulations.	North American infrastructure leaders are investing in digital transformation to boost operational agility and resilience.	APAC's leaders in the infrastructure industry must accelerate the adoption of data-driven decision-making tools to bolster collaboration and efficiency and reduce capital spending.

Infrastructure industry imperatives: Enhancing efficiency, reliability, and safety

Unify trusted intelligence from across their operations **and share it** with partners, suppliers, and even communities to break down silos, deepen collaboration, and open new avenues to manage operational needs while meeting sustainability requirements and boosting service efficiency for all stakeholders.

Build data-sharing ecosystems to accelerate the network effect in your infrastructure operations, increasing resilience, boosting liveability, and increasing community engagement.

With rapid urbanization and climate change, it's imperative to connect infrastructure stakeholders in order to collaborate to ensure a more liveable and sustainable world.

When predictive **insight** becomes **safe water**

After a harmful green algae bloom in a water reservoir, the City of Salem, Oregon turned to AVEVA's cloud-based industrial intelligence-as-a-service solutions to predict future algae blooms and ensure the city's drinking water is safe for residents. AVEVA's software enables the City of Salem to aggregate various sources of data—including algae levels, water depth, weather data, water turbidity, satellite imagery, and lab samples—into one central, cloud-based hub of information. The City of Salem then applies artificial intelligence and machine learning to this aggregated information to enable data science that forecasts harmful algae blooms and cyanotoxin activity so the city can take preventive action. As a result, the authorities can operate their systems more efficiently and ensure safe and clean drinking water for the whole community.

> "How do you do collaboration well? The cloud. It's not just your people and partners but all your systems."
>
> – Devin Doring, Field Services Supervisor, City of Salem

The AVEVA Survey was conducted by Wakefield Research (www.wakefieldresearch.com) among 500 Executives in North America (US, Canada), Europe (UK, France, Italy, Germany), Middle East (KSA, UAE), and Australia, with the following title and role requirements: C-Levels, VP+ Engineering/IT, VP+ Operations; at companies with a minimum annual revenue of $50m USD. All respondents worked in one of the following industries: Power, Chemicals, Manufacturing, Infrastructure, conducted in Q1 2024, using an email invitation and an online survey. Results of any sample are subject to sampling variation. The magnitude of the variation is measurable and is affected by the number of interviews and the level of the percentages expressing the results. For the interviews conducted in this particular study, the chances are 95 in 100 that a survey result does not vary, plus or minus, by more than 4.4 percentage points for the Total Sample and between 8.3 to 9.5 percentage points for the interviews conducted in specific industries (Power, Chemicals, Manufacturing, and Infrastructure), from the result that would be obtained if interviews had been conducted with all persons in the universe represented by the sample.

[1] Wakefield Research. "Solving Today's Challenges, Meeting Tomorrow's Goals: A Look at Industrial AI in Power, Chemicals, Manufacturing, and Infrastructure." 2024. Survey commissioned by AVEVA.
[2] McKinsey & Co. "Five key action areas to put Europe's energy transition on a more orderly path." 2023.
[3] McKinsey & Co. "One year into the BIL: Catalyzing US investments in energy." 2023.
[4] PwC. "Bridging the trillion-dollar infrastructure gap in Asia Pacific." 2022.
[5] PwC. "Achieving net zero infrastructure." 2021.