OCTOBER 24, 2023

# The journey to connected economies

Industry challenges and how AVEVA helps infrastructure

Gary Wong, Matt Miller – AVEVA

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CREATE A MORE SUSTAINABLE FUTURE

# Infrastructure

Modernize your critical operations and achieve net-zero emissions

Water and Wastewater

Waste Management

Transportation and Marine

Municipal Buildings

Commercial Buildings and Data Centers

Emergency Services

Schools and Campuses

Public Facilities and Arenas

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# Infrastructure's drive to resiliency, agility and sustainability

A widening labor shortfall means there are only
## 89 workers
for every 100 open jobs in the US

US water-related energy use is
## >521 million MWh a year
or 13% of the nation's electricity consumption

The transportation industry uses
## ~1/3 of global energy
and contributes 23% of all energy-related $CO_2$ emissions

## Emissions from electricity
were the largest contributor to water-related energy emissions in 98% of water and wastewater utilities

US buildings account for
## 40% of primary energy use,
72% electricity consumption and 39% of $CO_2$ emissions

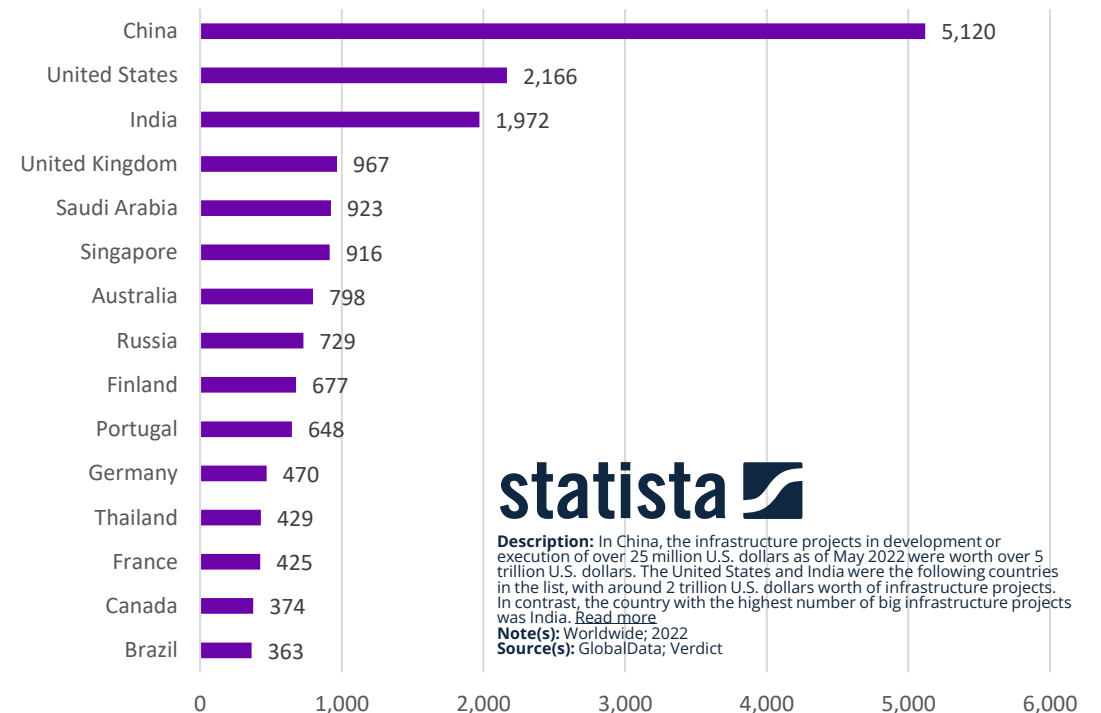In 2022, only 51.6% of the global urban population has convenient access to public transport

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# The opportunity is now… governments are funding!

Globally, governments are investing much-needed funds into modernizing infrastructure:

- **America – US$1.2 trillion** – the Infrastructure Investment and Jobs Act (IIJA) is the largest infrastructure package in US history
  - $180 billion funding via competitive grants; i.e. great applications win!
- **Canada – US$131+ billion** – invested by the Canadian government to improve public transit, ports, energy systems and more
- **Brazil – US$96 billion** – in committed funds across railways, ports, highways, airports, water and wastewater, sanitation and waste
- **France – US$73+ billion** – for thermal renovation of buildings, infrastructure, sustainable transportation and mobility
- **Saudi Arabia – US$1 trillion** – as it diversifies from oil and gas, the government is investing in major infrastructure projects such as Neom, Riyadh Metro, Makka Public Transport Program, Al Widyan

Value of infrastructure construction projects worldwide: Top 15 countries by spend in 2022 (in billion US dollars)

| Country | Value |
|---|---|
| China | 5,120 |
| United States | 2,166 |
| India | 1,972 |
| United Kingdom | 967 |
| Saudi Arabia | 923 |
| Singapore | 916 |
| Australia | 798 |
| Russia | 729 |
| Finland | 677 |
| Portugal | 648 |
| Germany | 470 |
| Thailand | 429 |
| France | 425 |
| Canada | 374 |
| Brazil | 363 |

statista

**Description:** In China, the infrastructure projects in development or execution of over 25 million U.S. dollars as of May 2022 were worth over 5 trillion U.S. dollars. The United States and India were the following countries in the list, with around 2 trillion U.S. dollars worth of infrastructure projects. In contrast, the country with the highest number of big infrastructure projects was India. Read more
**Note(s):** Worldwide; 2022
**Source(s):** GlobalData; Verdict

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# Five key issues facing infrastructure, utilities and transportation

**Increasing complexity of service networks**

**Budget constraints and funding restrictions**

**Aging workforce and high industry turnover**

**Aging infrastructure and pressure for "always-on" operations**

**Preparing for climate threats and natural disasters**

**IMPACT** ⬆⬇

# Five business imperatives for positive outcomes

**Operational agility and resiliency**

**A connected workforce**

**Sustainability and circular economy**

**Greater operational efficiency**

**Improved asset reliability and safety**

## Helping to drive success by enabling digital initiatives
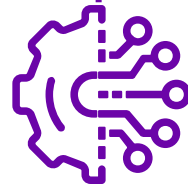
Streamline engineering and capital project execution

Improve simulation capabilities

Increase asset performance

Enable full visibility and awareness

Develop comprehensive industrial information infrastructure

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SAN FRANCISCO

OCTOBER, 23-26

# Agenda – Day 1 to Day 3

Track: Infrastructure (Water, Facilities, Transport, Marine)

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# Tuesday, October 24

| 2.10–2.40pm | 2.50–3.20pm | 3.50–4.20pm | 4.30–5.00pm |
|---|---|---|---|
| **acciona** | **EPCOR** | **ASHGHAL** Qatar Deserves The Best | **AVEVA** |
| **The journey to digital transformation in water** | **Using real-time data to create situational awareness** | **Creating a single version of truth for handling emergencies** | **Connecting operations: empowering infrastructure teams** |
| Connecting numerous systems and people from virtual meters to remote commissioning which resulted in energy savings and increased water production. | Managing stormwater systems across dispersed locations required multiple systems – SCADA, GIS, IoT – to come together in dynamic dashboards to make smarter, informed decisions. | It never rains but it pours. In Qatar, managing water is critical business. Digitizing systems across the water value chain provides a single pane of view of the organization's entire operations. | Learn how AVEVA monitoring and control solutions can help you drive increased operational efficiency, reliability, and agility with a cohesive and sustainable software framework, from edge to enterprise. |

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# Wednesday, October 25 - morning

## 8.00–9.10am

**EPC of SCADA systems**

A smart city with over 40 buildings, Qatar Foundation are optimizing HVAC efficiency, reducing water and energy usage across all these facilities in real-time.

## 9.20–9.50am

**Sunsetting traditional ITS SCADA in favor of AVEVA**

To better manage its growing road network, Ashghal needed to integrate its Intelligent Traffic System (ITS) with AVEVA™ System Platform. The first step, deciphering quaint system protocols.

## 10.20–10.50am

**Truly remote and smart**

How do you manage the complexity of hundreds of sites? And make good decisions quickly? SYSCOM goes beyond SCADA to create instant live reporting, redundancy in communication, and ideal response time.

## 11.00am–12.10pm

**Panel**

**Connect to drive the circular economy**

What does the future of connected communities mean to infrastructure? Find out in this interactive panel featuring speakers from AVEVA, Epcor, Inframark A&I, Maya HTT, Schneider Electric.

# Wednesday, October 25 - afternoon

| 1.30–2.00pm | 2.10–2.40pm | 2.50–3.20pm | 3.50–4.20pm | 4.30–5.00pm |
|---|---|---|---|---|
| **energy** DEVELOPMENT CORPORATION | That's Purely **ReWa** renewable water resources | **D.R. Ltd.** | **AVEVA** | **AVEVA** |
| **Natural catastrophe project – CSR and sustainability** | **Improving efficiency and averting problems** | **Unlocking real-time construction accuracy** | **Connecting information: enterprise visualization for smart cities** | **Connecting ecosystems: data-sharing at scale** |
| Energy Development Corporation needed to understand how weather events such as typhoons and earthquakes affect its network. Enter a new data management system that allows EDC to drive sustainability and community safety. | Over time, ReWa's wastewater treatment facilities have grown and gotten more complex, learn how it's using SCADA and alarm management to reduce callouts and become more efficient. | Delta River showcases the game-changing advancements realized through harnessing the power of AVEVA™ E3D Design with 3D scans from the project. The result is unparalleled construction efficiency. | Leverage your existing infrastructure and extract more value from your operations all through one single pane of glass. See how smart cities across the world are transforming to be more scalable, resilient, and agile. | Unlock the power of aggregated, secure, and sharable data in the cloud. Learn how critical infrastructure companies can apply machine learning and artificial intelligence through AVEVA™ Data Hub. |

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# Thursday, October 25 - morning

**10.45–11.15am**



**Connecting intelligence: taking data to the next level with AI**

Whether you are using AI and ML to identify quality, compliance, or asset maintenance issues; these new advanced analytics tools are an essential part of the modern digital toolbox for critical infrastructure.

**11.25–11.55am**



MITSUBISHI HEAVY INDUSTRIES

**Expanded use of AVEVA™ PI System™ for the energy transition and infrastructure**

Mitsubishi Heavy Industries implemented an energy management system to optimize the Takasago Hydrogen Plant including a large CCGT power plant, multiple hydrogen generators, and hydrogen storage, plus grid interaction.

# Thursday, October 25 - afternoon

| 1.30–2.00pm | 2.10–2.40pm | 2.50–3.20pm | 3.50–4.20pm |
|---|---|---|---|
| **AVEVA** | 株式会社 名村造船所 NAMURA SHIPBUILDING CO.,LTD. | **RAUMA MARINE CONSTRUCTIONS** | **CSL** |
| **Connecting the marine lifecycle** | **The challenge of changing outfitting detail design methods** | **Early structural modeling with AVEVA™ E3D Design** | **CSL's fleet management: A journey through advanced analytics** |
| Discover AVEVA's mission and strategy for the marine industry. Learn how our software can address challenges across the lifecycle, from faster design and digital shipyards right through to retrofitting and recycling. | Namura designs outfitting detail based on 2D drawings. Discover how the company is minimizing wasted work by changing its design method based on a 3D modeling approach. | Discover how Rauma Marine Constructions executed early structural modeling with AVEVA E3D Design, driving a single-source-of-truth model within AVEVA E3D Design and a structural model for FE-model creation. | Learn about CSL's journey toward connected vessels for operational excellence and advanced analytics, leading to fuel savings, a reduction in $CO_2$ emissions, and better operations. |

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# What else to see and do?

## Partner & Product Expo
- Product demos
- Partner solution talks
- Innovation talks
- Networking

WHEN:
- Breaks incl. lunch
- Dinner tomorrow

## Offsite dinner event
- Sponsored by Radix
- Networking

WHEN:
- Tonight, Fort Mason – Festival Pavilion

## Geek talks
- PI Geek
- Operations Control

WHEN:
- Today, tomorrow, Thursday

## User talks
- Engineering
- HMI/SCADA
- AVEVA PI System
- Advanced applications and artificial intelligence (AI)
- Ecosystem and cloud

WHEN:
- Today, tomorrow, Thursday

**12+** industries   **40+** learning labs   **50+** customer presentations   **160+** global speakers

## Infrastructure customer talks in other tracks
- **Inframark A&I** | *2.10pm, today – Ecosystem user*
- **Dallas Water** | *3.50pm, today – HMI/SCADA user*
- **UC Davis** | *3.50pm, today – Power and Utilities*
- **Snolab** | *4.30pm, today – AVEVA PI System user*
- **Qatar Foundation** | *1.30pm, tomorrow – HMI/SCADA*
- **Hanford Vit plant** *1.30pm, tomorrow – AVEVA PI System*
- **JEA** | *10.45am Thursday – AVEVA PI System*
- **Suez** | *2.50pm Thursday – Industrial AI*

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**Questions?**

Please wait for the microphone.

State your name and company.

**Please remember to...**

Navigate to this session in the mobile app to complete the survey.

Thank you!

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AVEVA is a world leader in industrial software, providing engineering and operational solutions across multiple industries, including oil and gas, chemical, pharmaceutical, power and utilities, marine, renewables, and food and beverage. Our agnostic and open architecture helps organizations design, build, operate, maintain and optimize the complete lifecycle of complex industrial assets, from production plants and offshore platforms to manufactured consumer goods.

Over 20,000 enterprises in over 100 countries rely on AVEVA to help them deliver life's essentials: safe and reliable energy, food, medicines, infrastructure and more. By connecting people with trusted information and AI-enriched insights, AVEVA enables teams to engineer efficiently and optimize operations, driving growth and sustainability.

Named as one of the world's most innovative companies, AVEVA supports customers with open solutions and the expertise of more than 6,400 employees, 5,000 partners and 5,700 certified developers. The company is headquartered in Cambridge, UK.

Learn more at www.aveva.com

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