Going Digital to Advance the 2030 Sustainable Development Agenda

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Bentley’s mission is to provide **innovative software and services** for the enterprises and professionals who **design, build, and operate** the world’s infrastructure – sustaining the global economy and environment for **improved quality of life**.
The Construction Industry is Among the Least Digitized

- McKinsey Global Institute industry digitization index; 2015 or latest available data

Relatively low digitization  Relatively high digitization

Digital leaders within relatively undigitized sectors

1Based on a set of metrics to assess digitization of assets (8 metrics), usage (11 metrics), and labor (8 metrics).
2Information and communications technology.

Source: AppBrain; Bluewolf; Computer Economics; eMarketer; Gartner; IDC Research; LiveChat; US Bureau of Economic Analysis; US Bureau of Labor Statistics; US Census Bureau; McKinsey Global Institute analysis

McKinsey&Company
GOING DIGITAL

THE MILLENNIALS

THE DIGITAL GENERATION

THE CONNECTED TEAM
Data comes from many sources
Some of the Challenges

• Data Overload
• Finding the right data
• Data Completeness / Quality
• Getting access is not always easy (IP, terms of use)
• Government agencies are not always the first to implement novel solutions
• Security Concerns
• ‘Silo’ mentality
Going Digital Use Cases
Goal 6
Ensure access to water and sanitation for all

Selected Targets

• By 2030, **achieve access to adequate and equitable sanitation** and hygiene for all and end open defecation, paying special attention to the needs of women and girls and those in vulnerable situations

• By 2030, **improve water quality by reducing pollution, eliminating dumping and minimizing release of hazardous chemicals and materials, halving the proportion of untreated wastewater** and substantially increasing recycling and safe reuse globally
Problem

- Only 76% of residents have access to sewage collection and treatment
- Decontamination of the Araruama lagoon

Master Plan Results

- Reduction of 60% investment from previous studies
- Reduced energy consumption due to 35% decrease in volume treated in wastewater plants and 20% efficiency gains of pumping systems
- Untreated discharges reduced by 6 million cubic meters

Technology Utilized

- GIS
- Water and Sewer Numerical Models
“...[technology] can really make a difference in the optimization of investments bridging the existing gap in sewage infrastructure, thus promoting social inclusion and increasing people’s living standards.”

- Wagner Oliveira de Carvalho, Senior Project Manager, Prolagos
Goal 11
Make cities inclusive, safe, resilient and sustainable

Selected Targets

• By 2030, significantly reduce the number of deaths and the number of people affected and **substantially decrease the direct economic losses** relative to global gross domestic product **caused by disasters**, including water-related disasters, with a focus on protecting the poor and people in vulnerable situations
Manila Water Natural Calamity Risk Resiliency and Mitigation Master Plan

• Problem:
  • 6 million customers
  • High Risk West Valley Fault System
  • Twenty typhoons per year

• Outcomes:
  • Critical assets requiring resiliency and contingency measures identified and prioritized
  • Expected damages of USD 520 million reduced to USD 380 million the event of a calamity
  • Savings of USD 30 million on insurance

• Technology Used
  • GIS
  • Water Numerical Models
Manila Water Natural Calamity Risk Resiliency and Mitigation Master Plan

“… [technology] helped Manila Water minimize the amount of its investment while maximizing the resiliency and contingency of its facilities, both being highly beneficial to the customers it serves.”

- Diogenes Adelbert Voltaire B. Evangelista, Water System Analysis and Planning Engineer, Manila Water Company
Goal 13
Take urgent action to combat climate change and its impacts

Selected Targets

• Strengthen resilience and adaptive capacity to climate-related hazards and natural disasters in all countries

• Improve education, awareness-raising and human and institutional capacity on climate change mitigation, adaptation, impact reduction and early warning
Sea Level Rise Simulation (courtesy City of Helsinki)
Going Digital can be an enabler for achieving the 2030 Sustainable Development Agenda and support development for all
Questions?

Thank you!