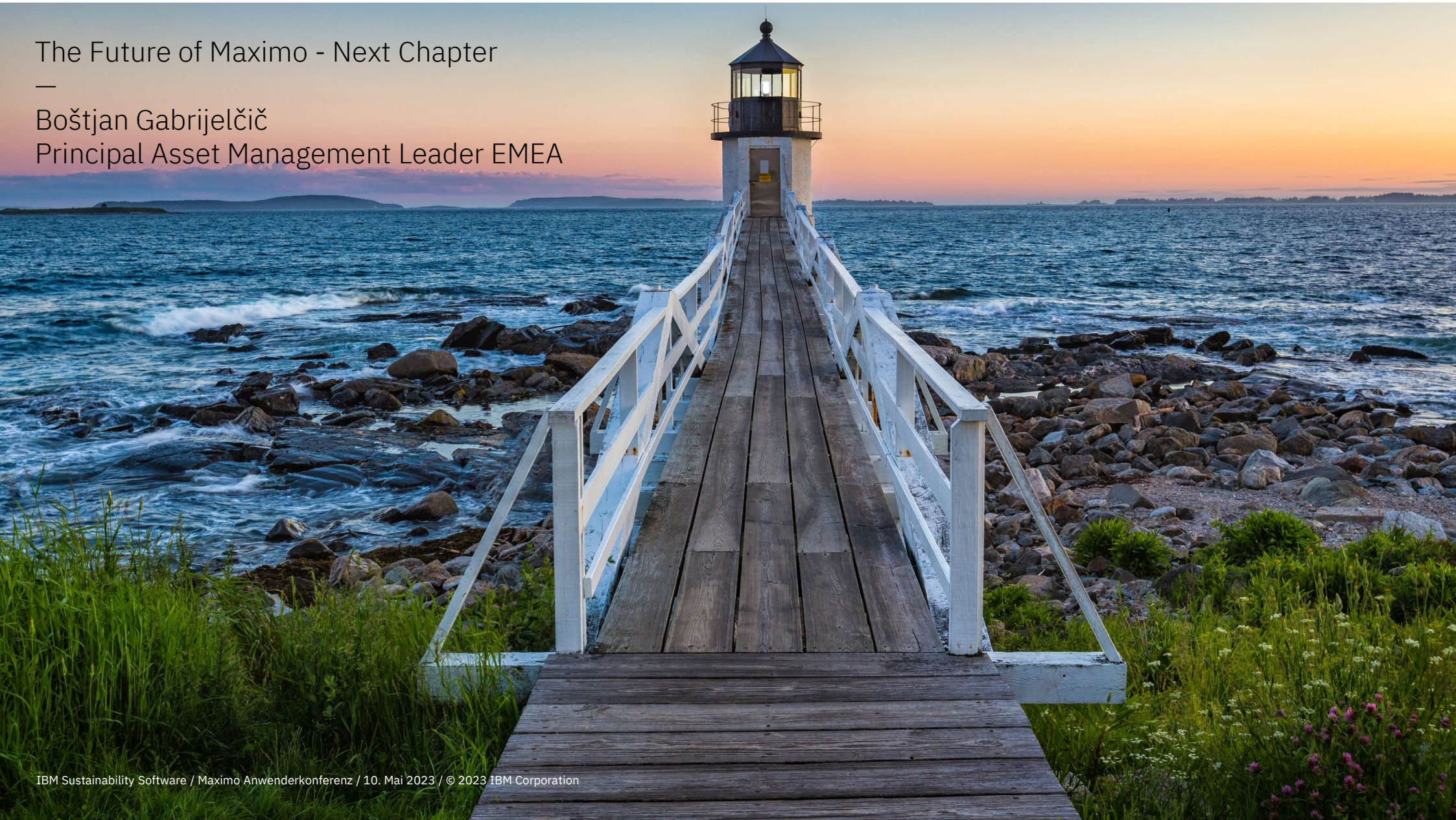# The Future of Maximo - Next Chapter

—

Boštjan Gabrijelčič
Principal Asset Management Leader EMEA

Please note

- The information mentioned regarding potential future products is not a commitment, promise, or legal obligation to deliver any material, code or functionality. Information about potential future products may not be incorporated into any contract.

- The development, release, and timing of any future features or functionality described for our products remains at our sole discretion.

- IBM's statements regarding its plans, directions, and intent are subject to change or withdrawal without notice at IBM's sole discretion.

- Information regarding potential future products is intended to outline our general product direction and it should not be relied on in making a purchasing decision.

Key topics

- Artificial Intelligence / Generative AI

- Robotics / Visual Inspection / Edge

- Mobile / User Experience / Augmented Reality

- Sustainability

- Resiliency / Scalability / Functionality
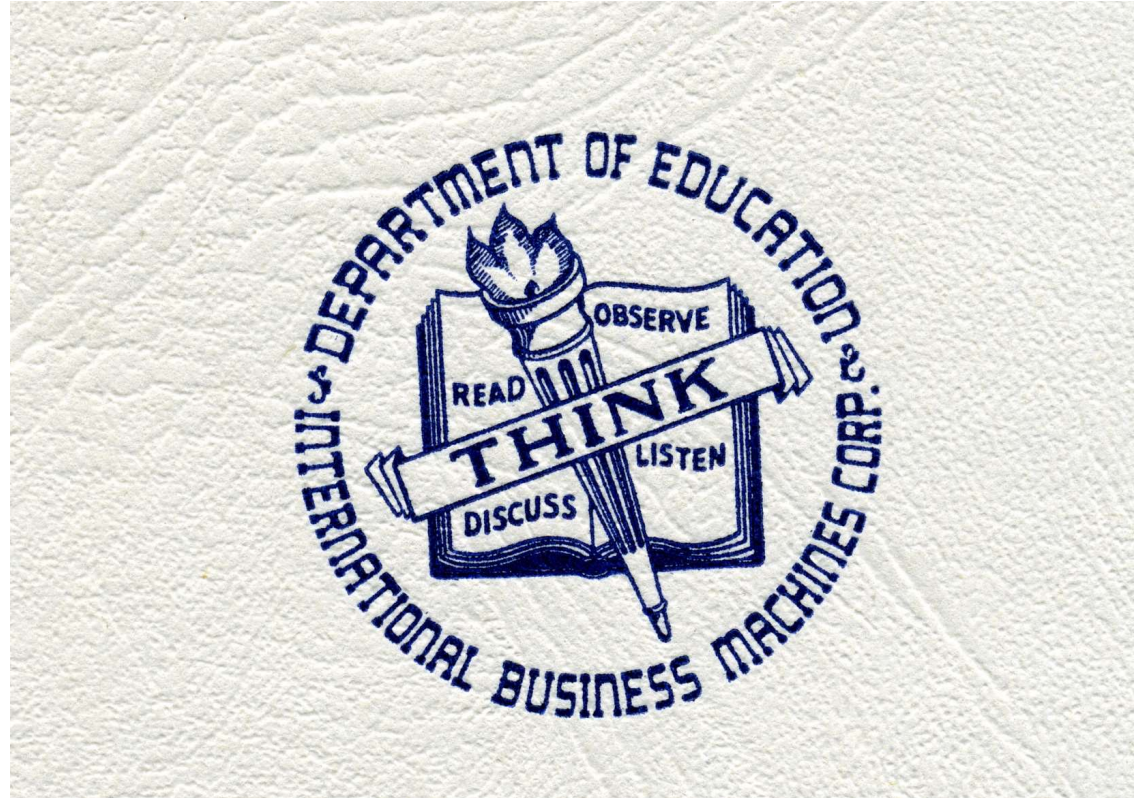
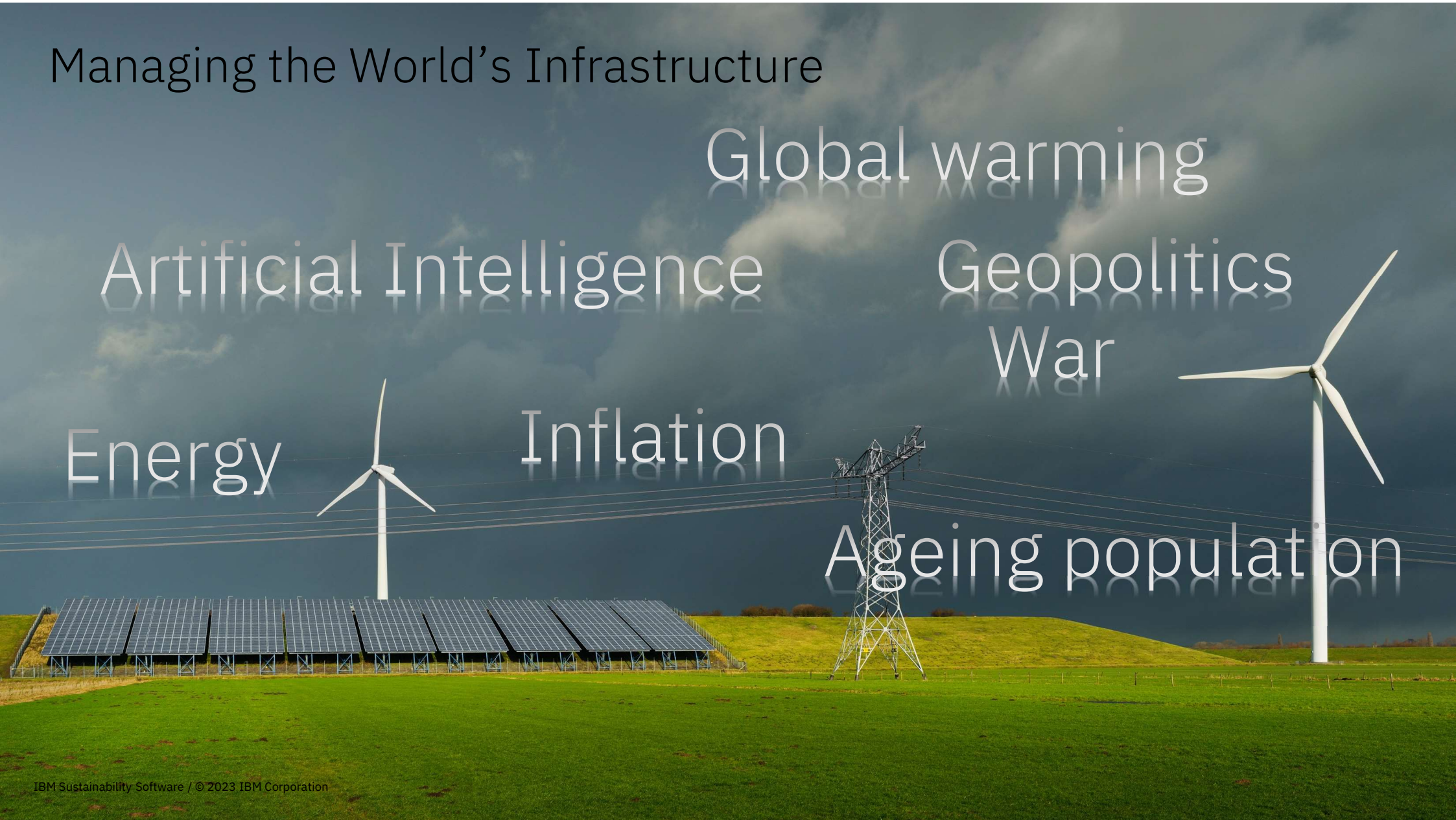Managing the World's Infrastructure

Global warming

Artificial Intelligence

Geopolitics

War

Energy

Inflation

Ageing population

Digitalisation Adoption

- Mobile 37%

- Predictive Maintenance 15%

- Inspection Robots 11%

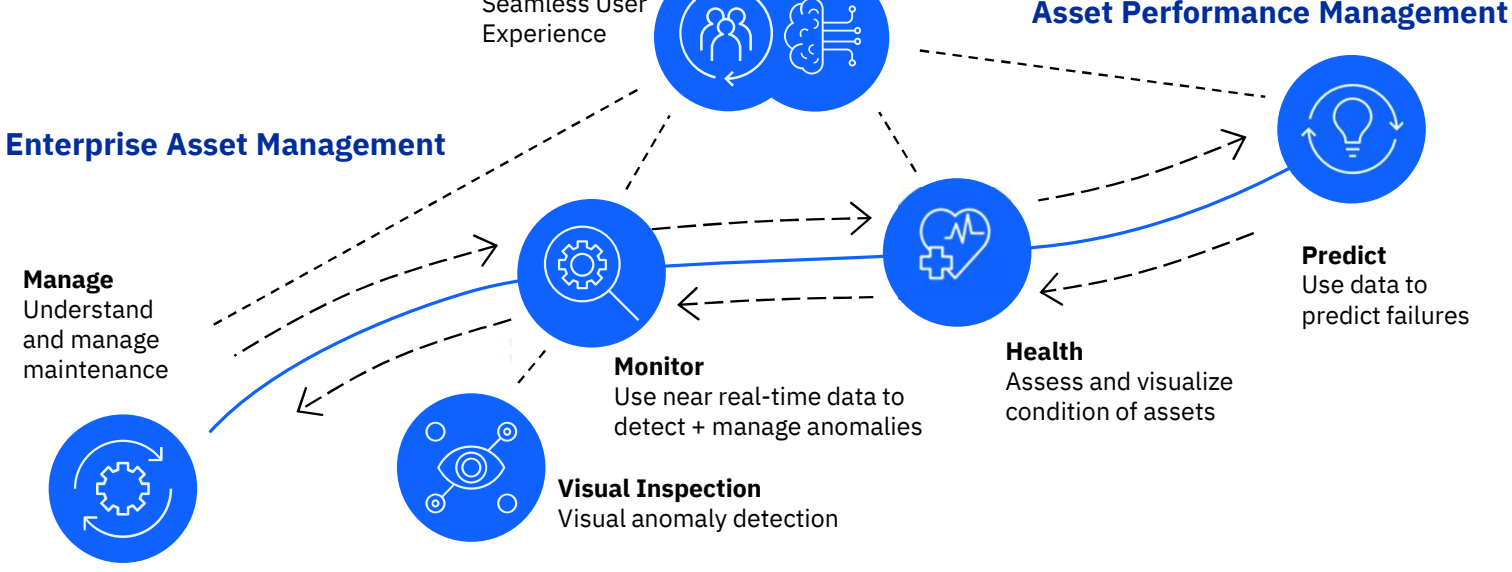- Augmented Reality 9%

- 3D Printing 7%

pwc | mainnovation

2018 Survey of companies in Belgium, Germany and the Netherlands.

Maximo Application Suite
Journey to AI

Assist
AI issue resolution at the point of work

Mobile
Seamless User Experience

Asset Performance Management

Enterprise Asset Management

Manage
Understand and manage maintenance

Monitor
Use near real-time data to detect + manage anomalies

Health
Assess and visualize condition of assets

Predict
Use data to predict failures

Visual Inspection
Visual anomaly detection

Core Platform Capabilities are shared between functions and users

Artificial Intelligence

Receive critical data and instruction based on AI-generated criteria

Robotics

Use mobile robots for enhanced data collection

Visual + Acoustic Insights

Analyzes data from visual + acoustic sensors to ID issues in real time

Edge

Integrate with operations and production at the point of work

Mobile

Connected to EAM platform with APM, reference docs, AR

IBM Sustainability Software / © 2023 IBM Corporation

Artificial Intelligence / Generative AI

"The only way for industrial enterprises to remain competitive in the coming years is by linking AI to their process automation. Don't screw this one up."

Prof. Dr. Sepp Hochreiter, JKU Linz University, Austria

2 MINUTE READ
HANNOVER MESSE to showcase Generative AI

from Building Services Engineering
by Pat Lehane

ON TECH: A.I. NEWSLETTER

What Makes A.I. Chatbots Go Wrong?
The curious case of the hallucinating software.

ChatGPT is changing manufacturing…here's how to use it

"The chatbot can provide quick responses for common issues that customers have, enable faster diagnosis and suggest personalized recommendations."

March 21, 2023

Smart industry

IDC on Chat GPT in manufacturing ≡IDC

"Good for clerical work simplification, redundant for other functionalities, but definitely overselling itself sometimes.

The advice is to take this technology with a grain of salt."

IDC, FEBRUARY 28, 2023|IN ARTIFICIAL INTELLIGENCE, INDUSTRIES

Chat GPT on Chat GPT in maintenance

"Overall, ChatGPT can be a powerful tool for industrial maintenance, helping to improve equipment reliability, reduce downtime, and lower maintenance costs. However, it should be noted that ChatGPT is not a substitute for human expertise and should be used in conjunction with experienced maintenance personnel."

ChatGPT, April 2023

Chat GPT v4 Q&A Example

The ChatGPT chatbot from OpenAI is amazing, creative, and totally wrong

Need ideas? Great! Need facts? Stay away!

By Mike Pearl on December 3, 2022

BG *I left 5 clothes to dry out in the sun. It took them 5 hours to dry completely. How long would it take to dry 30 clothes?*

The time it takes for clothes to dry depends on several factors such as the size and thickness of the clothes, humidity, temperature, and wind speed. However, for the sake of simplicity, we can assume that each piece of clothing takes the same amount of time to dry and that the environmental conditions are constant.

So, if 5 clothes take 5 hours to dry completely, we can say that it takes 1 hour to dry one piece of clothing. Therefore, to dry 30 clothes, it would take 30 hours, assuming the same environmental conditions remain constant throughout the drying process. However, in reality, it's highly unlikely that the conditions would remain the same for such a long time, so this estimate may not be entirely accurate.

Bostjan Gabriječič, asking Chat GPT
May 1st, 2023

Trustworthy AI & IBM AI roadmap

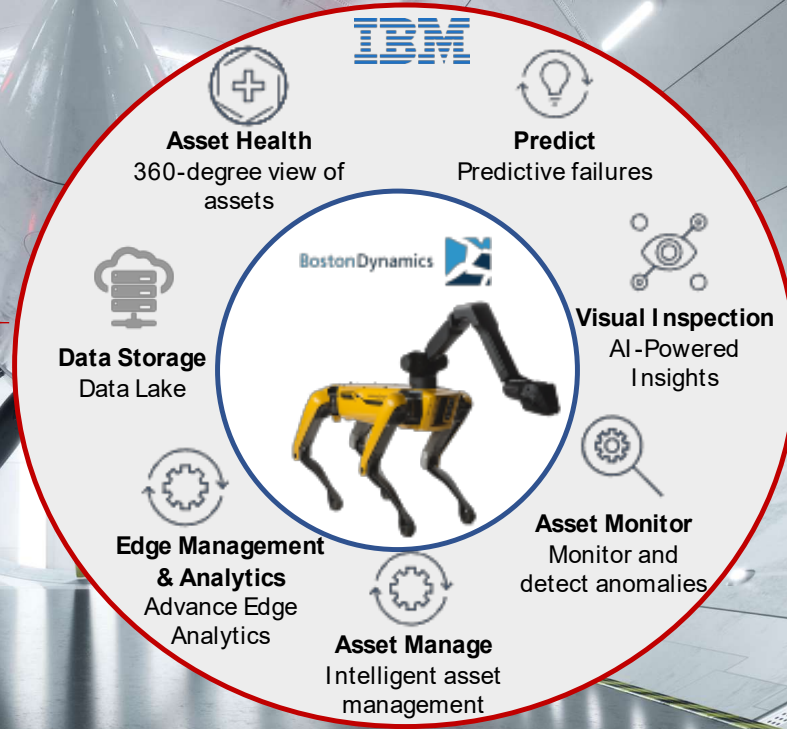|	→ on target **2023**	→ on target **2024**	**2025**	**2027**	**2029**	**2030**
AI journey	*AI extends beyond natural language processing*	*Governance and trust permeate AI*	*AI becomes more energy and cost efficient*	*Foundation models in production become scalable*	*Trustworthy and explainable AI starts to reason*	*Fully multi-modal AI gives enterprises unprecedented scale*
Strategy overview	2023 will expand enterprise foundation model use cases beyond natural language processing (NLP). 100B+ parameter models will be operationalized for bespoke, targeted use cases, opening the door to broader enterprise adoption.	In 2024, we will integrate trust guardrails throughout the AI foundation models lifecycle and AI governance at the organizational level. Data representations will optimize across privacy, fairness, explainability, robustness, etc.	In 2025, we will improve the energy and cost efficiency of foundation model training and inference by 5x and bring 200B+ parameter foundation models to enterprises. It's all about making them more powerful, useful, and practical.	By 2027, we will be routinely doubling the number of foundation model parameters in production for the same energy envelope every 18 months. Training and inference will be 4x more energy efficient vs. 2025.	2029 will be an inflection point. AI will support diverse forms of reasoning with explainability and trust. Energy efficiency will increase 4x more and scalable, operationalized AI models will be routine in enterprises.	By 2030 and beyond, fully multi-modal architectures will learn diverse data representations, and developers will be able to manipulate them at multiple levels of abstraction to give enterprises competitive advantage.
Why this matter to our clients and the world	The expansion of AI foundation models will lower the barrier for entry, broaden the use cases, reduce labeling requirements for training by 10-100x, and provide greater efficiencies through reuse of models across use cases.	Governance and trust in AI will drive significant business value by enabling advanced AI in mission-critical use cases while increasing automation, improving the quality of AI regulatory compliance, and maintaining customer trust.	Reducing cost and improving power efficiency will make foundation models more practical for enterprise workloads and promotes deployment across many enterprise use cases.	Foundation models will scale with growing data volumes and model complexity. A full stack infrastructure will be able to support enterprise data warehouses based on foundation model representations.	2029 AI means robust and explainable NLP, reasoning over text, and generation of knowledge and trustworthy natural language to advance mission critical use cases. Tuning of domain-specific AI models will be 10x faster and cheaper.	By being able to predict, act, plan, and adapt to new situations and environments, these unified neural architectures — grounded in biological brains — will broaden use cases even further while reducing energy consumption.

https://pages.github.ibm.com/technology-atlas/roadmaps/ai/

Robotic Automation

Manufacturing

Energy & utilities

Public safety

Oil, Gas and Mining industry

Warehousing

Building Infrastructure

Inspection
(Production and Quality)

Onsite Mobile Surveillance

Worker and Public Safety

Remote site inspection

Predictive Maintenance

Inventory tracking and Material handling

Digital Twin Designing

IBM's Intelligent SPOT Solution

IBM

BostonDynamics

Asset Health
360-degree view of assets

Predict
Predictive failures

Data Storage
Data Lake

Visual Inspection
AI-Powered Insights

Edge Management & Analytics
Advance Edge Analytics

Asset Manage
Intelligent asset management

Asset Monitor
Monitor and detect anomalies

Maintenance squad

Production planning

Safety Dept

Admin

Service/OEM Partner

Catch Issues Sooner + Prevent Failures

50% Decrease in unplanned downtime

Reduce Preventive Maintenance Costs

60% Defer unnecessary PMs by knowing asset health

Increase Efficiency of Repair

20% Increase first-time fix rate and improve technician productivity

SPOT at Paris Underground

Noise Anomaly Detection

Leak Detection

Gauge Reading

Radiation Detection

Telemedicine

Thermal Inspection

Search and Alert

Gas Detection

Site Documentation

Digital Twin Creation

As the city of Paris sleeps, Spot is hard at work inspecting some of RATP Group's 35,000 civil works components. See why RATPgroup has turned to mobile robotics to inspect hard-to-reach and hazardous areas. https://bit.ly/3JWdrNy

Boston Dynamics

IBM-SPOT IR Inspection
Electric Room - Transformer

Sund & Baelt Drone Inspection
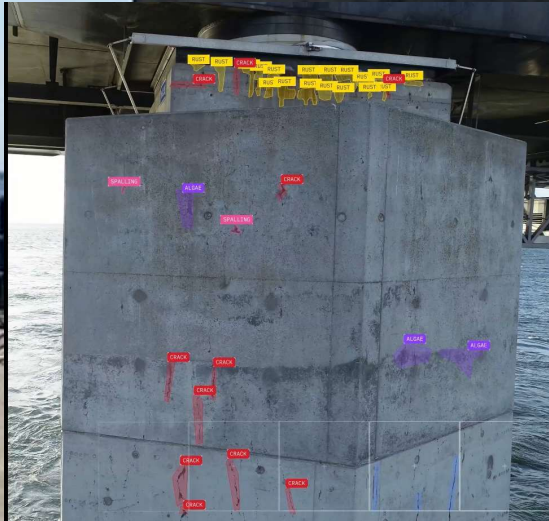
End User Experience is King
Real users don't read manuals
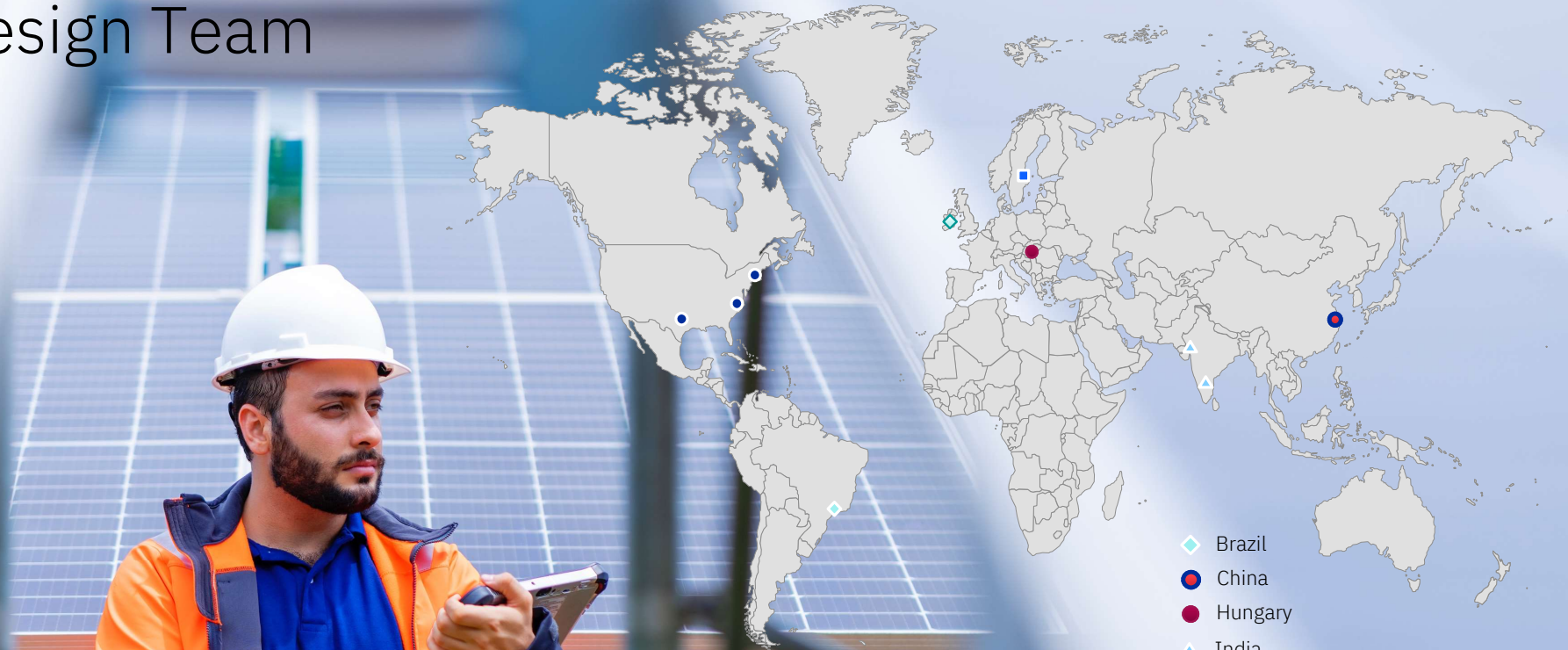
Seamless / Mobile / Intuitive / All generations

- Enterprise Asset Management & Asset Performance Management

- Documentation

- Augmented Reality / Remote Assistance

- AI guidance & Learning

"Perfection is Achieved Not When There Is Nothing More to Add, But When There Is Nothing Left to Take Away" Antoine de Saint-Exupery.

Maximo Design Team

Brazil
China
Hungary
India
Ireland
Sweden
USA

Sustainability is a
global megatrend

The world's largest corporations and governments are accelerating decarbonization commitments, amid increasing scrutiny of ESG disclosure
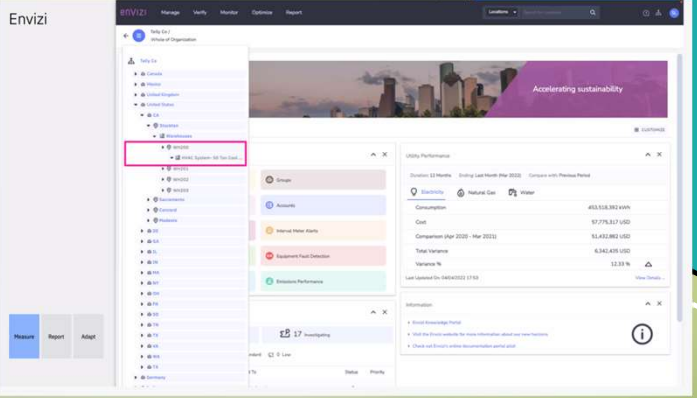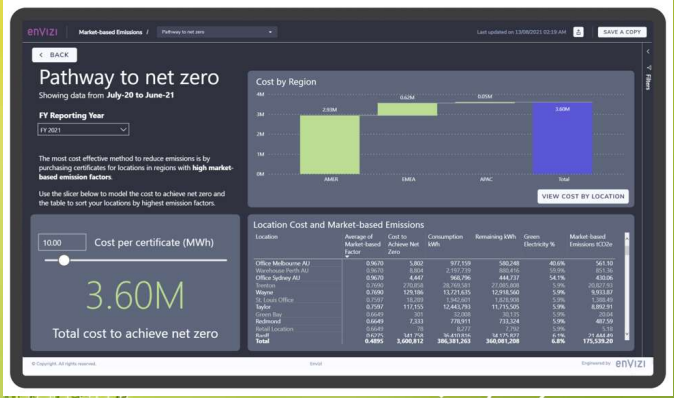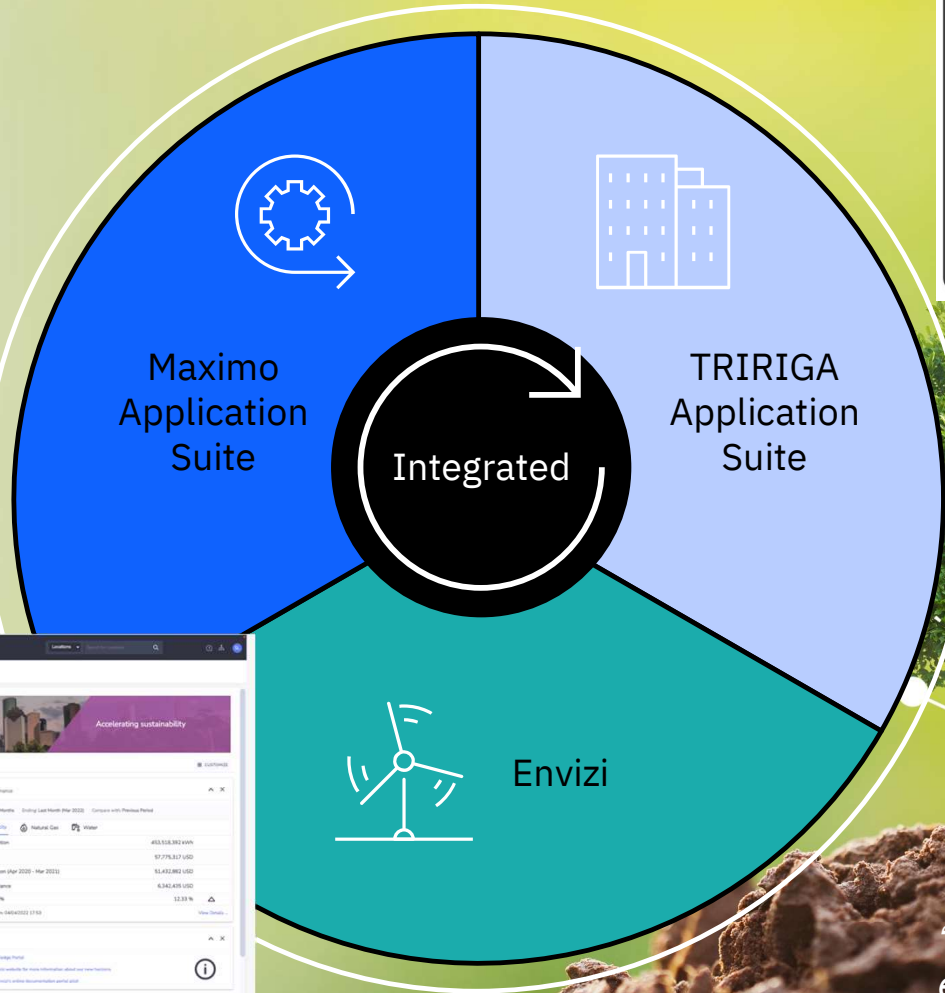
Corporate Sustainability Reporting Directive (CSRD)

Mandatory for large EU companies* to publicly disclose ESG performance
2024 data for 2025 reporting

Automating ESG

- Receive location, asset, and emissions information for ESG reporting
- Identify focus areas & assets
- Plan & execute decarbonization projects

Jane Muir-Sands
Vice President Global Real Estate and Operations at IBM

Customer #0

"High performance asset management equals high performance sustainability"

Brody Wilson, Sustainability Manager, IBM Global Real Estate

Maximo Resiliency & Scalability

Default Operations

Large

Critical Situations

Small

IBM Sustainability Software / © 2023 IBM Corporation

Maximo 5 year High-level Roadmap

2022

Manage
- Scheduling Dashboard
- Operational Dashboard
- Indoor Mapping
- **Manage IS/Add-ons Updates**
- Civil Infrastructure
- Nuclear
- O&G/HSE

MAS SaaS
- Self service enhancements
- Security and regulatory compliance updates

Maximo Mobile
- Current Mobile App enhancements
- Storeroom Clerk – Inventory Counting
- Defect App
- Asset Manager/Auditor
  Maximo Application Suite
- Consolidated platform
- Monitor
- Health
- Predict
- Visual Inspections

2023

Manage
- Scheduler Dispatch
- Operational Dashboare
- Enhanced Configuration

Manage IS/Add-ons
- Maximo IT (fka ICD)
- Civil Infrastructure
- Scheduler/Scheduler Plus
- Optimization

MAS Cloud Deployment
- Hybrid Cloud support
- AWS SaaS
- Security & Regulatory Compliance updates

Maximo Mobile
- Storeroom Clerk
- Support for e-sig

Maximo Application Suite
- Manage (EAM)
- Containerized deployment with Single Node OpenShift
- Monitor, Health, Predict
- Cognos reporting
- Visual Inspections

2024

Manage
- Asset Reliability Enhancements
- Asset Cost Rollup
- Additional Work Centers/UX
- Industry Solution and Addon updates

Maximo Cloud Deployment
- Fisma/FedRamp
- Rolling upgrade
- Continued Security & Regulatory Compliance updates

Maximo Mobile
- Enhanced applications for the technician

Maximo Application Suite
- Industry Accelerators
- Expanded scoring and models
- Updates to Monitor, Health, Predict, MVI

2025

Manage
- Supply Chain – Manifesting, Hazardous Materials Mgmt
- Platform Improvements
- Workflow engine updates
- Industry Solution and Addon updates

Maximo Cloud Deployment
- Additional applications
- Continued Security & Regulatory Compliance updates
- Serviceability

Maximo Mobile
- New and enhanced applications, Offline Work centers

Maximo Application Suite
- Optimized Investment Planning
- 3-D Visualization
- Updates to Monitor, Health, Predict, MVI

2026

Manage
- Customer and Market driven enhancements
- Improved Reporting and Data management
- Industry Solution and Addon updates

New Industries or Markets
- Mining
- others

MAS Cloud Deployment
- Continued Security & Regulatory Compliance updates Serviceability

Maximo Mobile
- New and enhanced applications, Offline Work centers

Maximo Application Suite
- Asset Performance benchmarks
- Updates to Monitor, Health, Predict, MVI

Uptake's Asset Strategy Library

IBM Maximo Application Suite will integrate Uptake's advanced optimization algorithms and content libraries capabilities into its existing suite of asset management tools, providing customers with an even more powerful solution for managing their assets.

Uptake Knowledgebase

800+
critical asset types covered

5K+
preventative maintenance tasks and intervals organized by operating context

58K+
universal failure mechanisms spanning all known operating contexts

32K+
years of professional industry experience

Customer Outcomes

UP TO **20%**
reduction in maintenance costs

UP TO **15%**
improved reliability

~75%
faster than traditional RCM

UP TO **37%**
labor hour reduction via elimination of ineffective tasks

Introducing RCM based capabilities and libraries within MAS:

✓ Rapid FMEA-based asset strategy creation
✓ Prebuilt FMEA libraries, PMs, and Job Plans
✓ Advanced PM Optimization balancing reliability, cost, and operating context
✓ Unified platform (EAM+APM) for strategy deployment and work execution

UPTAKE ASSET STRATEGY LIBRARY® EXPLORER

OPTIMIZE YOUR PREVENTATIVE MAINTENANCE STRATEGIES
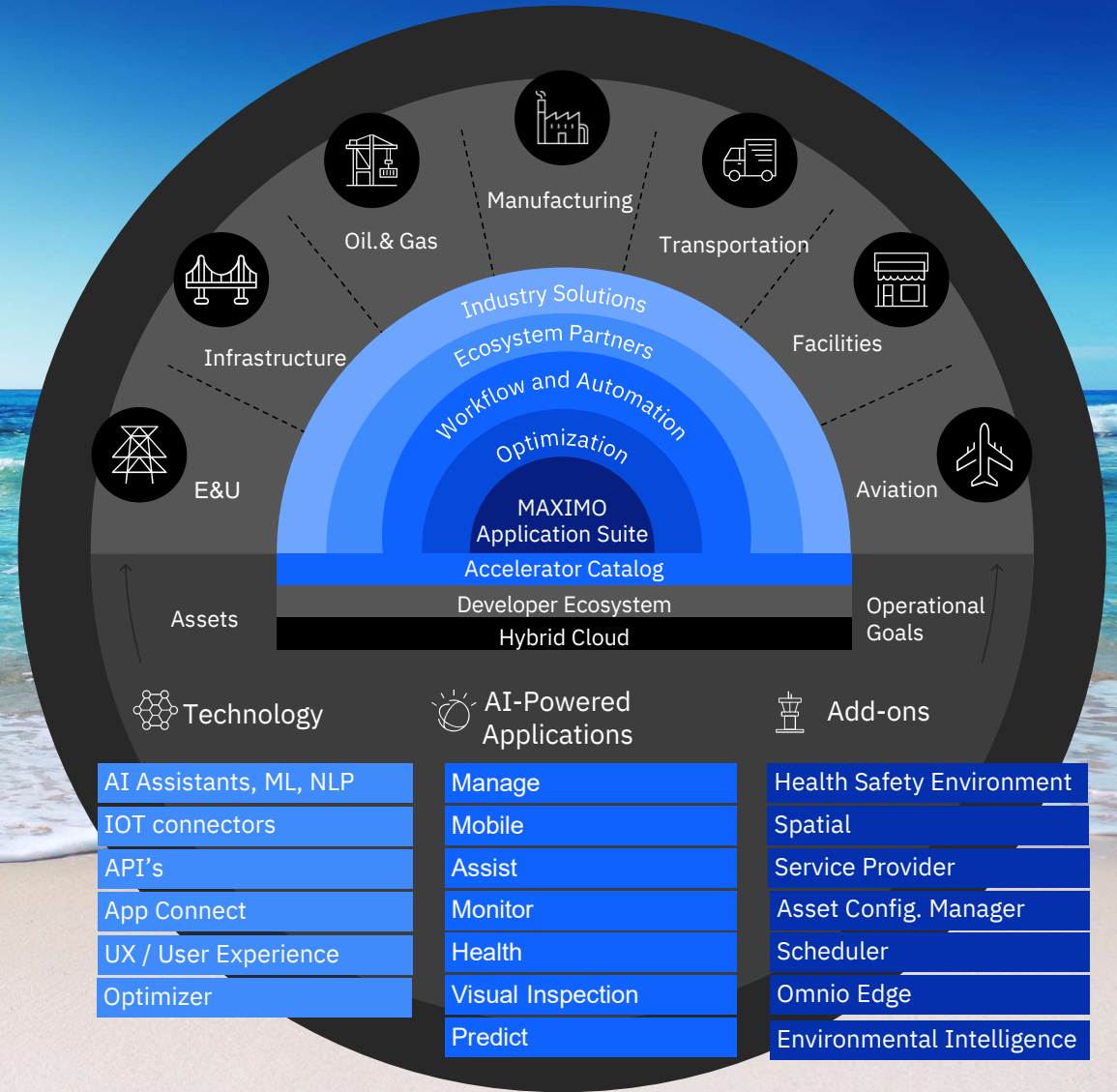
Maximo Application Suite
Operations Optimization platform

Powered by AI-based Automation

The next generation of Operational Technology solutions requires bringing new intelligence that did not previously exist.

Enhancing physical assets operations with rich digital insights helps companies transform their businesses.

Technology must be intuitive and easy to use without lengthy manuals and training.

Manufacturing
Oil.& Gas
Transportation
Infrastructure
Facilities
E&U
Aviation

Industry Solutions
Ecosystem Partners
Workflow and Automation
Optimization
MAXIMO Application Suite
Accelerator Catalog
Developer Ecosystem
Hybrid Cloud

Assets
Operational Goals

Technology	AI-Powered Applications	Add-ons
AI Assistants, ML, NLP	Manage	Health Safety Environment
IOT connectors	Mobile	Spatial
API's	Assist	Service Provider
App Connect	Monitor	Asset Config. Manager
UX / User Experience	Health	Scheduler
Optimizer	Visual Inspection	Omnio Edge
	Predict	Environmental Intelligence

USER GROUPS AND CERTIFICATE WORKSHOPS AUGUST 7 • AUGUST 7-10, 2023 • PHOENIX, ARIZONA

Maximo Exchange EMEA 2023

IBM Innovation Studio Munich & online
October 10-11

#1

Maximo users

exchanging the most exciting projects to learn from each other and discuss ideas with peers, domain and IBM experts

#2

Break the boundaries

Your peers might be in a similar industry, but different country. Exchange your challenges with industry leaders across EMEA.

#3

Not your usual event

This event is intended to be a user centric, fully co-created conference, not to a standard vendor-marketing event.

#4

Let's create!
- Topics
- Speakers
- The future

The Future of Maximo - Next Chapter

—

Boštjan Gabrijelčič
Principal Asset Management Leader EMEA