



The Future of Maximo

Ronald Teijken
Business Partner Manager Nederland
IBM Sustainability Software

Oktober 2022

A European Green Deal

14th July 2021 Striving to be the first climate-neutral continent
Climate, energy, transport and taxation **policies for reducing net greenhouse gas emissions by at least 55% by 2030**



Post Covid-19 value chains: options for reshoring production back to Europe in a globalised economy

Global Community Urges Energy Transition Action After COP26

17 January 2022 | Articles



Tuesday, 11 January 2022

MENA to double renewable energy production in next 5 years

EIB approves EUR 4.1 billion financing for renewable energy, clean transport, COVID recovery, social housing and education

17 JUNE 2021



OUT-LAW NEWS | 08 Dec 2021

The European Commission has unveiled a major infrastructure investment strategy aimed at mobilising up to €300 billion of investments in global development by 2027.

07 Jan 2021, 13:57 Charlotte Nijhuis

European energy companies to invest up to one trillion euros in renewables by 2030

Ageing workforce

13 July 2021

Sustainability Software mission and strategy

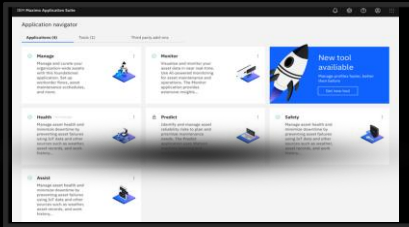
Aligned Business Strategy

Organization, operating model, culture, data and tech strategy to drive innovation across business and society

Integrated Suites of Applications

ESG Data, Reporting, and Climate Risk Management

System of record to operationalize sustainability goals and environmental intelligence



Intelligent Facilities and Assets

Operational insight to drive clean energy transition, efficient waste management, and decarbonization



Resilient IT Infrastructure

Responsible computing to enable sustainable IT and drive social impact



Circular Supply Chains

Intelligent workflows for equitable, transparent, and net zero supply chains

Managing The World Infrastructure

Mobility Infrastructure



Facilities Infrastructure



Production Infrastructure



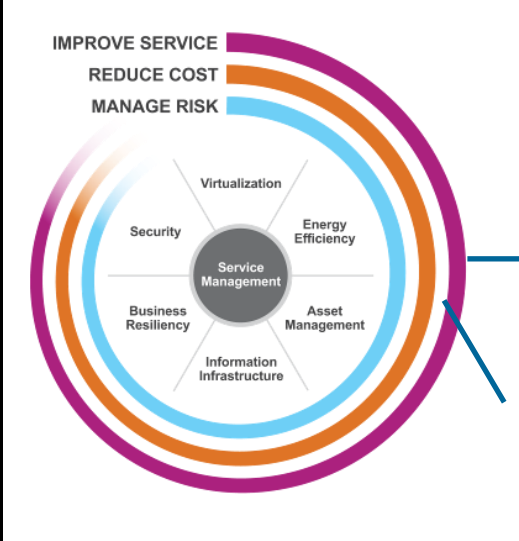
Technology Infrastructure



Communications Infrastructure



Maximizing the value of critical assets over their lifecycle



Transportation



Telecommunications



Manufacturing



Public Sector



Energy & Utilities

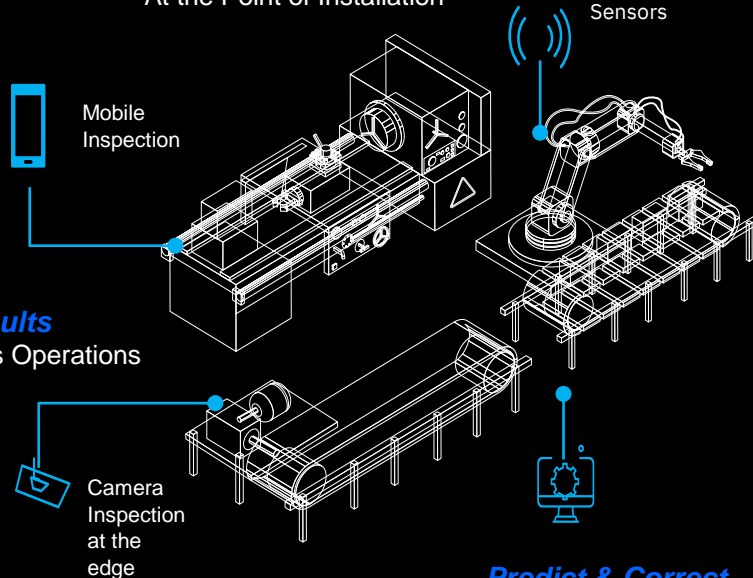


Oil & Gas

Advancing business outcomes

Detect & Correct

At the Point of Installation



Actionable Results

Drives Continuous Operations

Solve Skill Shortages & Constrained Workforce

Reduce Manual Inspections

Improve Accuracy, Consistency, & Worker Safety

Visual Inspection Does Not Require Data Scientists

Predict & Correct

Avoid Failures - Increase
Up Time & Availability



Supporting customers in their Journey to Predict

Visual Inspection

Visual anomaly detection



Monitor

Manage and detect anomalies



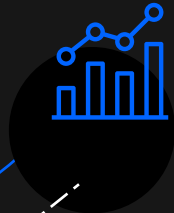
Health

Manage Health



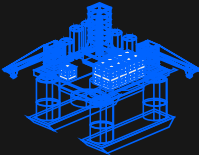
Predict

Use data to predict failures



Manage

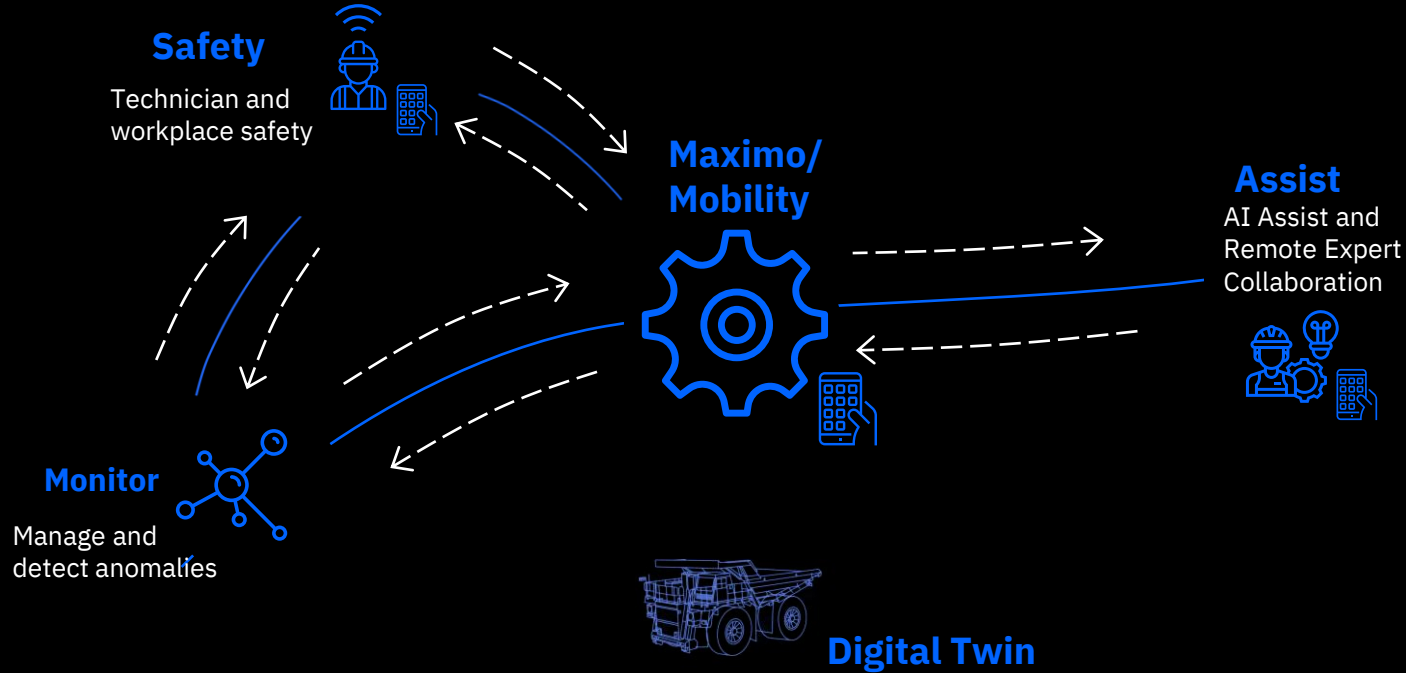
Understand and manage maintenance



Digital Twin

1-click download

Taking Customers Down a Journey: Mobile Technician



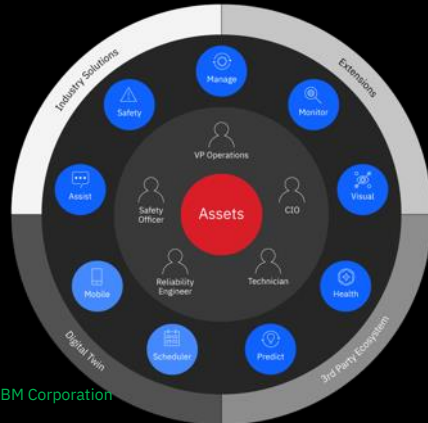
Maximo Application Suite

Remote asset monitoring, maintenance and reliability applications in a single platform

Winning in maintenance requires a solution that brings operations, maintenance and reliability together.

There is a new breed of intelligent assets that will use advanced technologies to manage themselves.

Powered by AI-based Automation



Maximo Application Suite – Release 8.x

Best of class capabilities to provide complete view of all assets

ICD
↓



IBM Cloud Pak for Data | IBM Watson Studio | IBM Watson ML | IBM Watson Discovery

 **Red Hat OpenShift** Infrastructure Independent Common Operating Environment



Asset Performance Management

Monitor

Health

Predict

Health and Predict –
Utilities

Visual Inspection



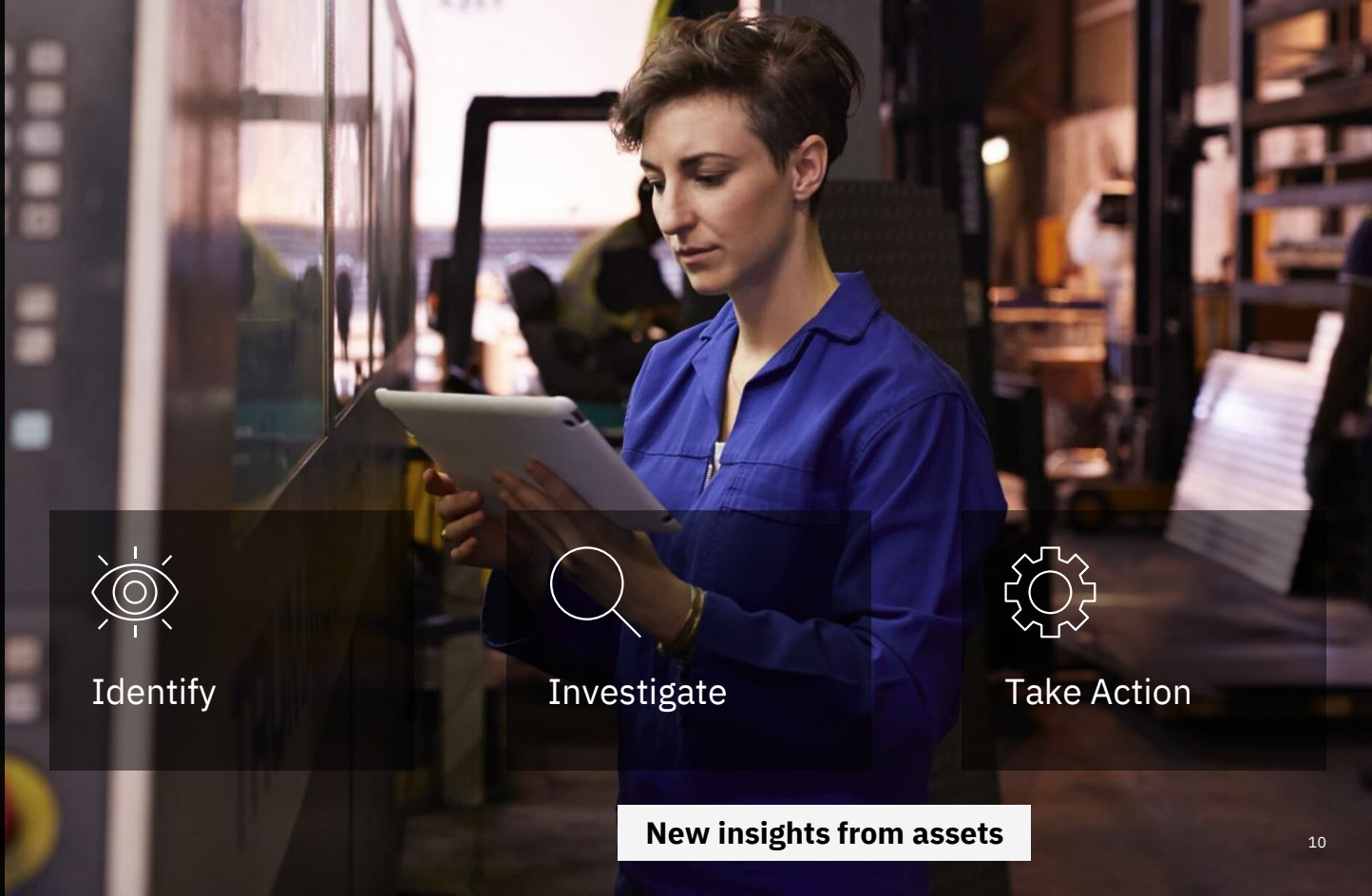
Identify



Investigate



Take Action



New insights from assets

Connecting maintenance, from the Factory to the field



Remote assistance



Work Execution



Inspections



Asset Health



AI-Based assistance



Asset operating history



Asset & digital twin info



Safety sensors

New ways of working

IBM Maximo Mobile & Monitor design awards 2021

SPARK
DESIGN AWARDS

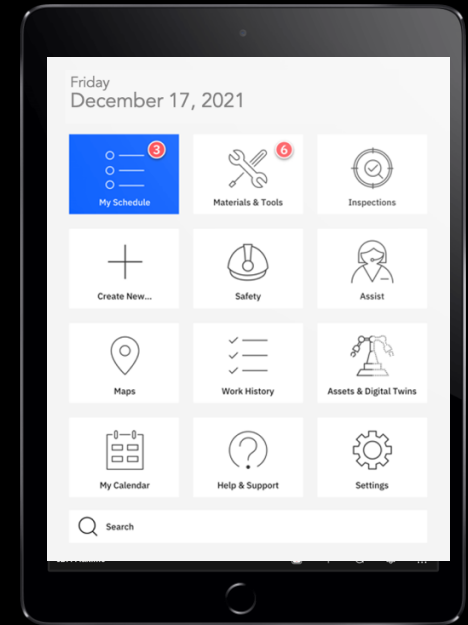
★ ★ ★ ★ ★

CONGRATS TO OUR WINNERS

IBM SPSS Statistics	Platinum
IBM Maximo Monitor	Gold
IBM Maximo Mobile	Gold



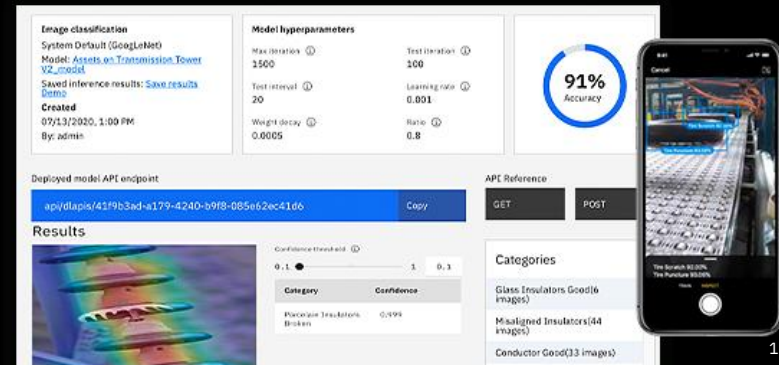
<https://youtu.be/SsYcmy7Va3U>



Field technicians and inspectors work in very unique environments, using specialized equipment in some of the most extreme conditions every day. The design team at IBM Maximo

Mobile created a solution enabling these users to benefit from the power of AI technology no matter where they are.

Whether working in a factory, on top of a cell tower, or in the middle of a train tunnel, Maximo Mobile brings big data and AI-powered features right to their pockets.



Modernized Experiences to support the new workforce

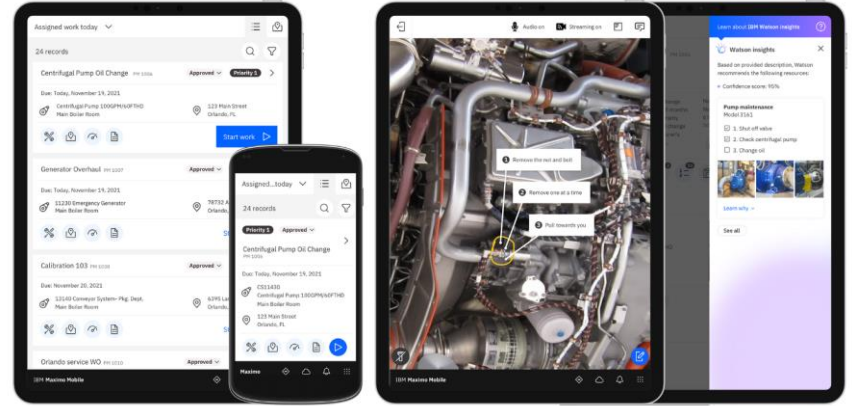
Next Generation Maximo Application Framework



AI Infused Applications



Award Winning Design



Improved:

- Increased Productivity
- Actionable Dashboards
- Data accuracy
- First Time Fix Rates

Maximo Mobile

Next Generation User Experience



1 application, 1 role-based interface



Intelligent workflows = blue button



Intelligent forms = configurability



Connected and disconnected



Trustworthiness: data quality is higher,
and real-time updates



Downloadable from:

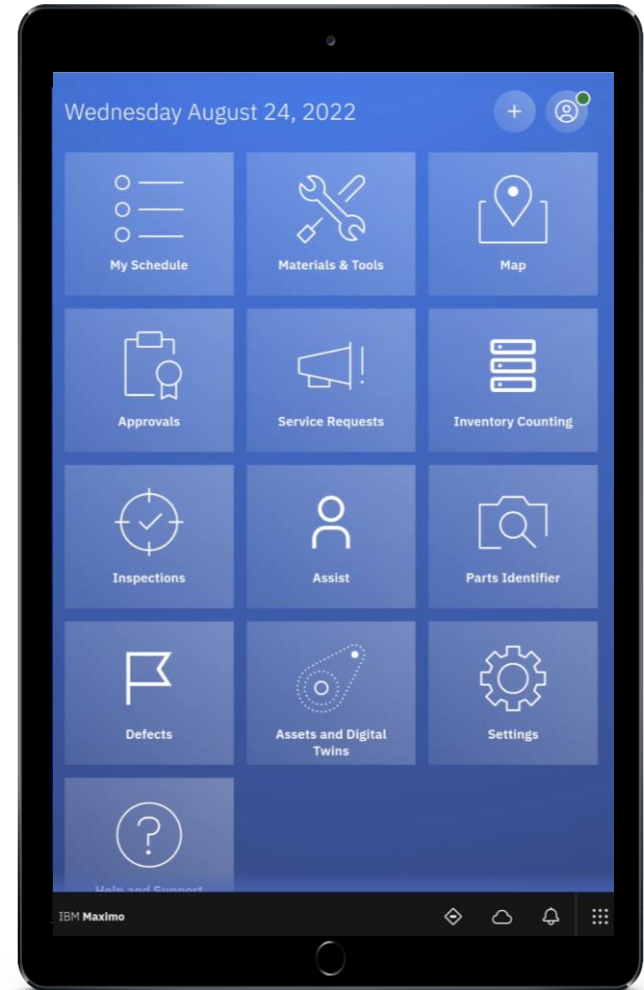


Apple App
Store



Google Play
Store

*also available for MS Windows



Touchpoints

The Right Information at the Right Time



Inspection



Materials & Tools



Attachments



Digital Twin



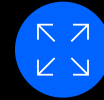
Assist



Tasks



Work Log Notes



Expand



Safety



Meter Readings



Photos



Information



Map



Report Work



Scan



Layers (map)

Continuing to deliver on Mobile Applications

Available



Technician

- Create material Requests with multiple materials
- Confirm the work is completed thru Physical Signature
- View history of location work orders
- Report tool actuals
- Scan RFIDs on the work order

Inspection

- Create forms based on legacy paper inspection requirements.
- Ensure accuracy with visual indicators – icons and colors to match responses
- Watson capabilities provide conversation interaction for hands-free capabilities

Work Approvals

- Review work
- Approve work.

Service Request

- Ability to create service request
- Choose from predefined problem types
- Attach images
- Quickly identify status on open active requests

Maximo Assist

Available

Empower technicians to work autonomously by enabling them to obtain AI guidance whenever they need it



Engineering process:
Root Cause Failure Analysis (RFFA)
Failure Modes Effects Analysis (FMEA)



Custom training repository



Journals, magazines



Customer
service/helpdesk data



Ask expert technician

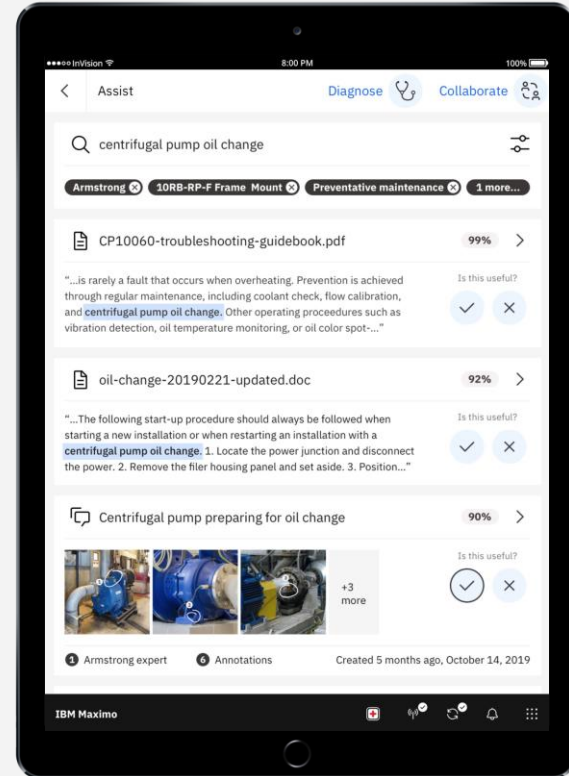


Historical work orders
(EAM data)



Manufacturer and owner
manuals, engineering manuals

Benefits: Reduce mean time to repair, boost first time fix rates, improve technician productivity



Assist Remote Guidance

Available

for additional assistance, whenever you need it, wherever you need it



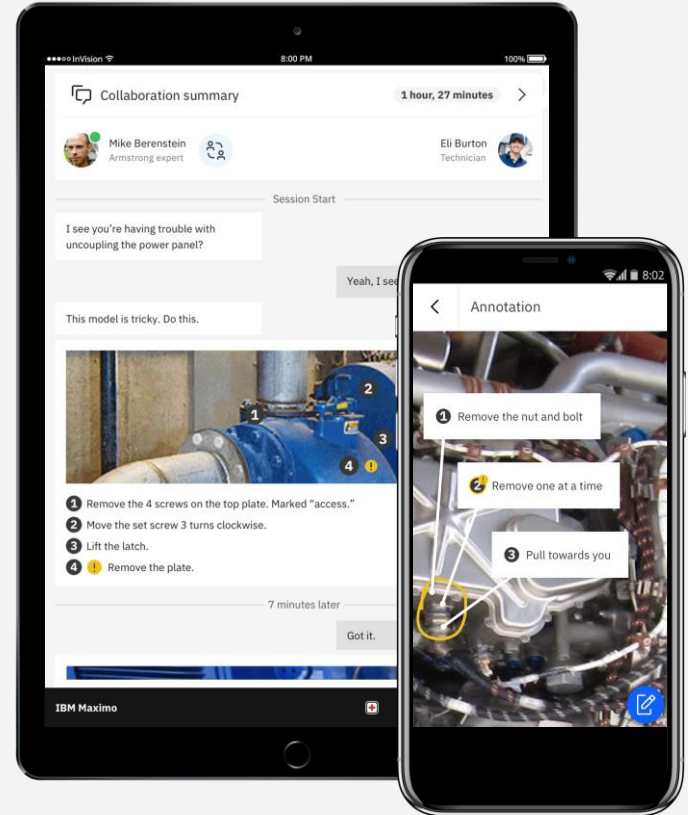
Remote Guidance session history **attached to the Maximo work order** for future reference and added to AI knowledge base



Capture your expert knowledge and make it searchable next time a similar incident occurs



Enhance experience for new technicians and help **every technician perform like your best technician**



Focusing on key capabilities for 2022 and 2023



Expand deployment and purchase choices

Easily deploy MAS into AWS & Azure

Purchase MAS as a SaaS offering hosted on AWS

Single Node Openshift for smaller footprint installs

Broader DevSecOps capabilities leveraging Red Hat Openshift.



Deliver AI driven asset performance @ Scale

Significant enhancement of ingestion and rendering of large datasets from IoT sensors and operational data.

AI Driven insights delivered where and when needed.



Streamline the EAM to MAS migration experience

End to end migration support with a focus on providing new differentiated value in Manage and the Suite.



Deliver new user experiences that increase operational effectiveness

Expand the new user experience aligning asset management roles with AI enhanced processes for managers, schedulers, dispatchers and mobile users.



Extend and enhance our Industry Solutions

Bring new user experiences to key roles and expand Industry Solutions to leverage MAS capabilities of value to industry customers.

Deliver AI driven asset performance @ Scale

Monitor

Monitoring with AI-based Anomaly Detection at Enterprise-Scale

- Rapid data integration
- Scalable dashboard filtering and management
- Enterprise-wide view of operation
- Generate work orders based on prioritized alerts



Health

Reduce fleetwide operational risk by focusing on the right assets

- Consolidated global view of assets
- Health Visibility and Analysis
- Flexible health scoring by asset type or groups
- Refurbish vs Replacement Planning
- Reduce unnecessary preventive maintenance



Predict

Identify asset failure and improve maintenance practices and reliability

- Templates provided to build common predictive models
- Determine factors that contribute to failure and build failure models
- Score predictive models using Watson ML
- View pre-built visualizations



Visual Inspections

Rapidly unleash the power of computer vision for inspection automation

- Perform a visual inspection of the line or asset using commercial, off-the-shelf devices such as iPads and iPhones
- Identify potential quality and performance issues in real time and configure to notify key stakeholders immediately
- Integrate with maintenance and quality workflows for a fast and prescriptive response



MAS/Manage Roadmap – 2022 / 2023

MAS 8.8 Q3 2022

Inventory Count Books

Configuration Capabilities

- UI Control Preview
- Ability to use deploy dates

Manage Mobile Apps

- Current Mobile App enhancements
- Storeroom Clerk – Inventory Counting
- Defect App

Serviceability /Security/Currency

- Operator maturity model enhancements
- Improved logging options
- Autoscripting Enhancements
- Bridge to Log4j 2.17

Civil Infrastructure enhancements

- Mobile Issue Collection with integration to MVI for Bridge Defects
- Drone Mission table in Manage
- Asset Classification Sample for Bridge
- Regional Asset Manager View – Health of Structures on a Map

MAS 8.X Q4 2022

Role Based Apps

- Scheduling Dashboard
- Operational Dashboard
 - Maintenance Manager
 - Workflow enh
 - Dashboard/KPI's

MAF Configuration

- Application Navigation left nav bar
- UI Control Selection from Palette

Indoor Mapping

Manage Mobile Apps

- Current Mobile App enhancements
- Asset Manager/Auditor

Serviceability /Security/Currency

- Operator maturity model enhancements
- Upgrade to Java 11
- Upgrade to JDOM 2.0.6.1
- Autoscripting Enhancements

Civil Infrastructure enhancements

- Drone Image Upload/Drone Application Alpha
- Linear Road and Rail Defects/Closure Planning
- Key Bridge Asset Template w/ Inspection Forms

MAS 8.y 1H 2023

Role Based Apps

- Dispatching Dashboard
- Operational Dashboard
 - Operations Manager
 - Query management enhancements
- New Inspection Forms
- MMI (Management Interface)

MAF Configuration

- Field Selection from ADD
- DataSource Assignment
- Drag & drop configuration
- Application views UI Control/Preview app

Manage Mobile Apps

- Current Mobile App enhancements
 - Addition of Calibration to Technician App
- Storeroom Clerk - Issues & Returns, Receiving & Shipments

Serviceability /Security/Currency

- Operator maturity model enhancements

Reporting

- Cognos 11.2

IS enhancements

- RBA and mobile apps
- Civil Infrastructure enhancements

MAS 8.y 2H 2023

Role Based Apps

- Planner Dashboard
- Operational Dashboard
 - HSE Manager
 - Asset Manager
 - Asset, PM and Meter enh
- Data loader

MAF Configuration

- Query Configuration management
- Customization – folder support & js/xml file support
- Version Control

Manage Mobile Apps

- Current Mobile App enhancements
- Desktop Requisition

Serviceability /Security/Currency

- Operator maturity model enhancements

Reporting

- Cognos enhancements

IS enhancements

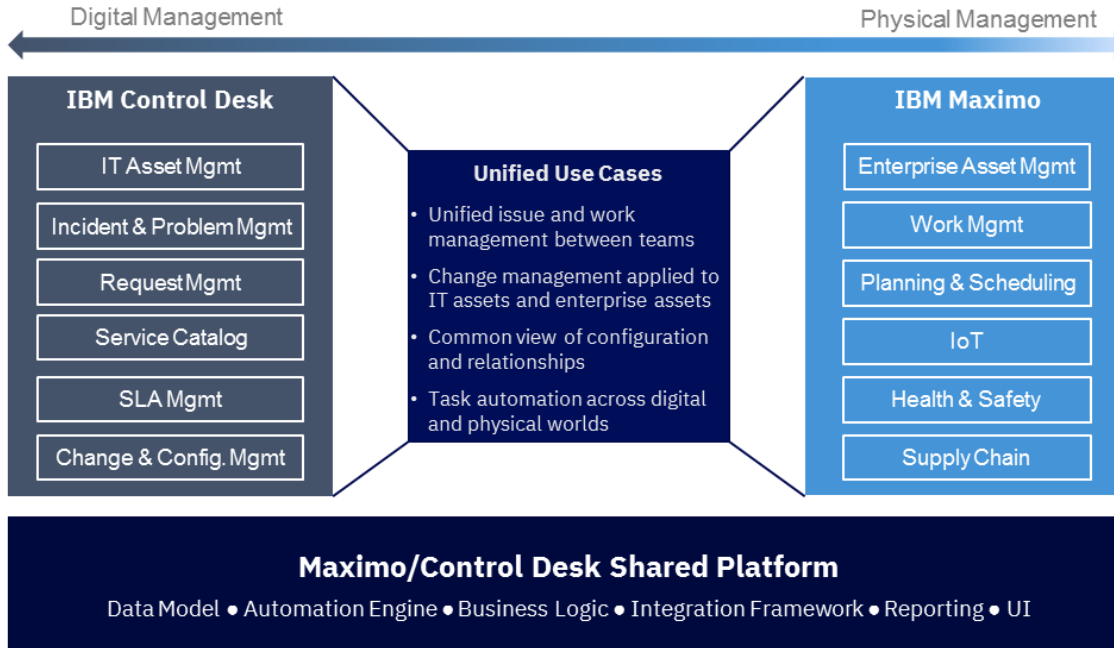
- RBA and mobile apps
- Civil Infrastructure enhancements

Notice: IBM's statements regarding its plans, directions, and intent are subject to change or withdrawal 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. 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.

Control Desk & Maximo

enables coordination of ITSM and connected enterprise assets

Unified Digital and Physical Worlds



Key Integrations:

- Slack
- ManageIO
- Virtual Network Computing
- Rational ClearQuest
- Netcool/OMNIBus
- WebSphere Service Registry and Repository
- TADDM

Key Integrations:

- Visual Inspection
- Maximo Monitor
- Asset Health Insights
- AT&T Asset Management – Operations Center
- SAP
- Oracle
- IBM Weather
- Watson Analytics
- Watson IoT Platform
- SCADA Device

IBM Control Desk (ICD) Roadmap – 2022/2023

Planned

	1H2022		2H2022		2023
<p>ICD 7.6.1.4</p> <p>November 12, 2021 (Current Offering)</p> <p>Service Management Service Requests Service Portal Incident & Problem Management Change & Release processes Configuration Item Management</p> <p>Asset Management Hardware/Software License Management Reconciliation Contract Management</p> <p>IT/OT Convergence IoT Device Management Software/Firmware Reporting/Analytics</p>	<p>761 iFix - April - 2022</p> <ul style="list-style-type: none"> Utilize bridge from 1.2 to Log4j 2.17 <i>Available</i> 	<p>761x IFR - April - 2022</p> <ul style="list-style-type: none"> Updates to PA downloads - DB2 11.5 - Cognos 11.1 - WebSphere 9.0.5 	<p>7.6.1.5 Fix Pack - December 2022</p> <p>Roll-up of addressed APARs from Tpaе/ICD</p> <p>Security and Currency updates</p> <ul style="list-style-type: none"> Windows Server 2020 Ubuntu 20.04 Dojo 1.16 Update iText 3rd party plug-in 2.17 CometD/Jetty update <p>Reporting</p> <ul style="list-style-type: none"> BIRT Upgrade 4.8 Still using bridge from 1.2 to Log4j 2.17 	<p>MAS 8.x - H2 2023</p> <ul style="list-style-type: none"> ICD available in MAS Service Management Asset Management IT/OT Convergence Mobile Service Request 	<p>7.6.1.x Fix Pack - H2 2023</p> <p>Log4j 2.17</p> <p>Roll-up of addressed APARs from Tpaе/ICD</p> <p>MAS 8.y - Enhanced ICD capabilities</p>

Notice: IBM's statements regarding its plans, directions, and intent are subject to change or withdrawal 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. 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.

Maintenance strategies differ by asset class

Asset Management Strategy and Maturity Model: Asset utilization and availability

The asset strategy and maturity changes depending on factors including asset/replacement cost, criticality of asset, usage patterns and impact of failure on safety, environment, operations, financial and public image.



Reactive



Run-to-failure



Calendar based



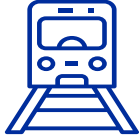
Usage based



Condition based



Risk-based maintenance



Predictive



Financially optimized

Risk Mitigation

Financial Optimization

Data driven decisions (analytics)

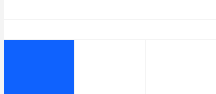


Asset value and business impact


Maintenance is an expense

Maintenance is an investment


Maximo Application Suite...




Manage
Intelligent Asset Management




Monitor
Monitor and Detect Anomalies




Health
360 View of Assets




Predict
Predictive Failures




Visual Inspection
AI-Powered Insights



Schedule
Schedule Work and Resources



Mobile
Technician Work Execution



Assist
Prescriptive Assistance



Safety
Actionable Insights for Worker Safety

Intelligent Enterprise Asset Management solution to help organizations:

- 1 Manage assets, infrastructure, and resources
- 2 Monitor and measure operations
- 3 Improve product and service quality

... for Sustainable Asset Management and Reliability Optimization

Enable creation of resilient and sustainable infrastructure and operations to **extend the life** of equipment, buildings, bridges, fleets, water lines and more to reach sustainability targets.

Asset Management & Maintenance

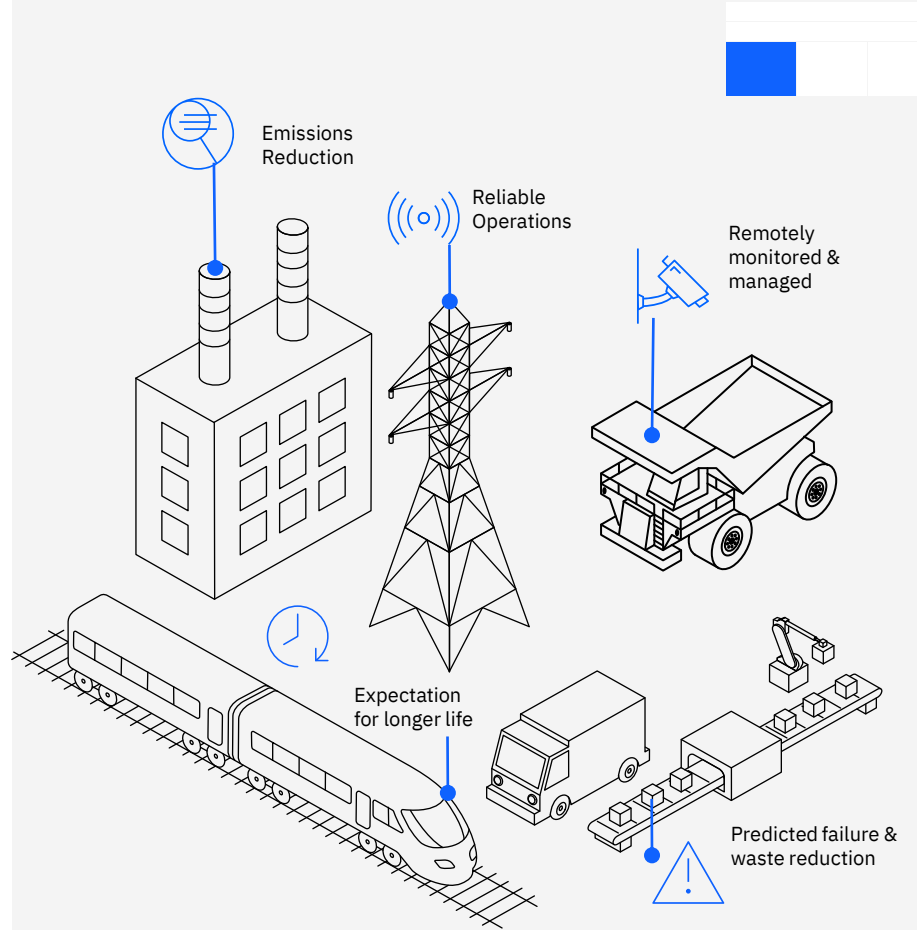
Optimize maintenance scheduling to achieve efficient, safe and sustainable work practices

Asset Reliability and Optimization

Extending asset life decreases waste & embodied carbon, and improves energy efficiency

Asset Monitoring and Fault Detection

Increased energy efficiency, equipment performance and reliability



IBM Maximo