



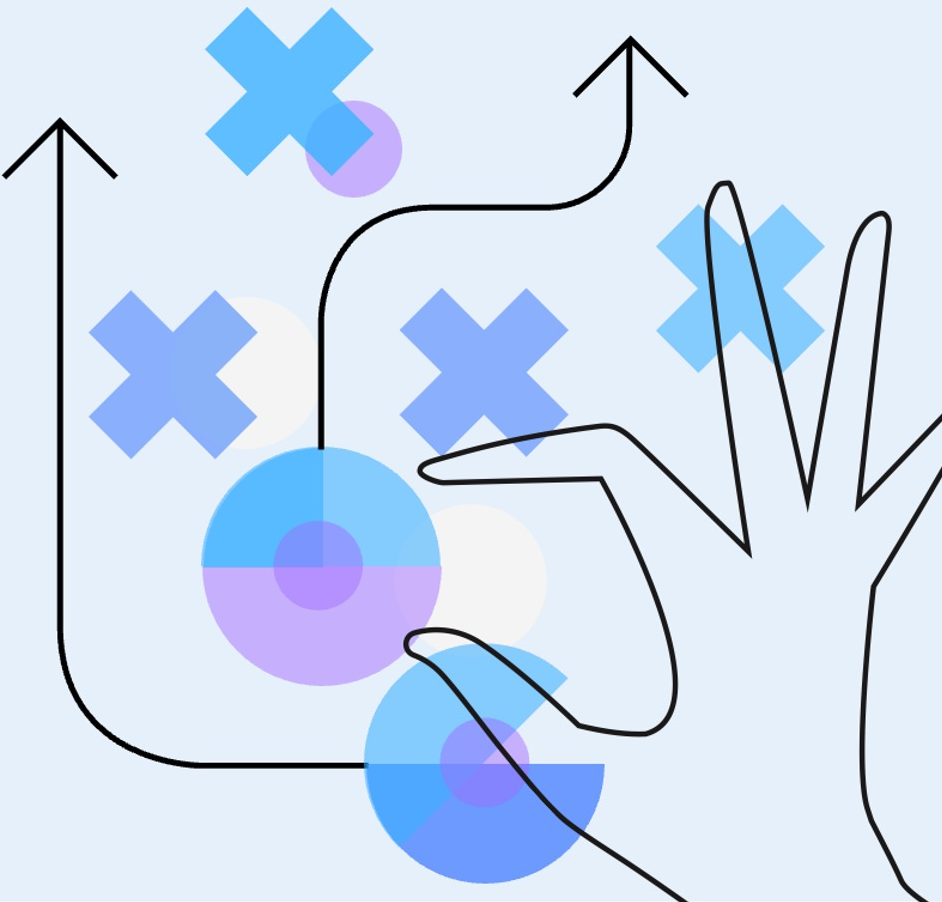
Romelia Flores

IBM Distinguished Engineer (DE) & Master Inventor, Public Market

Romelia's industry experiences combined with her unique software development and design expertise make her Global Sales' most highly sought-after innovator. She has collaborated with leading clients in the design of Electric Vehicle Fleet Management, Social Services, Airports of the Future and more. She holds 85 US patents and 10 patents pending. In 2021, she received the Dallas Business Journal's Women in Business Award. In 2018, she was the first female ever named to the Dallas Tech Titan Hall of Fame and was the 2016 Lifetime Achievement Award winner from Great Minds in STEM.



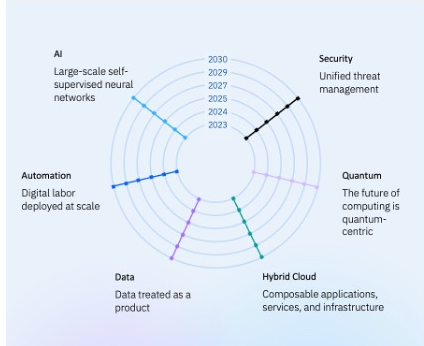
IBM Strategy



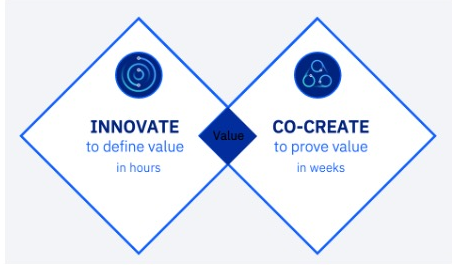
Hybrid Cloud and AI

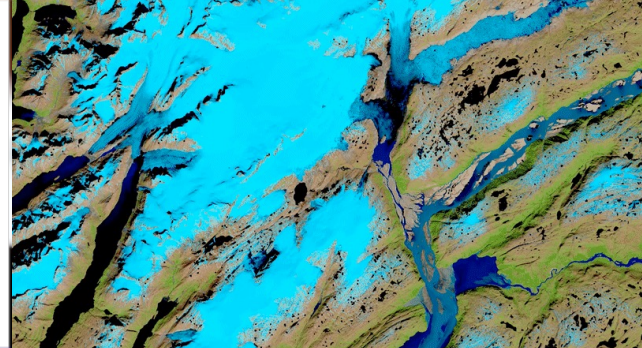
IBM Consulting Business Transformation Technology Consulting Application Operations	System Integrator Partners
IBM Software Automation IBM Cloud Paks Security Transaction Proc.	Software and SaaS Partners
Red Hat Hybrid Cloud Platform Development, Security and Operational Services OpenShift Red Hat Enterprise Linux Ansible Automation Platform	
IBM Infrastructure IBM zSystems Distributed Infrastructure (IBM Cloud, Power, Storage) Infrastructure Support	Public Clouds AWS Azure Others
Enterprise Infrastructure	Edge

Technology Atlas



Value Co-creation





Enterprises drive digital innovation



Manage increased complexity, given heterogenous IT/ clouds



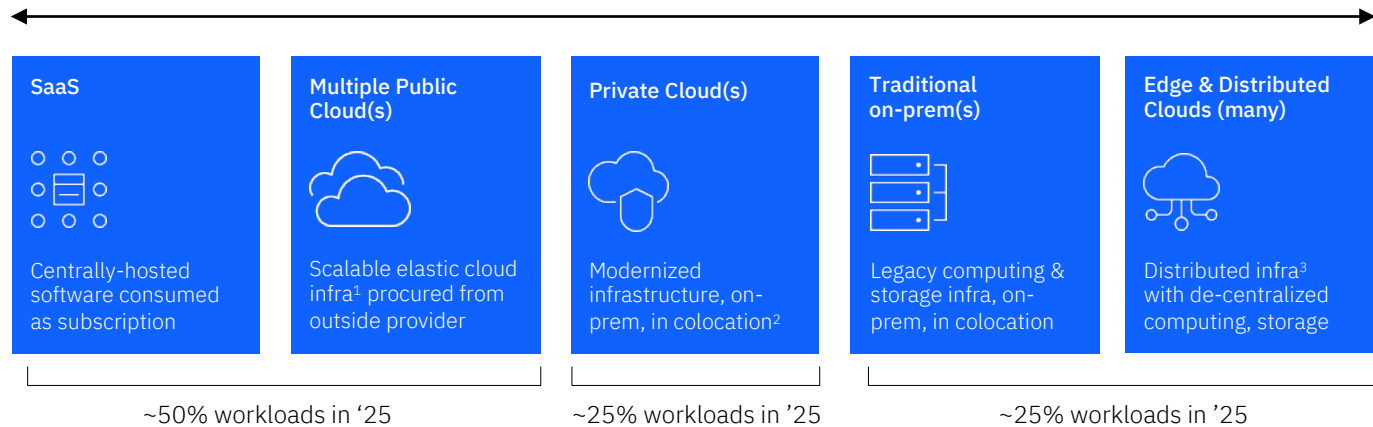
Derive value from an explosion of available data



Drive competitive operations, despite worker shortages

... across their heterogenous environments

Hybrid Cloud: Integrate and orchestrate enterprise workloads in multiple environments



Enterprise look for flexible, secure and open platforms... to operate and develop services consistently









Protect businesses from cybercrime: 40% increase in number of malicious security breaches in 2020



Be sustainable end-to-end: 85% of companies have a sustainability strategy, only 35% have acted on it

Note: WLS= Workloads; (1) Includes IaaS, PaaS, Virtual Private Cloud (dedicated public cloud infra); (2) High degree of elasticity and automation; (3) incl. IoT, robots, vehicles, branch offices servers

Platforms, technology and expertise for generative AI success

AI products 	Empower enterprise grade capabilities to maximize automation and business impact.	IT Automation Turbonomic , Instana Security Qradar , MaaS360 Sustainability Envisi , EIS , Maximo App Modernization API Connect , BAW
AI assistants 	Empower individuals to do work without expert knowledge across a variety of business processes and applications.	watsonx Code Assistant watsonx Assistant watsonx Orchestrate watsonx Orders
SDKs & APIs 	Embed watsonx platform in third party assistants and applications using programmatic interfaces.	Ecosystem integrations
AI & data platform 	Leverage generative AI and machine learning — tuned with your data — with responsibility, transparency and explainability.	watsonx watsonx.ai watsonx.governance watsonx.data Foundation models Granite IBM Open Source Hugging Face Llama 2 Meta Geospatial IBM + NASA ...
Data services 	Define, organize, manage, and deliver trusted data to train and tune AI models with data fabric services.	Cloud Pak for Data watsonx Discovery
Hybrid cloud AI tools 	Build on a consistent, scalable foundation based on open-source technology.	Red Hat OpenShift AI (e.g., Ray, Pytorch)

Consulting

Generative AI strategy, experience, technology, operations

Ecosystem and Integrator Partners

System Integrators, Software and SaaS partners, Public Cloud providers

Artificial Intelligence (AI)

Human intelligence exhibited by machines



AI can be defined as a technique that enables machines to mimic cognitive functions associated with human minds – cognitive functions include all aspects of learning, reasoning, perceiving, and problem solving.

Machine Learning (ML)

Systems that learn from historical data



ML-based systems are trained on historical data to uncover patterns. Users provide inputs to the ML system, which then applies these inputs to the discovered patterns and generates corresponding outputs.

Deep Learning (DL)

ML technique that mimics human brain function



DL is a subset of ML, using multiple layers of neural networks, which are interconnected nodes, which work together to process information. DL is well suited to complex applications, like image and speech recognition.

Foundation Model

Generative AI systems



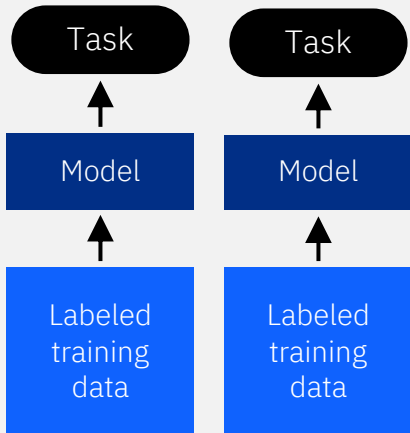
AI model built using a specific kind of neural network architecture, called a transformer, which is designed to generate sequences of related data elements (for example, like a sentence).



What's next with foundation models:

Conventional AI

1000s – 100000s labeled data points / task



Zero-shot prompting

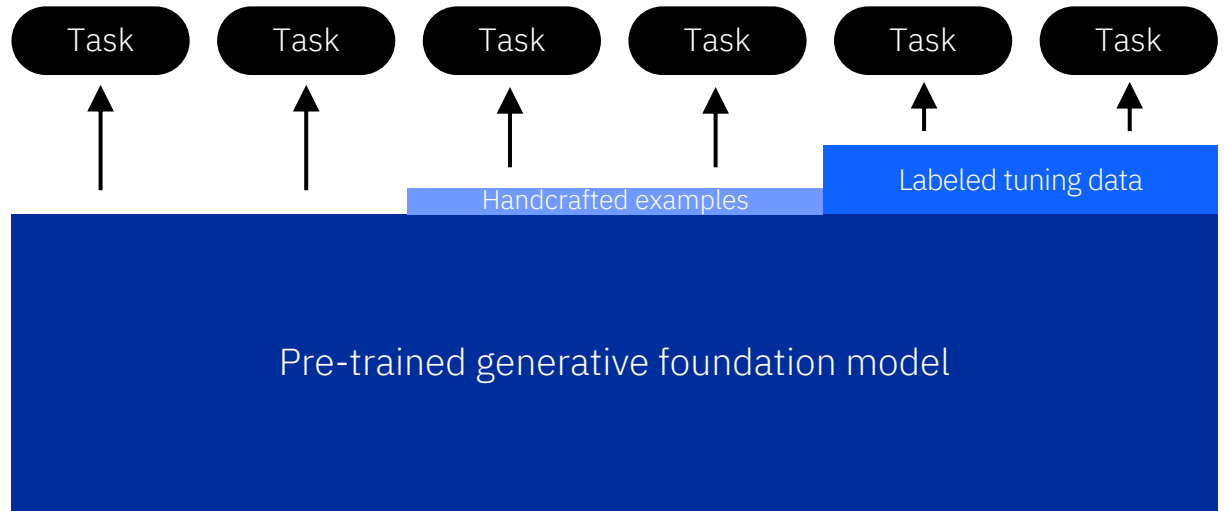
No labeled data needed

Few-shot prompting

1-10 labeled data points / task

Data-driven tuning

100s – 1000s labeled data points / task



Electric Vehicle Fleet Management

Solution Components

IBM Security

IBM Cloud

IBM Maximo (Analytics)

The Challenge

Water District looking to evolve their operations to meet their State's electric-powered evolution for the vehicle fleet.

The Approach

We gained clarity regarding the impact and requirements in support of this evolution utilizing a human centered approach.

- Phil the Fleet Manager
- Tim the Operations and Logistics Supervisor



Electric Vehicle Fleet Management

Solution Components

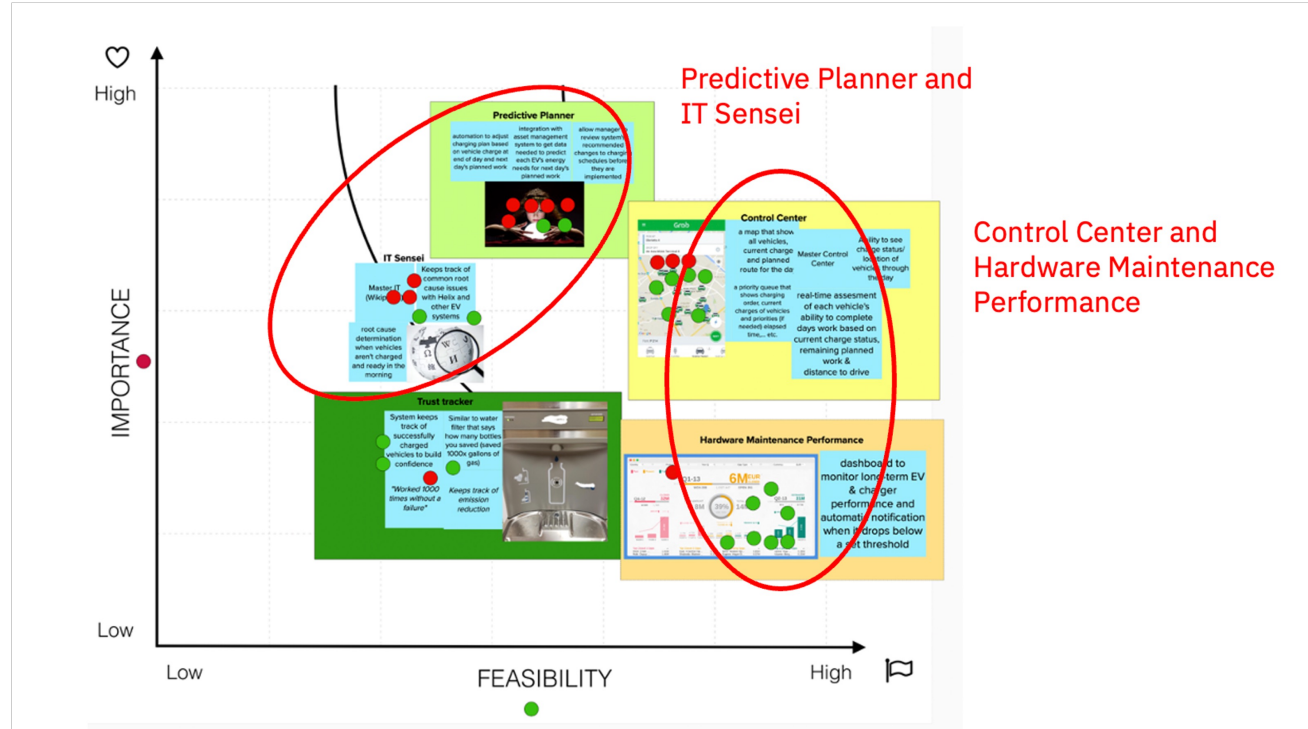
IBM Security

IBM Cloud

IBM Maximo (Analytics)

The Need

Phil the Fleet Manager



Electric Vehicle Fleet Management

Solution Components

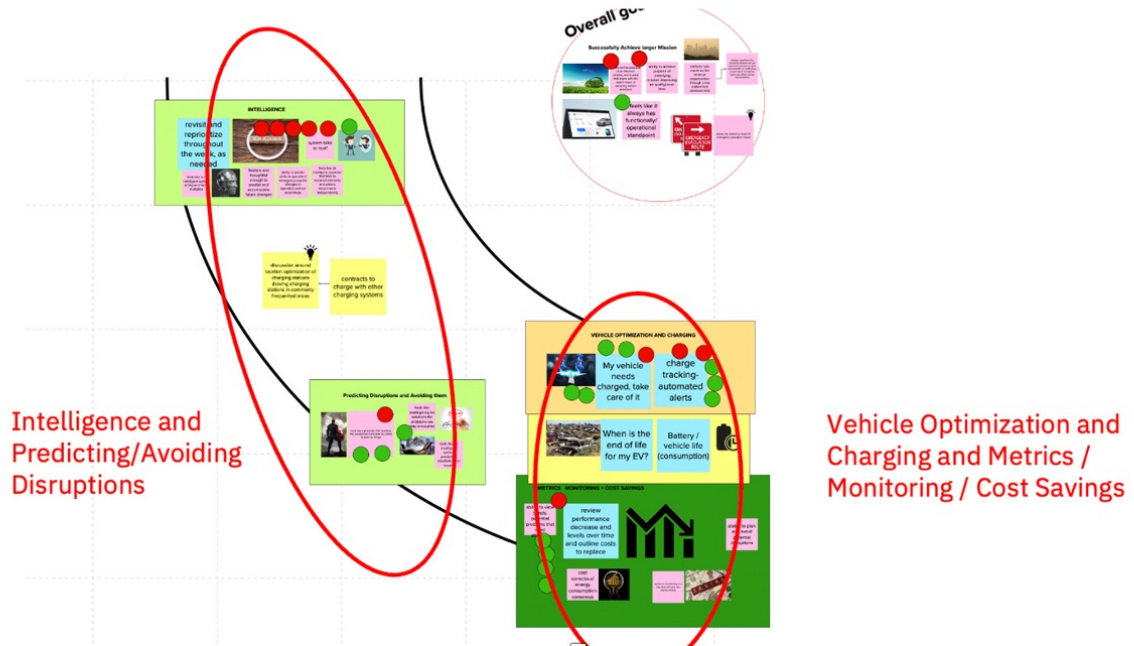
IBM Security

IBM Cloud

IBM Maximo (Analytics)

The Need

Tim The Ops and Logistics Supervisor



Electric Vehicle Fleet Management

Solution Components

IBM Security

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The Journey

Executive Summary

Electric Vehicle Management Journey

EV System Foundation (Solution component establishment)	EV Performance and Hardware Maintenance (Initial metrics collection)	EV Perf / <u>Maint</u> Visualization (Threshold identification, adjustments)	EV Predictive Planning Insights (Alerting and automation)	Control Center Visualization (Formalization)
Electric Charger data integration	Static Electric Charger perf./maintenance	Electric Charger, Vehicle Charge, Electric Vehicle threshold identification	Electric Charger, Vehicle Charge, Electric Vehicle alerting & automation	Electric Charger, Vehicle Charge, Electric Vehicle near real-time stats
Vehicle charge data integration	Static Vehicle Charge queue	Dynamic Vehicle Charge queue	Dynamic Electric Vehicle Fleet assignments	Fleet assignment views
Asset Management setup / proof points	Static Electric Vehicle performance	Static Fleet assignments	Initial reporting metrics	Initial reporting metrics (ESG, savings, costs, etc.)

EV Infrastructure Life Cycle Management with Maximo and watsonx.ai



Transportation is one of the largest contributors to GHG emissions



Extensive investment is being funded by federal and state governments, OEMs (and their tier 1, 2, 3 suppliers), industrial companies like Siemens, Bosch, Tritium and ABB.

Large retailers such as BP, Shell, Walmart, Starbucks, Circle K, Loves, TCA, Pilot Flying J, Hertz along with others continue investments in their effort to drive the adoption of EVs for both the commercial and fleet markets.

Huge funding initiatives throughout the Nation*



OEMs; Fleet Owners



Charge Point Operators



Retail



Federal, State and City
Government Investments



Energy and Utility

- **\$5B** NEVI (States) / **\$2.5B** CFI (Cities)
- **\$12.5B** Automakers Loan/Grants
- **\$10B** for clean transit/school buses
- **\$85B** across companies
- **\$200B** Global EV Infrastructure Spend*

*Source: BloombergNEF

**Source: [FACT SHEET: Biden-Harris Administration Announces New Standards and Major Progress for a Made-in-America National Network of Electric Vehicle Chargers](#)

EV Infrastructure Life Cycle Management with Maximo and watsonx.ai



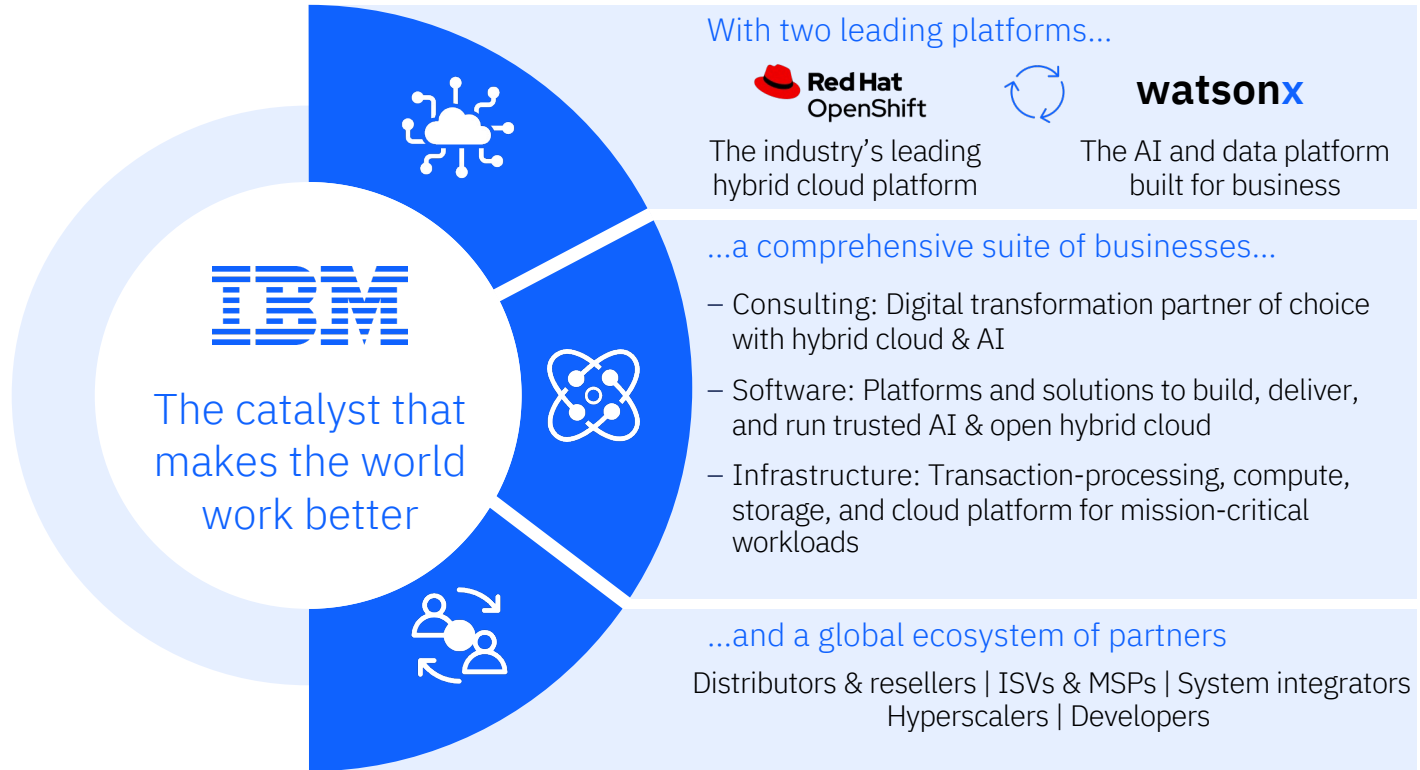
Andrew, Charging Station Reliability Engineer

Responsibilities:

- Monitoring and maintenance of charging station and charger assets
- Assess charging station and charger health (uptime/downtime, session state, etc.)
- Effectively detect malfunctions and/or at-risk assets by viewing current and historical state of charging stations and chargers
- Schedule proactive service & work orders with ecosystem partners

Our demonstration begins when Andrew is notified via the command center that one of the charging stations he is responsible for is experiencing outages...

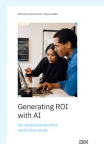
In summary



Read the latest on AI from the **IBM Institute for Business Value** here

AI capability

[Generating ROI with AI: Six capabilities that drive world-class results](#)



Strategy & Vision:
[Rethinking your approach to AI](#)

Data & Technology:
[Dealing with the AI data dilemma](#)

Engineering & Operations:
[Proven concepts for scaling AI](#)

[Capability maturity model](#)

AI value

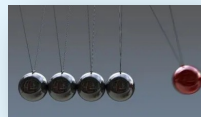
[How to create business value with AI: 12 stories from the field](#)



[The business value of AI](#)

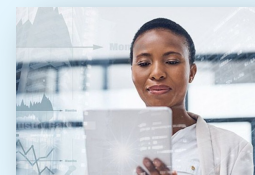


[Measuring AI's impact: An operational action guide to realizing value from AI](#)



AI ethics

[AI ethics in action](#)



[Advancing AI ethics beyond compliance](#)

