

# MLOps and Trustworthy AI

Watson Studio

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# The Promise of AI is clear, but with implementation comes questions

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## **Gartner Forecasts Worldwide Artificial Intelligence Software Market to Reach \$62 Billion in 2022**

Market Growth Will Accelerate as Organizations Progress Their AI Maturity

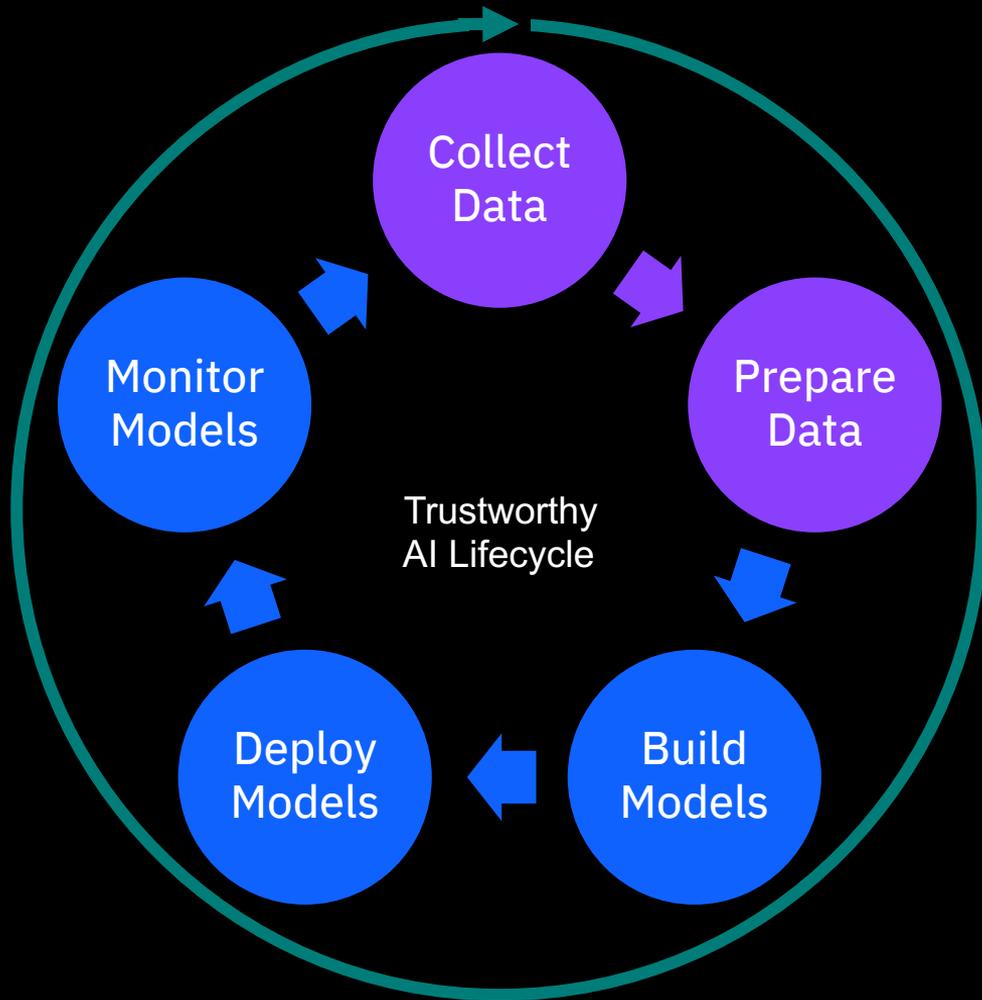
- AI represents a huge opportunity for organizations
- Our customers are coming to us with questions....

*How do we operationalize AI with confidence?*

*How do we scale given regulations?*

*How to enable responsible use of AI?*

# MLOps and Trustworthy AI



- **Data** : A complete view of quality data that is private, self-served and ready for analysis by multiple personas
- **Model** : MLOps infused with fairness, explainability, and robustness
- **Process** : Automation to drive consistency, efficiency and transparency for AI at scale

# IBM Watson Studio

Enterprise Data Science platform that helps your team work together to build models to make better data driven decisions for your business



## Analyze any data, no matter where it lives

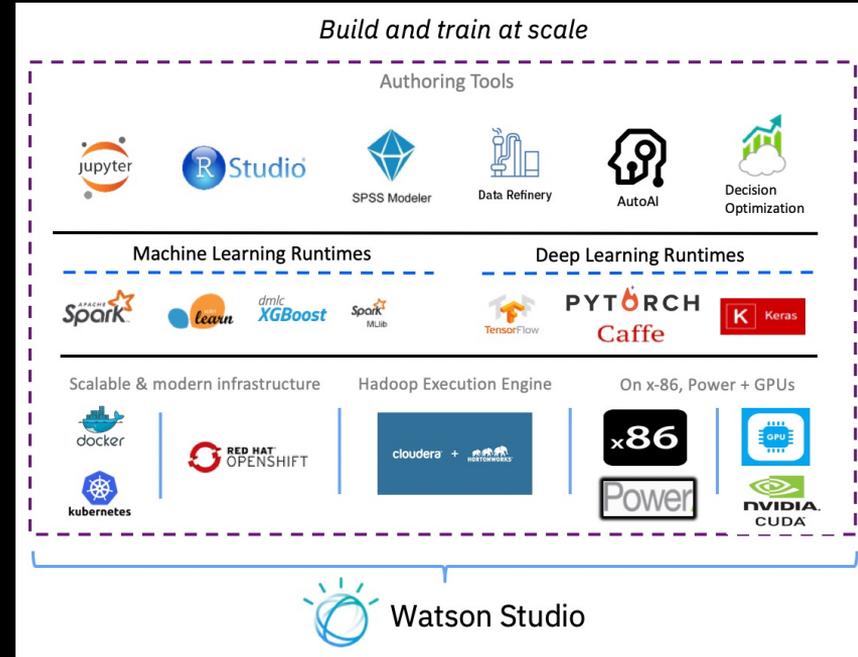
Connect to and analyze your data without moving a single byte through dozens of connectors and multiple deployment options

## Empower your entire organization with notebooks, visual productivity, and automation tools

Leverage your entire organization with a variety of tools in a single integrated platform

## One platform to rule them all from discovery to production

Analyze data, build predictive models, and seamlessly integrate Watson Machine Learning to deploy at scale





# IBM's Data Science and AI Elite helps Vivacom Bulgaria assess how to minimize cell tower operating cost through Data and AI

## Business Challenge

Vivacom operates cell towers around the clock in Bulgaria. They sought possible savings opportunities, particularly during low traffic conditions. Thus, Vivacom looked for a way to reduce power consumption cost by dynamically switching off cell layers for specific durations with minimal customer impact when traffic demand was low.

The key challenge was to develop an end-to-end AI model to automatically forecast the traffic load and optimize the switch off strategy on a regular basis.

## Solution

Vivacom worked with IBM's Data Science and AI Elite team to minimize cell tower operating costs. The resulting end-to-end pipeline consisted of a segmentation to group similar cell layers based on their traffic behaviour, followed by a forecasting model to predict future traffic load.

Finally, with the baseline traffic load estimates for different frequency bands and other business constraints, decision optimization was used to generate a power saving schedule, which could reduce cell operating hours while minimizing the power consumption cost.

## Estimated Outcome

- 30% reduction in operating hours of cell layers
- 12% reduction in energy consumption of cell layers
- Optimized plans to operate the network with a potentially automated pipeline

## Solution Components

- IBM Cloud Pak for Data
  - IBM Watson Studio
  - IBM Cognos Dashboard
  - IBM Cloud Object Storage

# Telefónica Argentina

Telefonica teams with IBM's Data Science and AI Elite to build a machine learning model to predict, with at least 20 hours warning, potential tower equipment failure.

Industry: Telecommunications  
Geography: Latin America (South America)

## Unique Challenge

- Having one model "fits all" scenarios.
- Received alerts are from sector level, but predictions need to be at node level.
- Integrating network KPIs into the model features.
- Getting actual technical factors that lead to failure represented in the data.
- Minimize false positives which cost \$\$.

## Use Case

### Predict Network Failure...

Alerts are received from a radio access network that indicate a problem in the mobile telecommunication system and possibly an interruption of service. There are different types of alerts such as energy alerts which are associated with a failed generator, which in turn could be due to no fuel. Or, it may start with a hardware alert, followed by an out of service alert. A node will be down if all its sectors are down. **Telefonica needs to predict which nodes will be out of service within 0 to 24, or 24 to 48 hours in order to send crews out for repair.**

## Expected Outcome

- Understanding the main factors that contribute to network failures
- A more informed decision-making process that allows placement of technical resources in the field
- Improve customer experience
- Minimize network outages through more timely intervention

## Solution Components

- IBM Watson Studio





IBM Global Elite

# IBM's Data Science Elite Helps Claro Colombia Predict Customer Churn

Industry: Telecommunications  
Geography: Latin America

## Unique Challenge

- Extremely short project timeline to satisfy client's budgetary constraint.
- Overwhelming volume of daily data needed to be aggregated and subsampled for effective data science exploration.
- Using machine learning techniques to discover the leading factors that lead subscribers to leave; customer's self-reported reasons are known to be unreliable.

## Use Case

Claro wants to continue to grow the customer base in the postpaid-mobile market by predicting which subscribers will churn and identify different categories of churners and the factors that drive them.

## Expected Outcome

- More effective offers and other measures to entice potential churners to stay
- Better targeted offers, reducing the "noise" affecting subscribers who are actually not at risk

## Solution Components

- IBM Watson Machine Learning
- IBM Watson Studio



IBM