

# The road to AI – A journey to modernize your data architecture

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Hybrid Data Management  
Data and AI



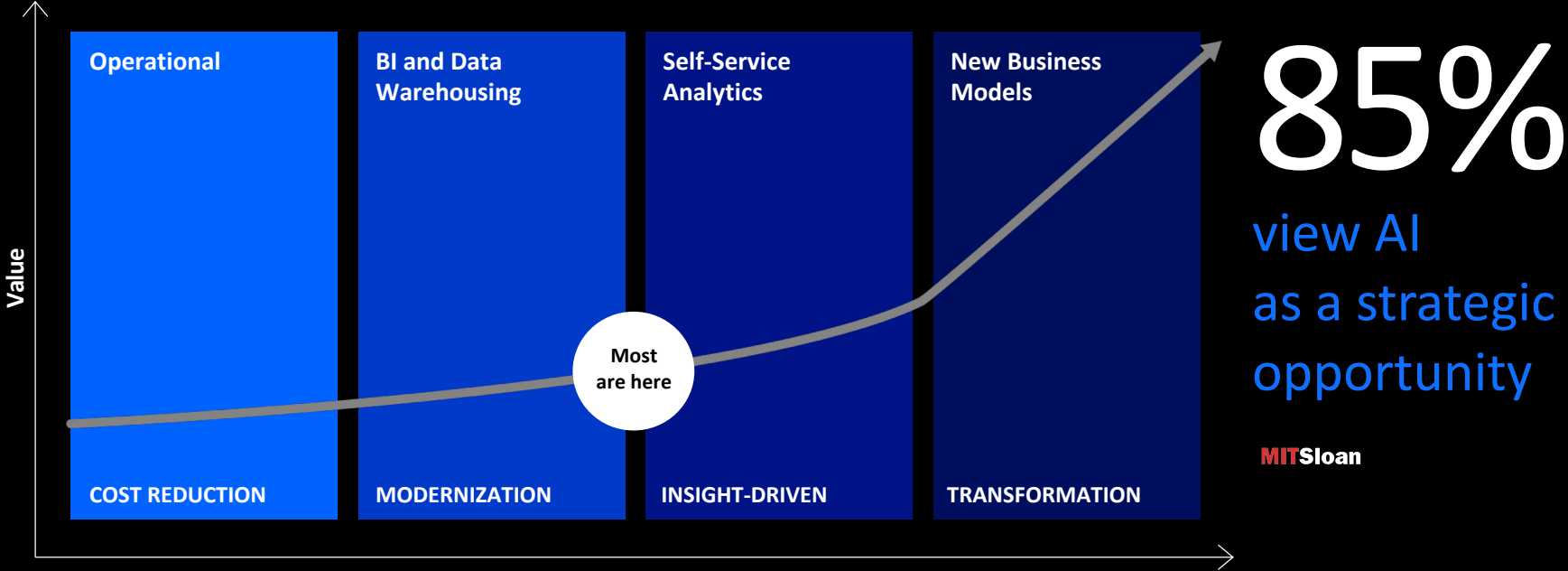
All business is becoming more data-driven

“Data will be your basis of competitive advantage”

– Ginni Rometty



# Our clients have declared the journey to AI a strategic priority.



# Welcome to the Era of AI



“...machines will be capable, within twenty years, of doing any work a man can do.”

– H.A. Simon  
*1965*

“In from three to eight years we will have a machine with the general intelligence of an average human being.”

– Marvin Minsky  
*1970*

# Databases and AI





# The IBM Db2 family and AI

# IBM Db2

## The AI database

- Accelerate the creation of AI applications
- Increase query performance
- A new paradigm in the db engine
- Intelligent database management



## Up to 10x better query performance

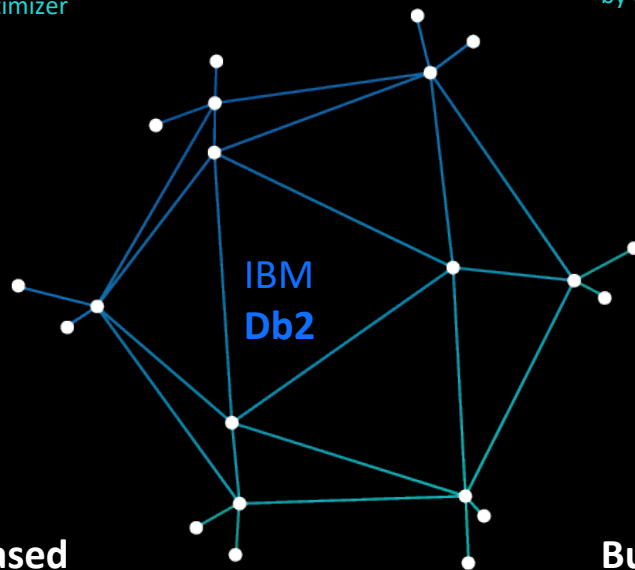
powered by an ML-Optimizer

## Enriched and faster data exploration

by using NLQ and Db2 ADE

## No data movement and a single view on all data

delivered by data virtualization



## Model complex relationships

by using Db2 Graph & SQL

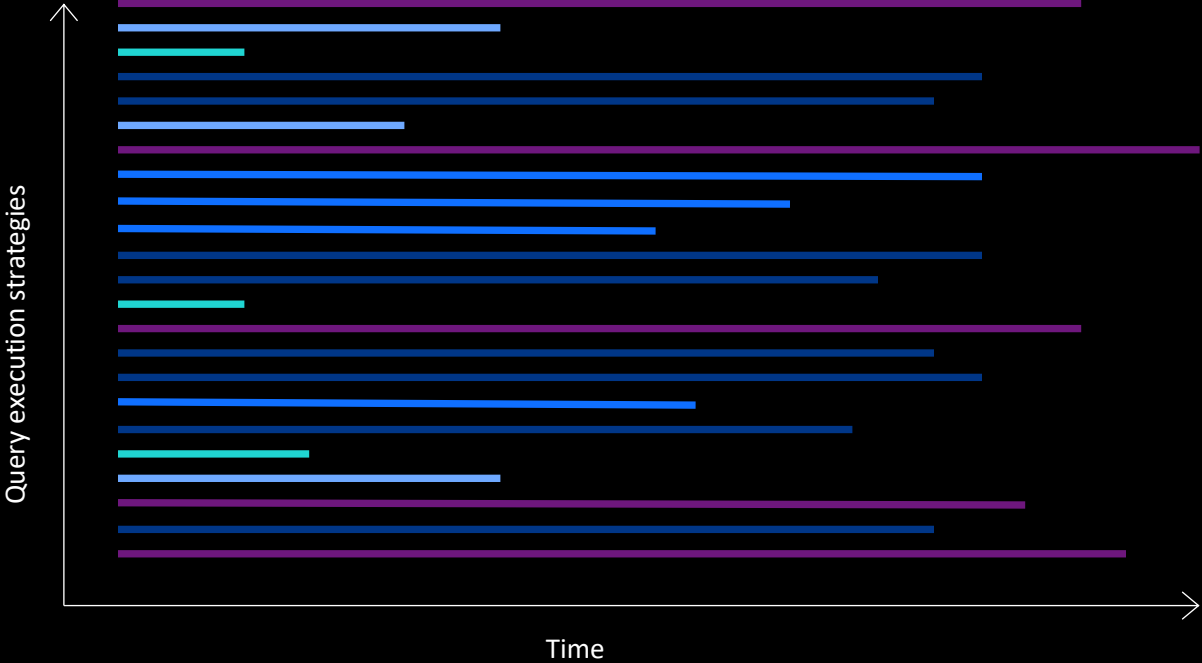
## Confidence-based query results

leveraging ML-SQL

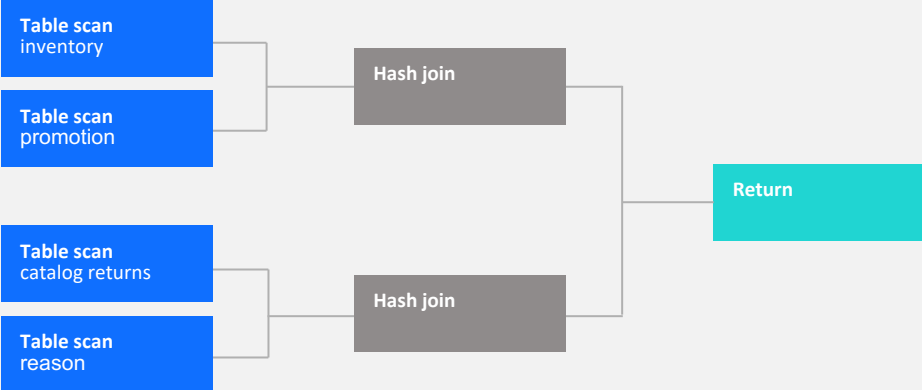
## Build AI based applications

by using Python, GO , JSON and Jupyter notebooks

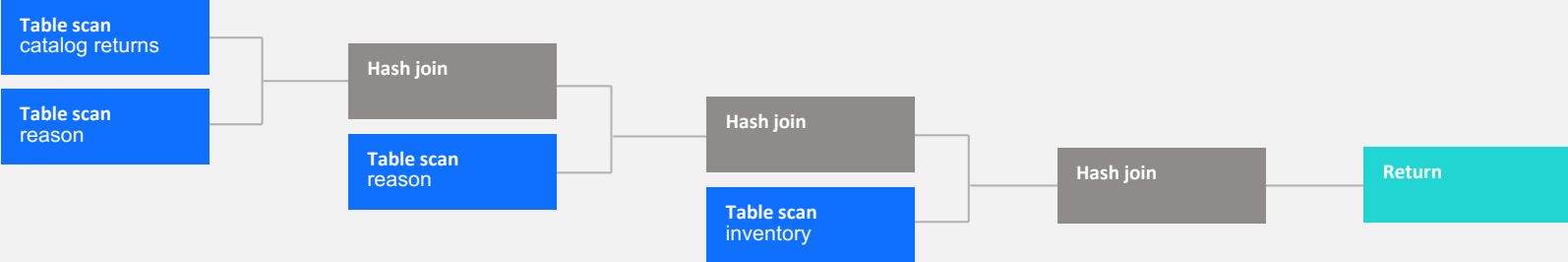
# Can we create databases that learn?



# Without machine learning



# With machine learning



Test 1 343 vs 2,927 = 8.5X faster

Test 2 281 vs 2,333 = 8.3X faster

## Fraud Analysis Dashboard

Repeat Query

Fraud Rate by Region



0% -> 2% 2% -> 4% > 4%

Db2 ML Optimizer **ENABLED**

Fetching Data...

Fraud Rate by Region



0% -> 2% 2% -> 4% > 4%

Db2 ML Optimizer **DISABLED**

Fetching Data...



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