

IOT : Data to Information & Information to Knowledge

Wael Elrifai
Director of Enterprise Solutions

Ask the following question...

“What *could* I do if I had perfect, universal, and timely information?”

5

Cs

of

IoT



Connections



Conversions



Centralisation



Cognition



Continuous improvement

Business Challenges

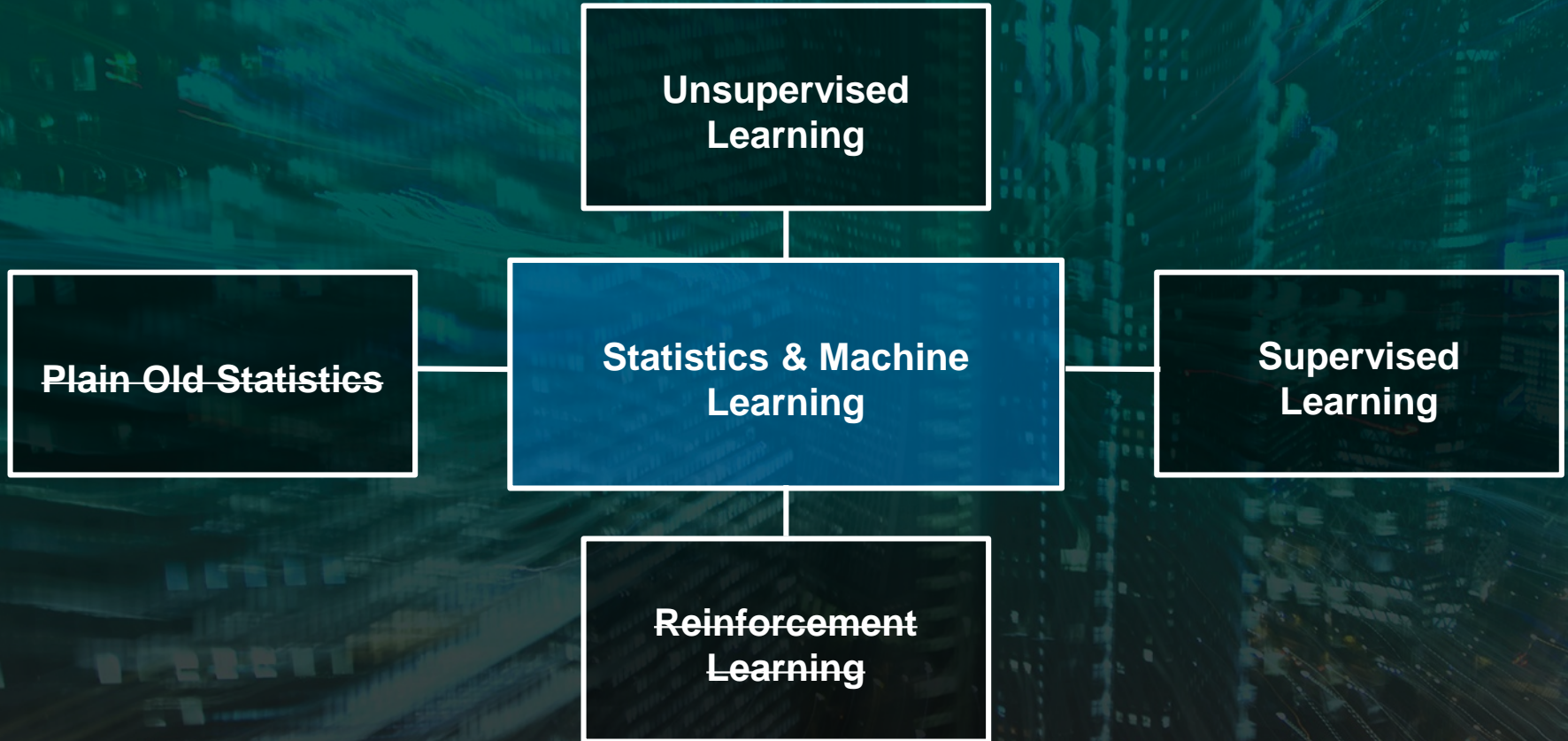
- Modernize and improve rail transportation reliability in the U.K
- Reduce maintenance costs

Use Case

- XaaS / Usage based pricing
- Predictive Maintenance (PdM) & Schedule Optimisation, Total Asset Optimisation
- Internet of Things
- Big Data Science



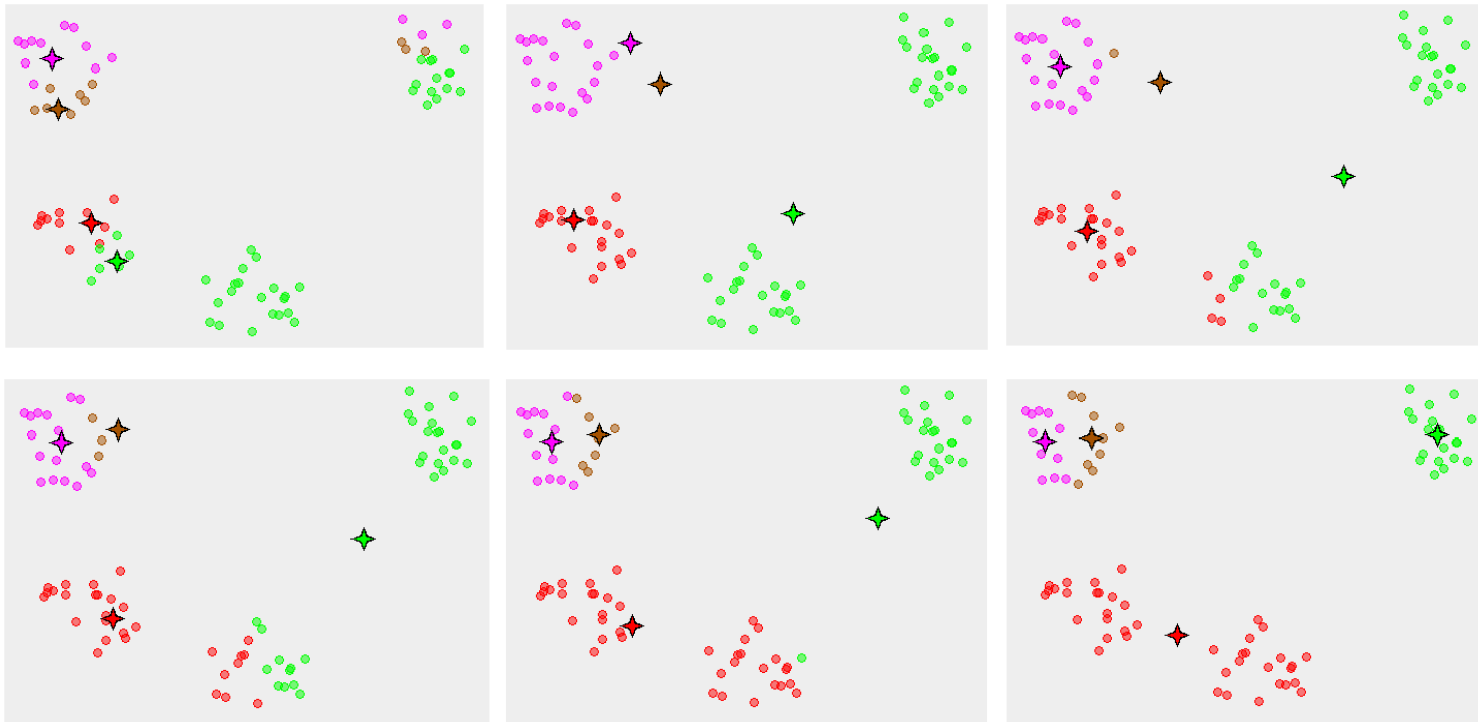
A (Very Rough) Outline of “Predictive”

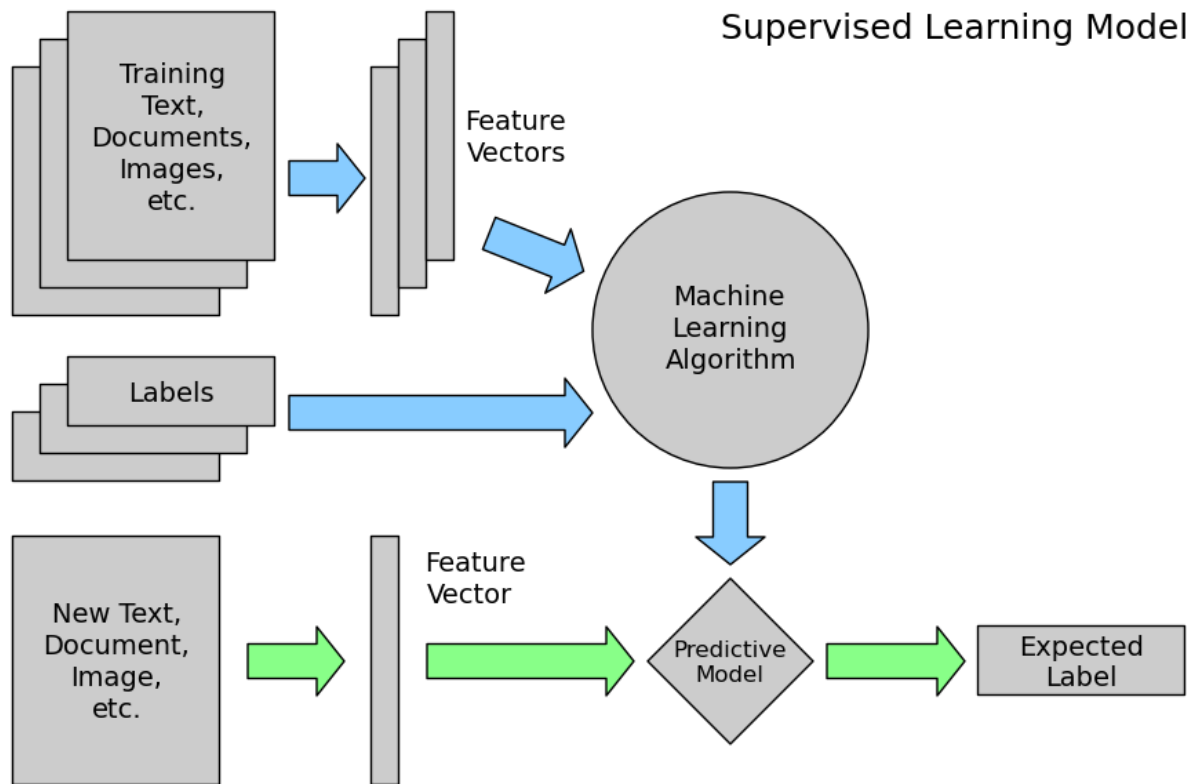


- Unsupervised learning
 - No target attributes.
 - We want to explore the data to find some intrinsic structures.

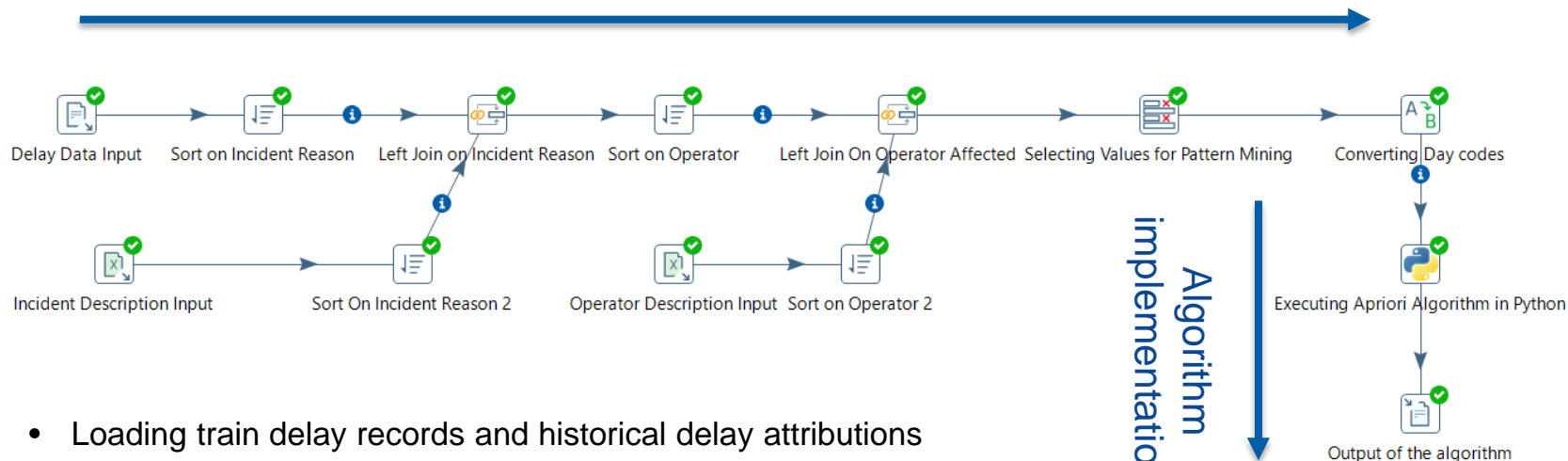
- Supervised learning
 - Discover patterns in the data that relate data attributes with a target attribute.
 - Use these patterns to predict the values of the target attribute in future data instances.

K – Means Clustering





Data injection and processing



- Loading train delay records and historical delay attributions
- Processing data for the algorithm application
- Operationalising prediction algorithm (Python) in PDI
- Outputting frequent delay patterns (location, train operator, reason) to a text file

- Data Catalog
- Community
- Data Studio
- Machine Learning
- GUI-based
- Don't be



Platform

Query Algorithms

Insights



Thank You