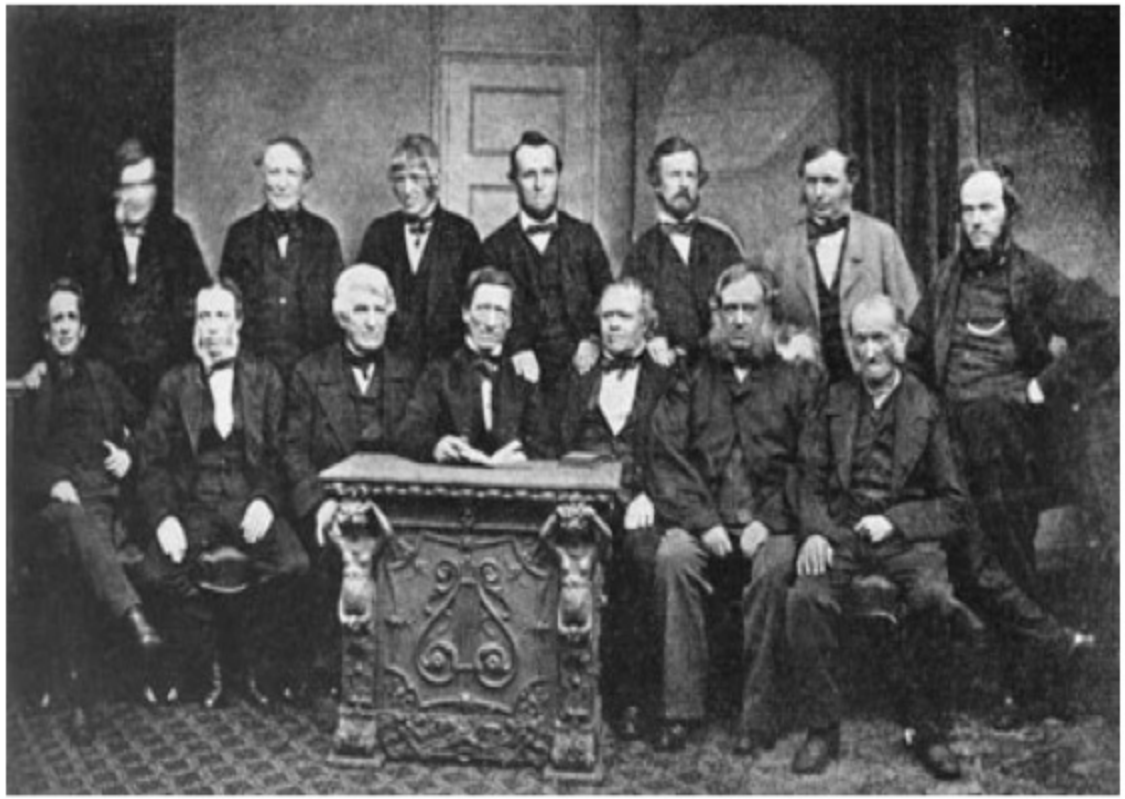
SPARK+AI SUMMIT EUROPE

Co-op's Transformation from Bricks & Mortar to AI with Databricks

Rob McKendrick, The Co-Operative Group

Co-op: Always a Business Disruptor

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PROFIT
BISCUITS, &C. £707,313.
PRESERVES, &C. £2,949,655.
CRUMPSALL
MIDDLETON
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FLOUR AND PROVENDER £10,577,100.
LEICESTER
LEEDS
BOOTS, SHOES, &C. £1,897,660.
CLOTHING, £885,081.
YOUR MONEY used in
YOUR OWN FACTORIES by
the Cooperative Wholesale Society
is the beginning of the
COOPERATIVE COMMONWEALTH

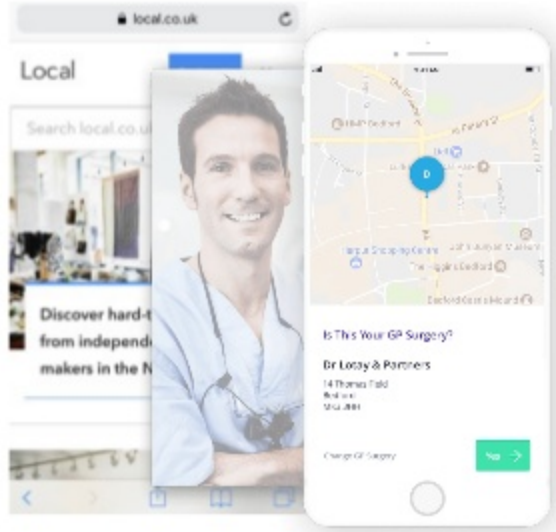

THE WORLD'S BEST
C.W.S. CYCLES
LIGHTER THAN AIR

Today's Retail: Massive Tech Disruption

Co-op's innovations…

Self-driving machines for delivery

In-aisle mobile payments



New digital services for members

Innovations Require a New Approach to Data

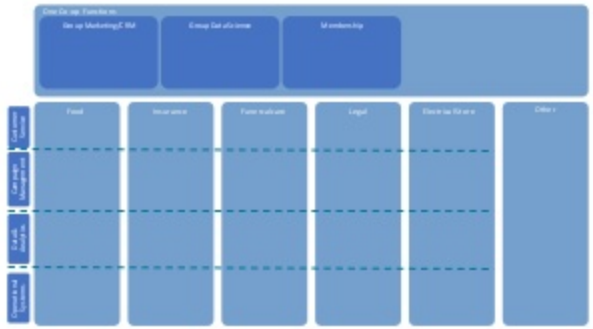
- Align data vision to creating customer value
- Embed trust and ethics into data usage
- Build a modern and agile data ecosystem
- Develop machine learning competencies

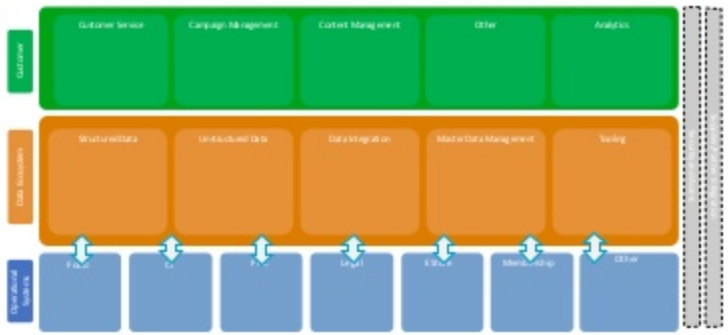
We agreed a new data vision

Our vision is to be totally **trusted** with data, and to use it to **create value** for our **customers**, **members** and **communities**

Talked about Data and Ethics

Modern and Agile Data Ecosystem





- Silo'ed
- On-premise

- Unified
- Cloud first
- Learn quickly through experiments

databricks

Power BI

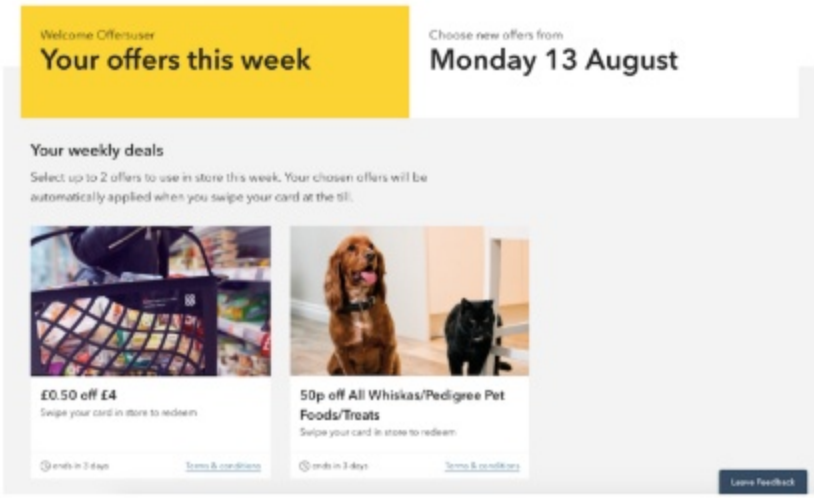
SQL

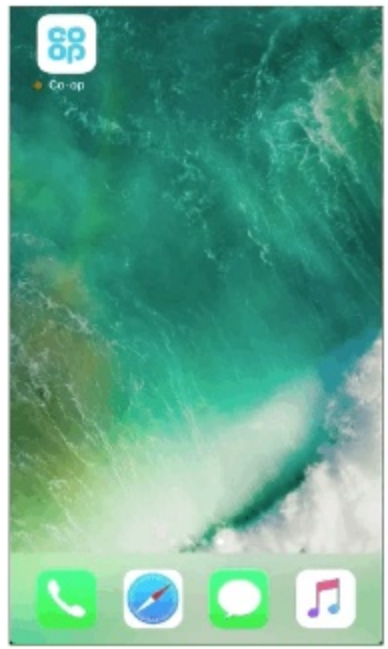
APACHE kafka

Accelerate ML competencies

- New tooling for data science users to leverage machine learning
- Achieve faster time to value by creating analytic workflows from data to interactive exploration to production
- Exploring collaborative working and increased pace in delivery
- Standardizing on Azure cloud services

Our first use case: Personalisation





These are pre-live designs for what people will see on their membership portal and app

Lots of models and analysis…

Product affinity

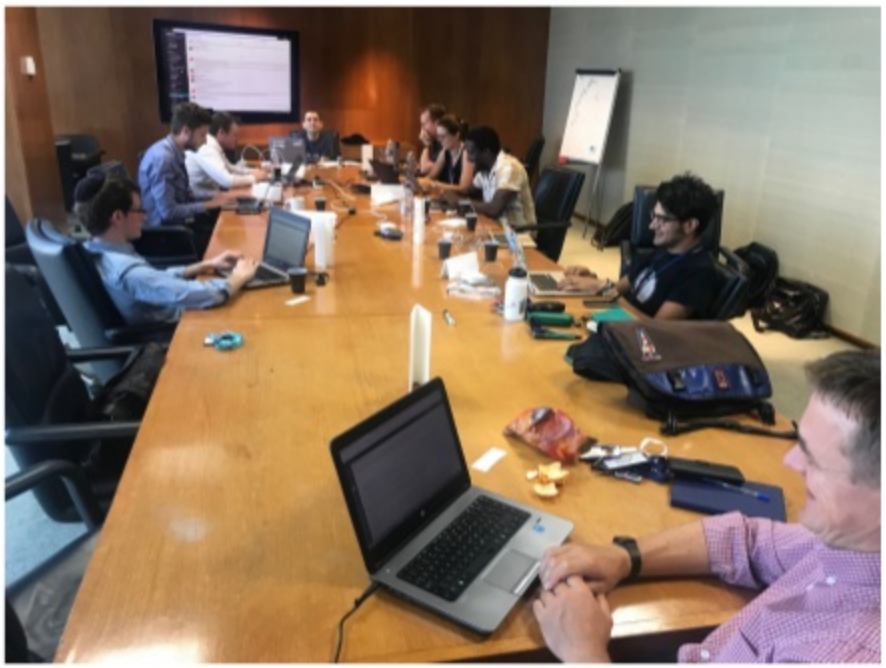
Availability

Favourite shops / times

Stretch

New product recommendation

Got going really quickly



- Databricks running in Azure
- Training for Data Scientists / Analysts / Engineers
- Atomic data transferred into Azure blog storage
- Started Machine Learning

Product affinity

Every product
Every member
Every store
Every basket

11 Trillion rows of intermediate data

Product affinity

Azure Blob
T-SQL

PySpark
Databricks

Force directed graph
d3js

Product affinity

Computed affinity for combinations of products for all stores for all weeks

Working more with Databricks

- We've already used ALS & Neural Networks for developing recommendation algorithms
- Other teams now looking at other business cases
- Our Digital offers trial goes live *very* soon
- And we'll learn out in the open https://digitalblog.coop.co.uk

Thank you…

- Co-op Retail Insight, Data Science, Data Engineering and Cloud Engineering
- Databricks
- Microsoft