A Capability Story

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Chief Data & AI Officer

Fonterra™

Dairy for life

Nov 2024

Data & AI

Enabling our Co-Op

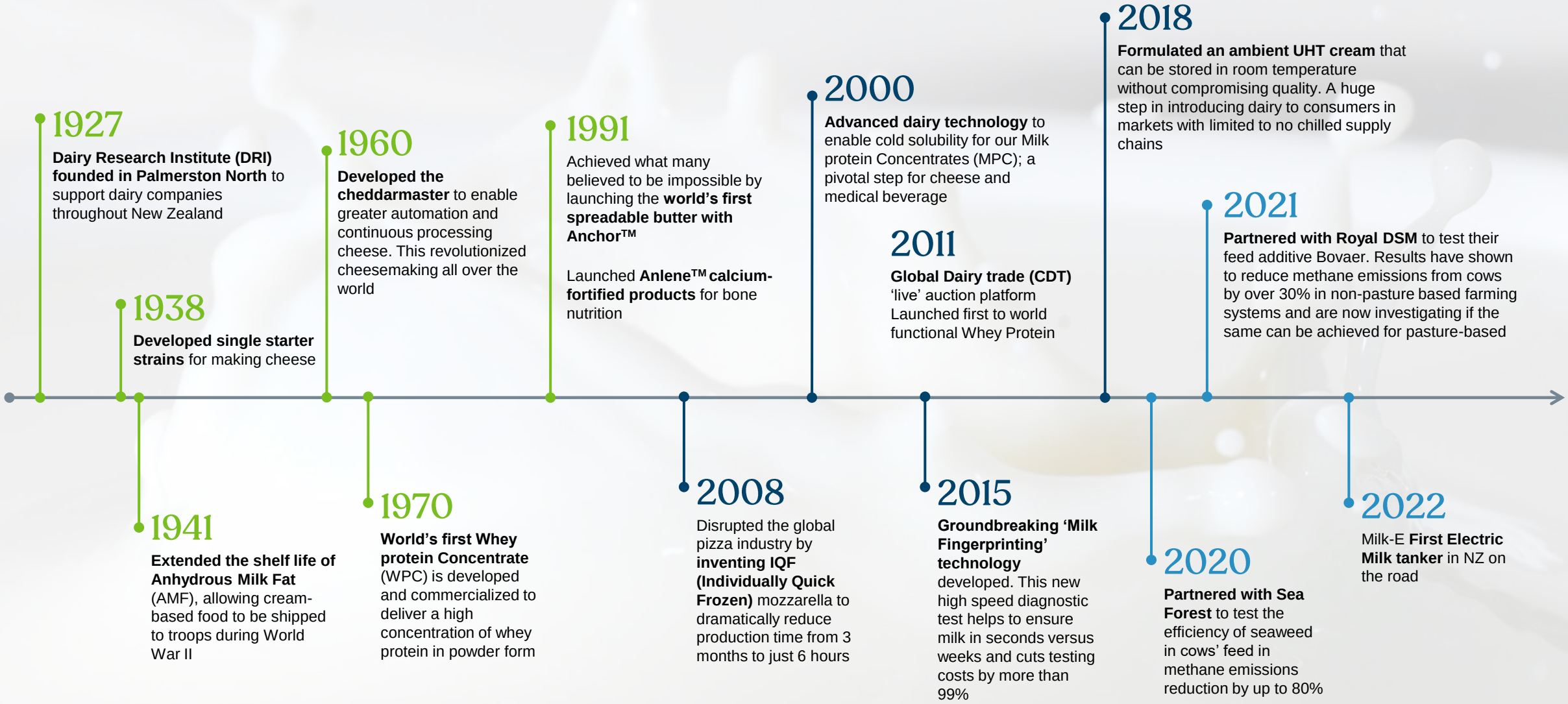
Our co-op

We're a dairy Co-operative, owned and supplied by farming families across Aotearoa, New Zealand.

Through the spirit of co-operation and a can-do attitude, Fonterra's farmers, along with almost 18,000 employees around the world, share the goodness of our milk through innovative consumer, foodservice and ingredient brands.

We have a long history of innovation

… and continue to push the boundaries of dairy science and technology solutions



Our Global Co-Op

China

REVENUE ($ MILLION)
6,2192

EMPLOYEES (FTE)
672

MANUFACTURING SITES
0

RAW MILK COLLECTED (MILLION LITRES)
0

Rest of Asia Pacific

REVENUE ($ MILLION)
9,012

EMPLOYEES (FTE)
1,809

MANUFACTURING SITES
4

RAW MILK COLLECTED (MILLION LITRES)
0

Rest of the World

REVENUE ($ MILLION)
4,619

EMPLOYEES (FTE)
1,829

MANUFACTURING SITES
5

RAW MILK COLLECTED (MILLION LITRES)
0

Total

REVENUE ($ MILLION)
24,580 FY22: 22,953

EMPLOYEE (FTE):
17,993 FY22: 19,608

MANUFACTURING SITES
45

RAW MILK COLLECTED (MIILION LITRES)
17,803* FY22: 18,455

Australia

REVENUE ($ MILLION)
2,239

EMPLOYEES (FTE)
1,534

MANUFACTURING SITES
8

RAW MILK COLLECTED (MILLION LITRES)
1,366

New Zealand

REVENUE ($ MILLION)
2,518

EMPLOYEES (FTE)
12,149

MANUFACTURING SITES
28

RAW MILK COLLECTED (MILLION LITRES)
16,333

* China & Rest of Asia 0.1% each

1 This geographical breakdown of revenue is for continuing businesses only rather than Total Group revenue of $23,425 million.

2 Figures represent raw milk collected during the financial year rather than milking season.

New Zealand manufacturing sites

34 sites total

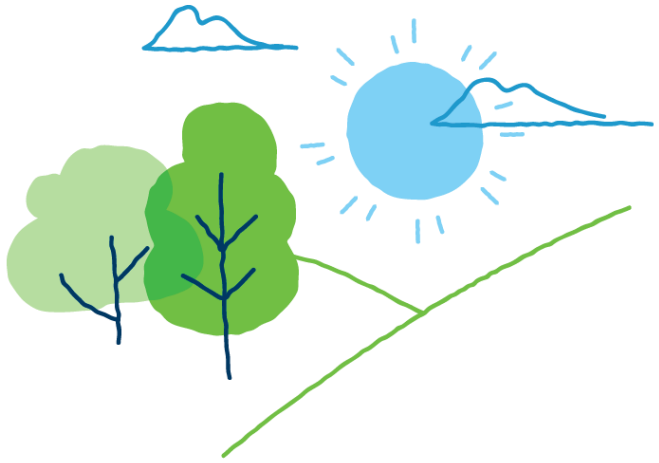
(manufacturing and Distribution)

17,803

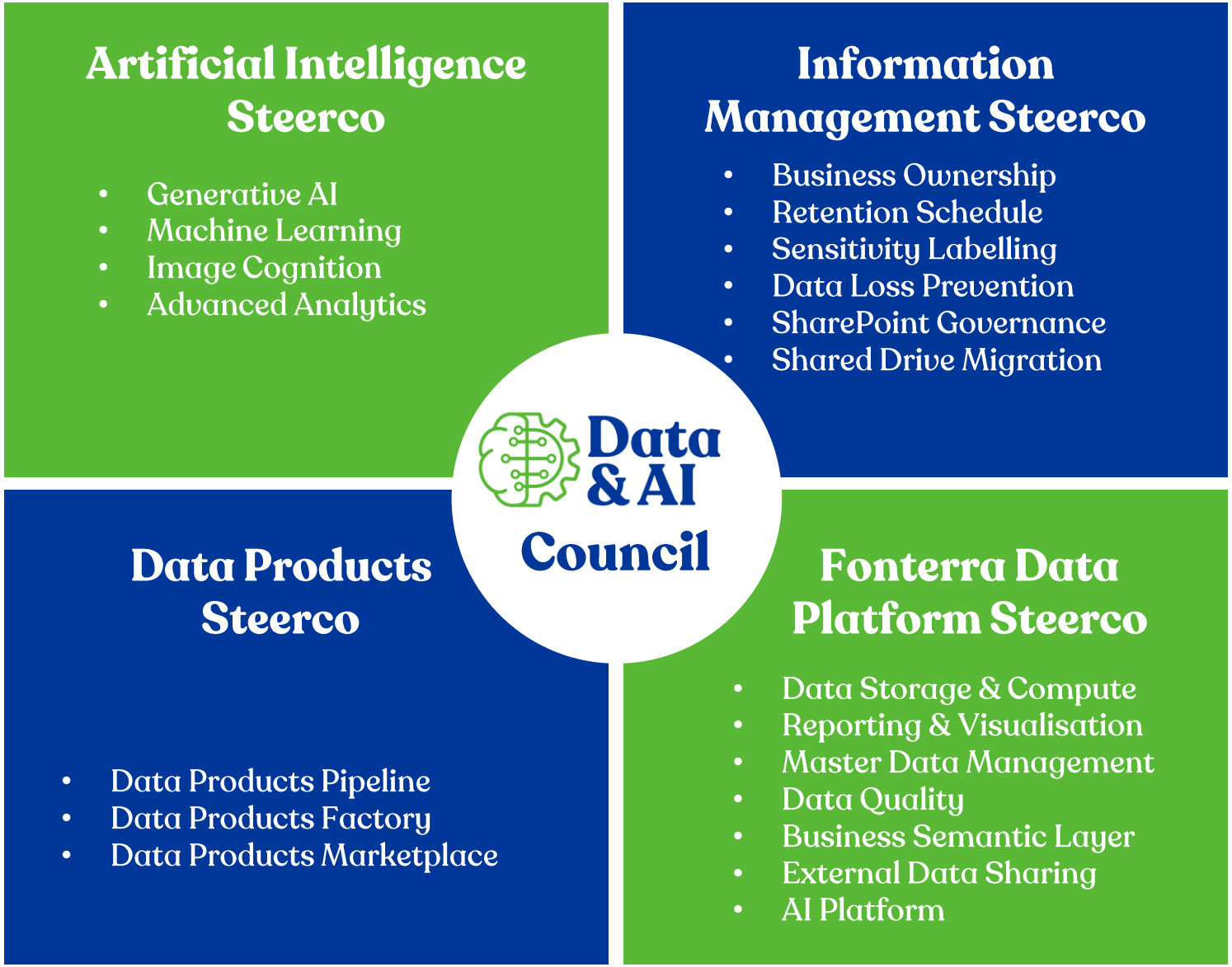
Raw milk collected (millions of litres)

A collaborative effort making every drop counts

- ✓ Governance
- ✓ Strategy & Implementation Roadmap
- ✓ Culture
- ✓ Foundation Infrastructure/ Architecture
- ✓ Information Management
- ✓ Data Products
- ✓ AI



Governance


Artificial Intelligence Steerco
Generative AI
Machine Learning
Image Cognition
Advanced Analytics
Information Management Steerco
Business Ownership
Retention Schedule
Sensitivity Labelling
Data Loss Prevention
SharePoint Governance
Shared Drive Migration
Data & AI Council
Data Products Steerco
Data Products Pipeline
Data Products Factory
Data Products Marketplace
Fonterra Data Platform Steerco
Data Storage & Compute
Reporting & Visualisation
Master Data Management
Data Quality
Business Semantic Layer
External Data Sharing
AI Platform

Strategy & Roadmap

Our Strategic Choices

- Deliver strongest farmer offering
- Unleash our ingredients engine
- Keep momentum in foodservice
- Invest in operations for the future
- Build our sustainability position
- Innovation to drive our advantage

Our Data & AI Vision

Our Data & AI capabilities are leveraged to their fullest potential across the Co-operative

Recommendations

- Strengthen Data Foundations
- Simplify the Data & AI landscape
- Enable self-service & business ownership
- Enable Data Products
- Innovate and optimise using Artificial Intelligence

Evolve the Data & AI Operating Model

How this helps

- Data Storage & Compute
- Reporting & Visualization
- Master Data Management
- Data Quality
- Business Semantic Layer
- External Data Sharing

- Minimises duplication of Data & AI technology solutions
- Simplified architecture
- Integrate data to deliver enterprise Data Products

- Business self-service of Data & AI through a well governed ecosystem
- Sharing & collaboration with internal & external stakeholders

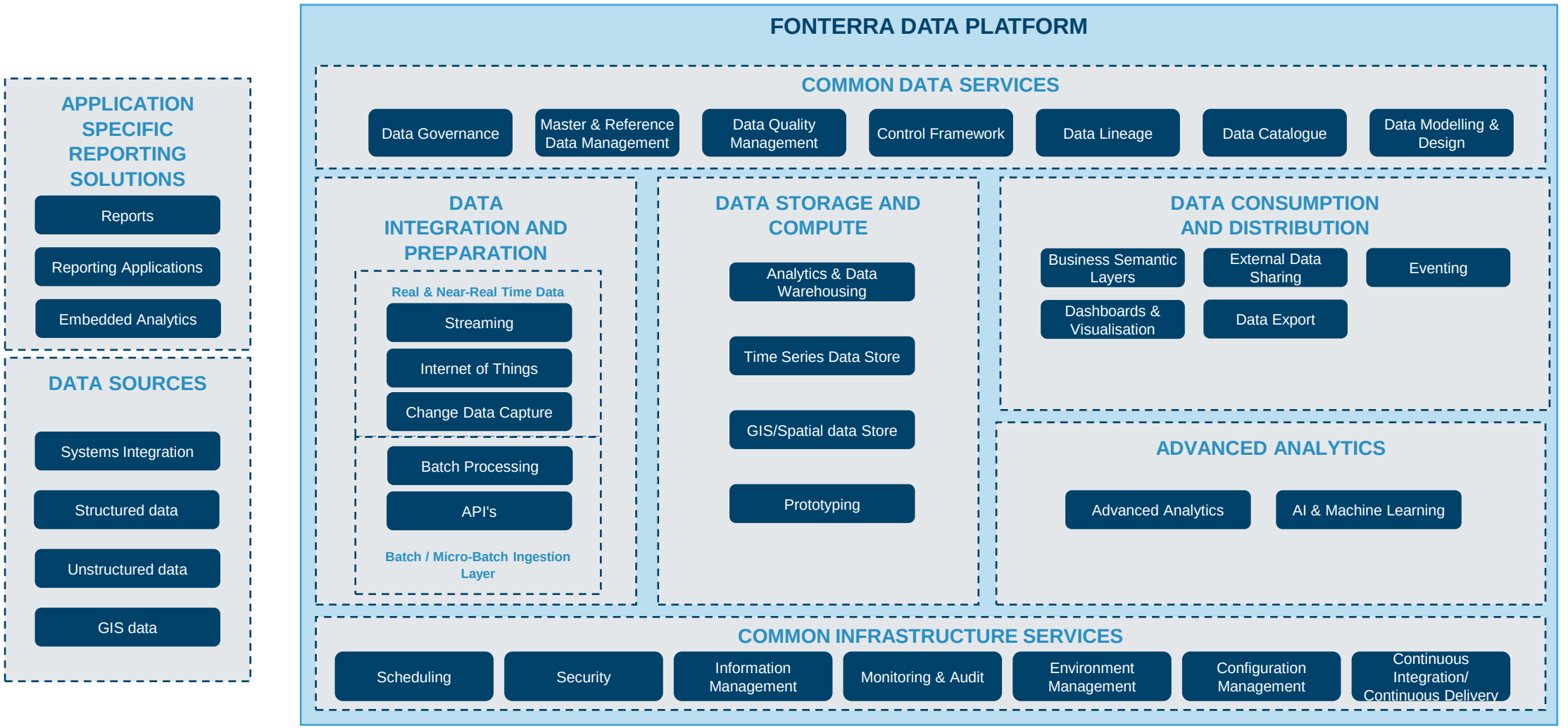
- Trusted & reusable Data Products
- Consistent terminology & ways of working
- Avoid duplication
- Cost efficient Data Product Factory

- Drive value from investments in foundational capabilities
- Transform the way we work with AI
- Failing fast

Culture

- Manage data as an enterprise asset
- Agility – a function of experimentation and failing fast
- Partnership
- Data stewardship
- Build once, use it many times
- Curious mindset
- Co-operative spirit
- International Love Data Week

Foundation infrastructure & architecture



What is a Data Product?

A trusted, reusable data asset with clearly defined purpose that delivers business value.

Foundational

e.g. Cost Centre, Customer Master

Integrated

e.g. Unconsolidated P&L

End User

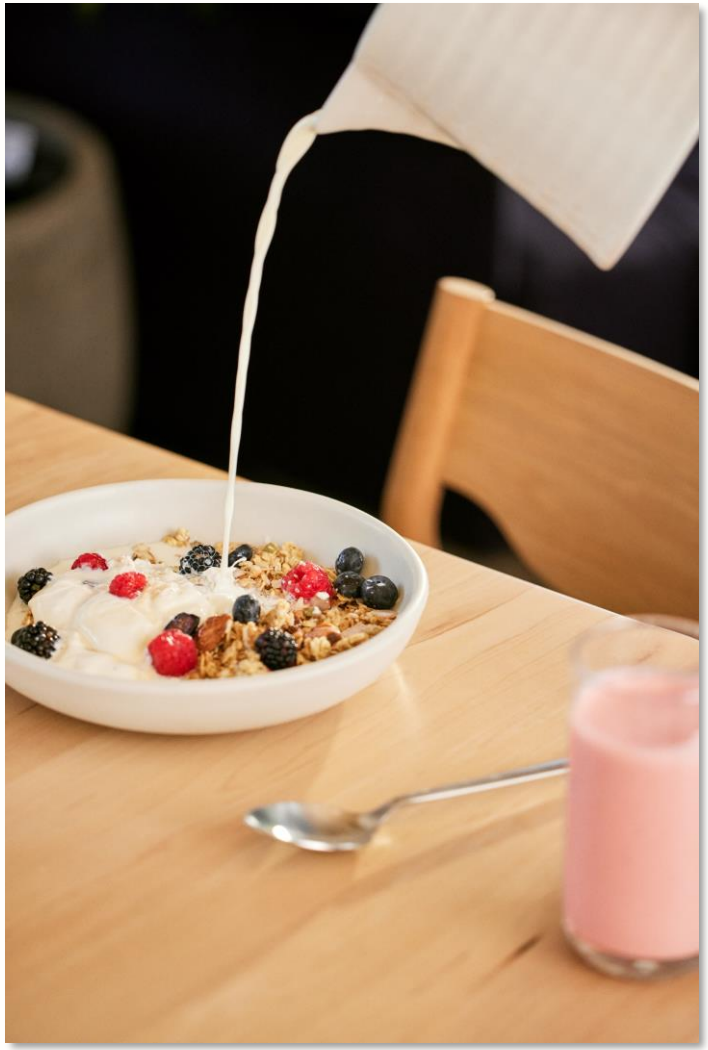
e.g. Ingredients Performance PowerBI Report

Enhanced for AI

Data Products need to be:

- Owned
- Discoverable
- Accessible
- Reusable
- Valuable
- Reliable
- Governed
- Understood in business terms

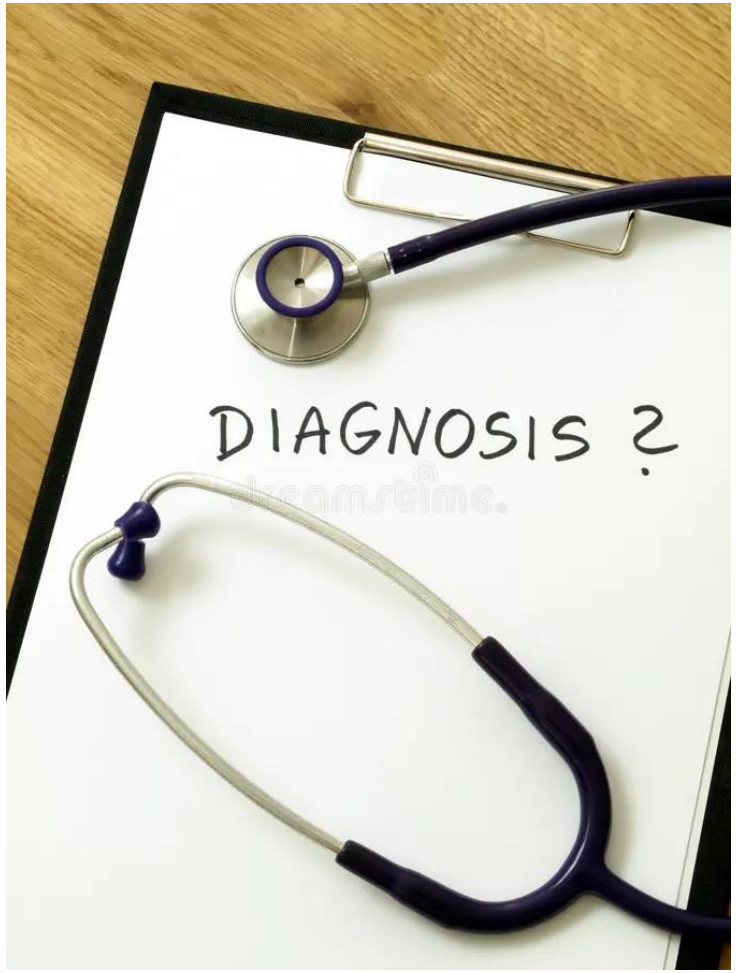
Look around you… everything you see is “grown” or “mined”



grown

mined

One can categorize data as "Structured" and "Unstructured"



Unstructured

Structured

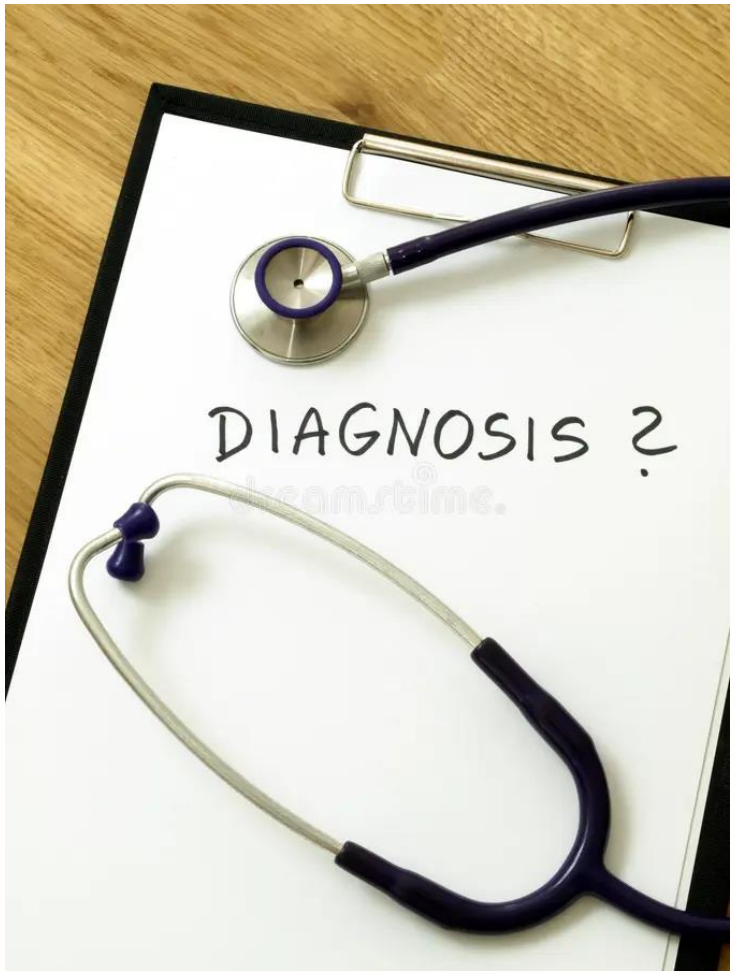
Clinical Notes

Associated Diagnoses: None .
Subjective:
11/30/15: 80 who presented to the hospital with 3 days history of fever and cough. She was diagnosed with CAP and was started on antibiotics. Unfortunately, she had a significant episode of hypoxemia and had to be intubated. Pinkish frothy sputum was reported after intubation. Patient has a remote history of smoking.
.....
11/30/2015 06:00 Transparent Physical Examination General: intubated and sedated. Eye: Pupils are equal, round and reactive to light, Extraocular movements are intact. HENT: intubated and sedated. Neck: Supple, No lymphadenopathy. Respiratory: bilateral rales. Cardiovascular: Normal rate, Regular rhythm, No murmur. Gastrointestinal: Soft, Non-distended. Musculoskeletal: intubated and sedated. Integumentary: Warm, Dry. Neurologic: intubated and sedated. Results Review Labs Last 24 Hrs SELECT Labs ONLY
.....
12/01/2015 06:52 - XR Chest PA AP Portable IMPRESSION: Diffuse bilateral airspace opacities. Interval improvement. Impression and Plan 1- Acute respiratory failure 2- Bilateral infiltrate: pulm edema vs. worsening pneumonia vs. alveolar hemorrhage (bloody sputum and HB dropped 2 grs) 3- Pneumonia 4- COPD: seen on CT chest 2014 5- Troponin elevation: troponin went up to 2 due to her respiratory failure. However, her echo is very suggestive of CAD. Appreciate cardiology. 6- CHF: sudden bilateral infiltrates and high troponin Plan Increase diuresis US of left chest and tap if needed bronch.....

Lab results

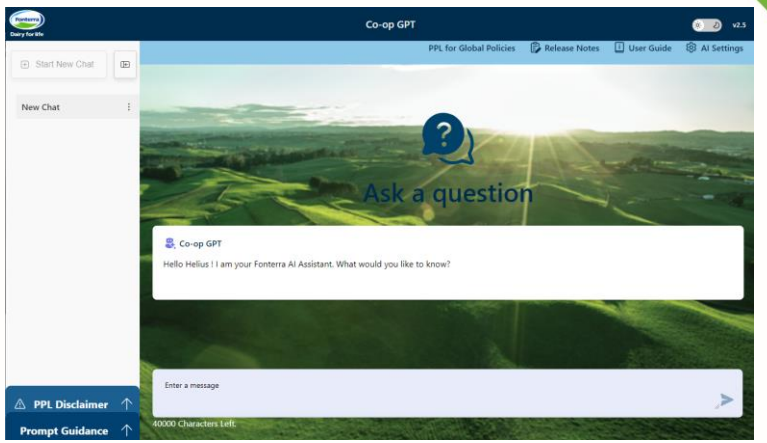
Blood work	Patient test results	Normal range	Interpretation of the tests: elevated (↑), low (↓)
Ferritin	10 µg/l	18–350 µg/l	↓
Hemoglobin	72 g/l	138–172 g/l	↓
Red blood cell count	3.35×10^{12}/l	$4.4–5.8 \times 10^{12}$/l	↓
Hematocrit	25.8%	41–50%	↓
Mean corpuscular volume	77 fl	78–102 fl	↓
Mean corpuscular hemoglobin	24.6 pg	27–33 pg	↓
Mean corpuscular hemoglobin concentration	318 g/l	320–360 g/l	↓
Red blood cell distribution width	15.4%	11.7–14.2%	↑

At the Co-op we successfully used GenAI on "Unstructured" Data



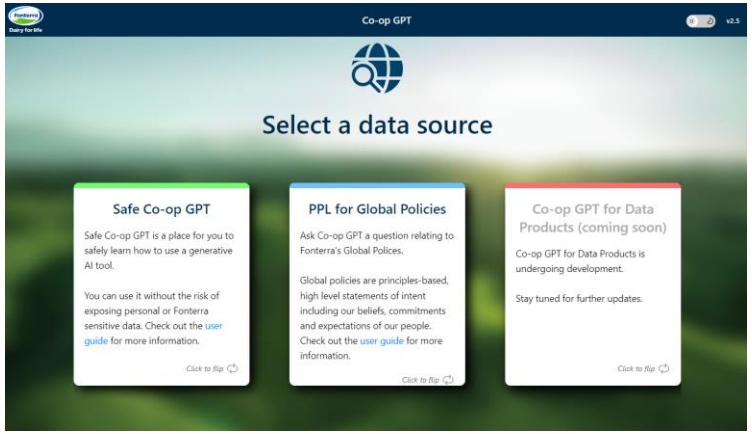
Unstructured

Policies, Standards, Process Assistance



Structured

What were my top selling products by margin and segment over the last 12 months?



Using GenAI today – what is good and still needing work

Use-case family	Generative models' current usefulness	Example use cases
Prediction / forecasting	Low	Risk prediction, customer churn prediction, sales / demand forecasting
Decision intelligence	Low	Decision support, augmentation, automation
Segmentation / classification	Medium	Clustering, customer segmentation, object classification
Recommendation systems	Medium	Recommendation engine, personalised advice, next best action
Content generation	High	Text generation, image and video generation, synthetic data
Conversational user interfaces	High	Virtual assistant, chatbot, digital worker

Gartner

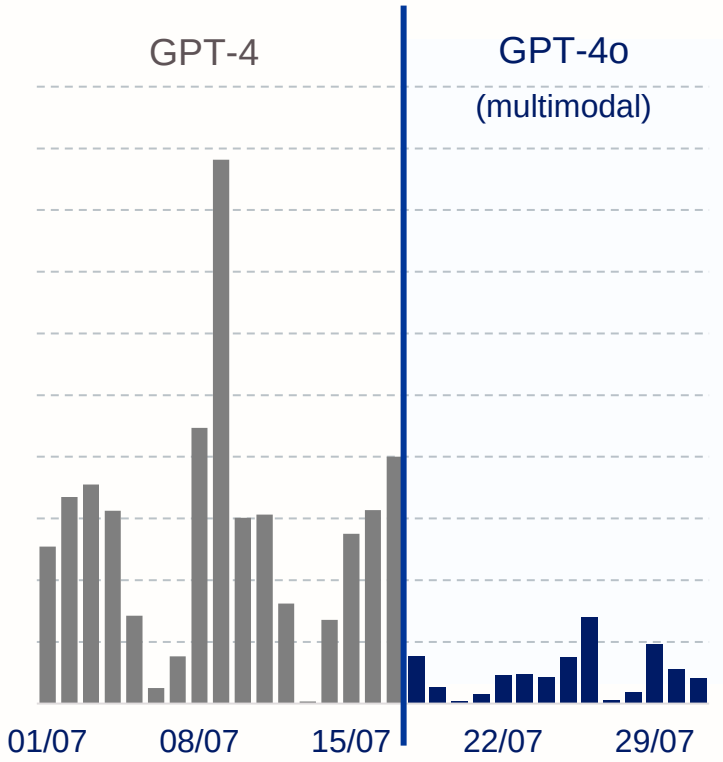
GenAI is just one of the AI techniques

	Common AI Techniques					
Use-case family	GenAI	Nongenerative machine learning	Optimisation	Simulation	Rules / heuristics	Graphs
Prediction / forecasting	L	H	L	H	M	L
Decision intelligence	L	M	H	H	H	M
Segmentation / classification	M	H	L	L	H	H
Recommendation systems	M	H	M	L	M	H
Content generation	H	L	L	H	L	L
Conversational user interfaces	H	H	L	L	M	H

Gartner

Co-op GPT leveraging Microsoft/ OpenAI partnership

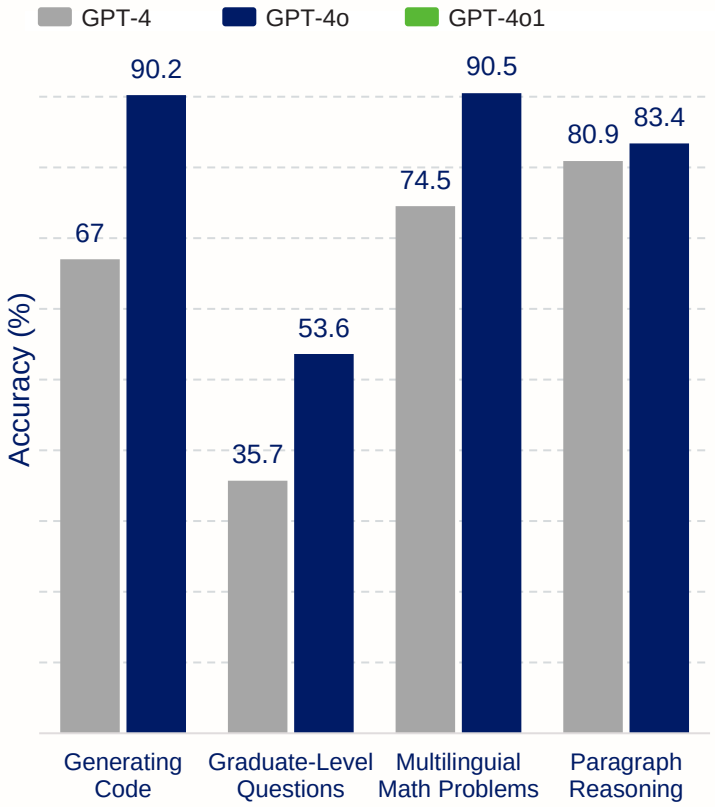
Daily Cognitive Services Cost



↓60% Decrease in Daily Cognitive Services Cost

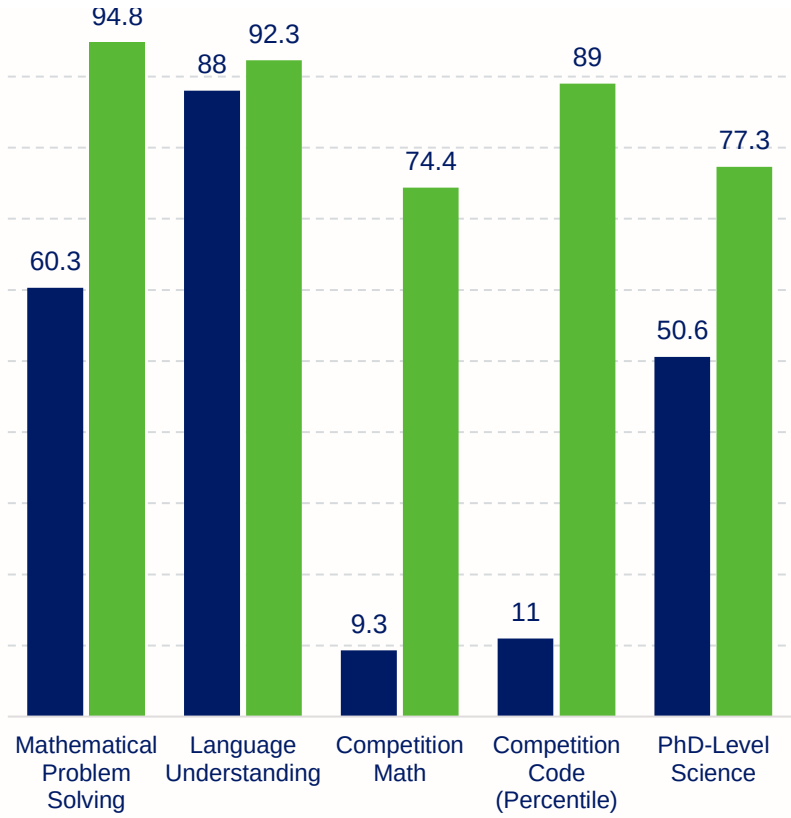
~1700 Monthly unique users

Evaluating GPT-4o



GPT-4o1 outperformed GPT-4o in **54/57** evaluations

Evaluating GPT-4o1



GPT-4o1 outperformed human experts in PhD-Level Science

Not Fonterra specific metrics. Data adapted from: Hello GPT-4o | OpenAI Learning to Reason with LLMs | OpenAI

Using GenAI today – our approach

- Adopting GenAI for use cases the technology is good at: **unstructured Data**: CoPilot, Co-OpGPT, built-in existing platforms (Salesforce/ ServiceNow/ SAP/ Rockwell/ Schneider)
- Getting Data Products ready for when GenAI is able to effectively be used on **structured data**
- Building capability to execute “Text to Action” – Agentic AI
- **Uplifting business capability** through education and continue learning on how to use GenAI (e.g. prompt engineering, grounding)
- **Changing the ways of working:** not just using GenAI as a smart search engine but generating new content
- Use/ build **Machine Learning** solutions for use case families GenAI is not a good fit today
- We built an **agile architecture** allowing us to safely and responsibly leverage the current strengths and pace of change of GenAI models

Thank you!