



G - Cloud 15

Faculty Frontier

Lot 2b - Service Definitions

We set Faculty up
10 years ago
because we thought
that AI would be
the most important
technology of our
time.

Our sole purpose is to help our
clients adopt it successfully

That's all we've ever done.

No chasing hype cycles. Just AI.

We take it very seriously.

And we've done a lot of it!



Ten years of Faculty

>400

AI product builds

>60

AI strategies signed off

>500

PhD Scientists supported into
applied AI careers in industry

For ...

>300

clients, in

>20

countries

By our team of ...

>400

AI specialists, with

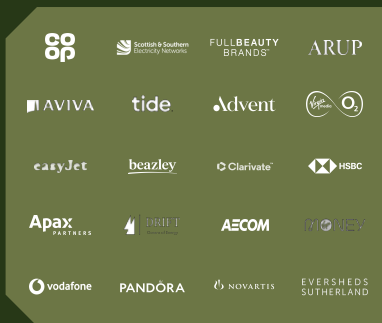
>100

STEM PhDs between them

Ten years of frontline impact

We care deeply about the impact of our work.

We feel privileged to have supported some of the most important organisations in the world, to grapple with the big challenges of our age.



Delivering commercial returns

We have a track record of delivering sustained returns from AI, right across the economy. From banks, insurers, airlines and retailers, to law firms, energy and pharma companies.



Supporting critical public services

We built the award winning NHS Covid-19 Early Warning System. We are the AI partner to UK armed forces, national security services, and the national grid.

OpenAI

ANTHROPIC

AISI | AI SECURITY INSTITUTE

Making foundation models safe

We are safety partner to frontier labs like OpenAI and Anthropic, and red team their most advanced models to keep them safe.

The best AI team you can appoint

You get the best results when you find people who have deep technical ability and a problem solving mindset, and you focus them on important problems.

We built Faculty to do just that.

Faculty is a go-to career choice for elite talent in the UK. 10% of the UK Science and Maths PhD population apply to our talent programme each year.

Our client teams combine the full mix of data scientists, engineers strategists, designers, user researchers and others you need to run AI programmes that succeed.

They bring a technical depth and a breadth of expertise that is unrivalled by other services firms.



Faculty have the strongest Data Scientists out there”



ROLLS-ROYCE



Faculty’s technical prowess is 40 steps ahead of anyone else we’ve come across”

NHS



Everything you need to get results from AI

We've learned a lot about what it takes to implement AI successfully over the years.

Often from bitter experience - we've lived through our fair share of stalled PoCs in the past.

So we only work with best practice methodologies, to make sure things are done to the highest standard.

And we have designed a service proposition that covers all the bases to support you from first thoughts, through to critical business systems powered by AI.



Develop a robust AI strategy

Identify how to use AI to accelerate your strategy, and put the plan in place to execute on that.



Implement AI into your core processes

Enhance your processes with AI systems that are high-performing and safe.



Ensure your AI systems are safe

Verify that where AI is used in your organisation it is trustworthy, safe, transparent and firmly under your control.



Build the AI Capability of your team

Ensure that teams at every level of your organisation have the knowledge and skills they need to thrive in the AI era.

But don't take our word for it...

Some of our customers are at the start of their AI journey. Others are amongst the most sophisticated AI organisations on the planet. We love working with them all. They love working with us too.



"Faculty have cared about AI safety for a long time and so they've been a natural and wonderful partner for us to work with. We really appreciate their efforts contributing to red teaming, which will ultimately help us ensure that our latest and greatest models are designed to work for the wide benefit of humanity."

Sam Altman,
CEO



"The Faculty team were high-calibre, engaged, and flexible. They understood what the use case was that we were looking to develop, and worked with us to continually improve it. It was a distinctive contribution that was not made by anybody else to that particular problem that we needed to resolve."

Sir Simon Stevens,
former CEO



"The whole process of working with Faculty is more than just the project. I feel there's something else there, an 'X-factor' that Faculty brought to this that's bigger than just the outcome."

Ben Medland,
Founder & CEO



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Some of our customers are at the start of their AI journey. Others are amongst the most sophisticated AI organisations on the planet. We love working with them all. They love working with us too.



"Faculty have been instrumental in helping us think about data and AI and where it can be used to transform lives, not just of the people we care for, but also of those delivering care."

Ben Maruthappu,
Founder & CEO



"Faculty were very hands-on, and they just rolled their sleeves up. We felt like one team. And that was really an uplifting capability for us."

Ming Tang,
Chief Data & Analytics Officer



"Faculty provided the Data Science and ML Engineering expertise to help us move from a standing start to a fully-operational, high-performance AI system in six months."

Alberto Villaverde,
Former Executive VP of Data



Introduction to Faculty Frontier

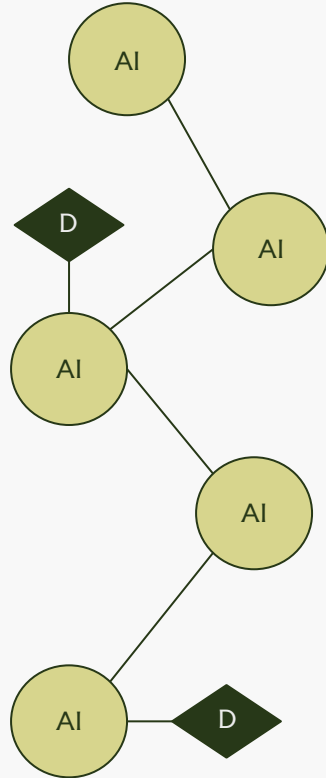


We've taken 10 years' experience and built this into our simulation platform, Frontier:

Frontier is an **AI powered simulation** technology which improves the speed, quality and execution of decisions across an organisation.

Enabled by **agentic features** that supports end users with intuitive workflows.

1 - COMPUTATIONAL TWIN



2 - DECISION HUB

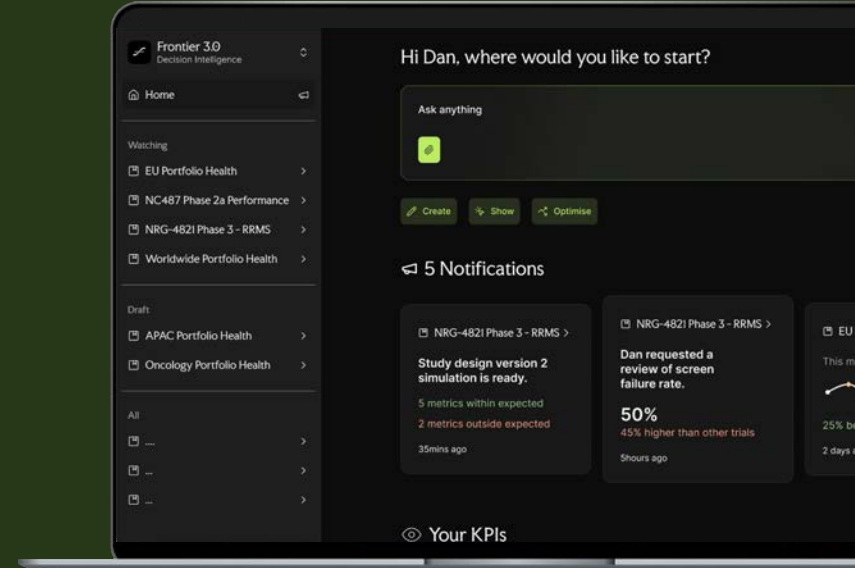
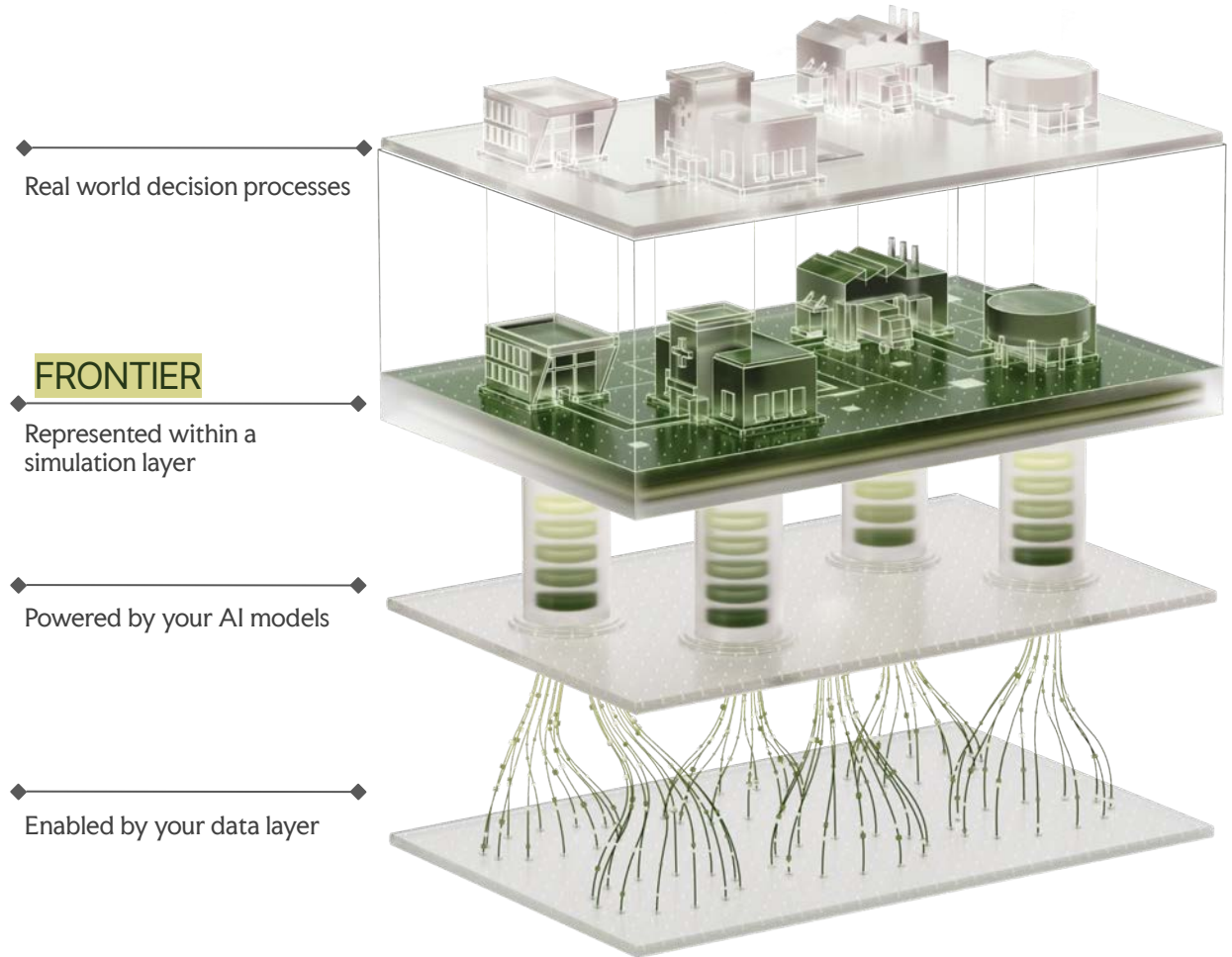


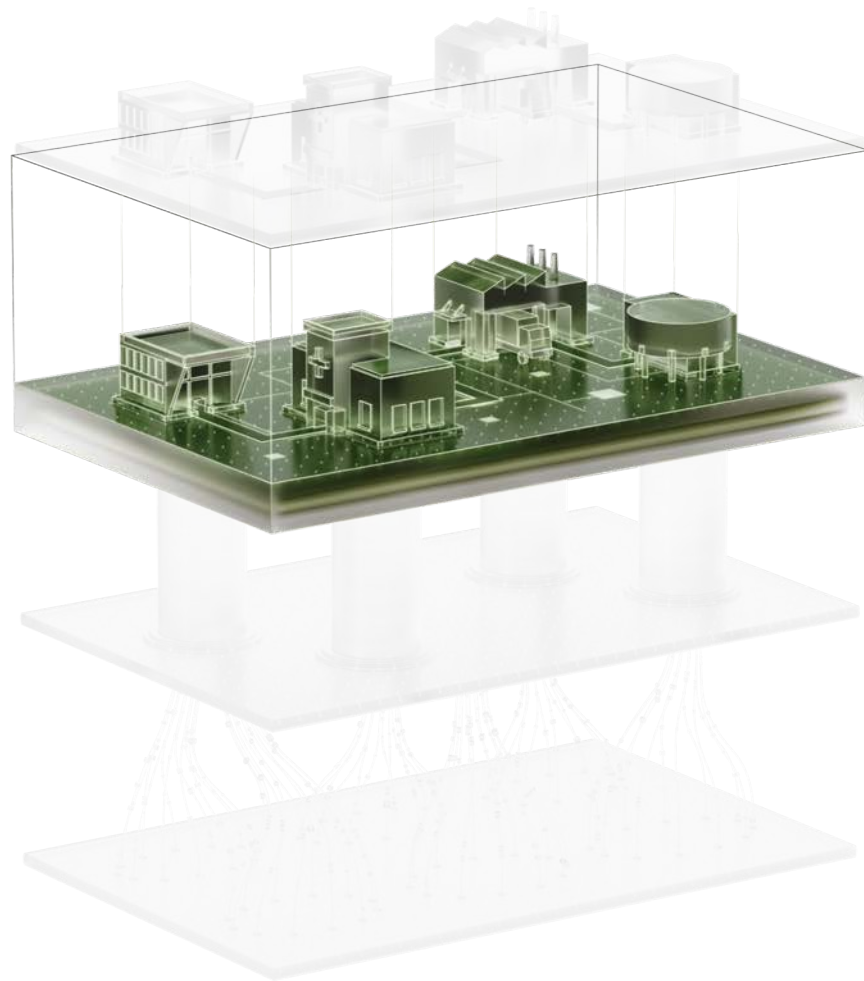
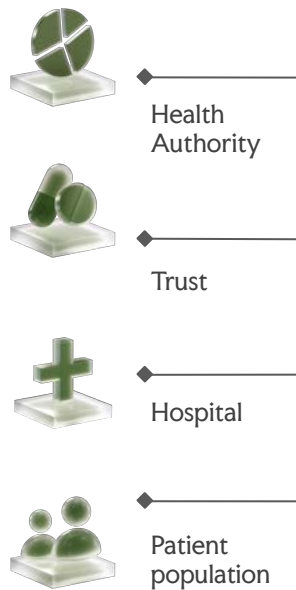
Figure: An example of Frontier deployed for Decision Intelligence in Clinical Trial Operations.

The Frontier simulation layer connects data and AI models into a computational twin of complex & interconnected real world decision processes



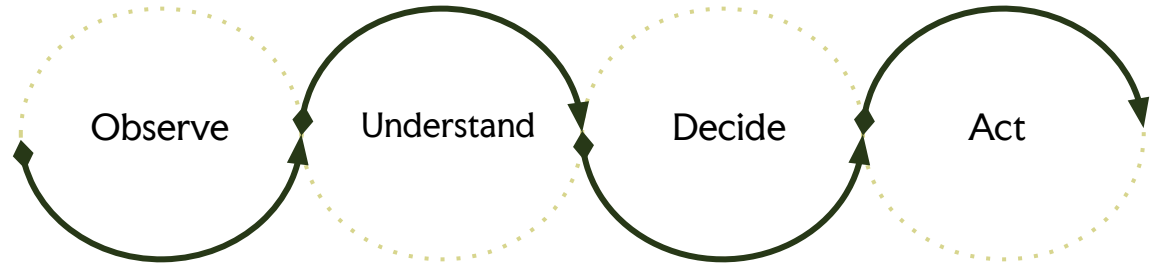
While allowing users across hierarchical levels to share a coherent and consistent worldview

Coherence ensures that all metrics and forecasts derive from the same underlying system state, so decision-makers at every level (from individual operations to enterprise level) work from a **single source of truth** rather than reconciling conflicting analyses.



Supported by four features that allow users to complete OUDA loops

The **OUDA loop** is a decision-making framework derived from Colonel John Boyd's OODA methodology, which enables decision-makers to achieve **measurable objectives through structured, agile decision cycles** - precisely decomposing these loops allows us to reconstruct and optimise them for speed, throughput, granularity, and accuracy.



Enterprise
twin

Decision
simulation

Decision
optimisation

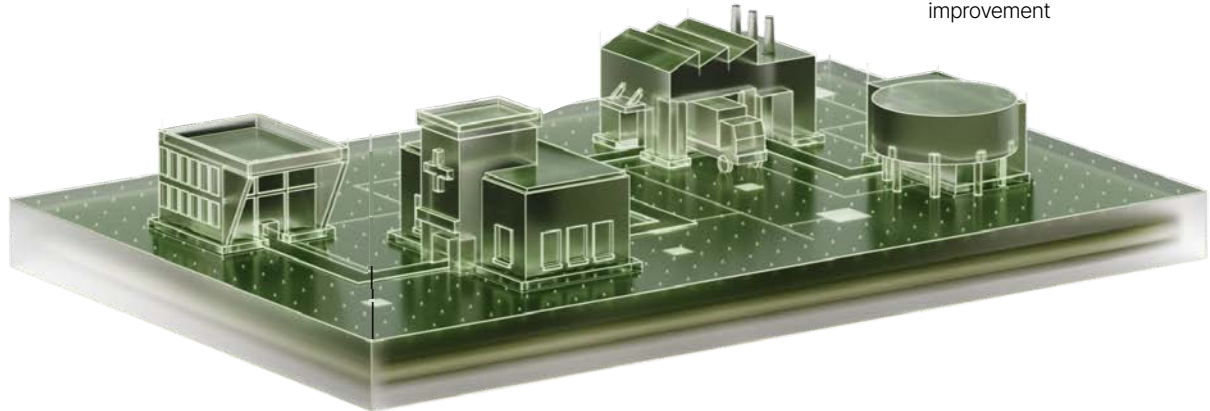
Decision
deployment

Connects data and AI models into a twin that can recreate past states of the org and model likely futures

To **simulate impact** of different **actions** and **assumptions** on business **KPIs** and metrics

To **identify optimal** decision strategies to that balance global vs. local objectives

To disseminate actions, complete **feedback loops**, and enable continuous improvement



Decision Agents are a natural extension of decision intelligence as part of our mission to help customers make better, faster decisions

Frontier provides agents with a **virtual testing environment** to simulate the impact of different decision strategies in context, while adhering to safety guardrails

The value of the combined Frontier + Agents proposition is threefold:



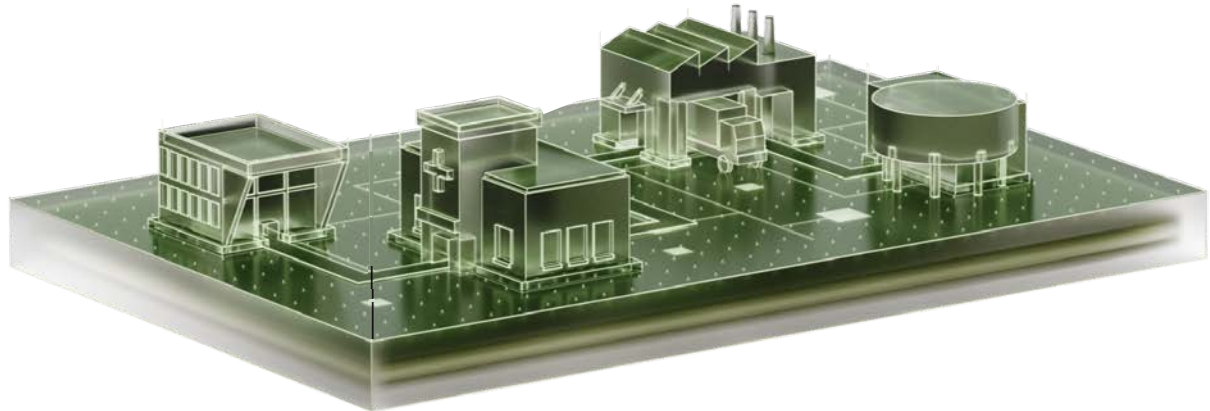
Frontier **grounds Agents in real world decision processes**. This provides deeper situational awareness and understanding of context.



Frontier provides Agents with the **ability to look into the future** by running different scenarios / simulations to identify optimal strategies



Frontier enables **more trustworthy governance** by establishing guardrails to ensure Agents operate in line with business rules.



Value is unlocked across four decision dimensions:

Speed

Go from days to minutes in the generation and analysis of complex operational scenarios and plans

Throughput

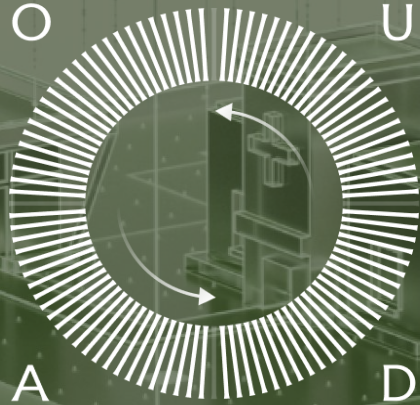
Consider 10s of concurrent scenarios / decision strategies to significantly increase solution space

Granularity

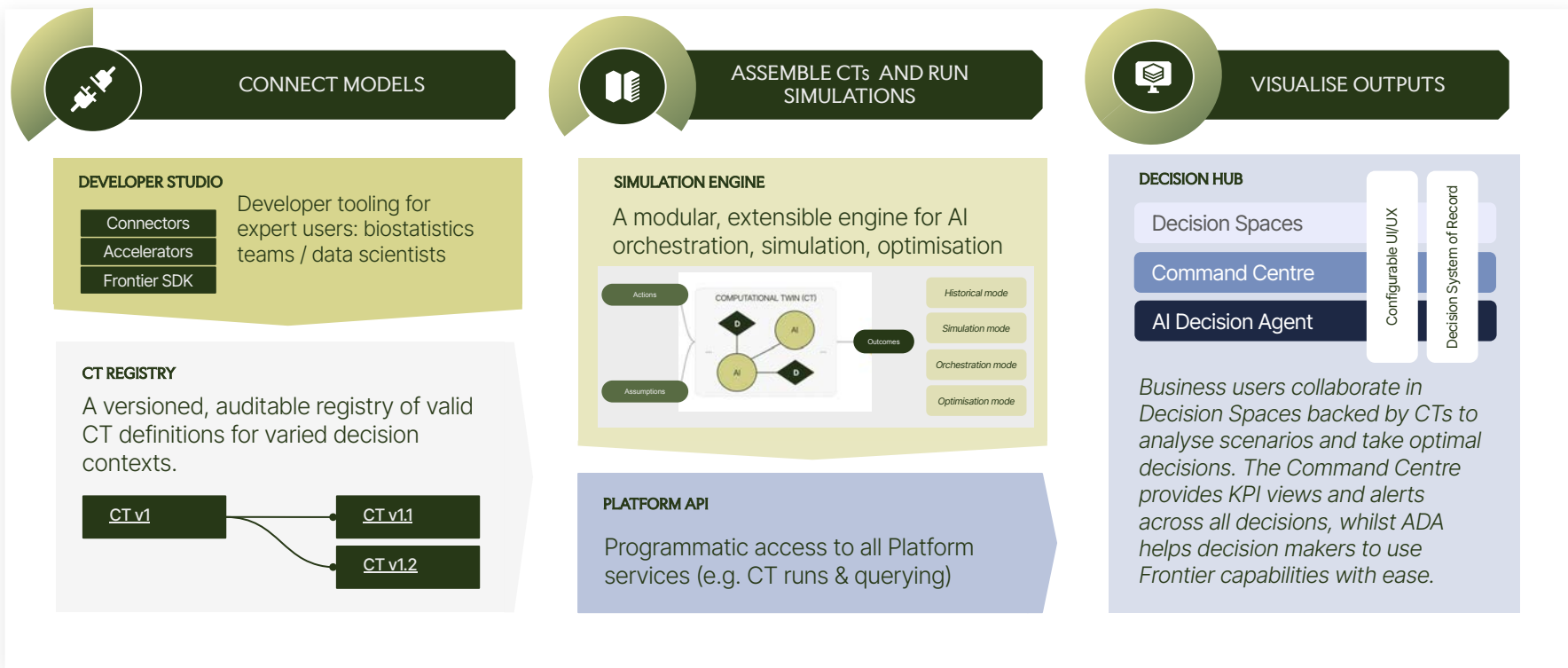
Enable more complex drill-downs to understand contributions of individual sites or processes across the enterprise

Accuracy

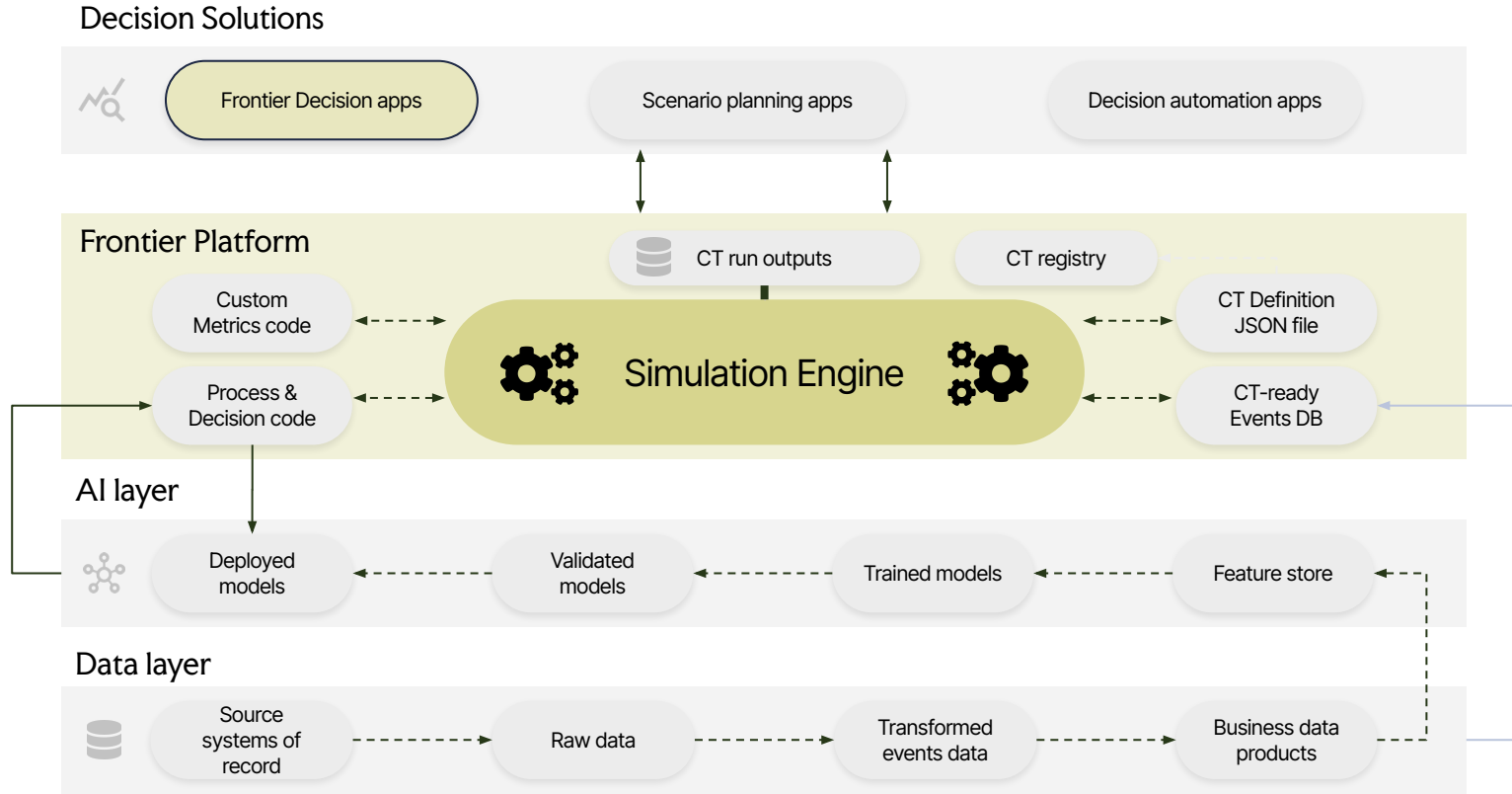
Improve forecasting accuracy by connecting together cross-functional insights and by identifying optimal solution strategies



Frontier comes with specific out-the-box tooling to significantly accelerate development



While its modular architecture maximises value of existing assets



So where to start?
To ensure we
always unlock
value, we work
backwards from
KPIs to the decision
that matter most.

HOW TO SCALE



Over time, we can **connect related decisions** as we develop in a way that is incrementally valuable, but collectively transformative

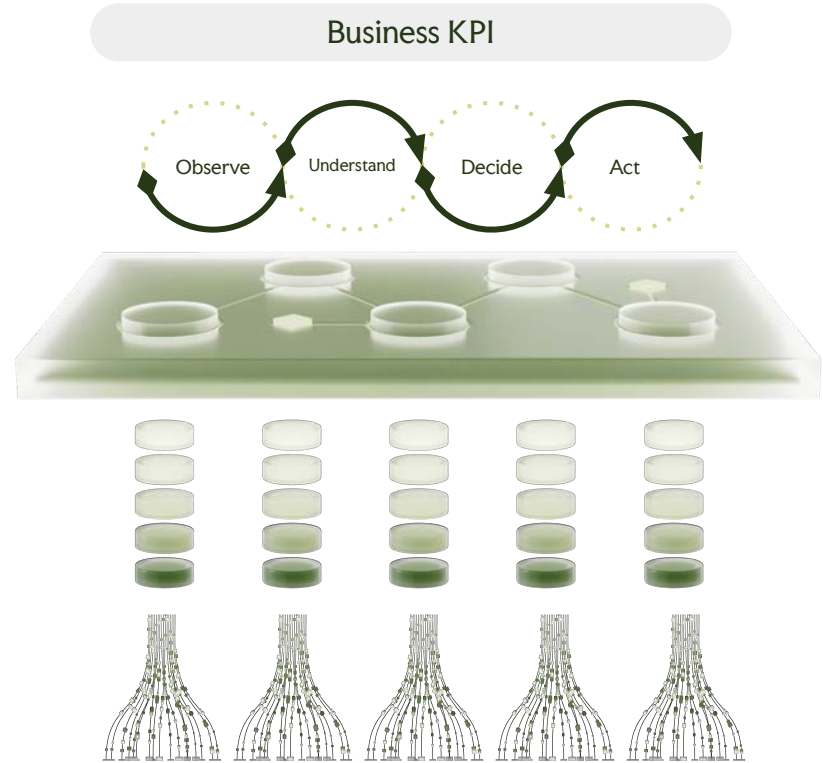
Business KPI

Isolate the decision that drives this KPI, broken down into its component parts

Represent the decision within our computational twin structure

Map out what AI models and rules are required

Map out what data is required and in what shape it must be



Frontier Service Category Overview

Frontier enables AI-powered Decision Intelligence across the enterprise; from strategic planning to operational execution.

The Frontier methodology can be applied to general decision-making use cases across the enterprise, with specific applications in supply chain management, and service industry and public sector operations.



Decision Making

Frontier enables organisations to **apply AI to complex decision-making**, combining simulation, optimisation and governance to help users understand what will happen, why, and what to do about it.

Challenge: Decision-makers lack the tools to test strategies before committing resources, reinforcing a reactive mindset, and driving suboptimal outcomes.

Value Proposition: Simulate and optimise decisions before acting, e.g.:

How do I balance limited resources across multiple strategic programmes to maximise collective success?



Supply Chain Management

Frontier enables organisations to **apply AI to supply chain decision-making**, simulating the procurement, manufacturing, and transportation of goods and resources to understand the impact of disruptions, test scenarios, and build resilience.

Challenge: Supply chains are complex, interconnected systems where local decisions create unpredictable downstream effects across cost, service, and system performance.

Value Proposition: Test supply chain scenarios before implementation, e.g.:

What would happen if I moved production or storage of products from country X to country Y? How would that impact cost to serve or regulatory risk?



Operations

Frontier enables organisations to **apply AI to operational challenges** such as forecasting demand, allocating resources, and managing service delivery.

Challenge: Service organisations struggle to match resource capacity with volatile demand, leading to bottlenecks, wait times, and inefficient utilisation - with an impact on services to (often vulnerable) individuals.

Value Proposition: Optimise operational decisions with probabilistic forecasting, e.g.:

How do I balance staffing levels against forecast demand to reduce wait times within budget?

Frontier Decision Intelligence services map to multiple service categories specified in the G-Cloud 15 framework.

These service **categories are used in combination to connect and enable decisions at scale** across the enterprise; specific case studies exploring the impact of Frontier and how we work with customers are included in the following slides.



Decision Making

Frontier enables organisations to **apply AI to complex decision-making**, combining simulation, optimisation and governance to help users understand what will happen, why, and what to do about it.

2. Analytics and business intelligence

2.2 Advanced and predictive analytics

3. AI platforms

3.1 Trustworthy AI software

3.2 Generative AI software; Forecast AI software

5. Application development

5.4 Business process modelling tools



Supply Chain Management

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As for Decision Making +

10. Supply chain management

10.1 Logistics and transportation management

10.2 Supply chain planning

10.3 Warehousing and inventory management



Operations

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As for Decision Making +

10. Supply chain management

10.1 Logistics and transportation management

10.2 Supply chain planning

10.3 Warehousing and inventory management

11. Production and operations

11.2 Service industry and public sector operations: healthcare; education; public order and safety; police; defence; social security administration; adult social care; children's social care; other; other operations

Case Study 1: Frontier for Decision-Making

How we developed a COVID-19 Early Warning System in a complex data environment

PROBLEM: COVID-19 created an **unprecedented forecasting challenge with virtually no historical data** and rapidly evolving dynamics. NHS decision-makers needed accurate 3-week forecasts for critical resources (ventilators, beds, staff) to balance COVID care with elective procedures, but traditional modeling approaches failed under conditions of extreme data scarcity and uncertainty.

FRONTIER SOLUTION

Bayesian Hierarchical Modelling:

Bayesian Hierarchical models explicitly quantified uncertainty and enabled robust forecasting from extremely limited data. The approach integrated sparse, heterogeneous data streams (historical admissions, 111 calls, mobility data, and testing rates) to generate probabilistic 3-week forecasts with quantified confidence intervals despite unprecedented conditions.

Multi-Source Data Integration:

Synthesised diverse leading indicators including testing data, 111 emergency calls, and real-time mobility data from Google and Apple. The model hierarchically structured information across hospital, regional, and national levels to extract maximum signal from limited data and maintain coherence across all forecasting levels.

Operational Deployment at Scale:

Seamlessly integrated into existing NHS systems to deliver daily forecasts to 1,000+ operational leaders across 137 trusts. The system provided actionable 3-week predictions for COVID-19 admissions, ventilator demand, and high-flow oxygen requirements, enabling optimized resource allocation and staff deployment decisions in real-time.

Deployed to **137 NHS Trusts**

Delivered **accurate 3-week forecasts** for admissions

Enabled **optimised resource allocation** under uncertainty

Won a **national award** in 2022
(Best Healthcare Analytics;
HSJ Partnership)

"Faculty [...] brought skills and expertise to complement the NHS, work shoulder-shoulder with our team and encourage bi-directional learning. Together we have achieved so much. The EWS represents an excellent exemplar of what good use of national data to support front-line services should be."

– Deputy Director, NHS England



Case Study 2: Frontier for Operations

How we improved patient flow and reduced delays across UK hospitals

PROBLEM: Bed capacity pressures in the UK Healthcare System are at an all-time high, making effective inpatient flow management critical. Delayed transfers place a significant burden on hospitals, with patients staying beyond treatment while awaiting discharge requirements like care packages, medication, or transport. These delays reduce bed availability, strain workforce, and contribute to overcrowding in emergency departments. Poor system-wide visibility and coordination lead to misaligned resources and reactive decisions, worsening capacity challenges.

FRONTIER SOLUTION

Patient Pathway Simulation

We configured a Computational Twin of hospital patient flow to simulate the impact of allocation decisions on safe discharge. The approach integrated data from admissions, testing, 111 calls, and mobility sources into a unified model of how patients move through the system - from admission through treatment to discharge and onward care.

Proactive Discharge Interventions

Frontier identifies when patients are likely to be ready for discharge and who to prioritise, enabling clinical and operational teams to resolve blockers earlier. This shifts capacity management from reactive firefighting to proactive intervention, focusing effort on the steps that contribute most significantly to delays.

Resource Optimisation at Scale

Frontier enabled testing of different resource allocation scenarios on KPIs including bed utilisation, discharge delays, and elective capacity. Frontier supports confident decisions on staffing, care package coordination, and patient prioritisation - optimising flow while maintaining safety and care quality.

Delivered **32% reduction** in avoidable delays due to discharge

Enabled **£12.5M** in annual efficiency savings

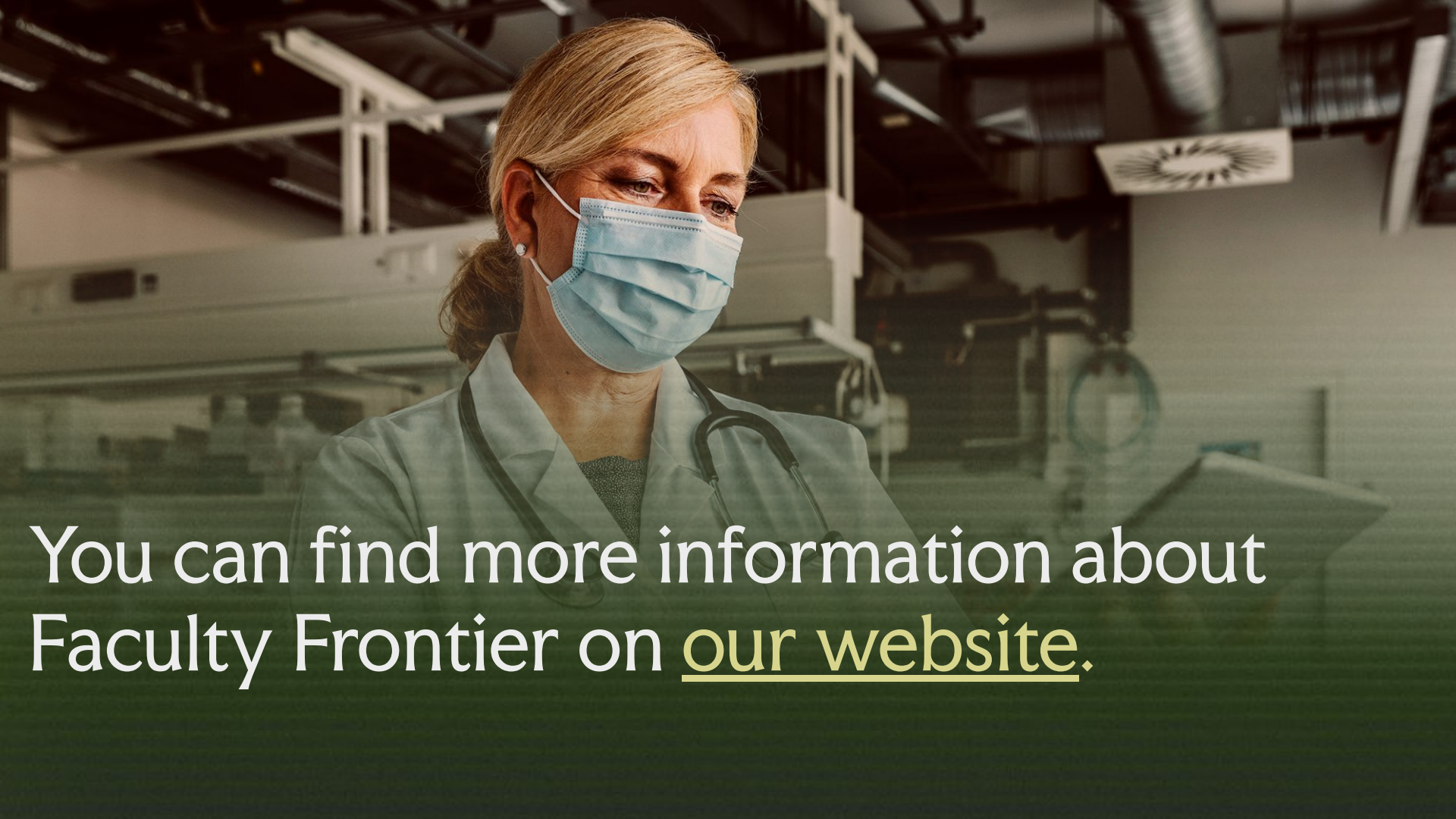
Released capacity for **850 additional elective patients**

1000+ daily users across operational, clinical, and strategic user groups

"With Frontier, we can fast forward and rewind to understand exactly what's happening across the system. We can see the choices we have, the levers we can pull and the impact those levers will have in real time. It's a very powerful platform."

– Director of Finance, Hywel Dda University Health Board





You can find more information about
Faculty Frontier on [our website](#).