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Google Cloud

Agentic AI In Healthcare

Agenda

- **1:30 AM - 11:45 PM: Arrival & Introduction. Speaker: DAVID O'HARA** Guests arrive, enjoy a catered lunch, and have an opportunity to network with peers and speakers.
- **11:45 PM - 12:10 PM: Keynote, Introduction:** Unlocking Potential with Agentic AI Speaker: DEVLIN LILES
- **12:10 PM - 12:35 PM: The Power Behind the Platform:** Google's Cutting-Edge AI Technology, Speaker: APARNA HARGUNANI
- **12:35 PM – 1:00 PM: Agentic AI in Action:** Solutions & Accelerators for Healthcare
- **1:00 PM - 1:30 PM: Panel, Q&A, and Discussion:** Driving Innovation Together
- **1:30 PM – 2:00 PM:** Closing Remarks & Continued Networking

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Keynote

Google Cloud
Partner

Improving – Your Trusted Google Cloud Partner

Our key differentiators are:

1. A **data-focused** company
2. Deep **co-partner network**
3. Develop GCP **with Google**
4. Expertise in **training**
5. **Geography** - we are where our clients are

Healthcare

Google Cloud Partner

Google Cloud

- UnitedHealth Group℠
- carilloop
- nova scotia health authority
- Provincial Health Services Authority
- Health Canada
- Canadian Mental Health Association British Columbia — Mental health for all

Other Clients

- ucare
- DHCS — California Department of Health Care Services
- AUXITA
- CENTENE Corporation
- evolent HEALTH
- McKESSON
- Medtronic
- BlueCross BlueShield
- PCCA
- SENTINEL HEALTH SERVICES, LLC
- imshealth

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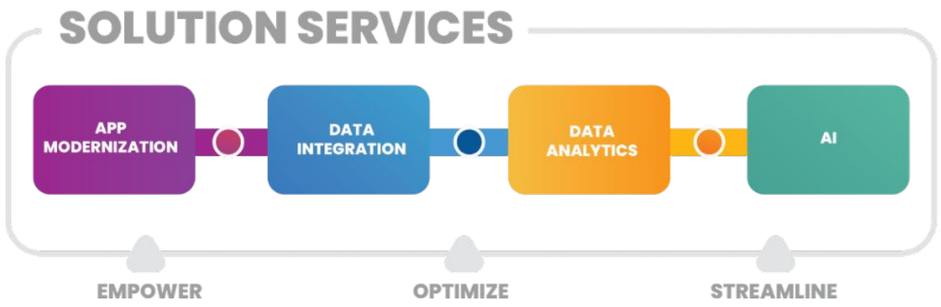
Our Industry Leading Expertise

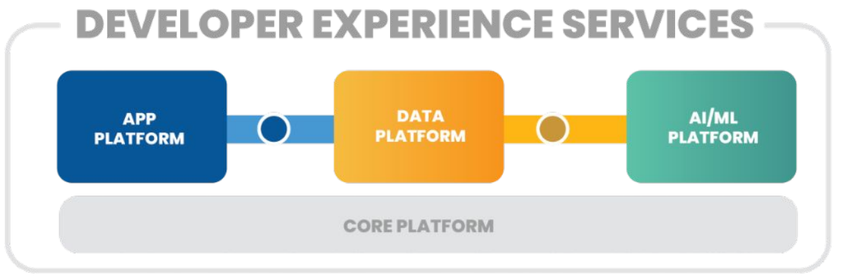
Improving is a **modern digital services firm** that provides best-in-class client-focused and industry-specific IT consulting, software development, and training services for organizations in a wide range of industries across North America, South America, and India.

Our Services Include:

- Software Development
- Software Consulting
- Outsourcing
- Training
- Community

Our Solutions & Expertise:





Summary of our Services

Google Cloud Partner

- ☑️ Cloud Landing Zones for Regulated Industries
- ☑️ Infrastructure Modernization
- ☑️ Cloud Migrations & Application Modernization
- ☑️ DB Migrations & DW Modernization
- ☑️ Data Analytics & AI/ML Solutions
- ☑️ Strategic Staffing

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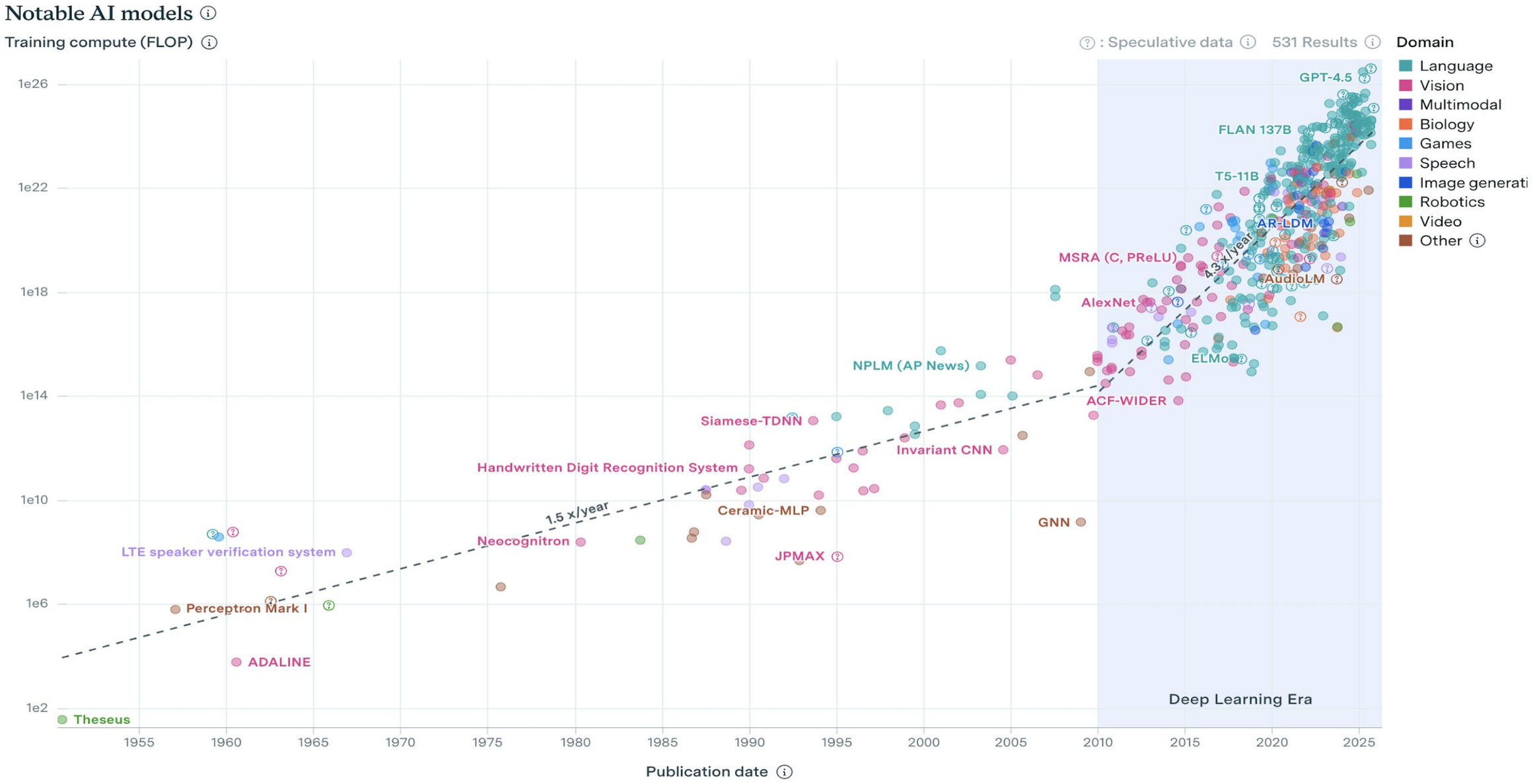
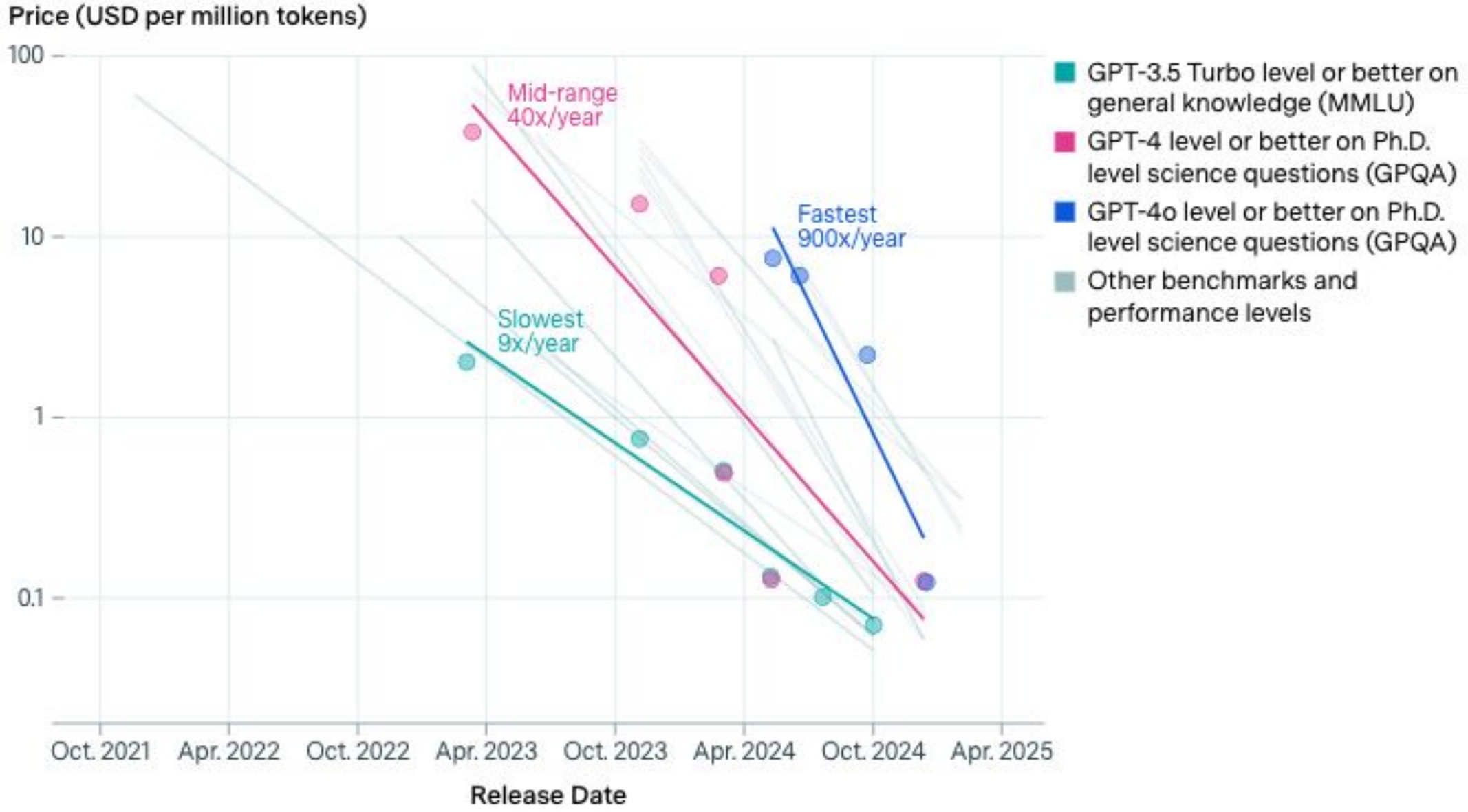
Where are we today?



Where are we today?



How can it work?

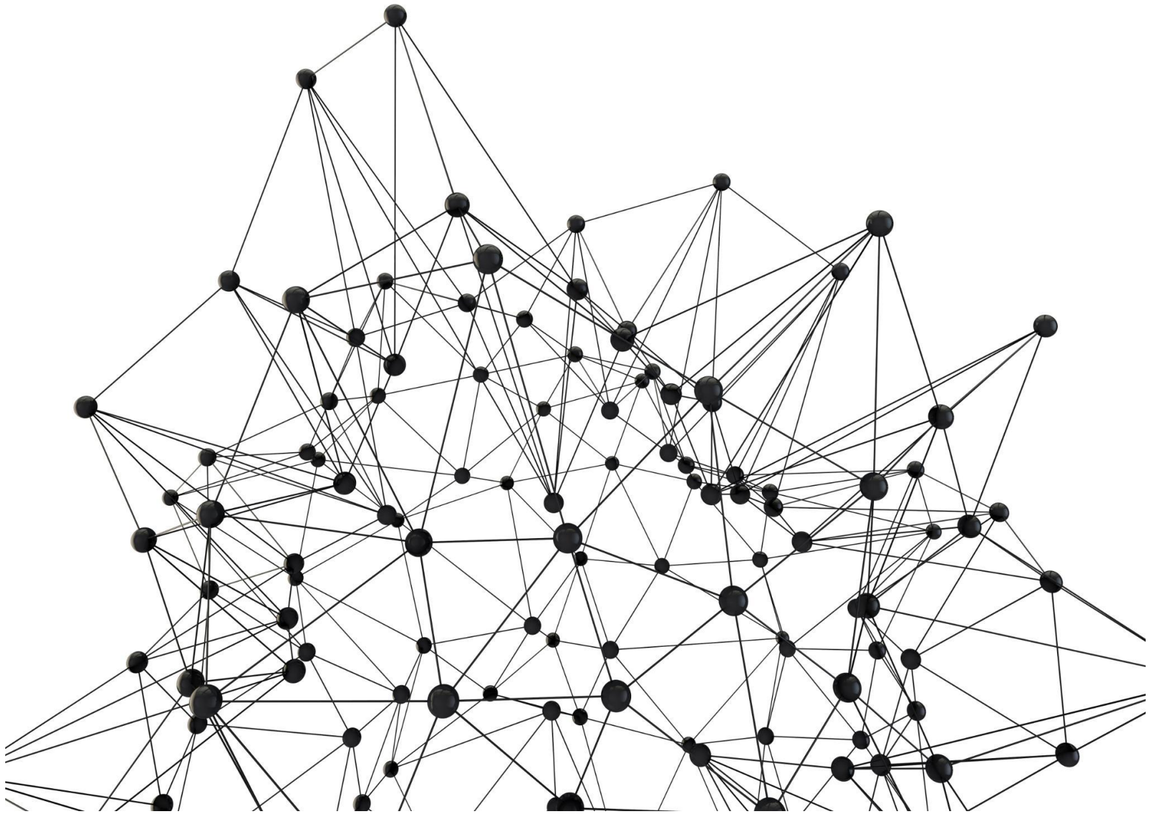
Rethinking Intelligence—Beyond the Brain

Distributed Intelligence Concept
Intelligence extends beyond the brain to systems, tools, and protocols in both humans and machines.

Intelligence in Software Development
Intelligence exists in documentation, development processes, and team collaboration, not just algorithms.

Intelligence in Data Management
Access controls, audit trails, and compliance frameworks embody intelligence in confidential data management.

Benefits of Extended Intelligence
Recognizing intelligence beyond the brain enables resilient, scalable, and trustworthy software and data systems.



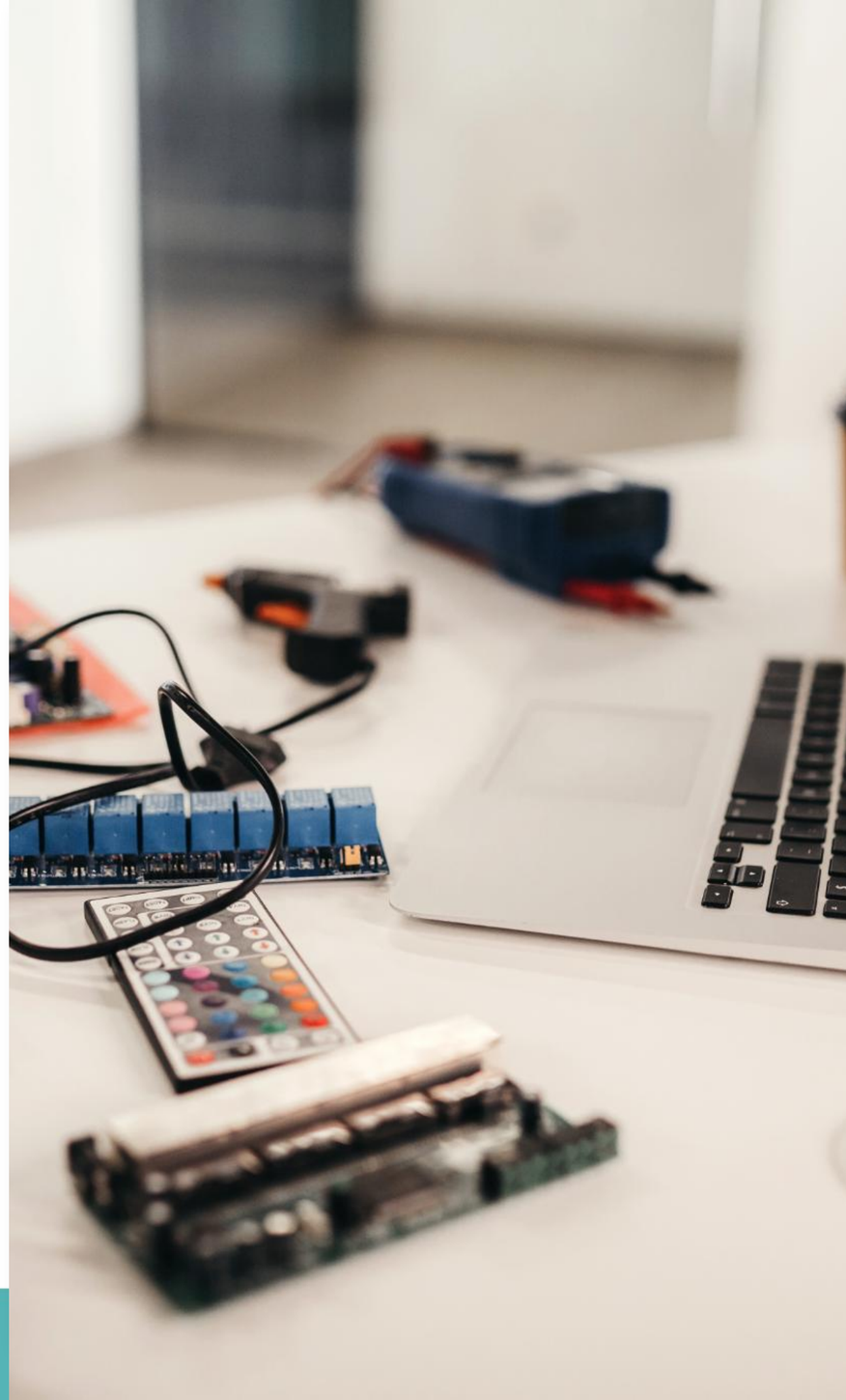
Cognitive Scaffolding in Software Development

Version Control as Scaffolding
Version control systems track changes and enable collaboration, preserving knowledge across software teams.

Automated Testing Benefits
Automated testing externalizes logic to ensure software reliability and repeatability of tests.

CI/CD Pipeline Support
CI/CD pipelines support continuous integration and deployment, improving software maintainability and scalability.

Team Collaboration and Consistency
Cognitive scaffolds facilitate team-wide understanding, supporting consistent and coordinated software development.

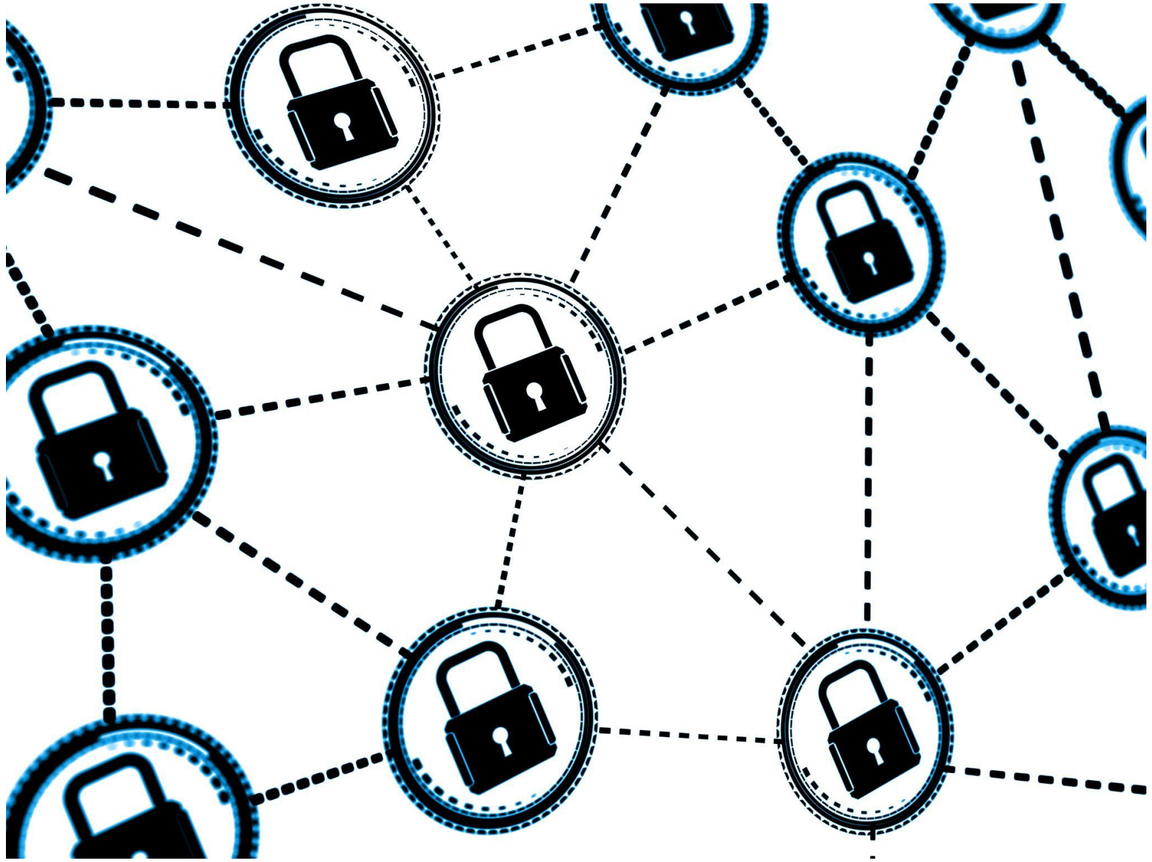


Governance as the Engine of Trust

Governance in Software Development
Governance uses coding standards and code reviews to ensure modular, auditable software architectures.

Confidential Data Management
Role-based access, encryption, and audits maintain data security and compliance under governance.

Building Trust and Accountability
Embedding governance frameworks helps organizations build trust and promote ethical intelligence.



Making Intelligence Explainable and Auditable

Importance of Explainability

Explainability ensures decisions can be traced back, fostering transparency and trust in intelligence systems.

Modular Frameworks

Modular frameworks allow policies and controls to evolve with changing threats and requirements.

Regular Protocol Reviews

Regular reviews and updates keep protocols compliant and relevant to emerging challenges.

Distributed Intelligence Principles

Distributed intelligence embeds knowledge and accountability within the system itself.

Echo

Echo is an enterprise-grade AI cloud-native accelerator that transforms how organizations **manage and access institutional knowledge** by using retrieval-augmented generation (RAG), large language models (LLMs), and cloud-native tools to deliver a chat-like experience. It centralizes scattered documents, files, and insights into a conversational interface, enabling faster discovery, better collaboration, and smarter decision-making.

Why Echo?

- Speeds up access to internal knowledge with AI-powered search.
- Enhances collaboration by surfacing expertise across teams.
- Reduces time spent searching documents and resources.
- Integrates securely with cloud environments on GCP
- Uses RAG and LLMs to deliver grounded, accurate responses.

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Code Explorer

Code Explorer, an Improving service accelerator, empowers your software engineering and development teams to **rapidly analyze, document, and extract actionable insights** from any codebase— combining decades of application modernization expertise with the latest in Generative AI technologies and innovations on Google Cloud.

Whether you're **planning a migration**, seeking to **improve maintainability**, or **striving for higher development efficiency**, Code Explorer delivers a comprehensive, AI-driven approach to code understanding and transformation.

Why Code Explorer?

- Faster Time-to-Insight: Rapidly surface technical and business-critical information from complex codebases.
- Reduce Risk: Identify refactoring opportunities and anti-patterns before they become costly issues.
- Boost Productivity: Generate human-readable documentation and knowledge graphs to onboard teams faster and support informed decision-making.
- Drive Modernization: Lay the groundwork for migration, integration, and continuous improvement initiatives.

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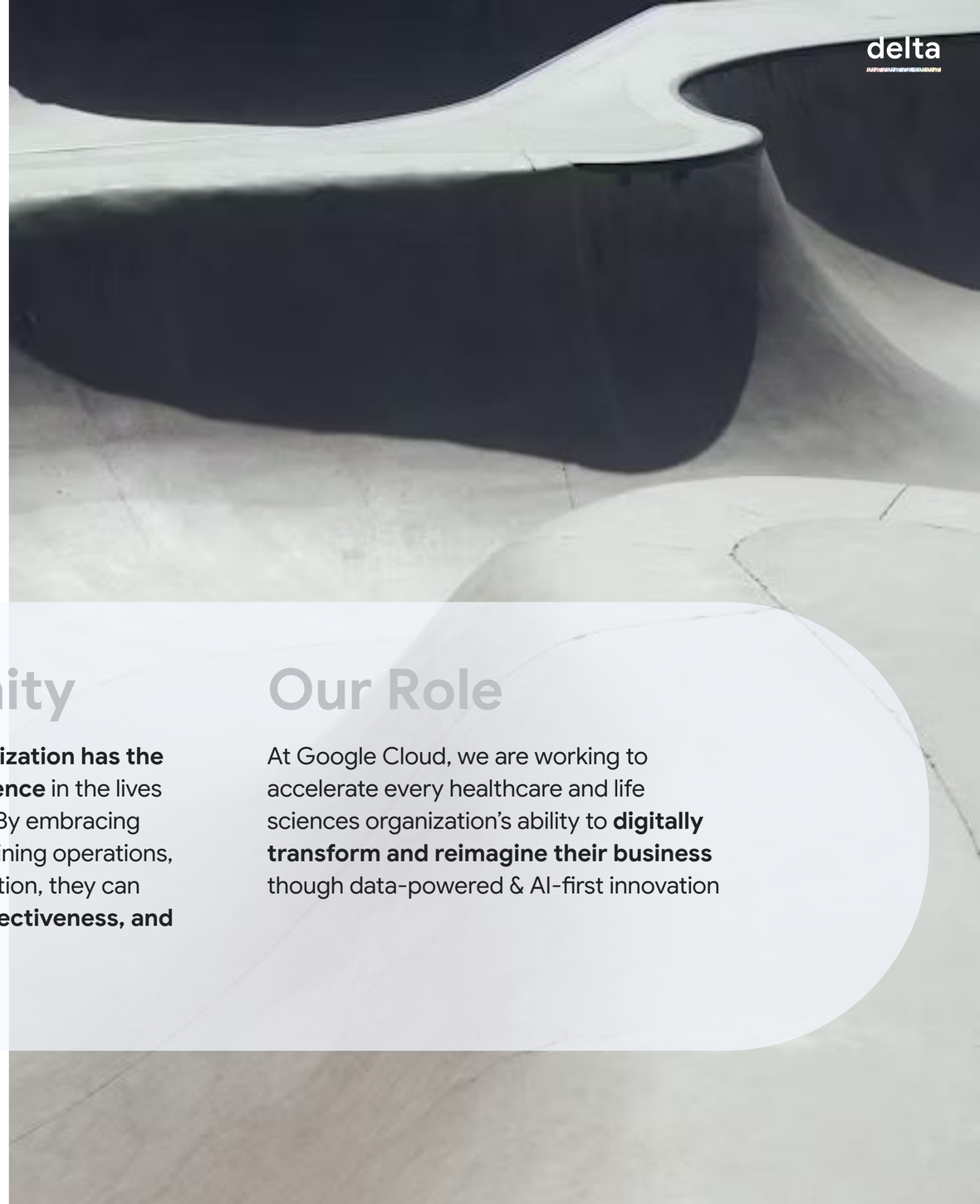
The Future of Healthcare: Actionable AI

Empower HCLS organizations to navigate the complexities of today's business and technology landscape to enable them to create a healthier, more equitable future for all



The Challenge

The healthcare industry is facing unprecedented challenges – **rising costs, aging populations, complex regulations, and rapid technological advancements.** These challenges can hinder HCLS organizations from delivering the best possible care and achieving their full potential.

The Opportunity

We believe that **every HCLS organization has the power to make a profound difference** in the lives of their patients and communities. By embracing innovation and technology, streamlining operations, and fostering a culture of collaboration, they can unlock new levels of **efficiency, effectiveness, and patient-centric care.**

Our Role

At Google Cloud, we are working to accelerate every healthcare and life sciences organization's ability to **digitally transform and reimagine their business** though data-powered & AI-first innovation

OUR METHOD

How we achieve great user and business outcomes in HCLS

The HCLS industry is facing unprecedented disruption and transformation, creating both challenges and significant opportunities for value creation.

delta was purpose-built to harness *Google DNA* and *empower our HCLS customers* along their journey.

We crafted a method that leverages Google know-how across strategy, product, execution, and organization to solve strategic challenges for our HCLS customers.

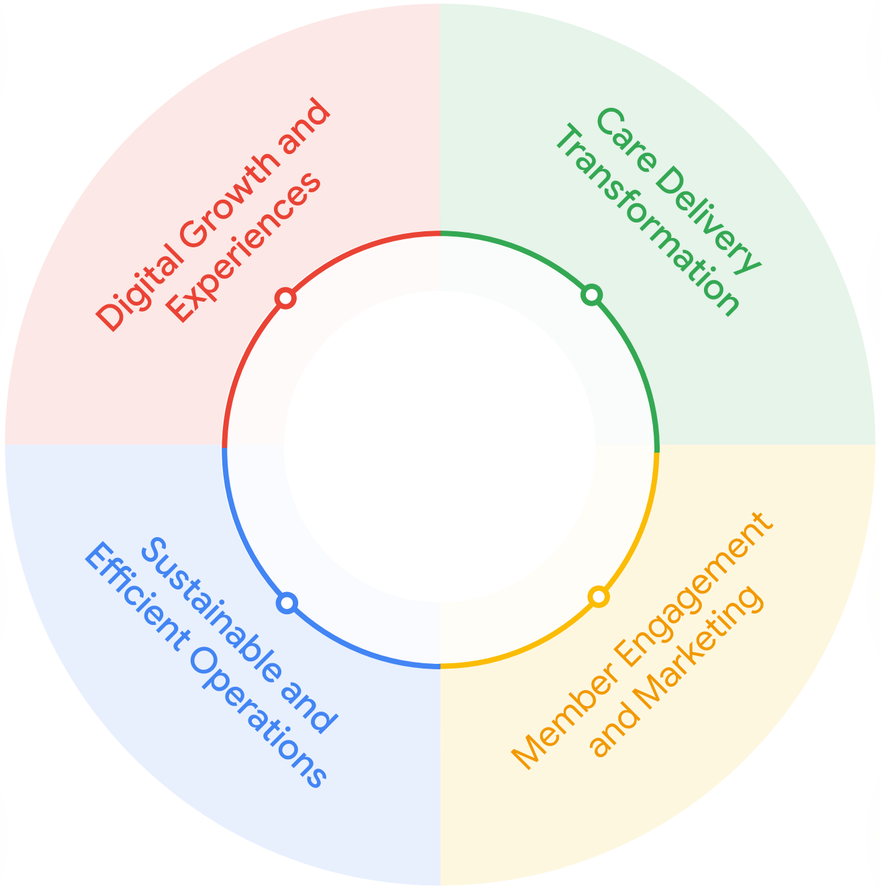
Industry leaders are already capitalizing on the opportunity

Healthcare consumer experience platform

Enterprise Search
Member/Patient Website/Portal

Prior Authorization Submission

Medical Imaging Storage optimization and AI



Medical Scribe
Automated Nurse hand off

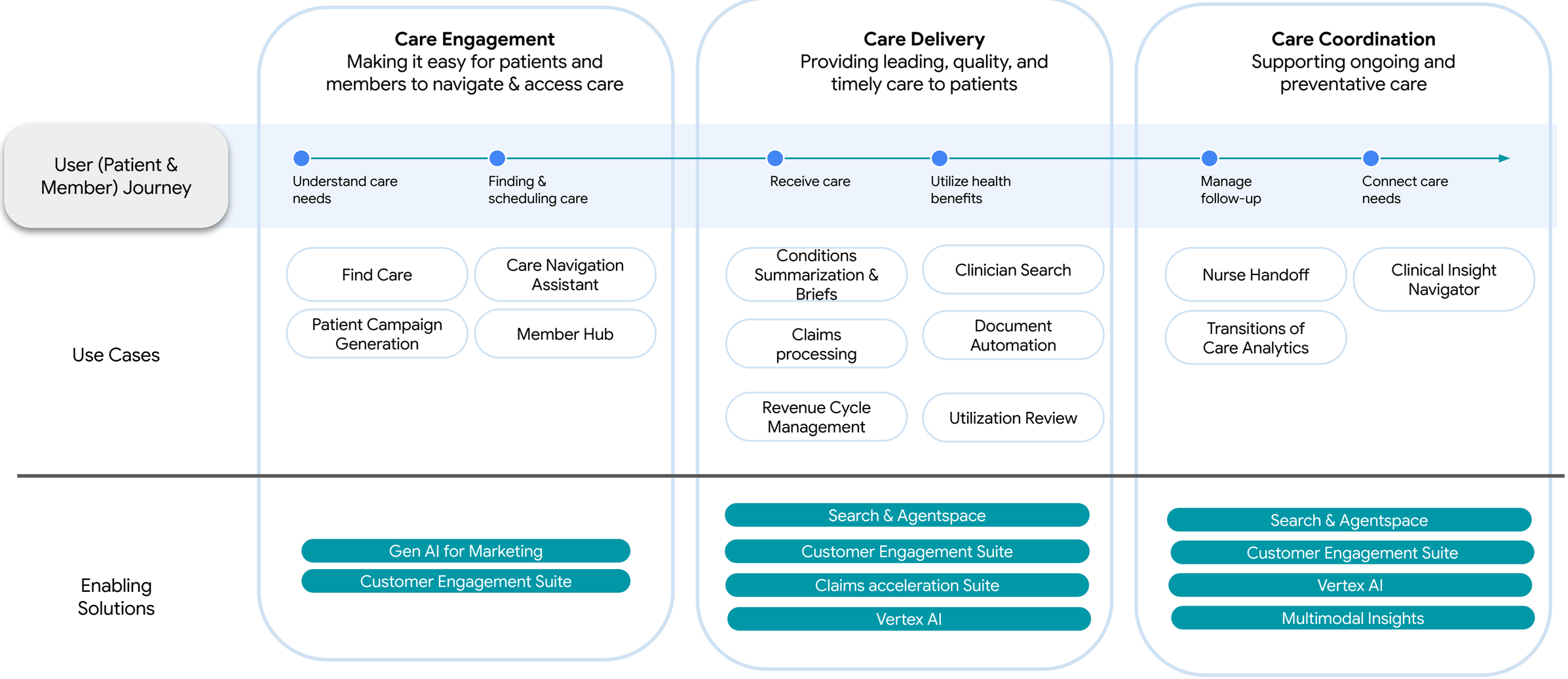
Document generation
Search through Patient History

Patient Engagement

Center without Walls

delta

Our differentiated AI Healthcare Solutions create value across the end-to-end care journey



The content of this document is provided for *informational purposes only* and solutions proposed are not intended to replace the advice of medical professionals.

delta

Care Navigation Assistant

The Use Case

Virtual conversational agents

Enhance healthcare by automating tasks, providing real-time insights, and supporting healthcare staff, leading to improved efficiency and patient outcomes

The challenge

Deliver consistent engagement for patients across channels

Primary User

- Patient / Member
- Provider
- Payer

User Benefits

Improved patient experience through seamless conversations

Get answers to questions and assistance with navigating healthcare systems outside of regular office hours

Feel more informed and empowered by having a virtual assistant to guide through the healthcare process

Business Value

Reduce operating costs

Empower teams and improve productivity

Better patient satisfaction

Improve employee experience by offloading tasks freeing up clinical time

Enabling Solutions

Customer Engagement Suite

delta

Member Hub

The Use Case

Proactive and Personalized Member Engagement Hub

Allows for the creation of intelligent agents that understand member context and provide personalized assistance.

The challenge

Members find it difficult to understand and manage their policies and struggle to find the information they need

Primary User

- Patient / Member
- Provider
- Payer

User Benefits

Tailored recommendations for coverage based on life events and individual needs.

Proactive guidance on policy renewals and potential savings.

Faster claims processing through automated data verification.

Business Value

Reduced churn through improved engagement and satisfaction.

Automation of routine tasks (e.g., policy information & management,) reduces reliance on human agents.

Improved ability to personalize services and develop targeted marketing campaigns.

Enabling Solutions

Customer Engagement Suite

delta

Revenue Cycle Management

The Use Case

Intelligent Agents improving operational workflows

Gemini Enterprise helps maximize revenue and compliance through accurate claims and coding

The challenge

Revenue cycle management often involves a multitude of tasks and processes which are manual, error-prone, and inefficient,

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Primary User

- Patient / Member
- **Provider**
- Payer

User Benefits

Efficient RCM minimizes errors in billing and patient information

Automated systems speed up processes like insurance verification and claims submission.

Clear communication between providers and patients regarding billing and payments.

Business Value

Faster claims processing and reduced denials lead to quicker payments and more revenue

Automation and streamlined processes reduce administrative costs and labor

Efficient RCM frees up staff to focus on patient care and other important tasks.

Enabling Solutions

Agent Space

delta

Clinician Search

The Use Case

Agents to search across the Patient Health Record

Allow clinicians to intuitively search over a patient's longitudinal health record, surface most relevant results, and summarize answers and information grounded in patient data.

The challenge

Practitioners spend considerable time searching through numerous sources (e.g., medical notes, vaccination history) to understand patient history to make an informed care decision

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Primary User

- Patient / Member
- **Provider**
- Payer

User Benefits

Understand underlying provider needs with natural language processing

Less multitasking during visits with quick access to patient medical history summaries

Make confident and tailored decisions for patient care

Business Value

Increase efficiency of patient visits

Improved care quality and patient outcomes

Reduce avoidable errors that could lead to compliance or regulatory issues

Enabling Solutions

Vertex Search for Healthcare

delta

Nurse Handoff

The Use Case

Agents to assist with Nurse Handoff

Pre-populate a draft summary of patients latest condition for use during Nurse shift changes.

Note: Customers will not use the Gen AI capabilities as a substitute for professional medical advice

The challenge

Simplify the process used by nurses to gather patient's condition as part of shift change.

Primary User

- Patient / Member
- **Provider**
- Payer

User Benefits

Reduces time spent in doing the patient handoff during shift change

Carries over critical information from previous shifts and not just the immediate conditions.

Enables information to be captured electronically for reference any time during patient care

Business Value

Standardizes the format for capturing patient's condition during shift change

Enables further analysis to see trend of change in patient's condition with each shift

Enabling Solutions

Defined tuning for LLM models for Nurse Handoff summarization

delta

Document Navigation Assistant

The Use Case

Agents to enable Q&A across clinical documents

AI-powered platform that transforms static clinical documents (guidelines, research papers, patient records) into interactive knowledge bases.

The challenge

Medical guidelines and research papers change frequently and are hard to keep the information up to date

Primary User

Patient / Member

Provider

Payer

User Benefits

Drastically reduces time spent searching for information

Simplifies complex information, allowing for better focus on patient care.

Minimizes the risk of errors due to missed information.

Business Value

Reduces administrative overhead and improves clinician productivity

Leads to better care and reduced readmissions.

Facilitates evidence-based decision-making.

Enabling Solutions

Vertex Search

Building Agentic AI Systems

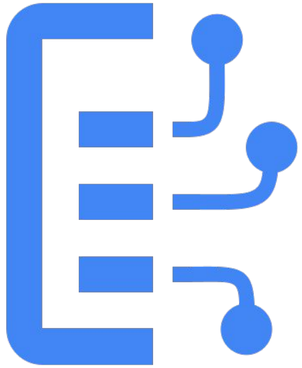
A case study of AI Applied Food Science

Michael Slater
Technical Director, AI

Google Cloud Partner

IFT *Feeding the minds that feed the world*

What kind of AI do I need?

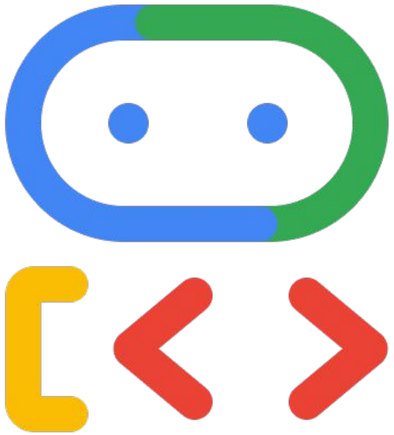


ML aka “Narrow” AI:

Document AI, AutoML, and BigQuery ML

Generative AI:

Vertex AI Search & Conversation, Gemini API



Agentic AI:

AgentSpace, Agent Engine, Agent Development Kit

Improving’s Expertise with AI/ML

Google’s suite of AI/ML technologies can be used to help customers **automate and optimize their business applications**:

- Automate document processing workflows, such as invoices and application forms using **Document AI**
- Remove or anonymize PII and other sensitive data, for release to outside parties or to achieve regulatory compliance with **Sensitive Data Protection API**
- Enhance user experiences with reliable summarization and natural language search over customer data using **Vertex AI Search and Conversation**
- Maximize the value of the users’ time and increase productivity by integrating **Google’s state of the art AI Models** into business solutions

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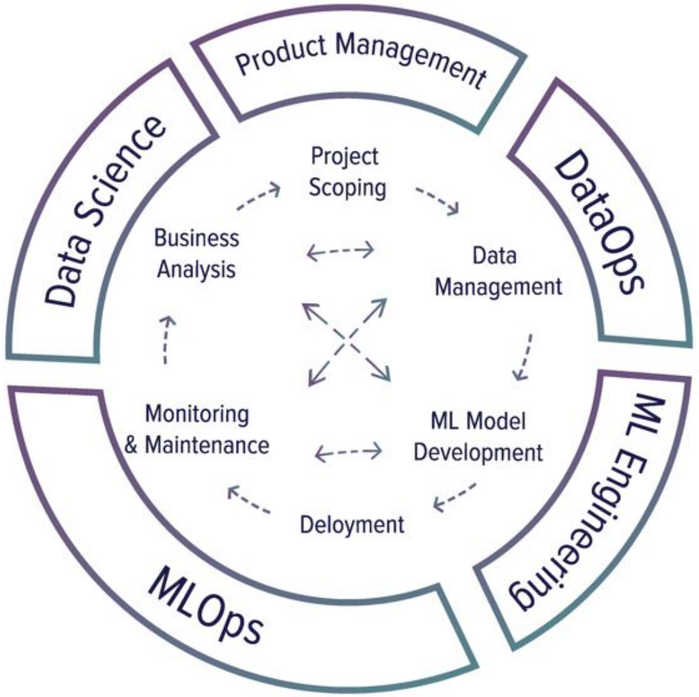
Michael Slater, Technical Director of AI

- At Improving, I help our customers build AI Products & Systems

- AI Systems Expert
- Software Engineering Team Leadership

sory



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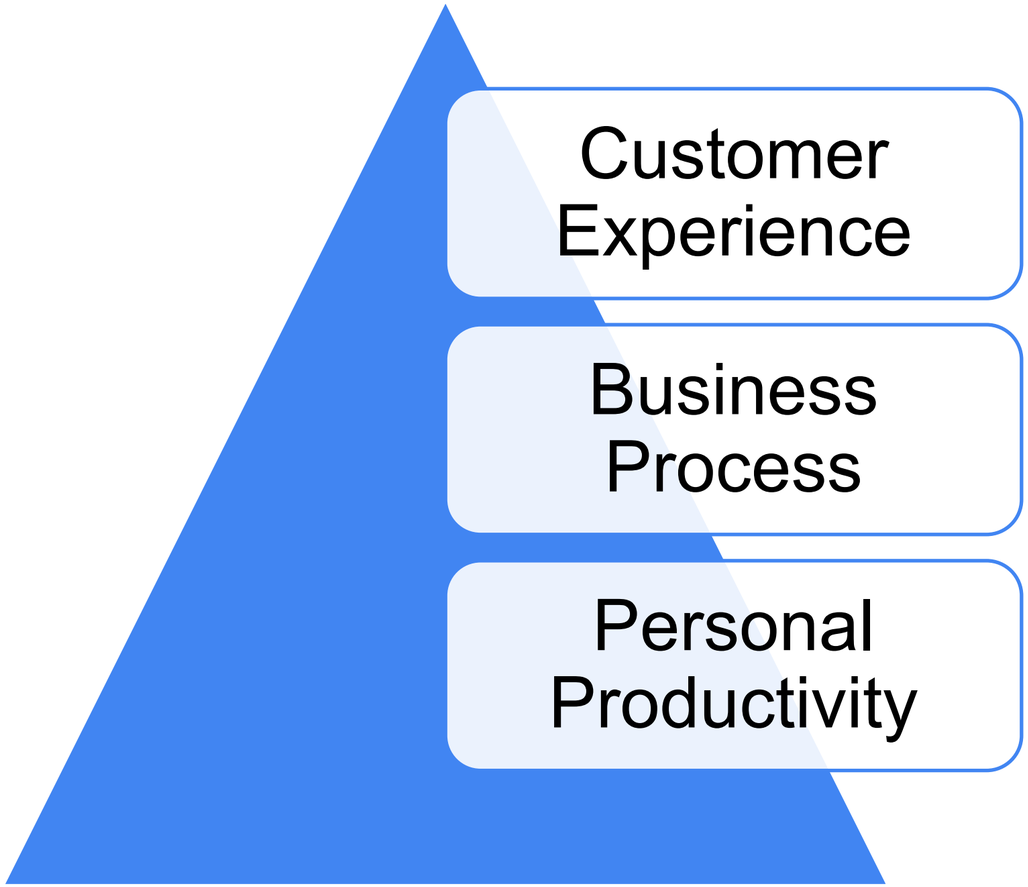
Michael.Slater@improving.com

What Problems AI Agents Solve

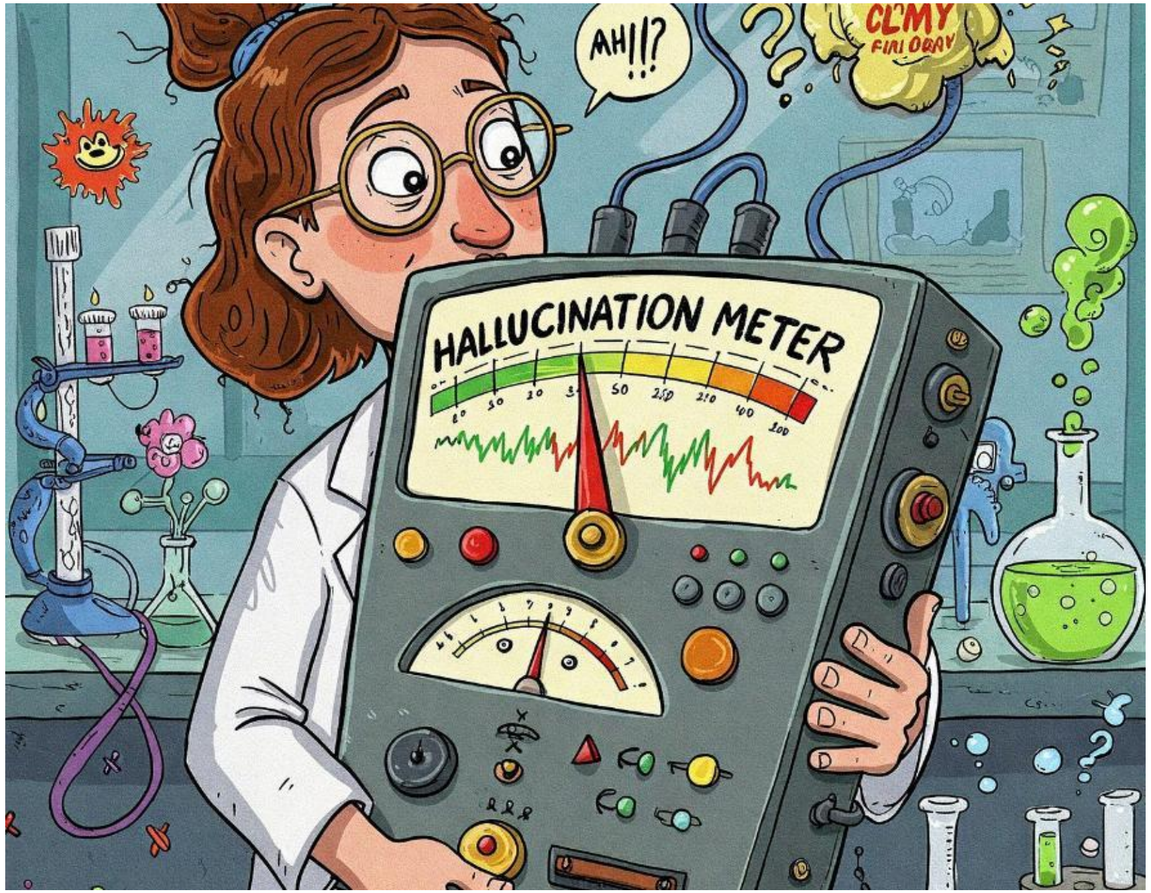


LLMs vs Science

When we use an LLM directly, we're relying on a model trained to predict what sounds plausible — not necessarily what's true.

It can generate amazing insights, but it can just as easily generate confident, well-worded misinformation.

In science, that's not just a flaw — it's a risk.



Truth? Facts? Experts?

Default LLMs

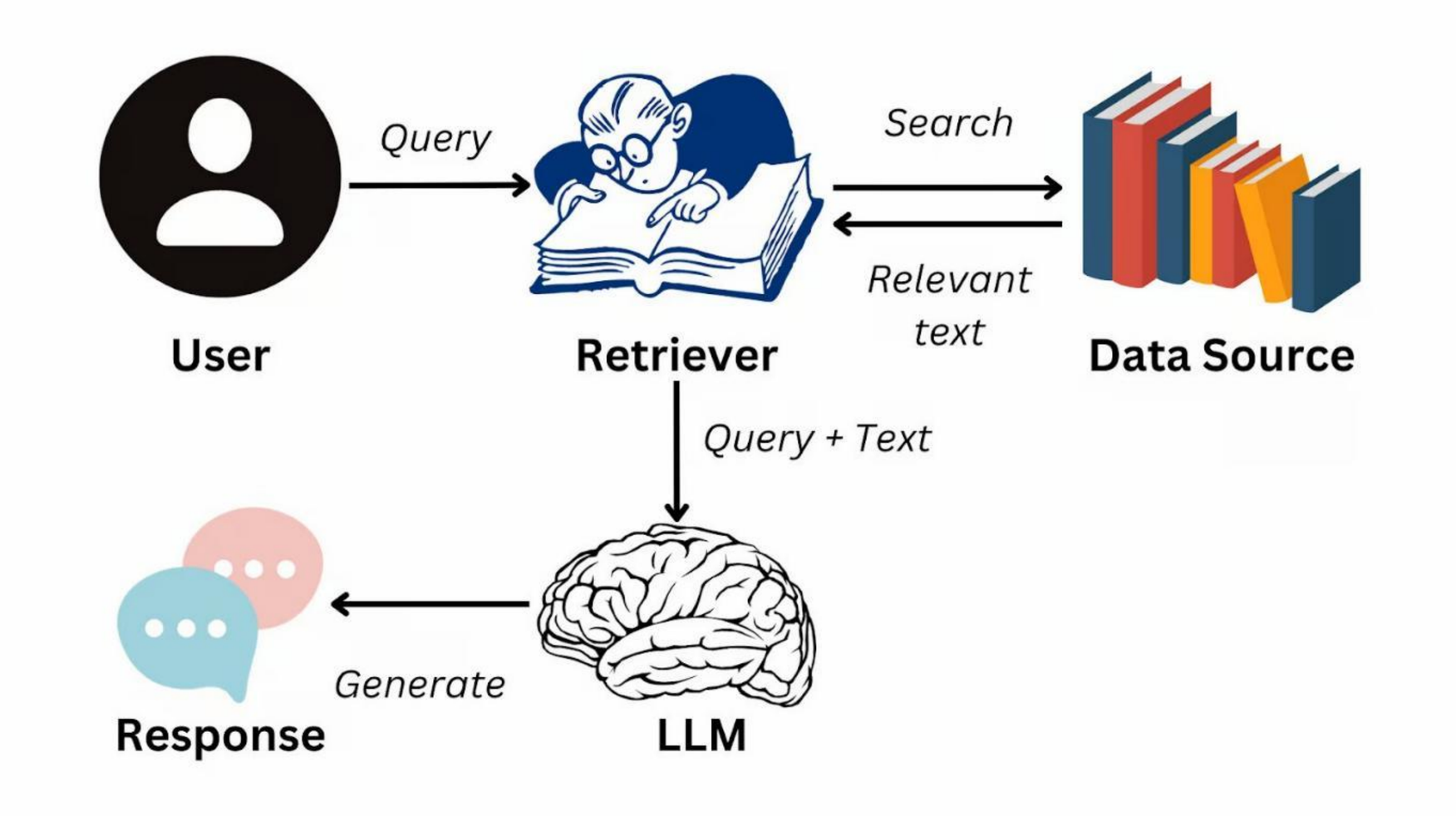
generate text by predicting the most likely next word based on training data

LLMs in Agentic Workflows

Models provide Language Expertise and the Agent System provides data and expert context

Chat with LLMs + Content

- (RAG) Retrieval Augmented Generation – a technique that leads to useful GenAI



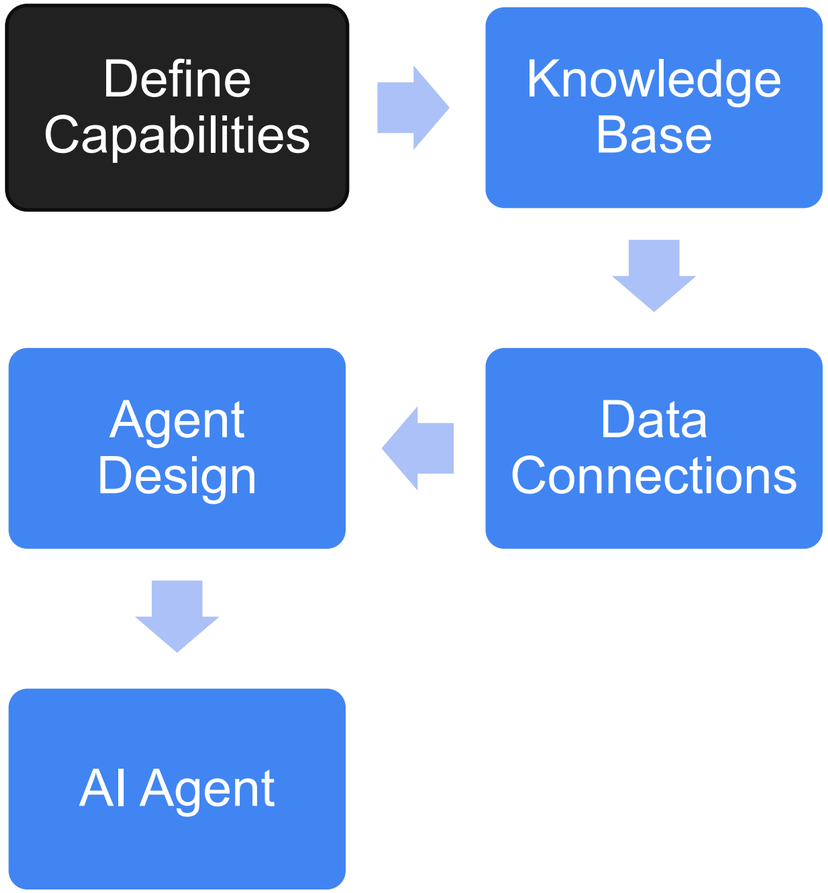
AI Agent Design Process

- Objectives for Building an AI Food Scientist Assistant

Capable of Technical discussion of Food Science Concerns

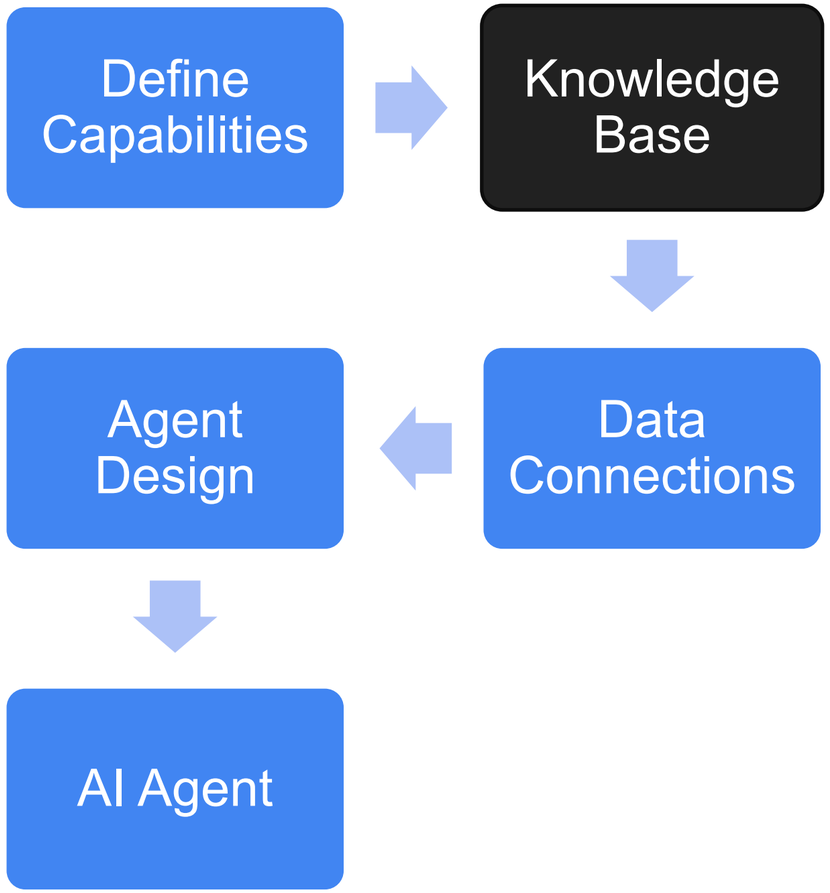
Creates Accurate and Shelf Stable Food Formulas from Ingredients & Goals

Analysis of Regulatory Concerns



Gather Expert Knowledge

Food Science Journals Education Content



Design Expert Content System

When Color Meets Flavor

September 29, 2025

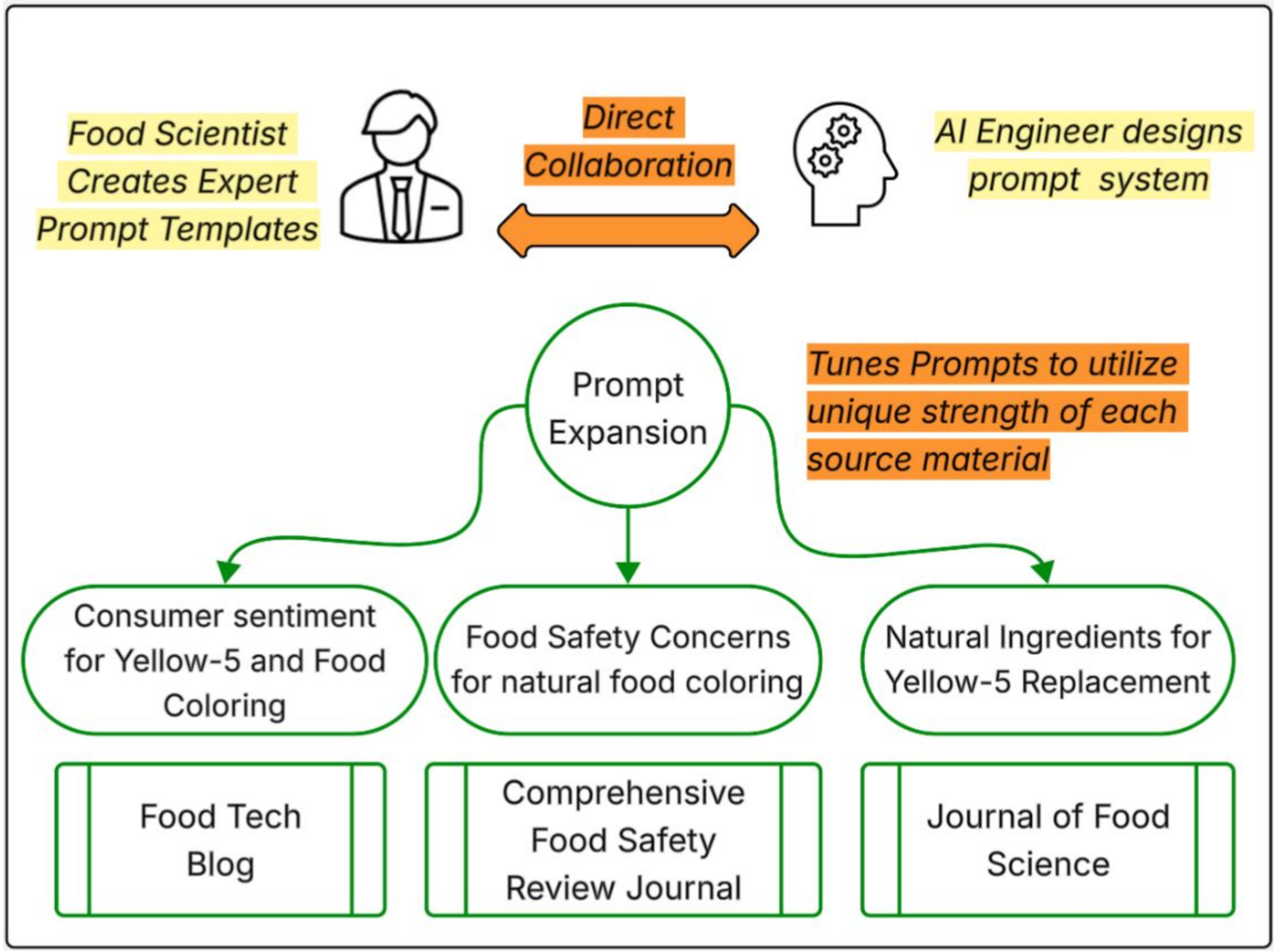
The shift away from artificial additives is

GLP-1 Medications Force Food Industry Rethink

September 16, 2025

The Complex Reality of 'Clean' and Shelf-Stable Foods

September 16, 2025



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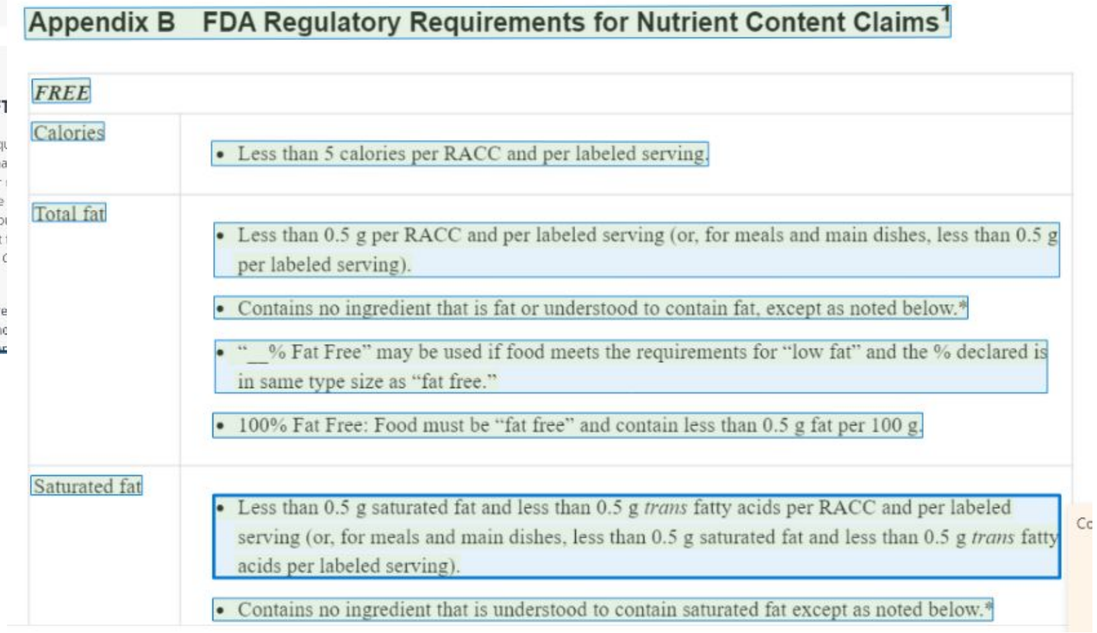
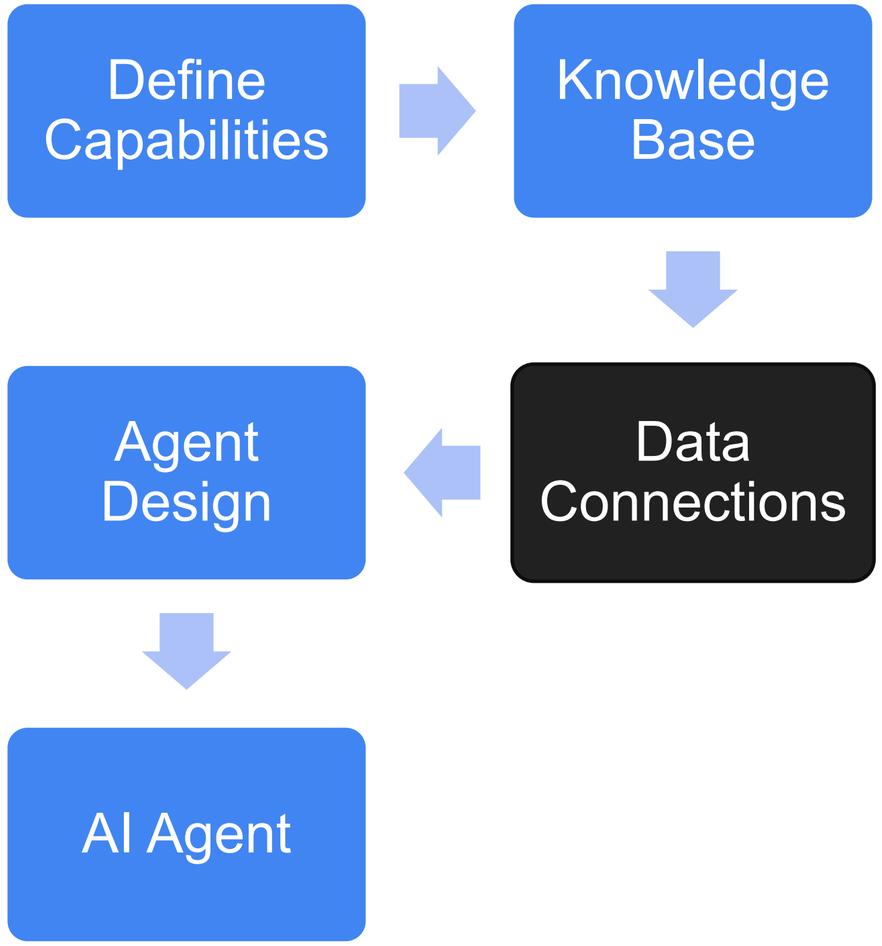
Wire up Data Connections

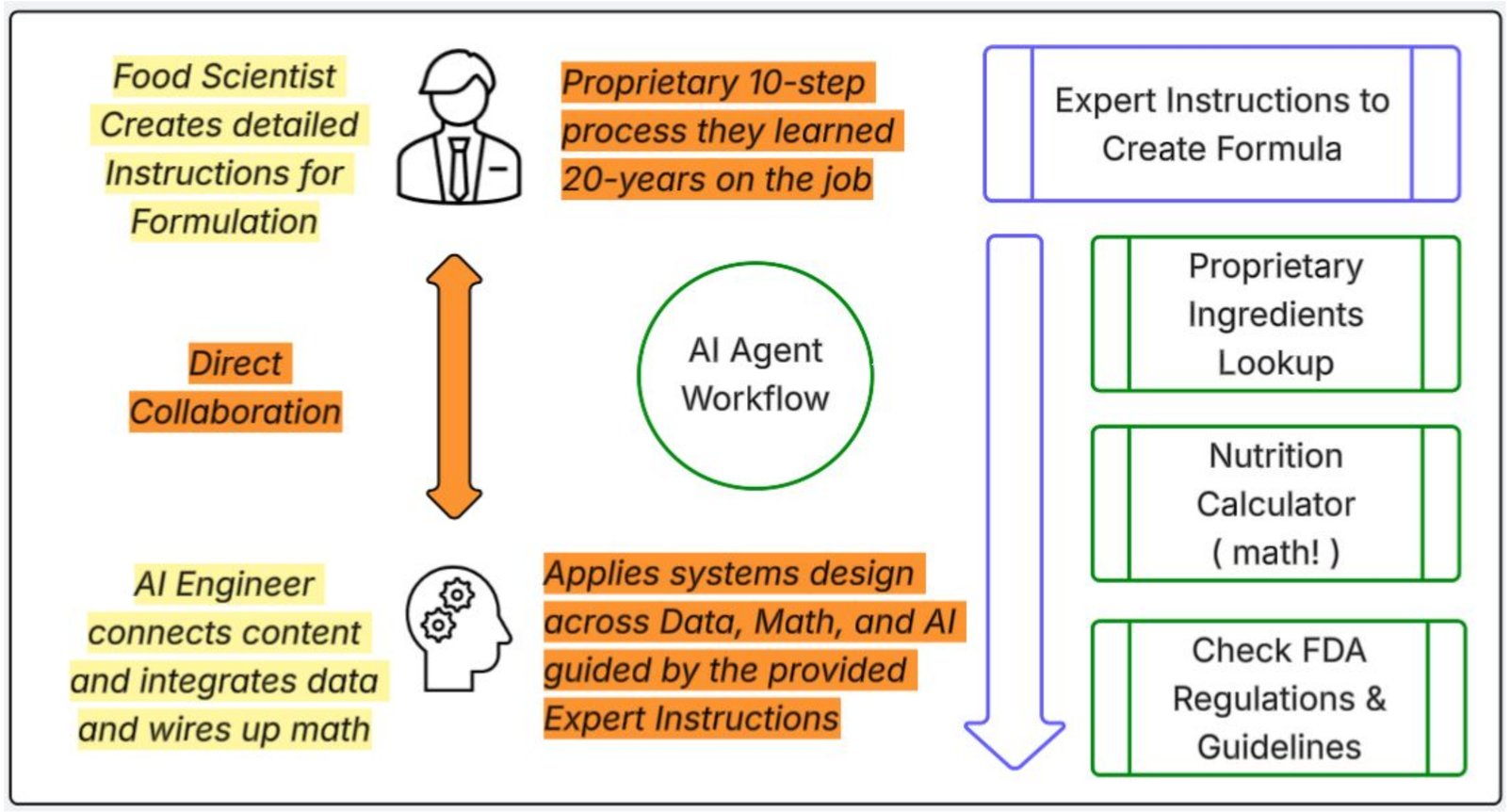


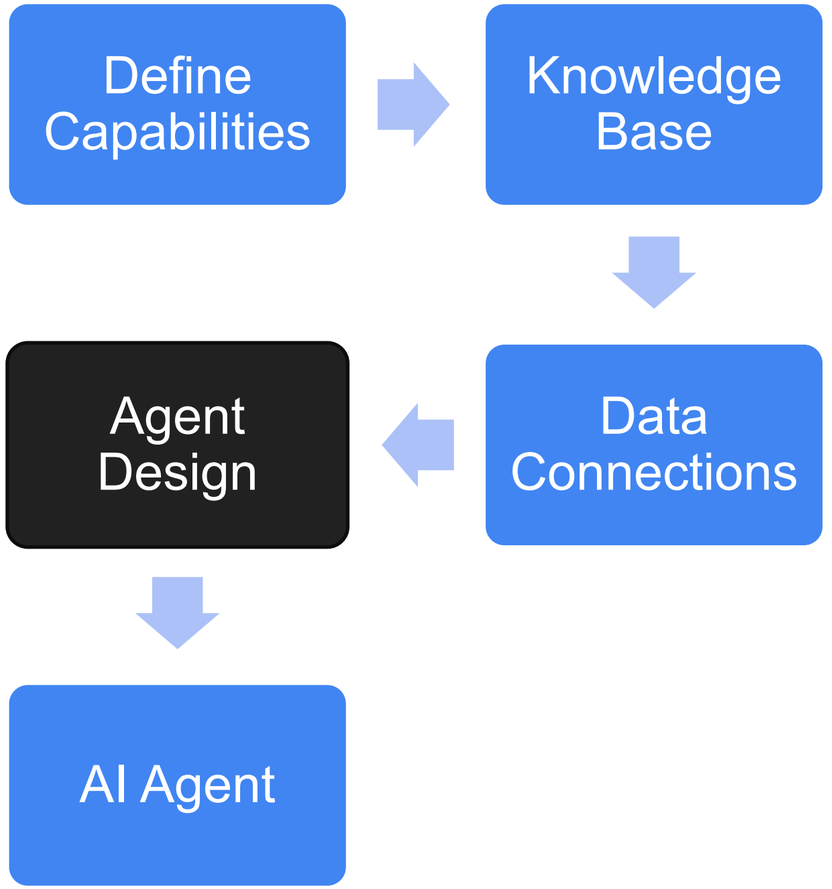
Appendix B FDA Regulatory Requirements for Nutrient Content Claims[1]

FREE	
Calories	• Less than 5 calories per RACC and per labeled serving.
Total fat	• Less than 0.5 g per RACC and per labeled serving (or, for meals and main dishes, less than 0.5 g per labeled serving). • Contains no ingredient that is fat or understood to contain fat, except as noted below.* • "__% Fat Free" may be used if food meets the requirements for "low fat" and the % declared is in same type size as "fat free." • 100% Fat Free: Food must be "fat free" and contain less than 0.5 g fat per 100 g.
Saturated fat	• Less than 0.5 g saturated fat and less than 0.5 g *trans* fatty acids per RACC and per labeled serving (or, for meals and main dishes, less than 0.5 g saturated fat and less than 0.5 g *trans* fatty acids per labeled serving). • Contains no ingredient that is understood to contain saturated fat except as noted below.*



Design AI Workflows with the Experts





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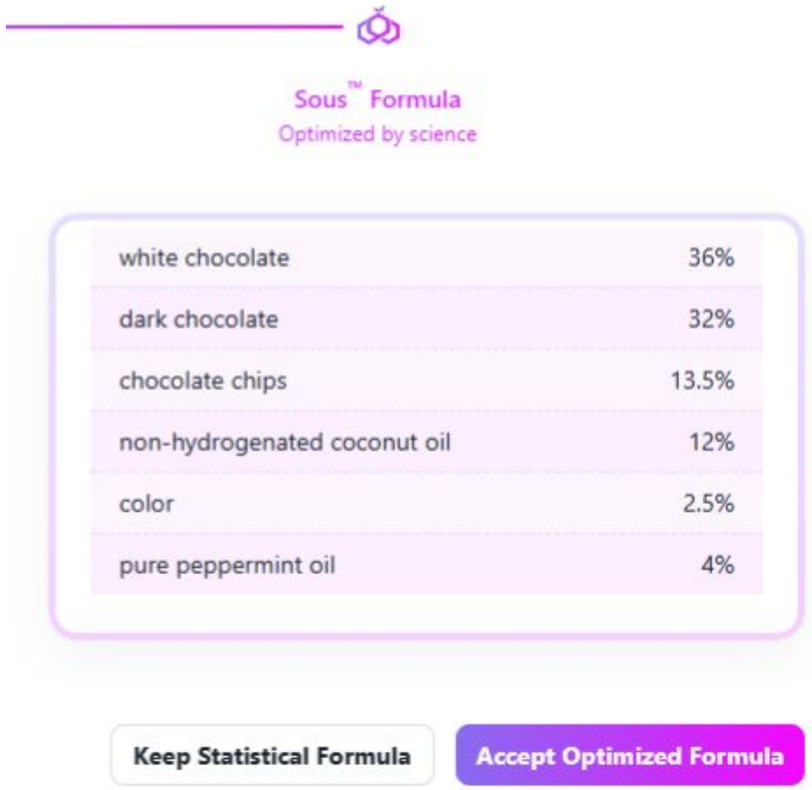
Create Real User Solutions with AI

- Expert AI systems go beyond chatbots



Rationale for Final Formula Revision

Guiding Principles

The primary objectives for the final formula were to optimize the sensory balance (flavor, sweetness, mouthfeel, aroma), maintain typical usage levels for potent ingredients, and reflect technical insights from interrogation, comparison, and analysis reports.
The Statistical Formula demonstrated excessive parity between white and dark chocolate, reduced inclusions and texture, elevated colorant, and an overly high peppermint oil load relative to established confectionery benchmarks. Conversely, the Initial Formula featured higher white chocolate, lower dark chocolate, increased inclusions, reduced color, and a higher peppermint oil concentration, yet may have been too aggressive on peppermint.

Accelerate Technical Problem Solving with Sous™

Sous™, your AI Co-Scientist that speaks food science fluently.

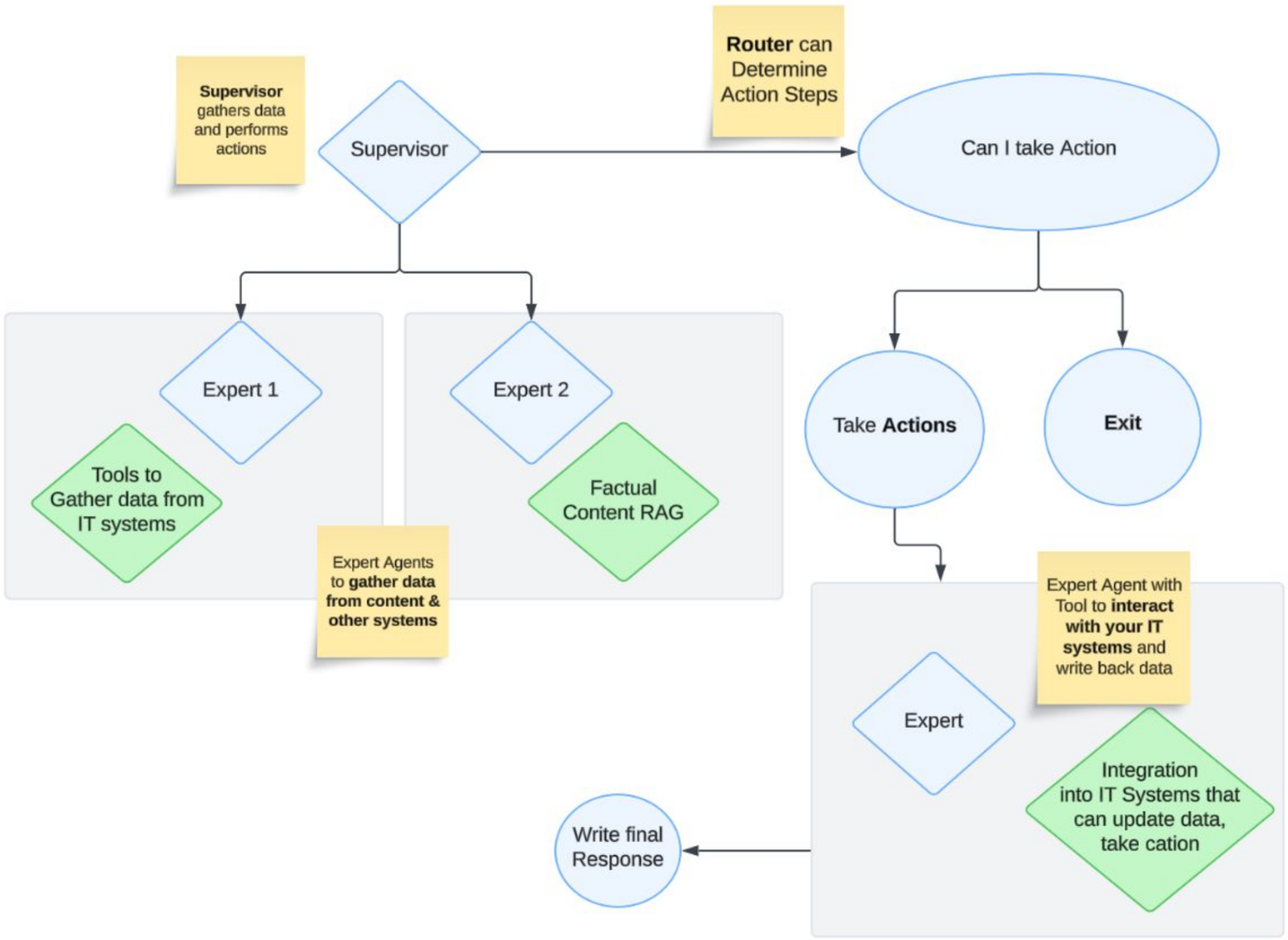
Reverse Engineer with Science-Backed Optimization

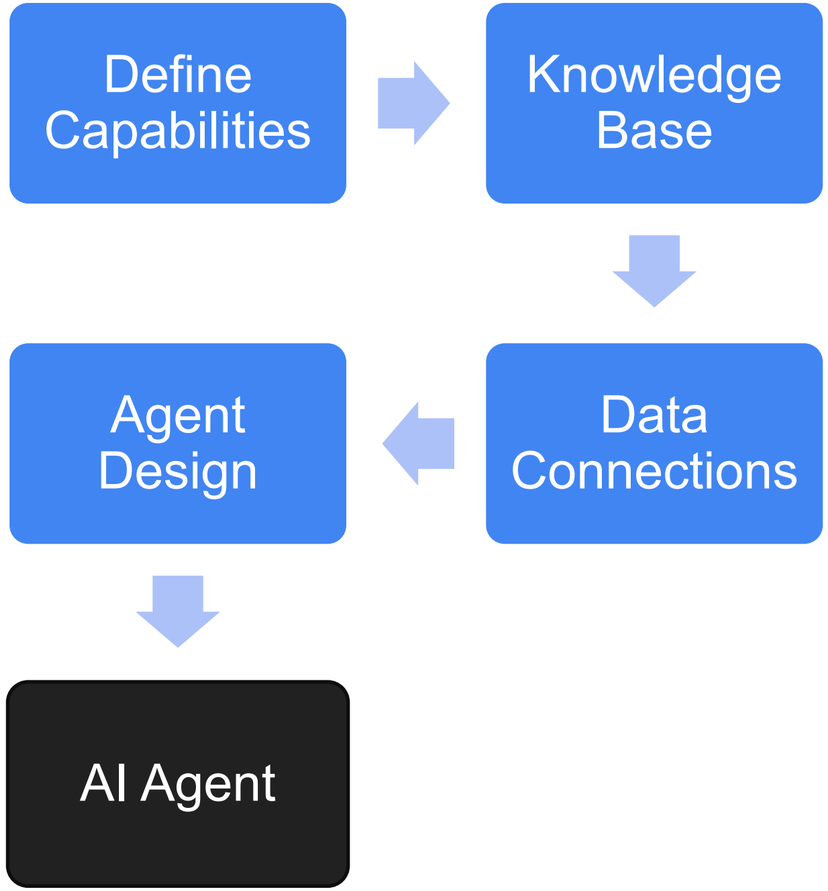
Reverse engineer existing products with ease, optimized to fit your needs.

Formulate with Project Requirements

Create formulas based on your specific needs, including claims and nutritional requirements.

Building AI Agents that Respect Science





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Panel Q&A + Discussion

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Thank you

Contact Thomas Cousens to kickstart your cloud journey!

thomas.cousens@improving.com
+1 (613) 793-2555