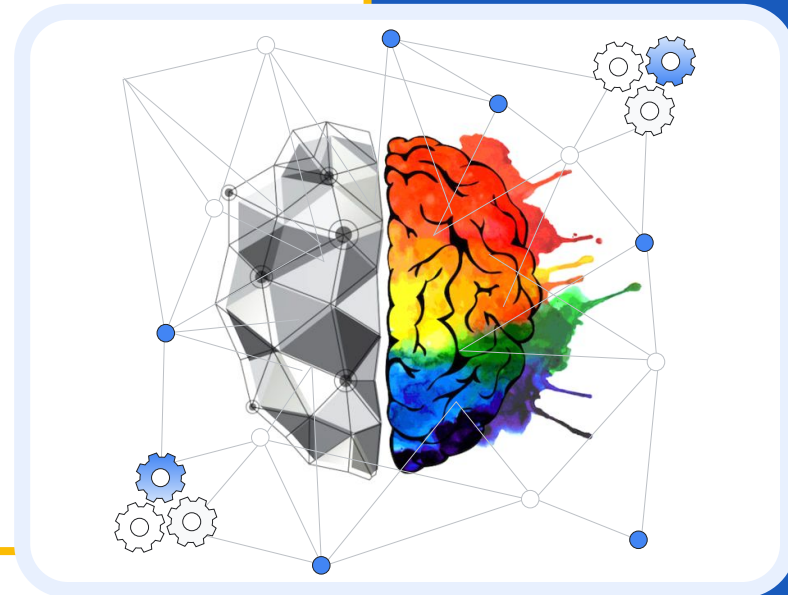


# Making AI helpful for everyone

Arnd Lülsdorf



# How many years did each take to get to 50 million users?



Airplanes

**68 years**



Internet

**7 years**



Facebook

**3 years**



Gen AI

**5 weeks**



Making **AI**  
helpful  
for everyone

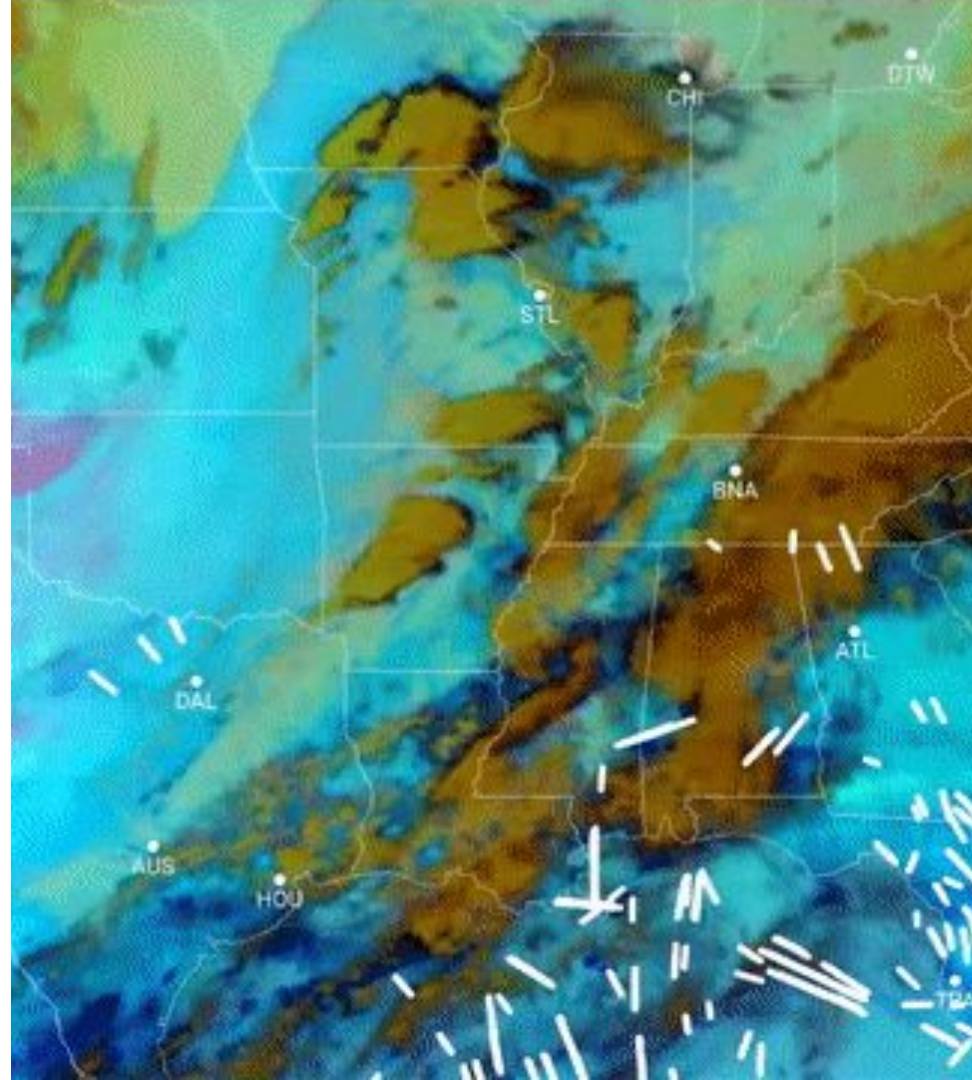


AI is helping emergency response teams **predict the paths of wildfires**





AI-based image recognition is helping **reduce the climate impact** of flying by mitigating contrails

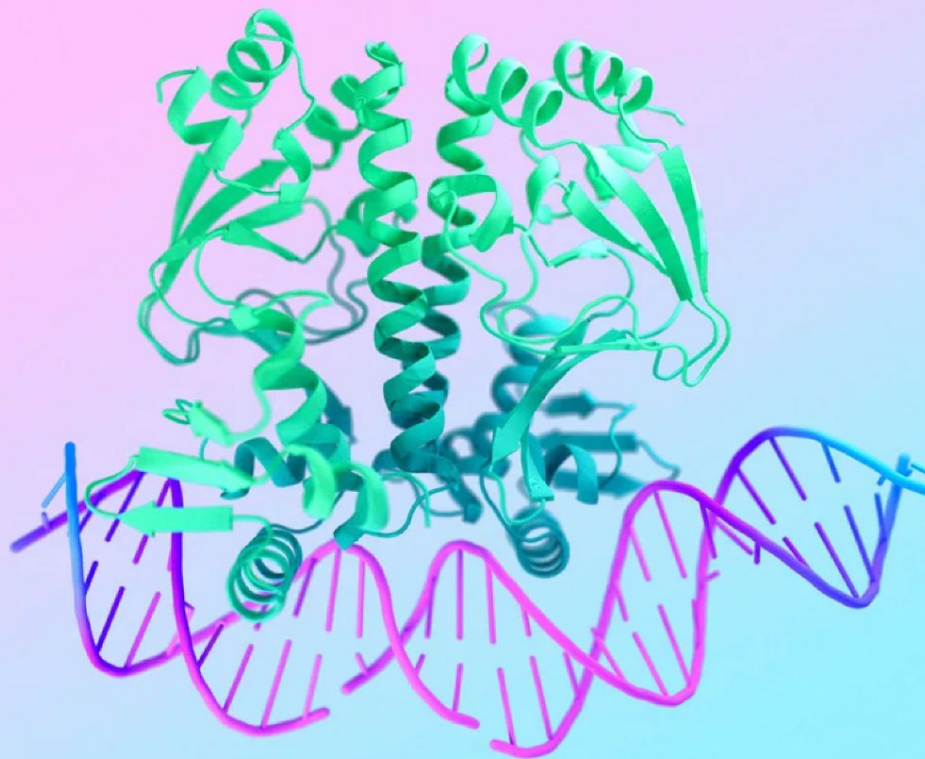




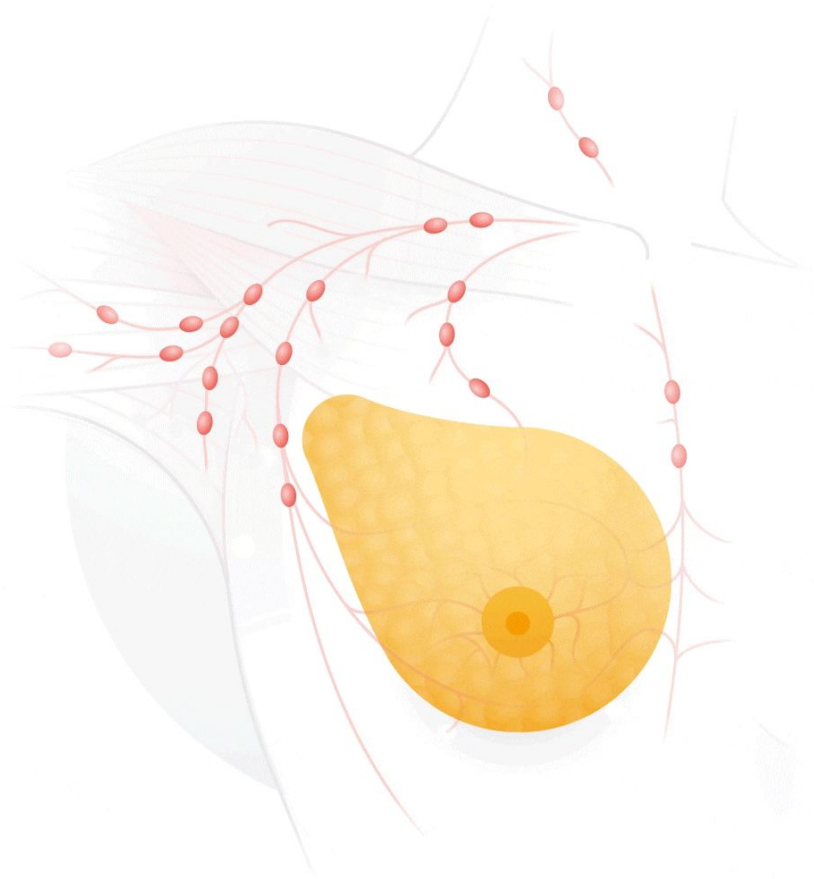
# AlphaFold

Revolutionizing the field of biology by rapidly and accurately predicting protein structures, which is accelerating research in drug discovery, disease understanding, and environmental solutions.

This groundbreaking technology is democratizing scientific discovery, potentially saving millions of research hours and trillions of dollars, and ultimately improving human health and the planet.



Generative AI is helping to  
improve  
breast cancer screening



# Disruption potential of **Generative AI** is immense, with far-reaching implications for businesses, governments and societies worldwide



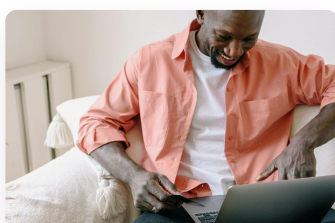
## Productivity and Efficiency

Generative AI can **automate tasks, streamline workflows, and accelerate processes**, leading to significant productivity gains across sectors.



## Innovation and Creativity

It can be a powerful tool for **generating ideas, designing products, and developing new solutions**.



## Accessibility and Democratization

It can **democratize access to information** and services by lowering barriers to entry and reducing costs.



## Personalization and Customization

It can enable highly **personalized experiences**, tailored to individual needs and preferences.



## Economic Growth & Job Displacement

Stimulate economic growth by **increasing productivity** and creating new jobs as well as pose a risk of job displacement for workers where tasks can be automated.

# A deep history of research and innovation at Google



Google invents **Transformer** kickstarting LLM revolution

A conversational AI Service powered by **Gemini**.





# Gemini marks the next phase on our journey to making AI more helpful for everyone

The Gemini logo is centered in a light blue rounded rectangle. It features the word "Gemini" in a sans-serif font, with a four-pointed star above the letter "i".

## Natively multimodal

2M **Long-context** understanding and generation across **text**, **images**, **audio**, and **video**.

## Family of models

Tailored **Performance & Efficiency**, while offering **scalability** and **cost** optimization

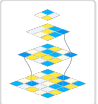
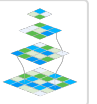







## Sophisticated reasoning

Tackle **complex**, real-world **problems** that involve **large** amounts of **diverse** information

Making Gemini a valuable tool for **decision-making**, **problem-solving**, and **knowledge discovery**.

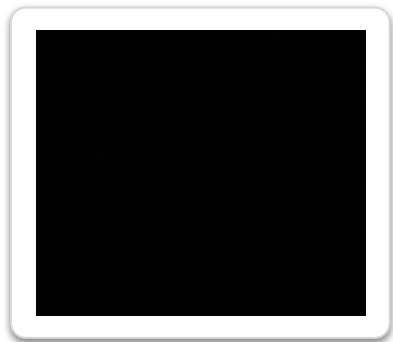
# 150+ enterprise-ready foundation models in AI Model Garden

## GenAI Model Garden

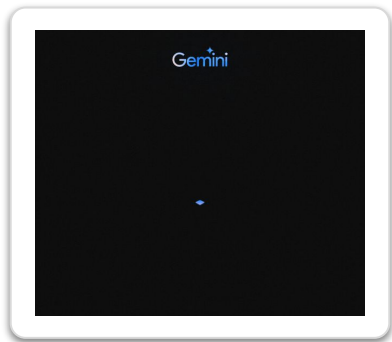
Gemini Foundation Models	Gemini 1.0 Pro	Gemini 1.5 Flash	Gemini 1.5 Pro					
Google Foundation Models	PaLM 2	Imagen 2	Chirp	Codey	Embeddings Embeddings API			
Google Task Specific Models	Speech-to-Text	Text-to-Speech	Natural Language	Translation	Doc AI OCR	Occupancy analytics	Vision	Video Intelligence
Google Domain Specific Models	 <b>MedGemini</b> Life Science and Healthcare		 <b>Sec-PaLM</b> Cybersecurity					
Partner & Open Ecosystem	 Llama 3 Code Llama	 Falcon	 Claude 3 Haiku, Sonnet, and Opus	 MISTRAL AI_ Mixtral 8x7B	 Hugging Face	  Gemma		

- **Choice and flexibility** with Google, open source, and third-party foundation models
- **Multiple modalities** to match your use case
- **Multiple model sizes** to match cost and efficacy needs
- **Domain-specific models** for specialized industries
- Enterprise ready with **safety, security, and responsibility**
- Decrease time to value with **fully integrated platform**

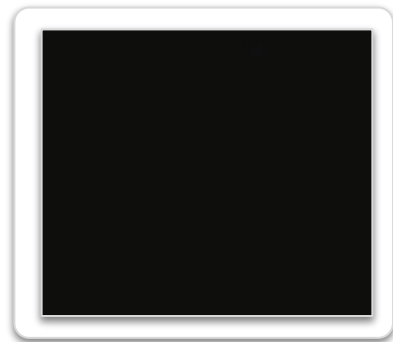
# Gemini marks the next phase on our journey to making AI more helpful for everyone



Natively Multi-modal  
including text, code, images,  
audio and video

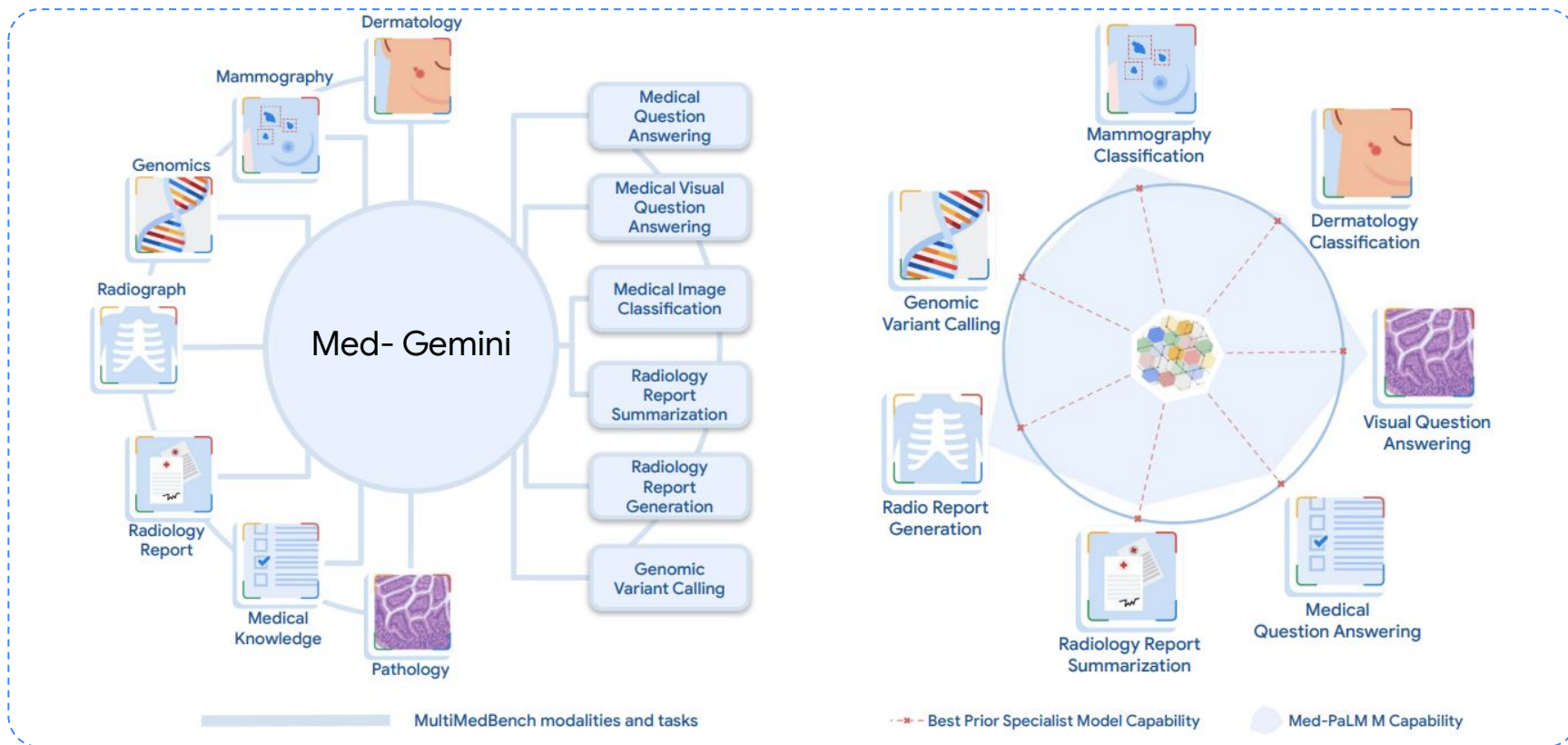


Better understanding  
and reasoning across  
modalities



Expanded context  
window  
(up to 2 Million Tokens)

# Multimodal towards Generalist Biomedical AI



# AI Hypercomputer: next generation AI supercomputing architecture for Cloud customers

## Flexible Consumption

- Dynamic Workload Scheduler
- On Demand
- CUD
- Spot

## Open Software

- JAX, TensorFlow, PyTorch
- Multislice Training, Multihost Inference, XLA
- Google Kubernetes Engine & Compute Engine

## Performance-Optimized Hardware

- Compute (GPUs, TPUs)
- Storage (Block, File, Object)
- Networking (OCS, Jupiter)

# It takes more than just a model to drive business value with GenAI

Google Cloud delivers a  
**differentiated, vertically  
integrated** GenAI portfolio



Super scalable AI infrastructure



Access to world class, state of the art models



Platform to develop and deploy production ready applications



AI powered solutions to assist everyone in their day to day work



Broad ecosystem of partners at every level of the stack

---





# Vertex AI

## Google Cloud Generative AI platform

### Agent Builder

OOTB and custom agents | Search  
Orchestration | Extensions | Connectors | Document processors | Retrieval engines | Rankers | Grounding

### Model Builder

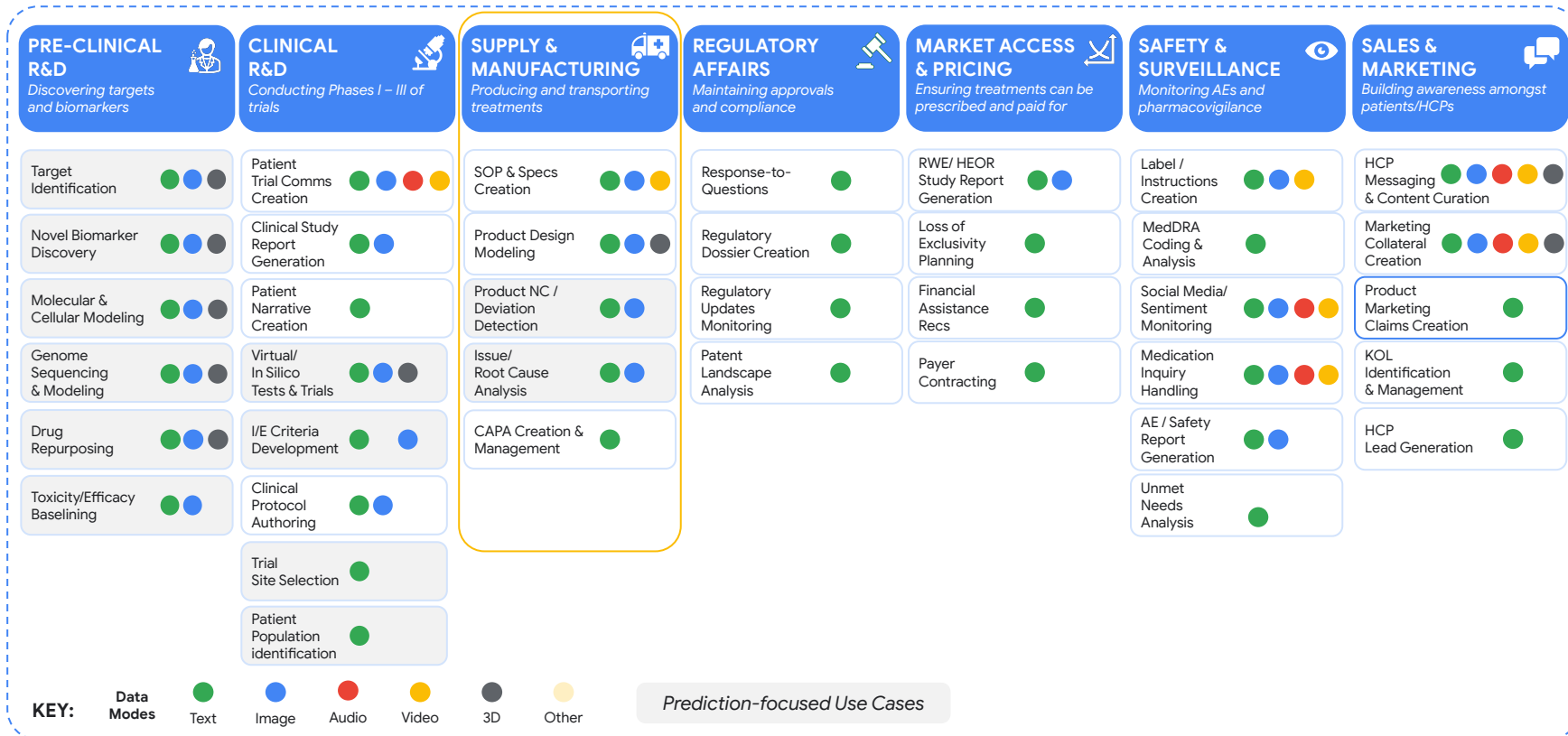
Prompt | Serve | Tune | Distill | Eval | Notebooks | Training | Feature store | Pipelines | Monitoring

### Model Garden

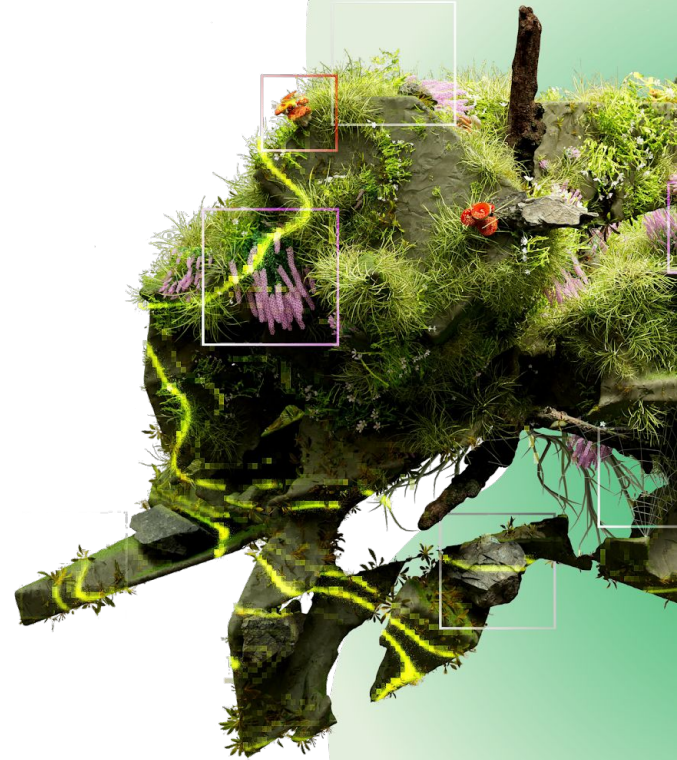
Google | Open | Partner

Google Cloud Infrastructure (GPU/TPU) | Google Data Cloud

# Generative AI Use Cases in Life Sciences



# Gen AI in Action (Live Demos)



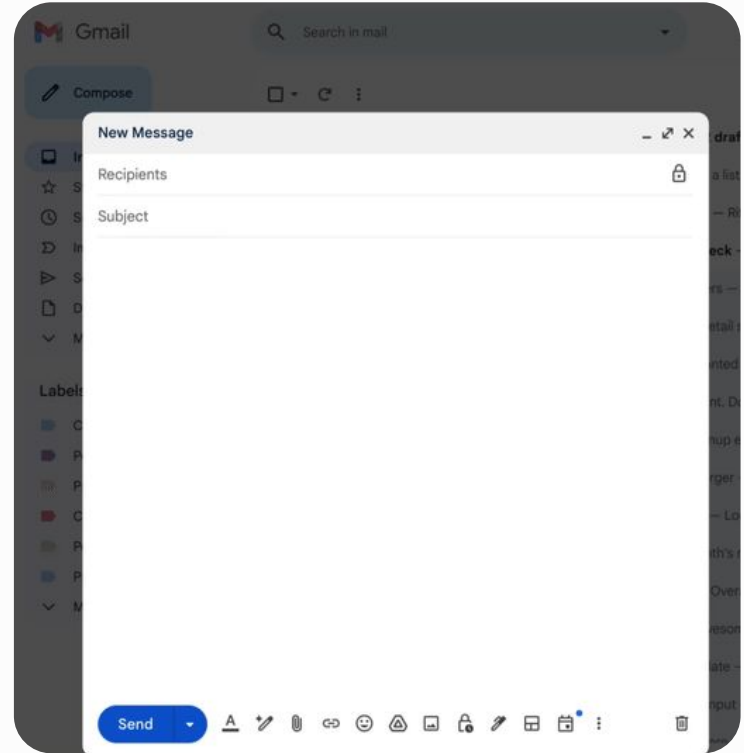


**Improve knowledge,  
learning, creativity &  
productivity**

Google Workspace

# Gemini in Gmail, Docs, Sheets, Slides and more

Boost your productivity with  
Gemini to help you write,  
visualize and organize



# Take notes for me

In Preview

1

Focus on the meeting

2

Keep the meeting moving

3

Never forget what was said

4

Offload to Gemini

The screenshot displays a Google Meet interface for a meeting titled "Cymbal Brand Strategy". The meeting is in progress with four participants visible in a grid view: Michelle Anderson (top-left), Joe Carlson (top-right), Nahla Vu (bottom-left), and "You" (bottom-right). A Gemini AI sidebar is open on the right, titled "Gemini is taking notes". The sidebar shows a "Summary so far" section with the text: "Joe gives a short introduction and then Marc and Nahla give their own short talks about their research." Below this is a "Latest update" section with the text: "Lani and Michelle have placed an order for Chromebooks, but aren't sure what the status is. Joe proceeds to outline next steps for completing the review for the sales team." The sidebar also indicates it was "Updated 4 min ago" and lists "Action items" including "Notes - Cymbal Brand Strategy" with a "Stop taking notes" button. The bottom of the screen shows the standard Google Meet control bar with icons for mute, video, chat, and other functions, along with a "Send message" input field.



# Translate for me

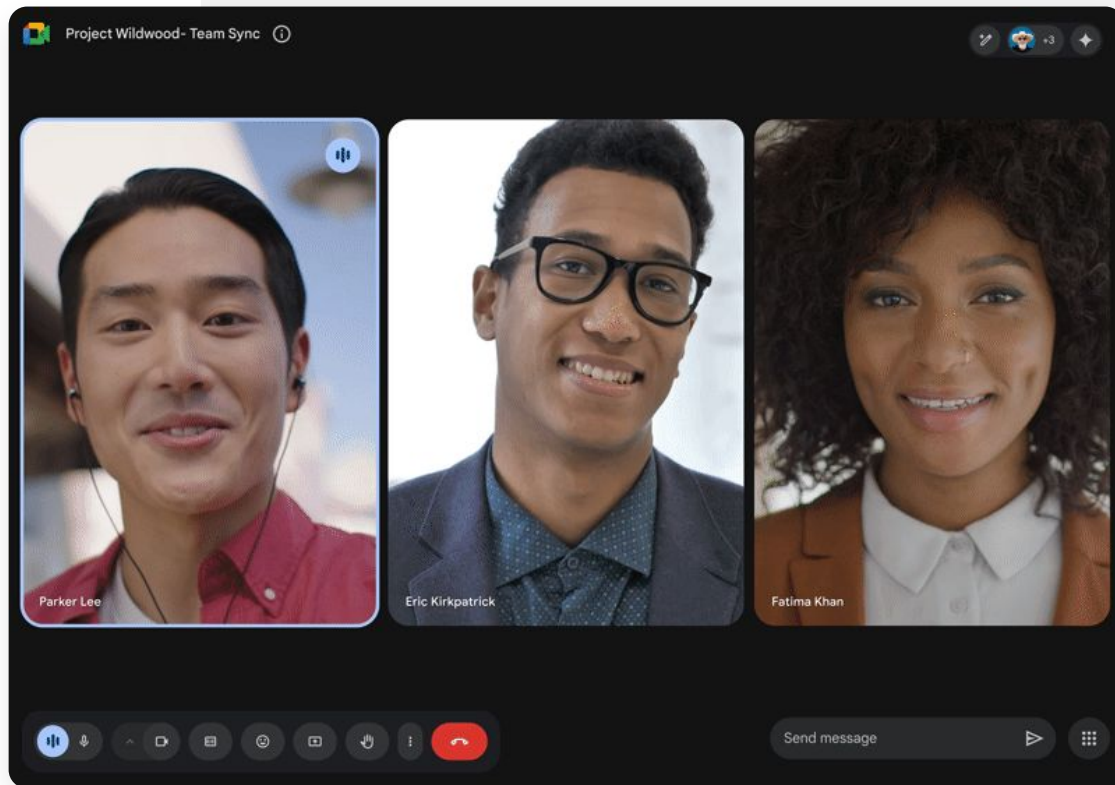
In Preview

1

Automatic language detection and translation

2

Supported in 69 languages



# Gemini

In Preview

**Gemini joins the conversation**

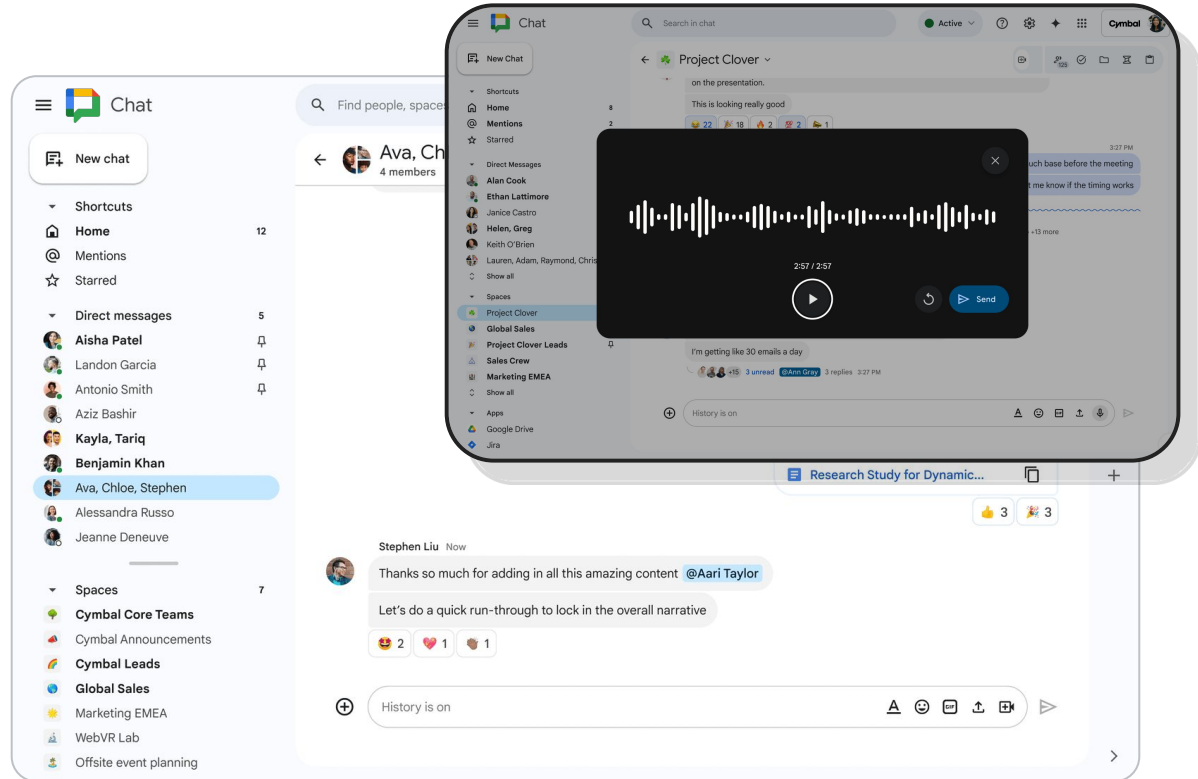


Customer preview in H2 '24

# Audio messages

General Availability

Send audio messages of up to 3 minutes from Chat on mobile

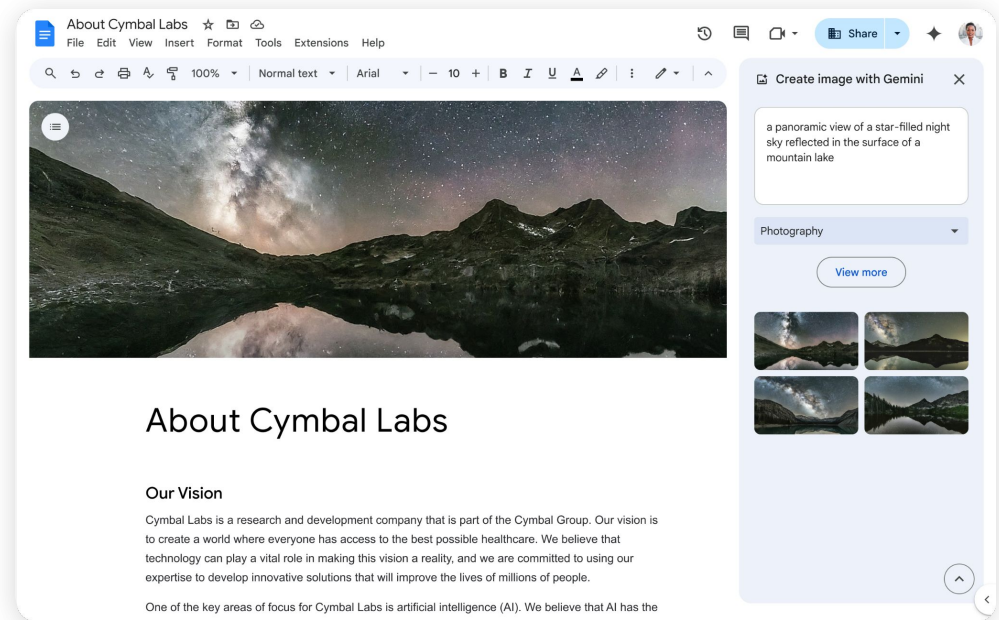


Q1 '24

# Cover images

## Generate cover images with Gemini in Docs and easily render full-bleed cover images

Generally available in the coming weeks



The screenshot shows a Google Docs interface with a document titled "About Cymbal Labs". The document content includes a large image of a starry night sky reflected in a lake, followed by the heading "About Cymbal Labs" and a section titled "Our Vision" with descriptive text. A sidebar on the right is open to the "Create image with Gemini" tool, showing the prompt "a panoramic view of a star-filled night sky reflected in the surface of a mountain lake" and a gallery of generated images. The document's menu bar includes "File", "Edit", "View", "Insert", "Format", "Tools", "Extensions", and "Help". The sidebar also includes a "Share" button and a "View more" link.

About Cymbal Labs

### Our Vision

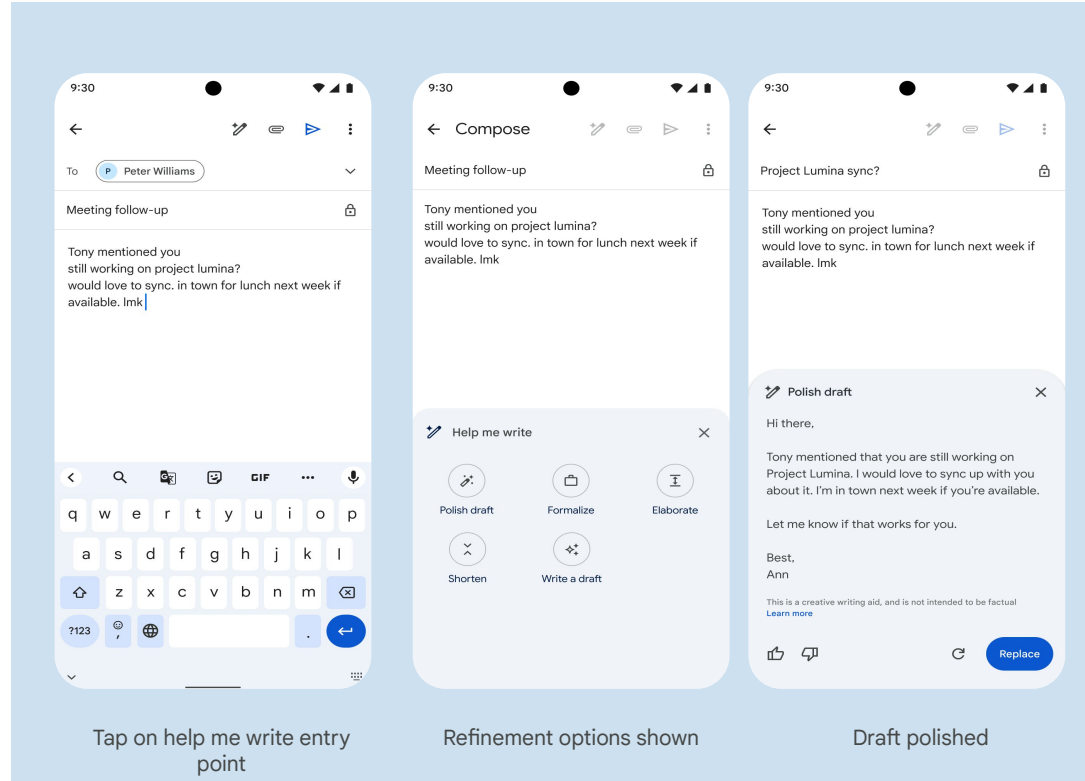
Cymbal Labs is a research and development company that is part of the Cymbal Group. Our vision is to create a world where everyone has access to the best possible healthcare. We believe that technology can play a vital role in making this vision a reality, and we are committed to using our expertise to develop innovative solutions that will improve the lives of millions of people.

One of the key areas of focus for Cymbal Labs is artificial intelligence (AI). We believe that AI has the

# Polish my draft (mobile and web)

Summarizing project notes or  
feedback in a few words

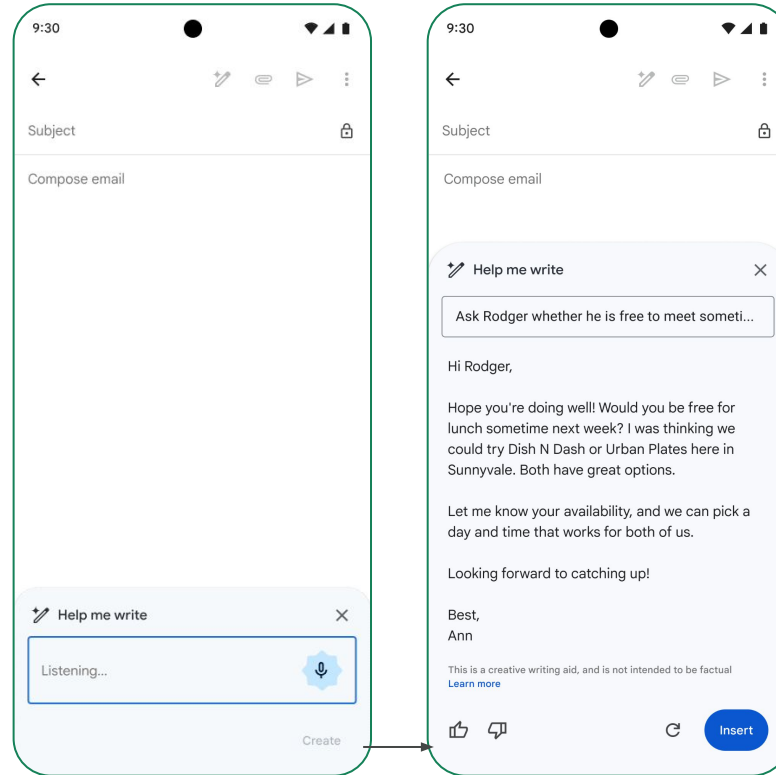
In Preview



# Help me write Voice Compose on mobile

By adding voice to help me write users can improve both the prompting experience and draft quality.

In Preview



Prompt transcribed inline

Draft generated





Golden Stripes

# Enterprise Readiness



# Enterprise Readiness



## Data governance and privacy

Your Data is Your Data

We can not access your data ever without your permission

We will not train our models on your data



## Security & compliance

VPC Security Controls

Customer Managed

Encryption Keys

Access  
Transparency



## Reliability and sustainability

Infra is fast and cost-effective

Scaleable across ML/GenAI workloads

Optimized for running large models

Low carbon footprint



## Responsible AI and indemnity

AI Principles

Safety guardrails

Content filters

Recitation checks

Indemnify LLM inputs

Building and  
deploying  
Gemini models  
responsibly



Gemini

Safety and  
responsibility at  
the core



Thank you!

Google Cloud