

AI and Generative AI

2023-10

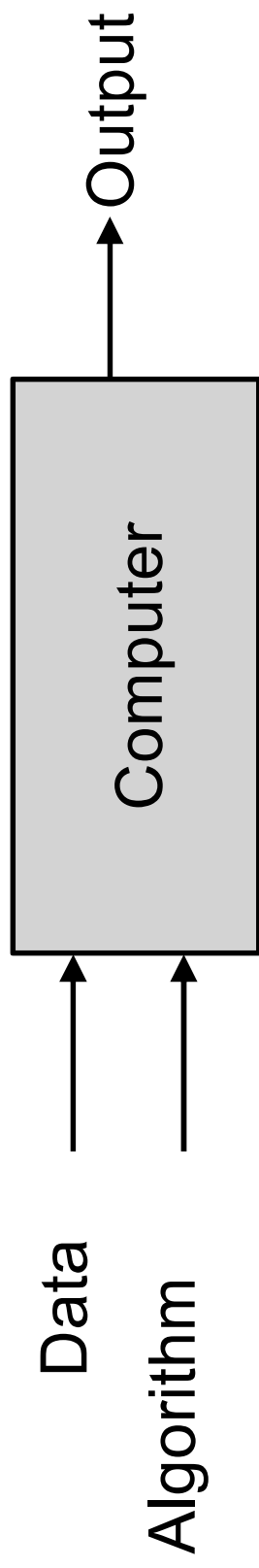
AI is defined as capability of machines to perform cognitive functions like humans.

AI vs AGI vs SI

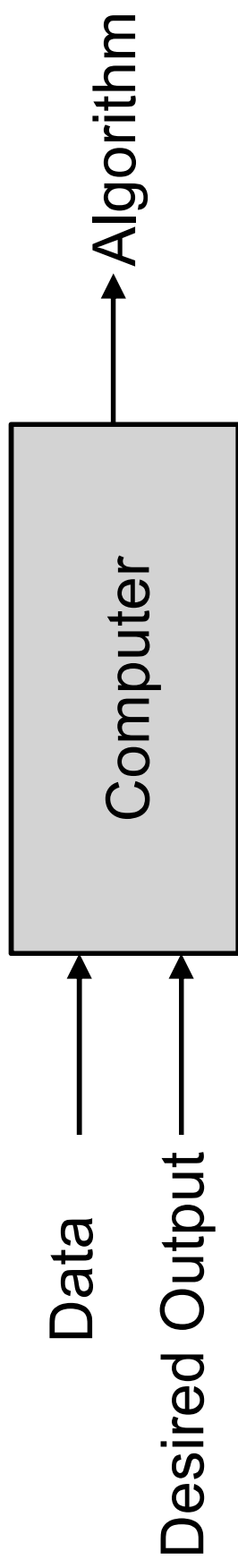
- “Biggest existential threat to mankind”
Elon Musk
- “Google is basically an AI company”
Sundar Pichai, CEO Alphabet
- “AI has become a new focus of international competition” China State Council, Artificial Intelligent Development Plan AIDP document 2017



Traditional Programming



AI



What makes AI successful now?

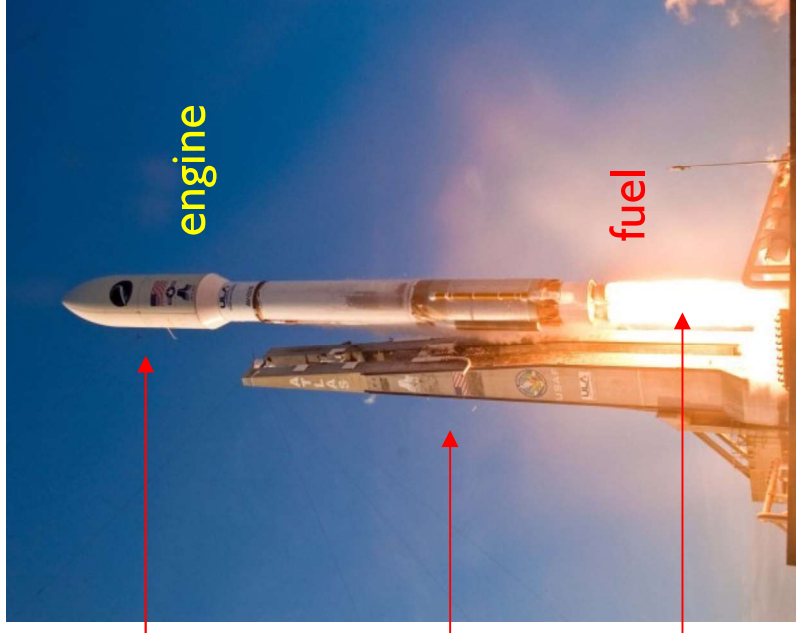
Computation models,
e.g., deep learning

engine

Computation
infrastructure
e.g. AI data center

Data is energy.
Big data is the
huge energy source

fuel



Andrew Ng's Analogy

How can you tell if an AI product is good or not



Technical specification



Performance in edge cases



Ease of deployment

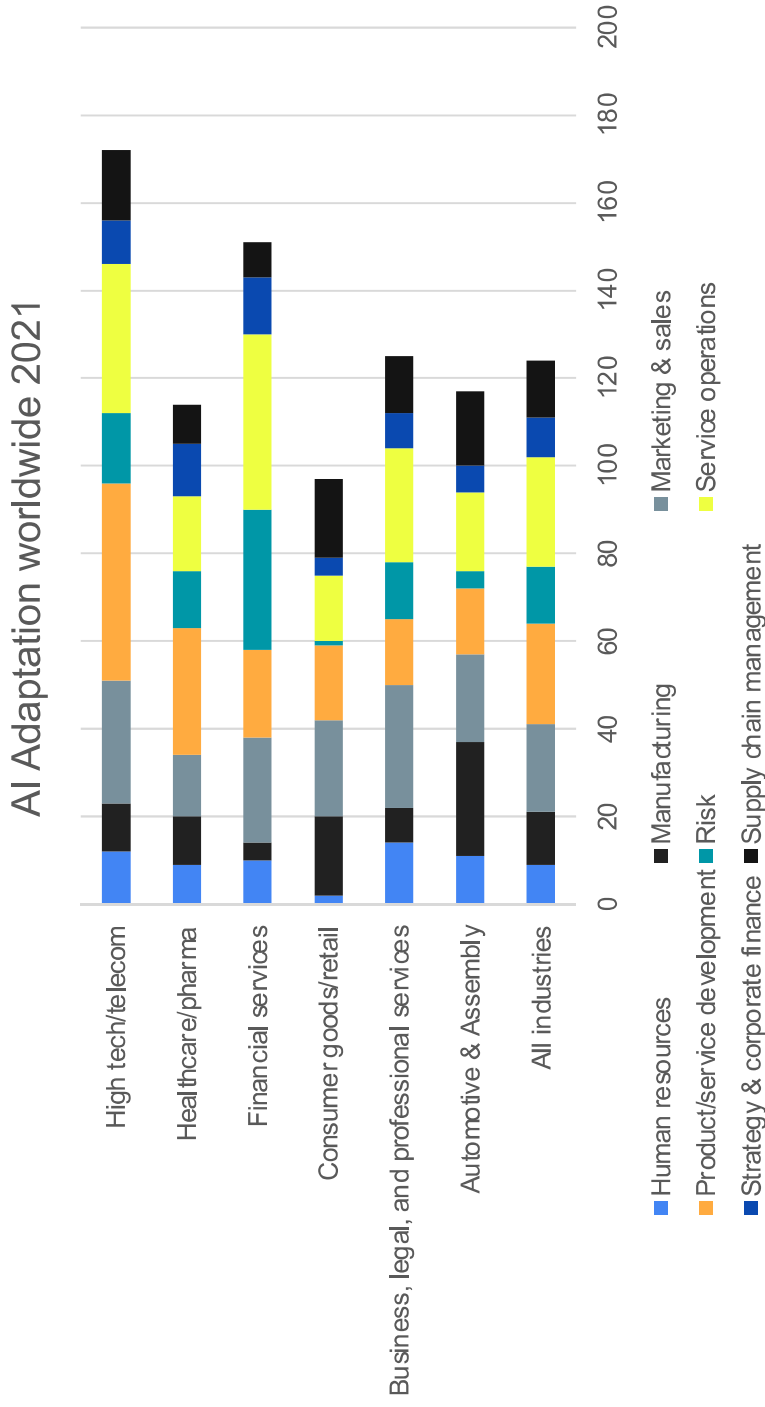


Capability of improvement

AI Applications



Kai-Fu Lee, AI super-powers



Source: Stanford University, McKinsey, worldwide study 2021



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Large Language Model: how things start

Attention Is All You Need

Adept character.ai **Adept** Inceptive

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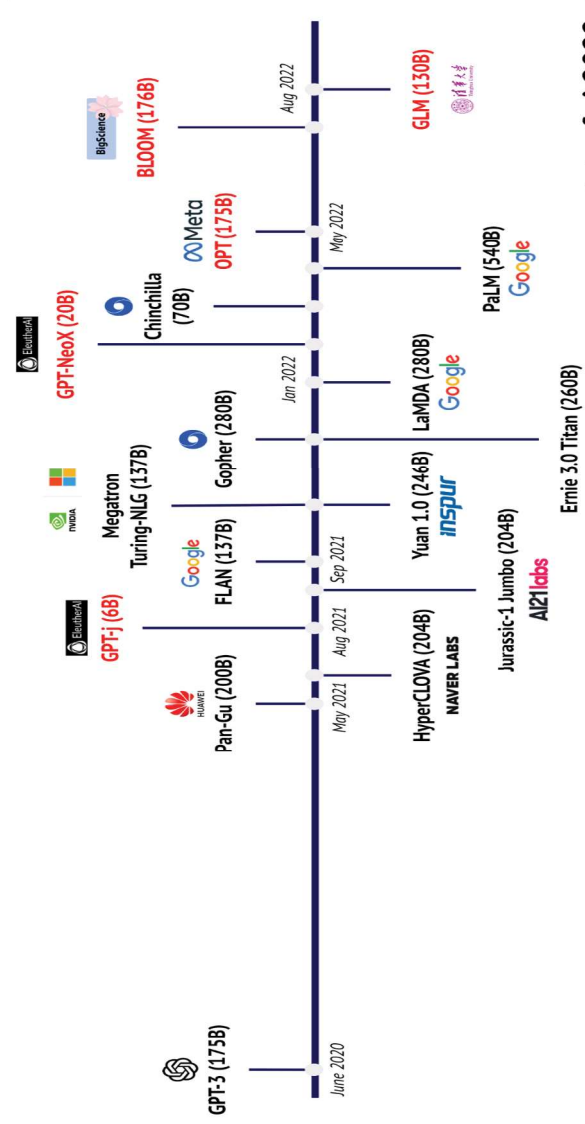
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NEAR
INCORPORATED

Transformer

- **Non sequential:** texts are processed as a whole rather than word by word.
- **Self Attention:** this is the newly introduced 'unit' used to compute similarity scores between words in a sentence.
- **Self-supervised pre-training**

GPT: Generative, Pre-trained, Transformer





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From large language models to generative AI: big boom!

AI 50 2023

VISUALIZED

Forbes SEQUOIA MERITECH

CONSUMER USES	ENTERPRISE STACK	INDUSTRY VERTICALS
ENTERTAINMENT character.ai Midjourney	GENERAL PRODUCTIVITY A DEPT tome glean AlphaSense	LAW FIRMS Harvey. CREATIVE runway Midjourney imagen descript
PRODUCTIVITY OpenAI ChatGPT neeva	GENERAL & ADMINISTRATIVE Ironclad eightfold.ai synthesia	HEALTH BAYESIAN insitro PathAI UNLEARN
OTHER trigo luabot	SALES & CUSTOMER SUPPORT GONG Clari RevComm PolyAI	DEFENSE ANDURIL Shield AI SLINGSHOT VANNEVAR Labs
	MARKETING Jasper WRITER	AGRICULTURE & CLIMATE Pachama FarmWise
	EPD/IT/SECURITY Moveworks VECTRA Abnormal GitHub Coaliat	CONSTRUCTION CANVAS

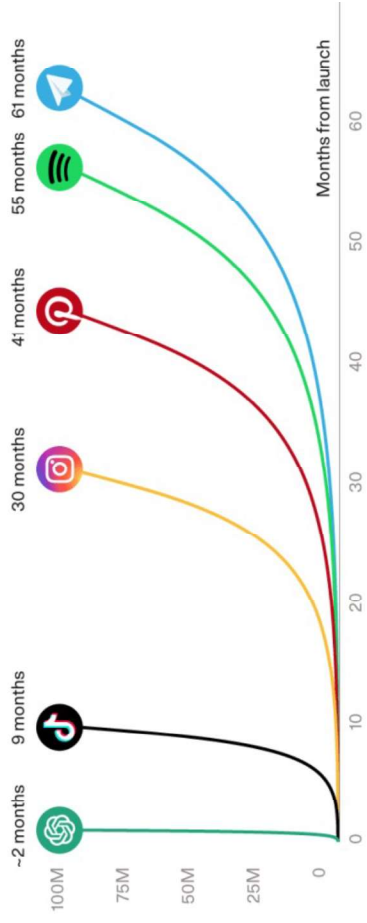
Apps

DEPLOY & MONITOR	TRAIN & FINE TUNE MODELS	USE OPEN SOURCE MODELS & FRAMEWORKS	STORE & COMPUTE	LABEL / PROCESS DATA	DATA WAREHOUSES / LAKEHOUSE	CLOUD SERVICE PROVIDERS	HARDWARE
Hugging Face arize	Weights & Biases mosaic ML PyTorch FA	Hugging Face Stanford Alpaca LLaMA	Snorkel scale surge COACTIVE	snowflake databricks	Google Cloud aws Azure	OpenAI Anthropic character.ai Inflection cohere	NVIDIA AMD intel (etc.)

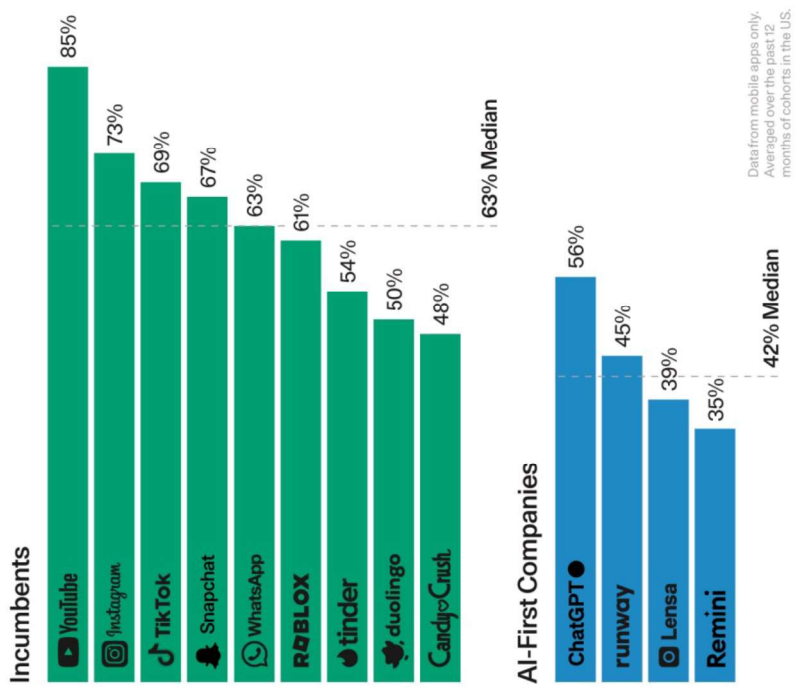
Infrastructure

* Foundational Company not on the AI 50 because it's public ** Notable open source project not on the AI 50 because it's not a company

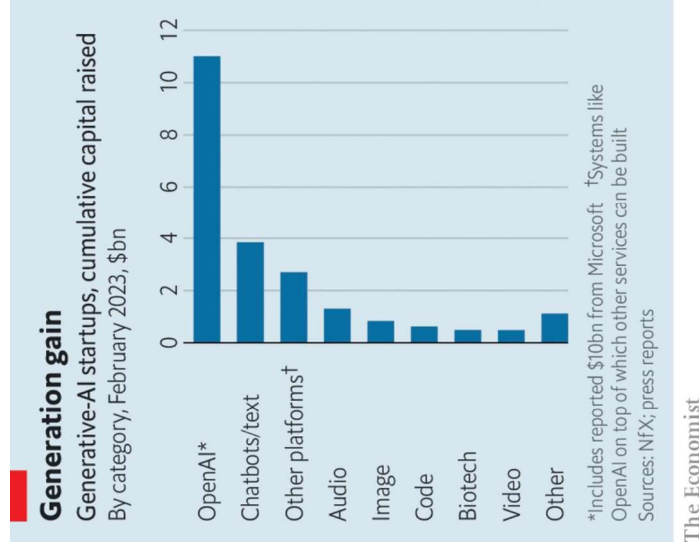
Path to 100 Million Users (stylized)



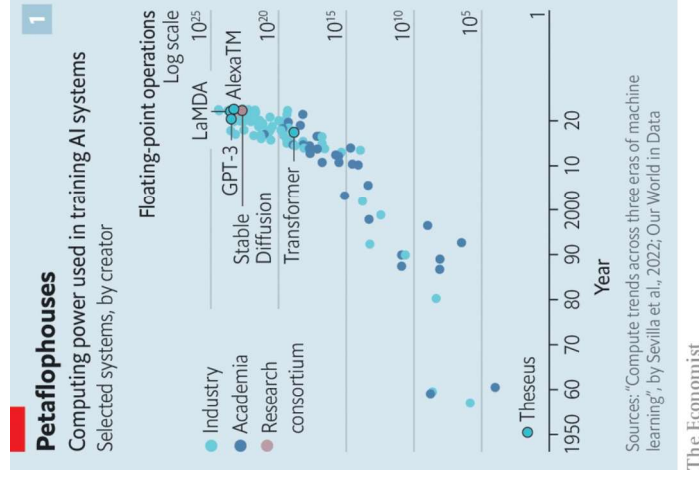
One Month Retention



Lot of money is flowing in



Hot race between big guys to build big models



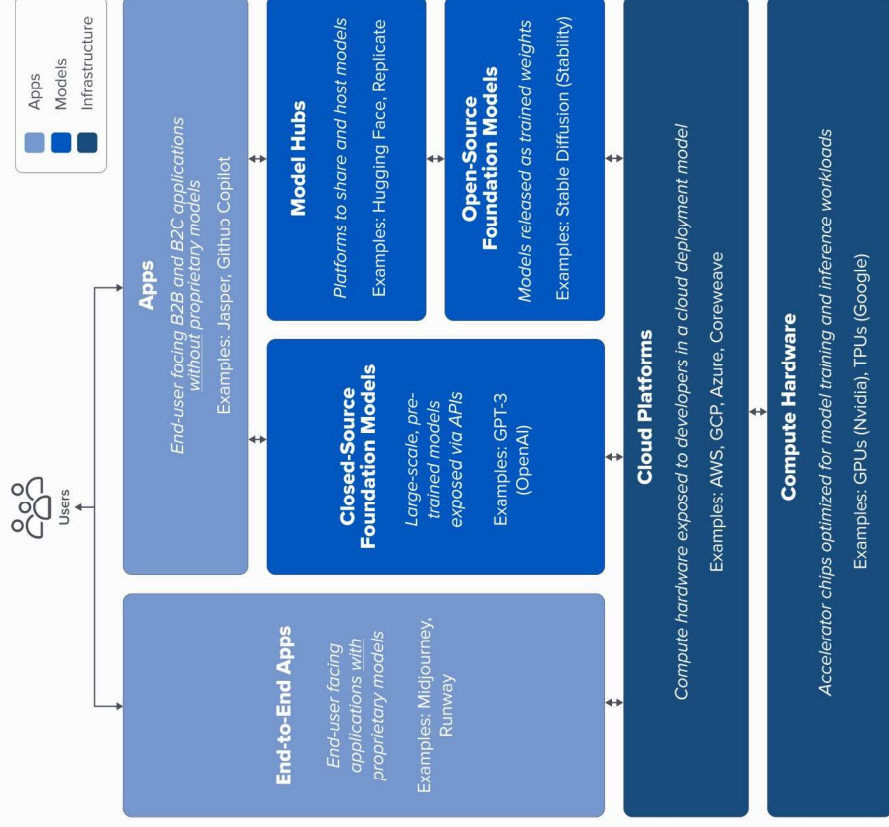
But seems still a lot of rooms for small guys to leverage

Generative AI
Curated by @saronim

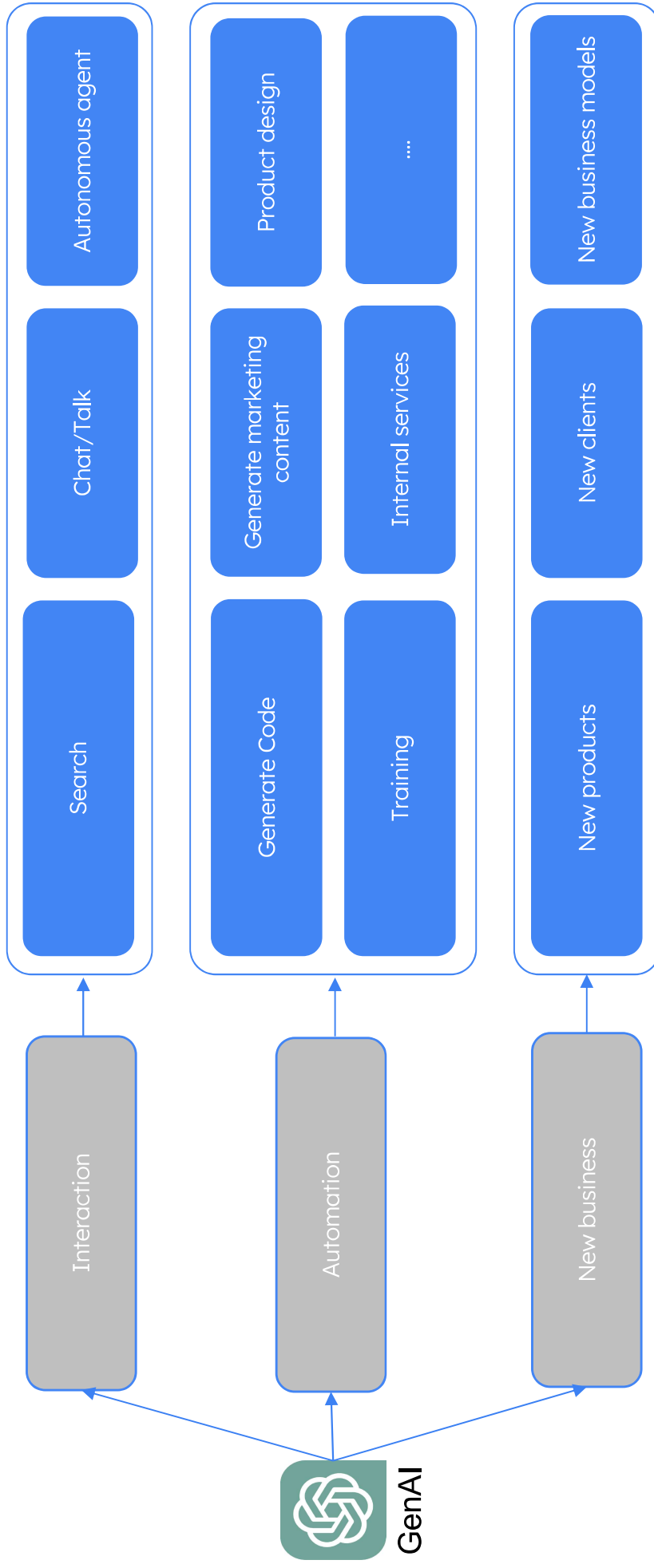
Category	Tools/Services
Text-to-Image (T2I)	DAVinci 2, Stable Diffusion, Craiyon, Jasper, Midjourney, NightCafe, GauGAN2, Wombo, Wonder, pixray-text2image, neural.love
Text-to-Video (T2V)	Runway, Fliki, Synthesia, Meta AI, Google AI, Phenaki
Text-to-Audio (T2A)	Play.ht, Murf AI, Resemble AI, WellSaid, Descript
Text-to-Text (T2T)	Simplified, Jasper, Frase, Ethernal, Replika, Grammarly, Copy AI, MarketMuse, AI21 Labs, HubSpot, InterKit, Goosel AI, Wit.ai, Cohere, CHIR, Ideas AI, CopySmith, Flowrite, Write, Ideasy.ai, OpenAI GPT-3, Blog Idea Generator
Text-to-Motion (T2M)	Runway ML, MDM Human Motion Diffusion Model
Text-to-Code (T2C)	Replit, Generate Code, GitHub Copilot
Text-to-NFT (T2N)	Lensa AI
Text-to-3D (T2D)	DreamFusion, CLIP-Mesh, GET3D
Audio-to-Text (A2T)	Descript, AssemblyAI, Whisper
Audio-to-Audio (A2A)	Audiolm, Non-VoiceMod
Brain-to-Text (B2T)	Speech from Brain, Non-Invasive Brain Recordings
Image-to-Text (I2T)	Neural, GPT-3 x Image Captions



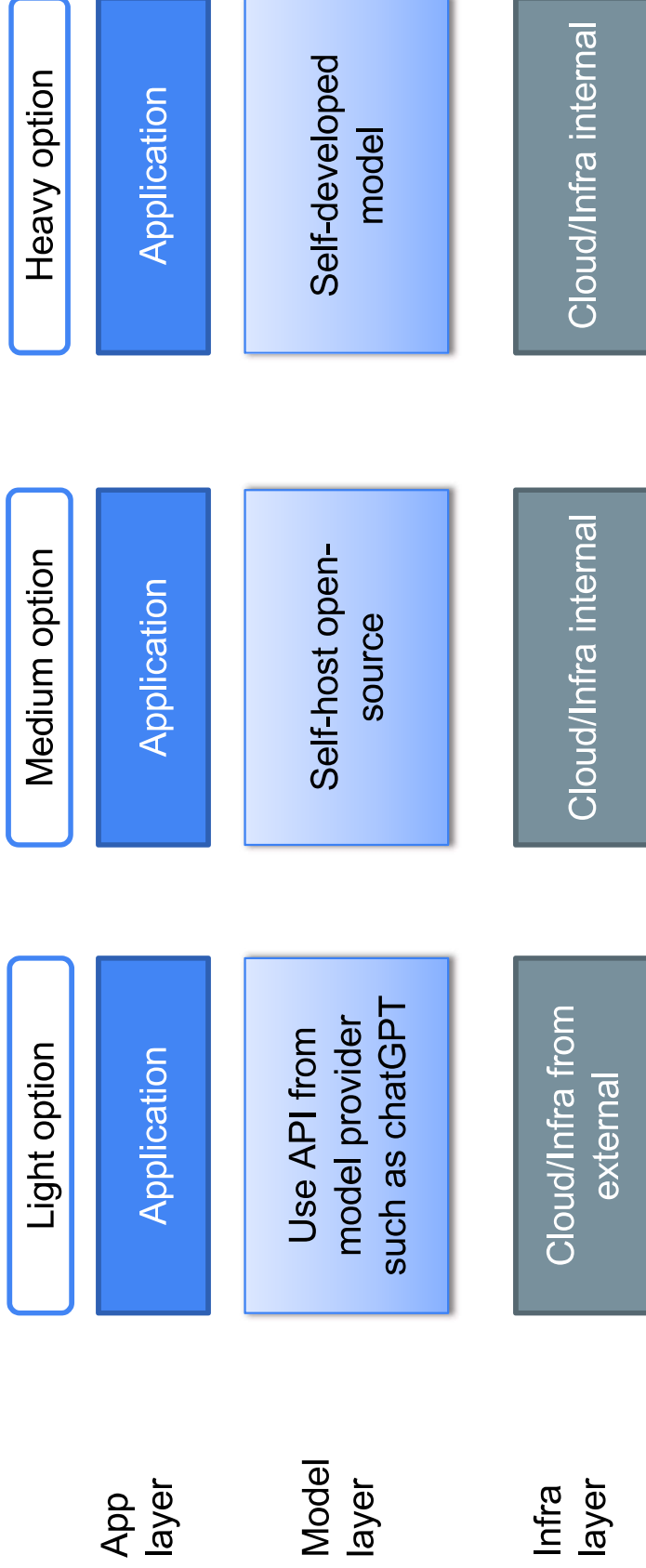
Preliminary generative AI tech stack



1. Infrastructure companies captured most of the values so far
2. There are fast growing application companies, but no durable business models yet
3. The model provider themselves are the ones who contributes most, but captures the least so far



Adoption options of chatGPT for an enterprise



Pros	<ul style="list-style-type: none"> • Fast adaptation • Low investment • Inherit quality 	<ul style="list-style-type: none"> • Good control of finetuning: data and model • No data exposure 	<ul style="list-style-type: none"> • Max control of model • No data exposure • Have IP
Cons	<ul style="list-style-type: none"> • No control of finetuning • Expose data 	<ul style="list-style-type: none"> • Need high-skill people • Medium investment 	<ul style="list-style-type: none"> • High investment: very high-skill people and H/W • Long adaptation, big risk



Technology inherent

- Contain hallucinations
- Lack interpretability.
- Include toxic or biased content.

Business/tech challenges

- Few proven use cases
- Fast changing supplier landscape
- How to fine-tune for a specific problem
- Cost
- Data protection

Conditions

- Data, Data and Data
- Team readiness
- Understand the risks and define guardrails



Case Study

2023-10

LifeX Company

- Vietnam-based, young population
- ~50,000 agents
- Banca (Banks) channel contributing 45% of revenue
- Growing digital channel





Problem Statement

01 Regulation

Due to recent scandals, the regulator increases pressure in transparency when selling. On the other hand, the regulator also welcomes innovation such as online sale.

02 Internal Strategy

LifeX self-defined new strategic direction to take more control of the 50,000 strong sales force, instead of mainly relies on partner/distribution as currently.

03 Customer Expectation

Strong demand to boost customer satisfaction, winning customer's heart & mind.

→ Thus the company is facing the tasks of measuring and improving sale/service quality as well as customer satisfactions while also complying with new regulation at the same time.

Challenges

- How to build a comprehensive system to measure service quality instead of the current random approach like mystery shopper?
- How to increase the quality standard of the agency, ensuring agency can get all the necessary assistance when selling to prospects
- How to measure prospects/customer's satisfaction in each touch point with company's agency?
- How to ensure regulatory compliance, minimizing litigation risks and preventing fraud in every transaction with prospects?



Recommended Solution

Leveraging Voice AI & Generative AI

Basic Ideas

- Build a company wide infrastructure to capture all interactions between the LifeX and their prospects/clients
- Use AI Signal processing/speech technology to clean and digitalize all those data, thus creating a “Conversation database” for the company
- Leveraging AI NLP technology including Generative AI to analyze and perform tasks such as Agent scoring, Agent assist, Compliance checking, Evidence storing, Fraud detection...



Recommended Solution

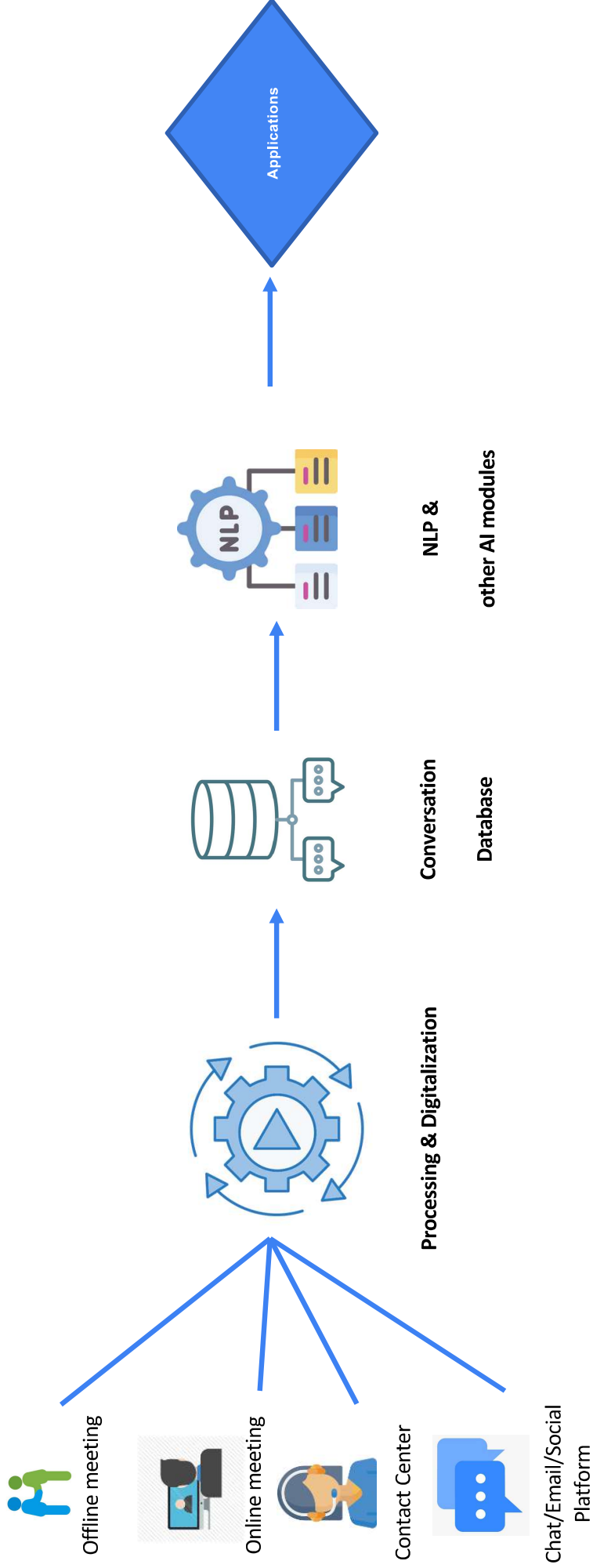
Leveraging Voice AI
& Generative AI

Challenges

- Make AI speech technology works in real-life (noisy) environments
- Privacy concerns
- LifeX's condition readiness?
- Supplier selection (ex: top 3 rule? Emerging tech?)



Recommended Solution: System View



The main applications



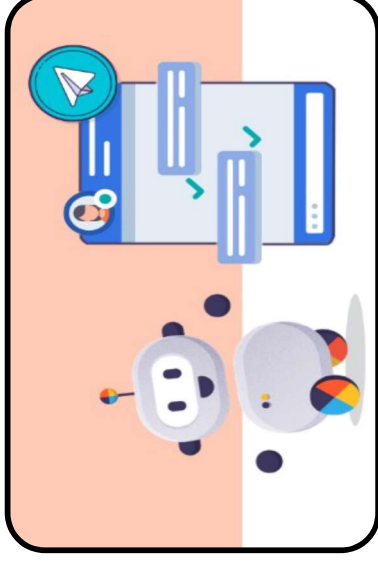
Compliance Recording & Auto-Verification

Agent Assist (Personal Companion)



Compliance Recording & Auto-Verification

Agent Scoring (Script Adherence, Skill check)



Customer Virtual Companion



SOLUTION DEMO- CONTACT CENTER AGENT SERVICE QUALITY CONTROL & CUSTOMER SATISFACTION

Trang chủ / Danh sách cuộc gọi / eQI3Q08LYKbuWBct9

Chi tiết cuộc gọi Xem chi tiết thông tin của cuộc gọi

1x 00:00/02:51

EMO 0.86 **A** Em cảm ơn chị Phương Anh. Kh mà mình thực tiễn giao dịch chuyển tiền thì lỗi báo như thế nào vậy chị ạ? **0.66**

EMO 0.99 **B** Em không vào em kiểm tra được, em phải hỏi khách hàng ạ? **0.67**

EMO 1.00 **B** Không chuyển được là không chuyển được hay là như nào? **0.56**

EMO 0.91 **A** Chỉ đi, hiện tại là em cần phải có thông tin báo lỗi thì em mới có thể hỗ trợ cho mình được. **0.69**

EMO 0.96 **A** Dạ em xin lỗi chị, tuy nhiên là hiện tại là em sẽ cần có thông tin. **0.95**

EMO 0.81 **A** Mên hình báo lỗi thì em mới biết được là mình đang bị lỗi chuyển khoản như thế nào, thì em mới có thể hỗ trợ chị được chị ạ. **0.82**

Nhân viên: default
 Năm: Demc
 Thời gian: 2022-10-27 04:17:11
 Điểm: 35.0
 Thời gian chấm: 2023-02-18 10:54:00
 Nhân: -
 Xu hướng cảm xúc: [Progress bar]

Biểu mẫu đánh giá năng lực

Quy trình làm việc	0.0/10
Xung danh_1.1	15.0/15
> Áp lại tên KH_2.1	0.0/15
> Dùng nội_2.3	10.0/10
Thái độ hỗ trợ KH_2.2	10.0/10
> Ngắn gọn sử dụng_2.4	0.0/10
Xin lỗi KH_2.6	0.0/10

Tỷ lệ thành công của các tiêu chí đánh giá năng lực

Thái độ - NV không to tiếng
 Quy trình - Nghiệp vụ - Hỏi m
 Quy trình - Nghiệp vụ - Điều xu
 Kỹ năng - NV không để khách chờ lâu
 Quy trình - Nghiệp vụ - Tam biệt
 Từ cấm - NV không nói cấu mỗi cấm
 Nghiệp vụ - Xác thực địa chỉ
 Thông gây khó chịu cho khách
 Kỹ năng - NV không cheat time
 Xác thực tên khách hàng & chủ hộ

Agent Skillset Analysis

Agent Scoring (Script Compliance)

Customer satisfaction measurement



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SOLUTION DEMO- CONTACT CENTER AGENT SERVICE QUALITY CONTROL & CUSTOMER SATISFACTION

Home / Dashboard 2022-04-11 → 2022-04-17

Overall Sentiment

Rank	Topic	Volume increase	Sentiment trend
1	Gói cước/thuế bao	23%	↑
2	Khuyến mãi	0%	→
3	Sim	57%	↓
4	Thanh toán	33%	↑

negative: 8, neutral: 45, positive: 46

Topic Hierarchy

Keyword cloud

Top keywords: đăng ký, gia hạn, xưng hô, tổng đài, kiểm tra, cước gọi, thanh toán, cước phí, khuyến mãi, tài khoản, đồng bộ, miễn phí, địa chỉ, cước phí, đăng ký, gia hạn, xưng hô, tổng đài, kiểm tra, cước gọi, thanh toán, cước phí, khuyến mãi, tài khoản, đồng bộ, miễn phí, địa chỉ, cước phí.

Implementation Approach

Starting from collecting conversation data first

Design workflow so that LifeX can collect data
as much as possible

Quick start from low-risk use cases

Choose the one that data is already in place such as Contact Center.

Research & Try out Autonomous Agent
From Co-pilot to Full autonomous



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How's LifeX now?



OWNERS
JOURNEY ALWAYS

Thank you!