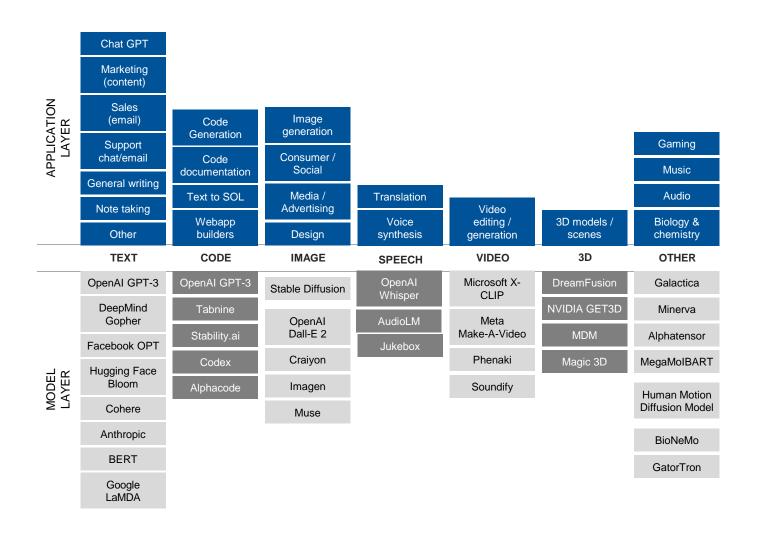




## The "Moore's Law" for Gen AI is currently 10x per year

Generative AI is multi-modal – it can read, comprehend and decide based on input data, and it builds on each subsequent request, continuously improving.



#### LLMs have been increasing

1 O<sub>X</sub> per year

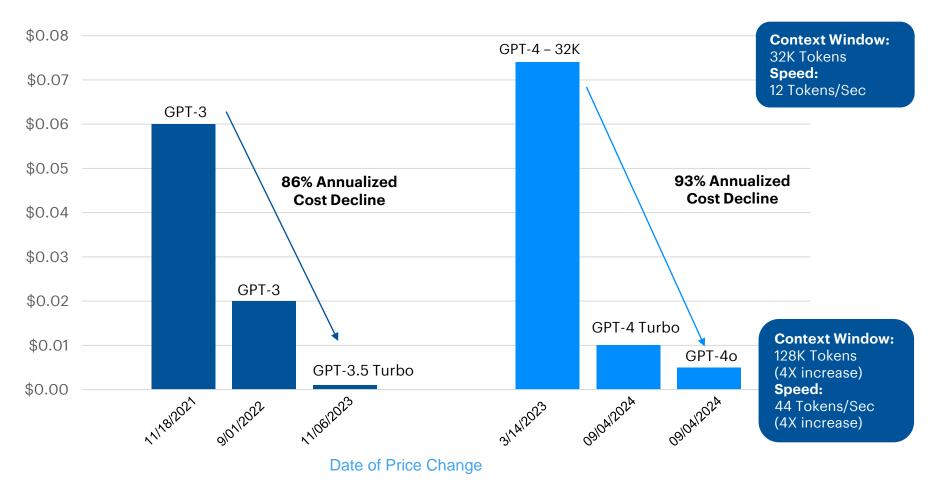
As large language models (LLMs) improve, advances flow to downstream tasks and multi-modal models. These are models that can take multiple different input modalities (e.g., image, text, audio), and produce outputs of different modalities.

2



# Gen AI – Evolution: The cost of Gen AI is declining at a rate we've never seen before

#### **GPT-3 and GPT-4 API Inference Costs Per 1000 Tokens**



## A modern view of Wright's Law



### **Combinatorial Productivity Impact of Gen AI =**

#### **Hardware power**



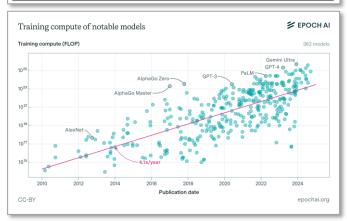
#### Software efficiency



#### **Tech Adoption**

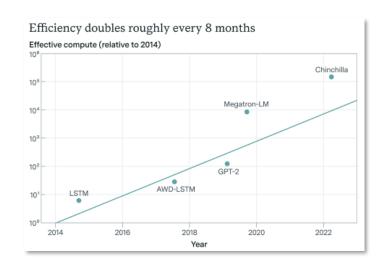
## Compute is improving ~1-1.5 OOM per decade, roughly 5 times Moore's Law

Model	<b>Estimated Compute</b>	Growth
GPT-2 (2019)	~4e21 FLOP	
GPT-3 (2020)	~3e23 FLOP	+ ~2 OOMs
GPT-4 (2023)	8e24 to 4e25 FLOP	+ ~1.5–2 OOMs



Source: Epoch AI, 'Data on Notable AI Models'. Published online at epochai.org. Retrieved from 'https://epochai.org/data/notable-ai-models' [online resource]. Accessed 27 Sep 2024.

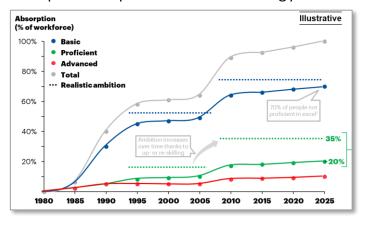
## Algorithm efficiency is improving ~4 OOM every 8 years



Source: Achenbrenner, Leopold. Situational Awareness. The Decade Ahead

## The business adoption rate is unknown and the gating factor

#### Adoption of spreadsheet technology



Source: Accenture Research on thoughtspot.com and Sapio Research (link)

### Pathways to scale

•

We see banks moving through a horizons and starting to "big bets" starting to emerge.

#### **Horizon 1**

**Self contained use cases** using localized data and off-the-shelf technology with human-in-the-loop controls to deliver immediate value – productivity and revenue

#### **Example use cases**

- ✓ Post call summarization
- ✓ Knowledge management
- ✓ Credit memos
- ✓ Programming co-pilots

#### **Horizon 2**

Agentic workflows built with prompt engineering, enabled by Retrieval-Augmented Generation (RAG) powered with case specific data to enhance decision making

#### **Example use cases**

- ✓ Mortgage LOS/ U/W assistant
- ✓ Credit spreading vs. policy
- ✓ Pair-wise analysis
- ✓ Reverse/forward engineering

#### **Horizon 3**

**Real-time custom LLMs** trained via proprietary data to augment and/or potentially fully replace human interaction

#### **Example use case**

- ✓ Digital call center brain
- ✓ Intelligent RM
- ✓ Autonomous credit agent

Early transformational use cases **Mass Enablement & Firm-wide Adoption** 

**Tech & Legacy Modernization** 

Zero Based Ops - Gen AI + Six Sigma

**Re-usable Agents** 



# Gen AI is helping unlock decades of legacy code and forward engineer it into modern code at pace

BUSINESS INSIDER

Goldman Sachs is Leveraging AI to Break Down Coding Language Barriers



Cracking COBOL: Banks to deploy AI to retool legacy apps

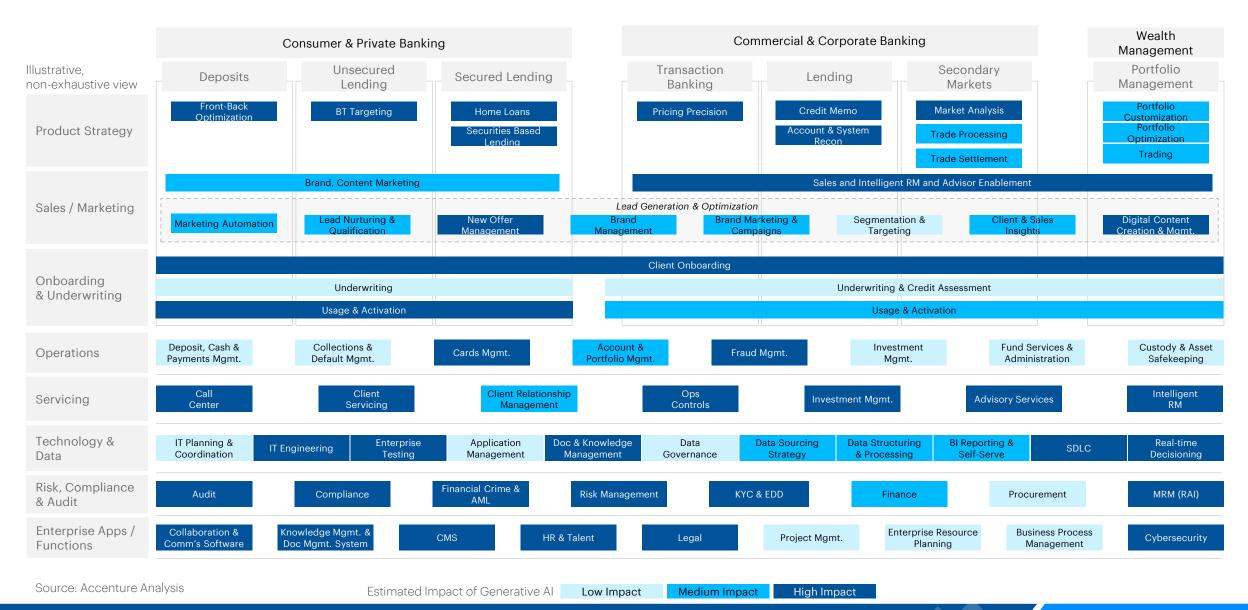
## **FORTUNE**

Can AI fix Wall Street's 'spaghetti code' crisis?

## AMERICAN BANKER

Why Citi is rolling out generative AI to all its developers

## Gen AI is impacting nearly every segment and function in banking



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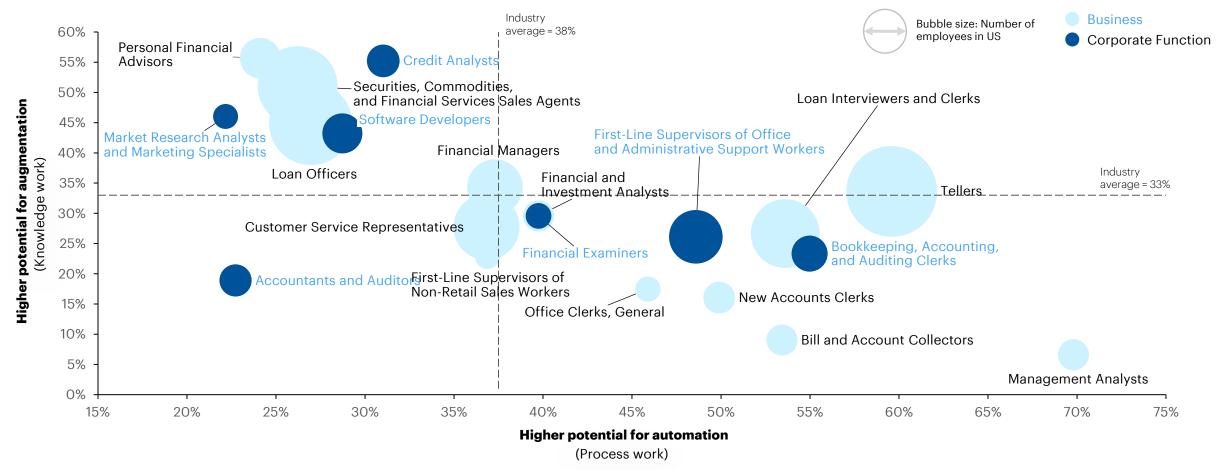


# Role automation and augmentation will vary across functional areas in banking

Differential Impact Across Roles and Functional Areas

#### **Banking Industry Exposure to Generative AI by role**

Percentage of working time by role (Top 20 roles by # of employees in US)



Source: Gen Al Impact on Banking | Accenture | Human + Machine | Reimagining Work in the Age of Al | Accenture

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# We see substantial potential gains for banks that adopt Gen Al over the next 3 years



3-yrs projections for 150 lartgest global banks

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