



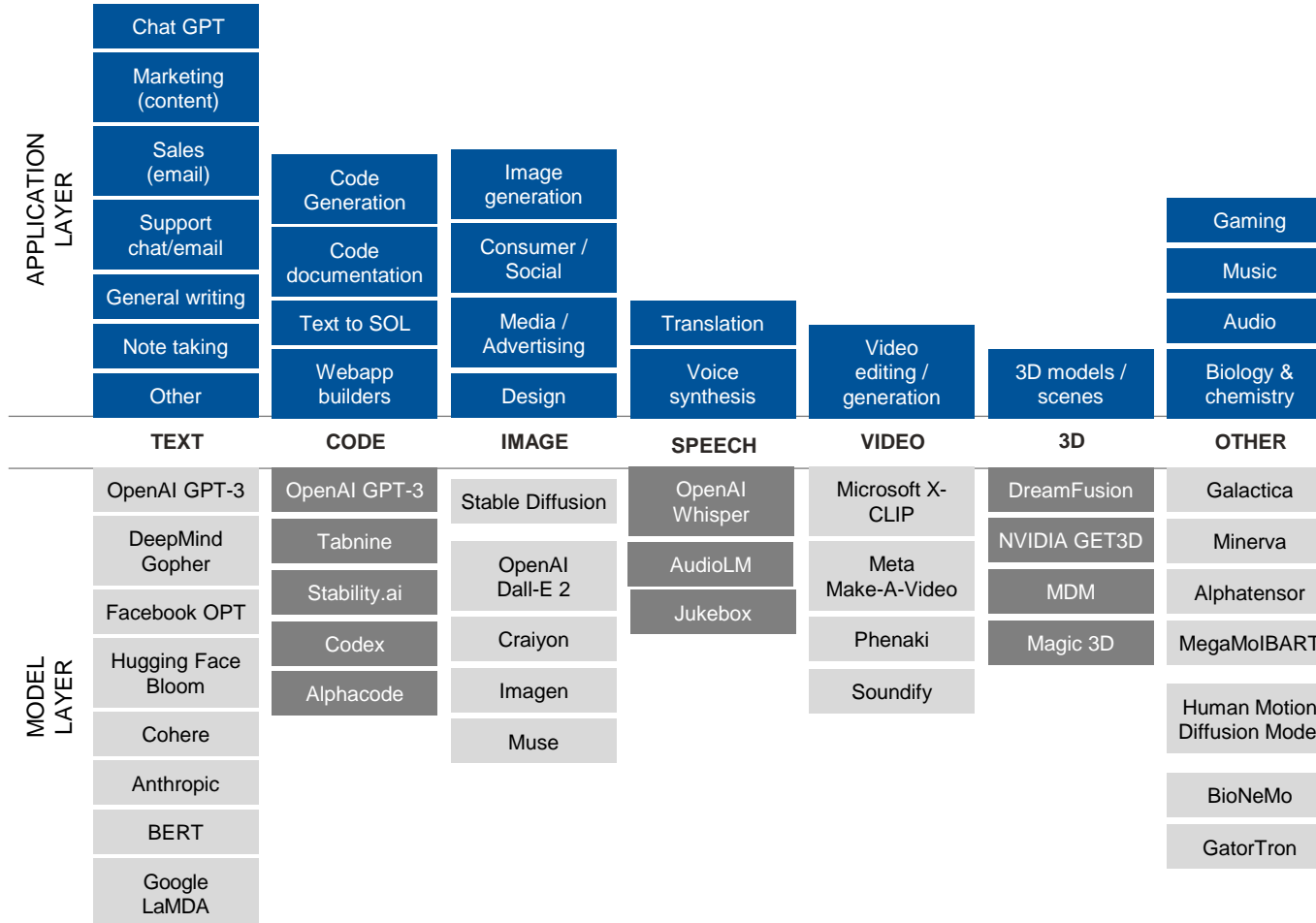
# Atlanta Fed TED Talk – Gen AI

September 17<sup>th</sup>, 2024



# 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.



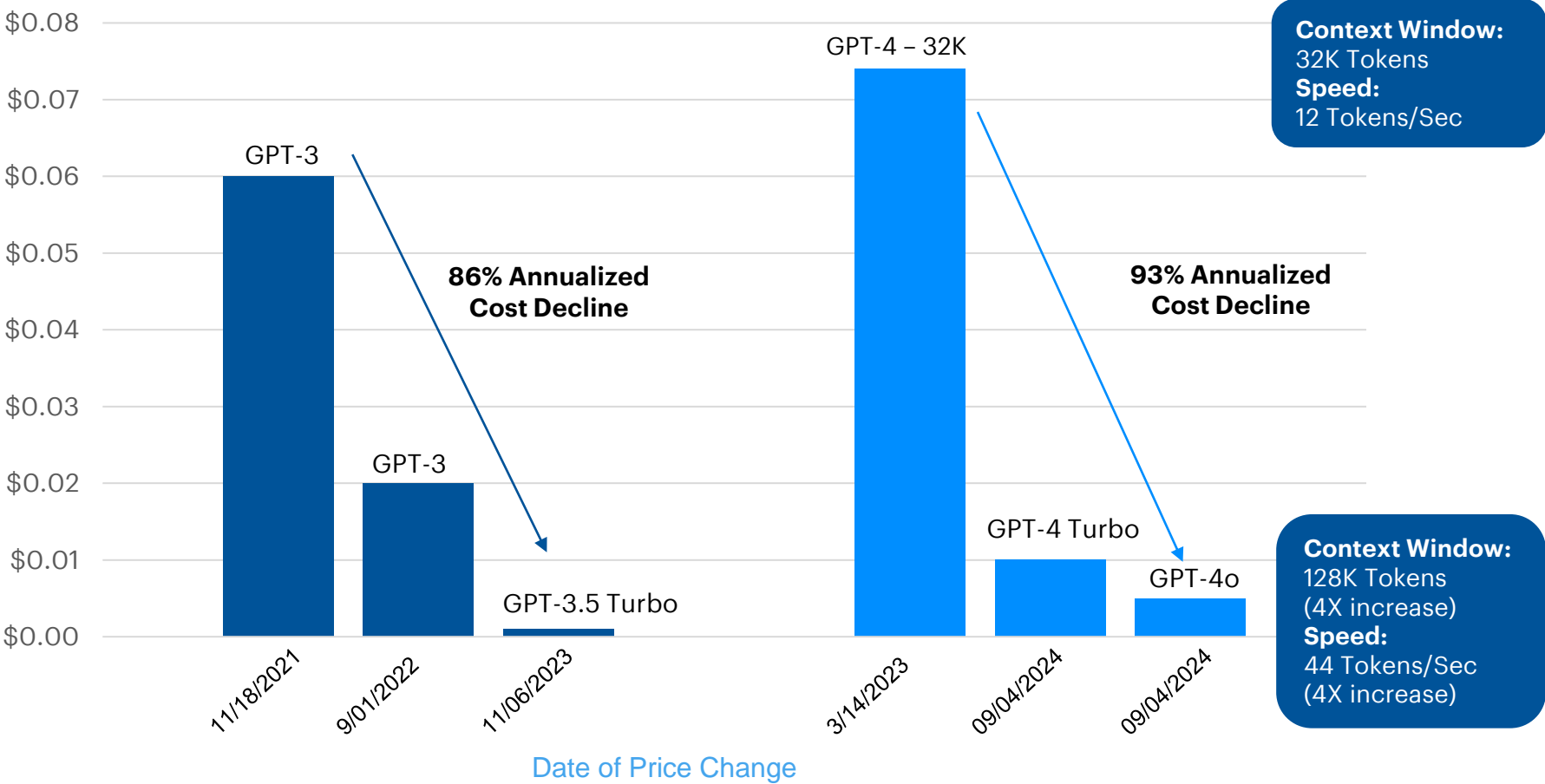
LLMs have been increasing

10x 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.

# 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



Source: Big Ideas 2024, ARK Investment | Pew Research, Our World in Data. S&P Global Market Intelligence, Moody’s

# A modern view of Wright's Law

## Combinatorial Productivity Impact of Gen AI =

**Hardware power**



**Software efficiency**



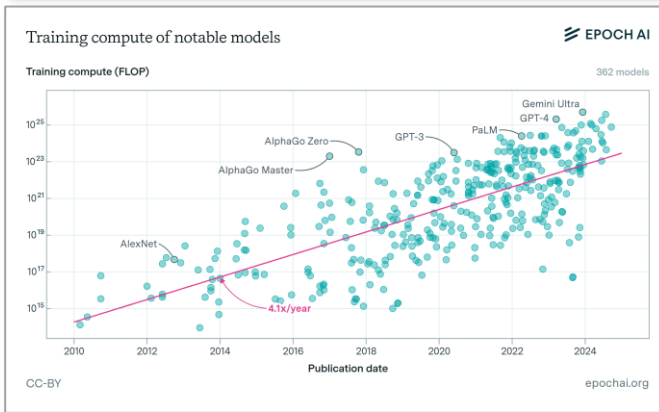
**Tech Adoption**

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

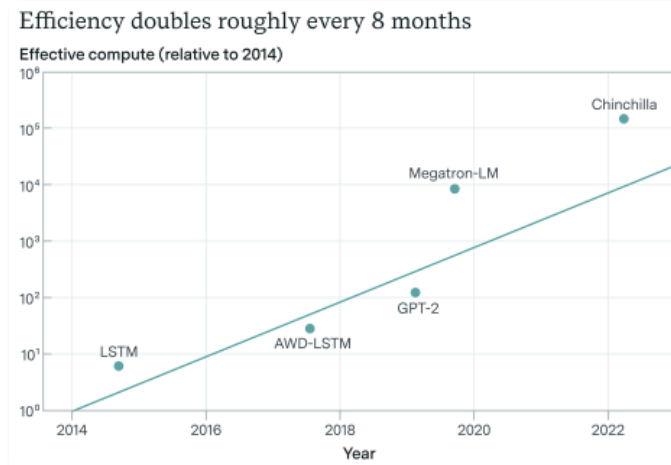
**Algorithm efficiency is improving ~4 OOM every 8 years**

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

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

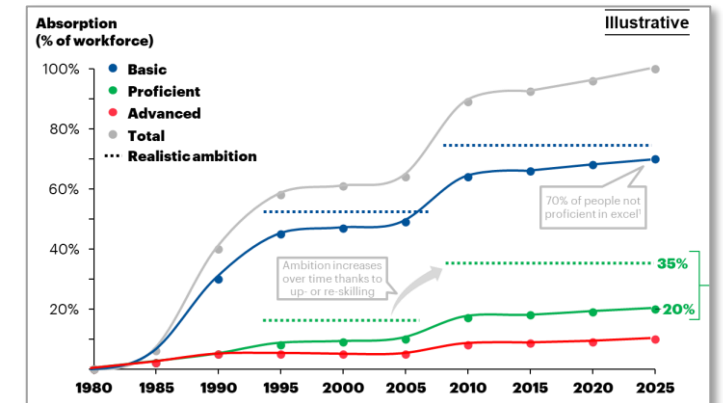


Source: Epoch AI, 'Data on Notable AI Models'. Published online at epochai.org. Retrieved from 'https://epochai.org/data/notable-ai-models' [online resource]. Accessed 27 Sep 2024.



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

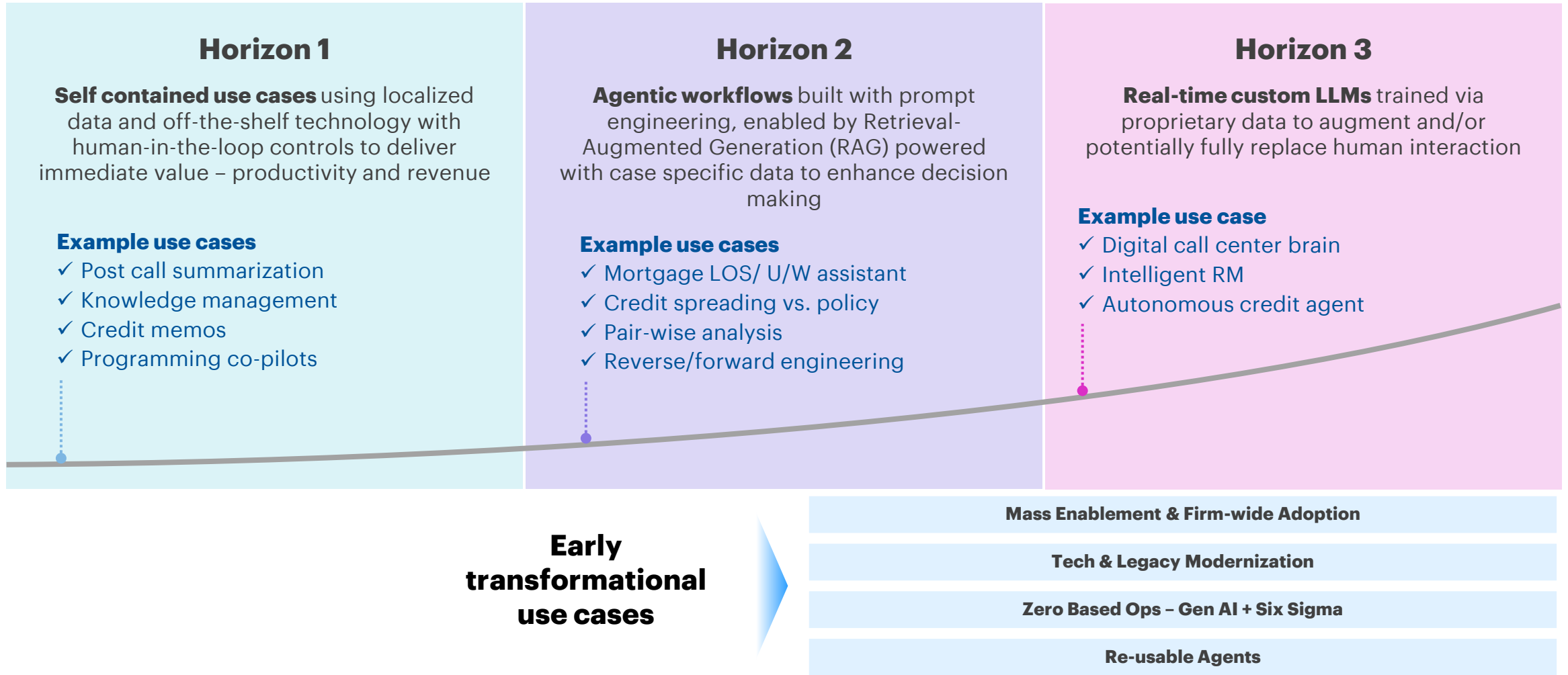
### Adoption of spreadsheet technology



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.





# 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**

 **CIO DIVE**

**Cracking COBOL: Banks to deploy AI to retool legacy apps**

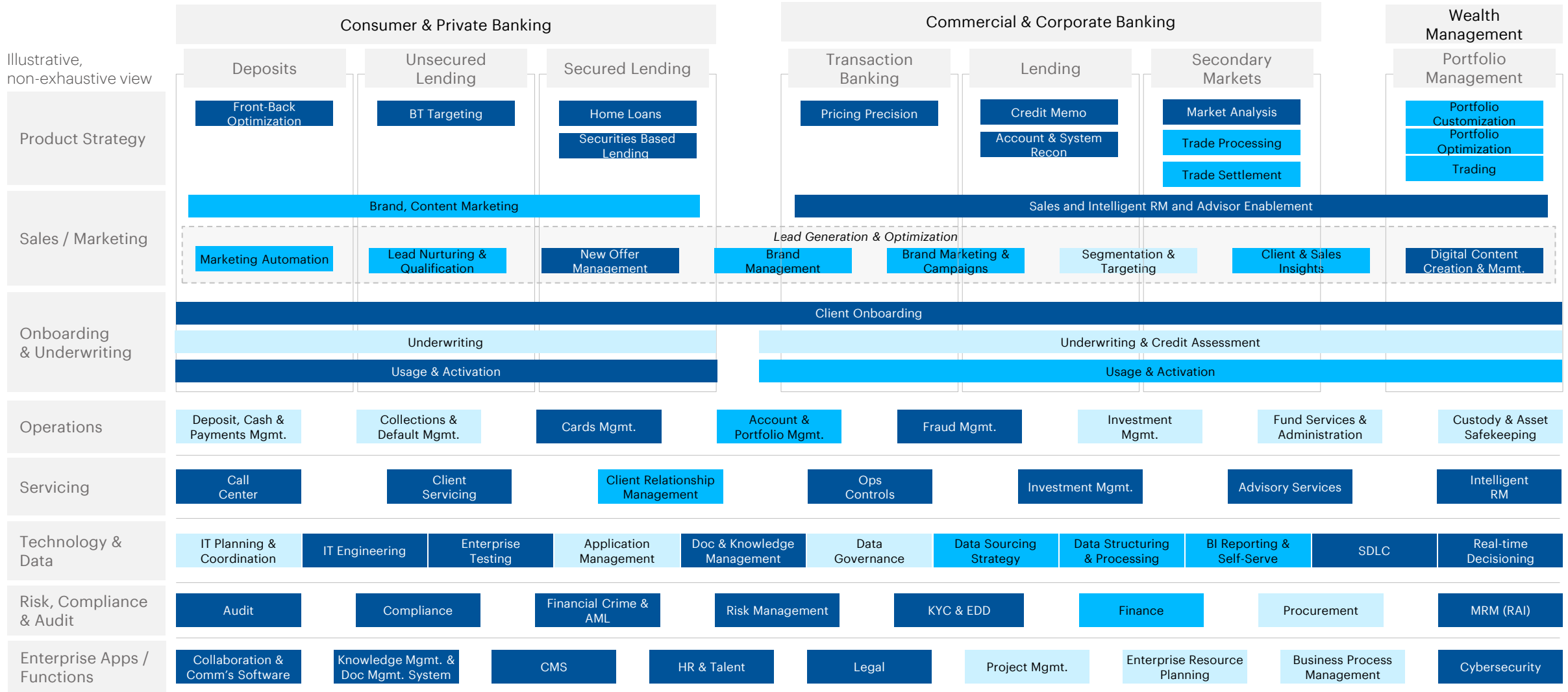
**FORTUNE**

**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



Source: Accenture Analysis

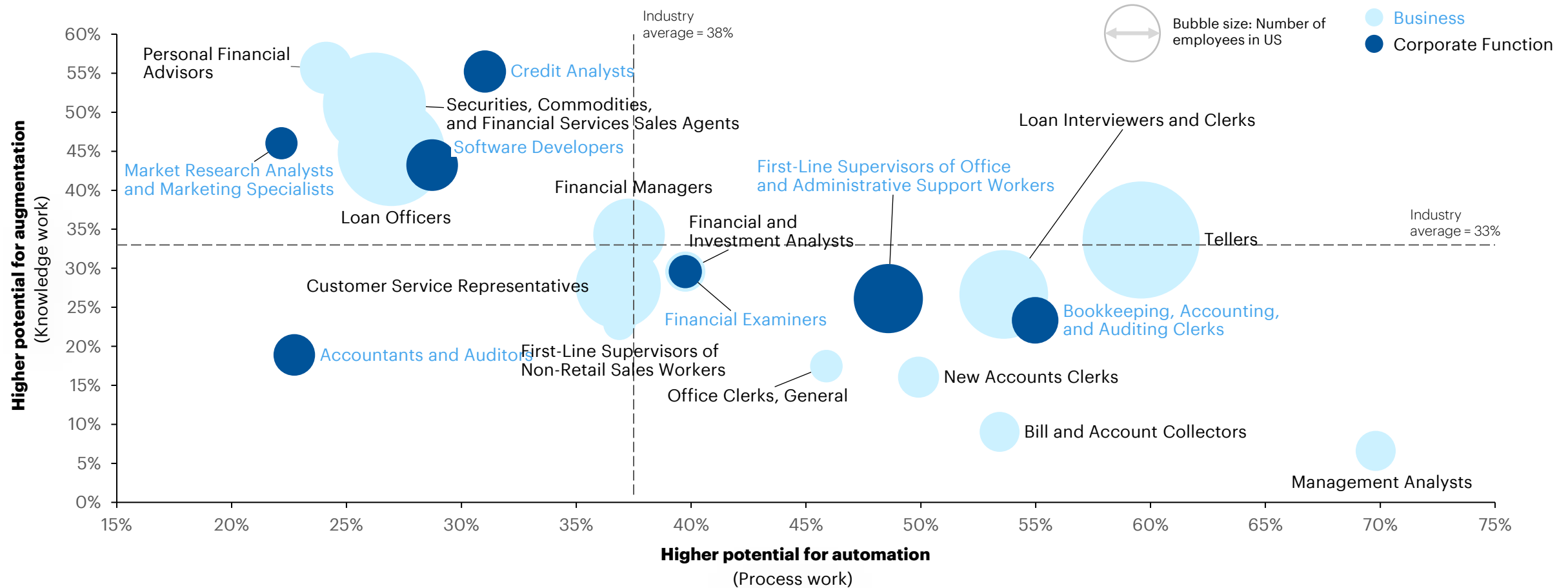
Estimated Impact of Generative AI Low Impact Medium Impact High Impact

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

Differential Impact Across Roles and Functional Areas

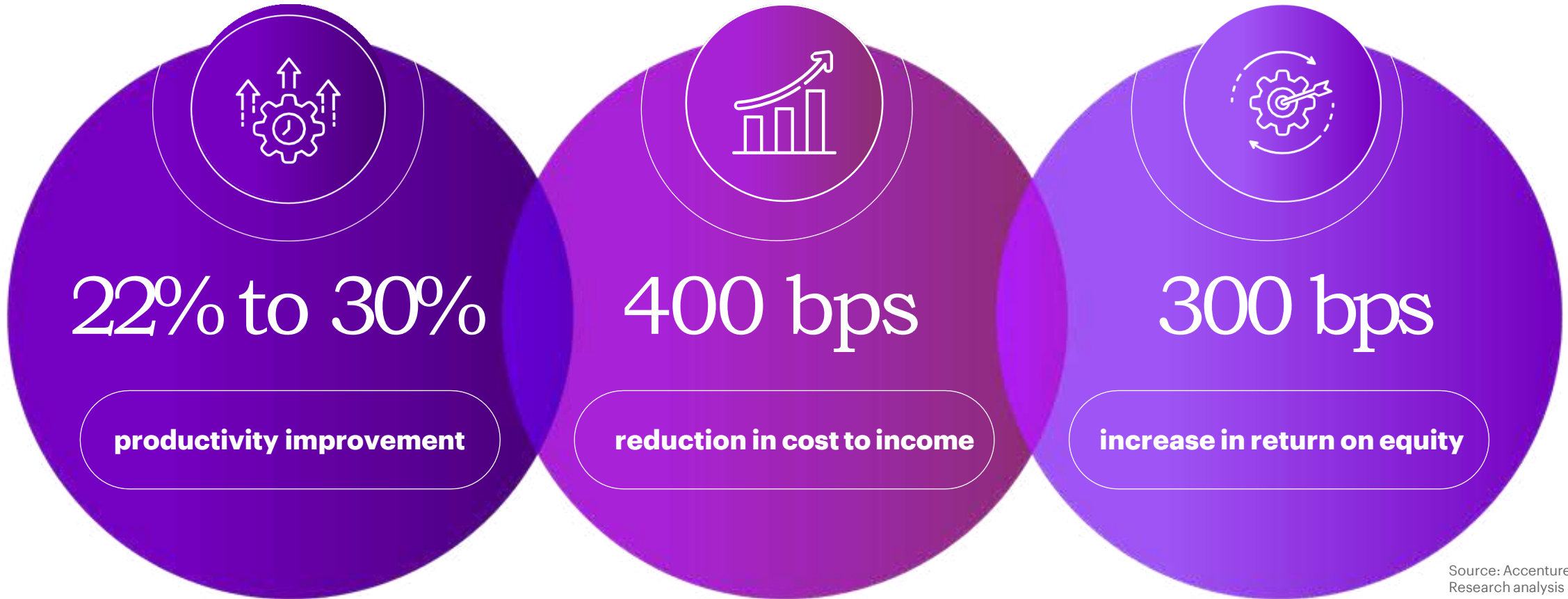
## Banking Industry Exposure to Generative AI by role

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





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



3-yrs projections for 150 largest global banks

Source: Accenture Research analysis