Virginia Society of Certified Public Accountants

54th Annual
Virginia Accounting & Auditing Conference

The Reverberations, Impacts & Transformational Aspects of AI in Finance & Financial Services

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September 2024

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It appears that in the future, AI will indeed play a role across many aspects of our professions, daily lives and in so many other ways.

Please join this thought-provoking session, highlighting some of the core themes and aspects where AI may have reverberating, impactful or even transformational effects in finance, financial services, and in other industry sectors and areas. .

Let's explore these developments and discover what may lie ahead!

Let's get at it ☺

Please note that any companies mentioned within this presentation are not being presented or offered as investment recommendations.

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Reverberations of AI
AI
Background

- Artificial intelligence is the <u>simulation of human intelligence by a machine</u>.

- The <u>first true example of machine learning came in 1951</u> when a checkers program at the University of Manchester learned how to play well enough to beat human players. This was the earliest form of game AI.

- Today, AI is everywhere, especially in our phones and mobile apps, where it performs common tasks like facial recognition, speech recognition, spam filtering, language translation, and grammar suggestions.

  - I.e. the very popular "app" – Grammarly and GrammarlyGO

  - Grammarly's AI writing assistant understands the context of your communication so you can generate high-quality, relevant content

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Reverberations of AI
AI
Background

- Further, AI is an area of computer science that emphasizes on the creation of intelligent machines that work and perform tasks like humans.

- These machines are able to teach themselves, organize and interpret information to make predictions based on this information.

- It has therefore become an essential part of technology in the Banking, Financial Services and Insurance (BFSI) Industry, and is changing the way products and services are offered.

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Reverberations of AI
AI
Background

- There isn't a single type of AI that does everything … YET! ☺

- We use different computer programs for word processing, accounting, etc.

- Hence, there are different types of AI that work differently to achieve different goals.

- The types of AI that you're likely to encounter on any given day fall into three basic categories.

Reverberations of AI
AI
Background – Three Types of AI – NARROW

Narrow:

- This type of AI performs specific tasks and doesn't learn beyond that.
    - Image recognition
        - ✓ e.g. facial
    - Natural language processors
        - ✓ e.g. voice authentication
    - Image generators
        - ✓ e.g. Log on credentials … replicate image and click … " I AM NOT A ROBOT"

- Alexa, Siri and Google Assistant are forms of narrow AI.

    - They can understand and respond to voice commands -- but they can't give you accurate medical diagnoses.

Reverberations of AI

AI

Background – Three Types of AI- REACTIVE

Reactive:

- As the name suggests, these machines <u>can only react to stimuli</u>, like the movement of a chess piece on virtual chessboard.

> An example of a reactive machine is perhaps the most famous AI system – **IBM Deep Blue**, a chess-playing supercomputer that defeated international grandmaster Garry Kasparov. Deep Blue understands the rules of chess. He recognizes all the pieces on the chessboard and knows how each of them moves!

- They don't build memories that they can retrieve in the future like limited memory AI machines, but they're useful parts of digital life.

- Spam filters and recommender systems that note your behavior and suggest what you should watch next or what you might like to buy are reactive machines.
  - E.g. Netflix

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Reverberations of AI

AI

Background – Three Types of AI – Limited Memory

Limited Memory:

- The <u>next step in AI development</u> after reactive machines.

- Limited memory AI can store knowledge, learn from it, and perform new tasks based on that learning.
  - I.e. ChatGPT

- This type of AI is useful for making predictions, and it's used to forecast future trends in everything from finance to the weather.
  - I.e. Predictive Analytics

- This is the most common type of AI in use today, appearing in chatbots and self-driving cars.

Segway to Generative AI:

Generative AI is specifically designed to generate new content as its primary output. Whether this is text, images, product suggestions, whatever, that's what generative AI is designed to do. 8

Reverberations of AI
Generative AI
Overview – Text to ...

- <u>Trained on enormous datasets, generative AI recognizes patterns in that data and draws conclusions about what it's learned.</u>

- It offers a broad range of possibilities for creators of all kinds of content.

- Then it can take a text description and apply that machine learning to create new patterns and produce or output something new …

  … for example, in the form of:

  – Text
  – Image
  – Video
  – Sound

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Reverberations of AI
Generative AI
Overview – Text to ...

- (continued)
  … for example, in the form of:

  – Text
    - ✓ Text generation is perhaps the <u>most talked about form of AI</u>.
    - ✓ Chatbot AI models have become popular.
    - ✓ Users generate everything from proofreading to writing surveys to creating code.

  – Image
    - ✓ Trained on hundreds of millions of images and captions.
    - ✓ A wide range of uses for artists, content creators, and marketers.

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Reverberations of AI
Generative AI
Overview – Text to ...

- (continued)
  - … for example, in the form of:

    – Video

      ✓ <u>Combines all three forms of video, sound, and image generation</u>.

      ✓ Trained on data that includes audio, video, and text

      ✓ These models can help video producers save time editing, adding captions, resizing for different outputs, and even generating new video content based on text prompts.

    – Sound

      ✓ AI music generators are <u>trained on music and metadata</u>.

      ✓ Can identify patterns in music genres and the work of specific artists and create new music based on those characteristics.

> "Metadata" makes finding and working with data easier – allowing the user to sort or locate specific documents. i.e. Author, date created, date modified, and file size.

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Text To Sound:
- **Synthesis**
- **Dubverse**
- **Others ...**

Reverberations of AI
Generative AI
Overview – Text to ...

01

ChatGPT

Text-based AI

Launched in November 2022, amassing more than 1 million users in five days

02

DALL-E

Text-to-image AI

Launched in January 2021, amassing more than 1.5 million users in one year

03

...and many more

Gato is a multifunctional agent

Make-A-Video is a text-to-video generator

- ChatGPT-3.5, a foundation model trained on large volumes of text, can be adapted for answering questions, text summarization, or sentiment analysis.

- DALL-E, a multimodal (text-to-image) foundation model, can be adapted to create images, expand images beyond their original size, or create variations of existing paintings.

- Gato is a deep neural network for a range of complex tasks that exhibits multimodality. It can perform tasks such as engaging in a dialogue, playing video games, controlling a robot arm to stack blocks, and more. It was created by researchers at London-based AI firm DeepMind.

- These newer types of AI have the potential to significantly accelerate AI adoption …

- … and are not only capable of carrying on sophisticated conversations with users; they also generate seemingly original content.

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Reverberations of AI
Off To A Very Impressive Start!
Considerations

- <u>Proof-of-concept and early adoption</u> did not seem to be an issue.

- The debut of OpenAI's ChatGPT in November 2022 is rippling through finance and other industries.

It quickly topped 100 million users and has become fastest-growing application in internet history!

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Reverberations of AI
AI
Considerations

Artificial Intelligence tools will be

among the 'core' and 'must-have' tools

for the world's Financial Institutions, Central Banks, and FinTech players.
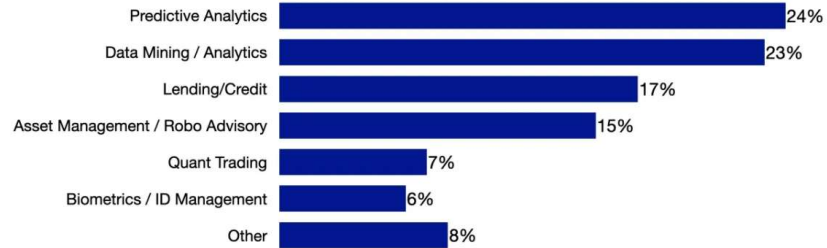
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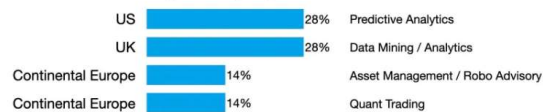**Primary Applications of A.I. in Fintech**
(2020 Fintech Survey of 700 senior decision makers)

Application	Percentage
Predictive Analytics	24%
Data Mining / Analytics	23%
Lending/Credit	17%
Asset Management / Robo Advisory	15%
Quant Trading	7%
Biometrics / ID Management	6%
Other	8%

Regional Highlights

Region	Percentage	Category
US	28%	Predictive Analytics
UK	28%	Data Mining / Analytics
Continental Europe	14%	Asset Management / Robo Advisory
Continental Europe	14%	Quant Trading

Data: Goodwin's Fintech 2020: A Global Survey on the State of Financial Technology   Chart: gradientflow.com

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PLENTY OF FUNDING AVAILABLE
&
AI INITIATIVES ARE SHAPING
NEW PRIORITIES WITHIN
ORGANIZATIONS!

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Reverberations of AI
A New Look At Priorities
Considerations

- Capital inflows to AI from financial and other enterprises are shaping a fresh look at new priorities.

- Sales of software, hardware, and services for AI systems were estimated to climb 29 percent in 2023 to $166 B.

- Further rising to $400B in 2027, according to International Data Corp.

- Financial sector spending will more than double to $97 billion in 2027, with a 29 percent compound annual growth rate (CAGR)

   … the fastest of five major industries surveyed!

- The pandemic also played a role in propelling AI to forefront, offering her non-human intervention and self-service initiatives.

- AI has accelerated digital transformation in the banking sector, with several financial firms racing to adopt cloud-based technology.

- To deliver enhanced service for their clients, using various different technologies to offer digital online services that have traditionally been provided by mainstays of the financial industry.

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Reverberations of AI
A New Look At Priorities
AI as a Disruptor

It appears clear that AI can disrupt industry dynamics very quickly.

Over the last 15 years, we have witnessed a number of significant disruptions that can be traced to the growing dominance of technology and data.

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Reverberations of AI
A New Look At Priorities
AI as a Disruptor

Some Key Disruptors:

- Explosion of Big Data
  - 360-degree view of CRM-Brand interaction
  - Personal data, transaction history, social media interactions, email, voicemail, images, video, etc.
- Scrutiny due to regulatory requirements & compliance obligations
  - Will be transformational to front and back-office operations
- Competition
  - Technology use and deployment has become a "differentiator" in this space
- Availability of infrastructure
  - Fast computers, hardware, software, Cloud
- The explosion of cloud technology as well as high computational resources and infrastructure availability.
- Plentiful capital for fuel!

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Reverberations of AI
A New Look At Priorities
AI As a Disruptor

Some Key Applications:

- Chatbots - AI-powered natural language processors … rental car CRM

- Fraud Detection - on-boarding, anomalies, money laundering

- Customer Relationship Management - 24/7 access, behavior & segmentation

- Predictive Analytics – all sorts of forecasting

- Credit Risk Management – FI's under mandate for more reliable risk modeling

  Honing "Risk Profile & Appetite"

  – Maximizing rejection of high-risk customers

  – Minimizing rejection of creditworthy customers

  – Gaining more traction in FinTech and digital banking!

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Reverberations of AI
A New Look At Priorities
AI As a Disruptor - Hedge Funds

It appears clear that AI can disrupt industry dynamics very quickly.

- Hedge funds have historically been early adopters and pioneers of cutting-edge tech.

- The industry is actively embracing generative AI.

- Nearly half of them use ChatGPT professionally.

- More than two-thirds of those use it to write marketing text or summarize reports or documents.*

- <u>Ability to analyze large amounts of data quickly and create relatively short-term strategies appears to be beating the slower and deeper analysis that traditionally led to long and short investment decisions</u>.

    – Algorithmic Trading
    – Predictive Analysis

- Has been transformed by the growing dominance of "<u>quantitative investing</u>" over traditional, fundamentals-driven long-short strategies.

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*Source: BNP Paribas survey of funds with $250 billion in total assets.

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Reverberations of AI
A New Look At Priorities
AI as a Disruptor – Asset / Investment Management

It appears clear that AI can disrupt industry dynamics very quickly.

Asset/Investment Management Industry:

- The mutual fund industry has seen the rise of passive fund managers …

    (i.e., managers who invest in indices with no analysis)

- … and the decline of active fund managers

     (i.e., stock pickers).

- This shift has occurred remarkably quickly as data and technology made passive investing more competitive and made it more difficult for active managers to attain informational edges.

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Reverberations of AI
A New Look At Priorities
AI As a Disruptor – Asset / Investment Management

It appears clear that AI can disrupt industry dynamics very quickly.

Asset/Investment Management Industry:

- Has been a dramatic shift in market share.

- In the last eight years alone, the ratio of passively-managed assets to actively managed assets has risen to favor passively-managed.

- The ability of active fund managers to extract large fees (upwards of one percentage point of assets under management) has been smashed as passive fund managers demonstrated their ability to approximate many active fund management strategies at one-tenth of the cost.

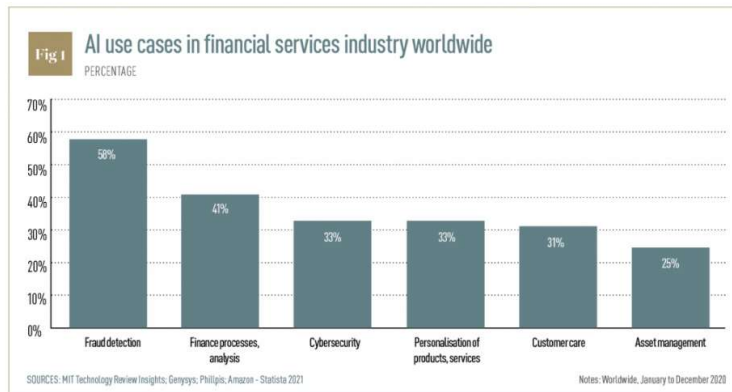Note: alpha vs. beta vs. investment fees vs. index funds.

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Reverberations of AI
A New Look At Priorities
Asset/Investment Management – Early Adoption Use Cases

<u>Early Adoption AI Use Cases in Finance:</u>

- The rapid expansion of AI application areas is having a huge impact in the environment that firms are operating in, both externally and internally.

Fig 1 — AI use cases in financial services industry worldwide
PERCENTAGE

Category	Percentage
Fraud detection	58%
Finance processes, analysis	41%
Cybersecurity	33%
Personalisation of products, services	33%
Customer care	31%
Asset management	25%

SOURCES: MIT Technology Review Insights; Genysys; Phillps; Amazon - Statista 2021

Notes: Worldwide, January to December 2020

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Reverberations of AI
A New Look At Priorities
Asset/Investment Management

<u>Some AI Use Cases:</u>

- Fraud detection
- Predict cash-flow events
- Create invoices
- Fine-tune credit scores
- Conduct cost and benefit analysis
- On-boarding and account creation
- Goal selection and setup
- Recommendations for investing
- Rebalancing of portfolios and retirement planning
- Trading and investing in stocks, bonds and ETFs

- Robo-Advisory

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Reverberations of AI
A New Look At Priorities
Asset/Investment Management

AI Use Case:

Robo- Advisory (differentiators from traditional investment advisory services)

- Helps to simplify customers' user experience and make advisory services accessible to both wealthy customers and investors with lower investable amounts.

- Is increasing investment activity, especially with the low-budget investor, who generally doesn't have access to investment advisors.

Other positive factors:

- Continuous 24/7 accessibility

- Automated rebalancing and monitoring

- Customers can access their accounts via user-friendly websites or smartphone applications

- Can make adjustments to their portfolios any time of the day and recalibrate their investments

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Reverberations of AI
A New Look At Priorities
Investment Management

AI Use Case:

Robo- Advisory (differentiators from traditional investment advisory services)

- The much anticipated ability of robo-advisors to eclipse the massive financial advisory complex has appeared to stall and may be reversing.

- It appears that the client side of finance retains a preference for humans!

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Central Banks/Regulatory Environment
Considerations

HIGH STAKES FOR
FI's / CENTRAL BANKS
POLICY MAKERS
&
REGULATORY AGENCIES

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Reverberations of AI
Central Banks/Regulatory Environment
Considerations

- The stakes are high for deploying AI in this realm.

- FI's need to maintain and adhere to compliance, supervision and risk management.

- Policymakers have an underlying mission to safeguard monetary systems, economies, and stakeholders … while balancing innovation and healthy competition.

- Central banks, which by design are slower-moving and more risk-averse, are learning to use AI in a much different context … and are weighing potential risks.

    - Supervision, Regulation & Compliance Obligations

    - Fraud Detection & AML (Anti-Money Laundering)

    - Capturing, sorting and analyzing structured and unstructured data

- AI has shown promise in a range of applications.

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Reverberations of AI
Central Banks/Regulatory Environment
Considerations

Application – Supervision:

Case: BRAZIL

- Brazil's central bank built a prototype robot to <u>download consumer complaints about financial institutions and categorize</u> them through machine learning.

Case: INDIA

- The Reserve Bank of India this year hired consulting firms McKinsey and Accenture to help deploy AI and related <u>analytics in its supervision work</u>.

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Reverberations of AI
Central Banks/Regulatory Environment
Considerations

Application – Supervision:

Case: The Basel Committee on Banking Supervision (BCBS)

- The Basel Committee on Banking Supervision (BCBS) is the <u>primary global standard setter for the prudential regulation of banks</u> and provides a forum for regular cooperation on banking supervisory matters.
    - Was established by the central bank governors of the Group of Ten (G10) countries in 1974.

> Belgium, Canada, France, Italy, Japan, the Netherlands, the United Kingdom, the United States, Germany and Sweden

- The committee expanded its membership in 2009 and then again in 2014. As of 2019, the BCBS has 45 members comprising central banks, Governors and Bank Supervisors from 28 jurisdictions.

- The committee <u>agrees on standards for bank capital, liquidity and funding and AML</u>. Those standards are non-binding high-level principles. Members are expected but not obliged to undertake effort to implement them e.g. through domestic regulation.

- Found AI can make lending <u>more efficient in credit decisions and in thwarting money laundering.</u>

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Reverberations of AI
Central Banks/Regulatory Environment
Considerations

Application – Supervision:

Case: The Bank For International Settlements (BIS)

- The Bank for International Settlements (BIS), the group of global central banks that hosts the committee secretariat in Basel, Switzerland, has tested a variety of potential uses.

- The BIS Innovation Hub's Project Aurora, for example, showed that neural networks (a type of machine learning) can help detect money laundering by sniffing out patterns and anomalies in transactions that traditional methods can't identify.

Case: The Bank of Canada

- The Bank of Canada built a machine learning tool to detect anomalies in regulatory submissions.

- Its automated daily runs catch things people wouldn't, while freeing up staff to follow up on the analysis.

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Reverberations of AI
Central Banks/Regulatory Environment
Considerations

Application – Supervision:

Case: European Central Bank

- Using AI for applications such as automating classification of data from 10 million business and government entities.

- Scraping websites to track product prices in real time.

- To help bank supervisors find and parse news stories, supervisory reports, and corporate filings.

- Also exploring large language AI models to help write code, test software, and even help make public communications easier for people to understand.

> With the "big data" universe growing exponentially, sorting and understanding unstructured data is a key issue. AI can help humans make important distinctions.

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Reverberations of AI
Other Industries, Sectors, Eco-systems
Considerations – Insurance

Insurance Industry:

Within the broader landscape of financial services, insurance stands out for its unique applications of artificial intelligence. These include:

AI-Powered Underwriting

- For decades, underwriting decisions have relied on highly manual <u>processes and data inputs</u>, as well as invasive processes like medical exams.

- Today, insurance companies use AI to assess risks using massive data sets that draw on factors ranging from:

  – Prescription drug history, to
  – Where you live and/or work, to
  – Credit history, or even to
  – Pet ownership

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Reverberations of AI
Other Industries, Sectors, Eco-systems
Considerations – Insurance

Insurance Industry:

Within the broader landscape of financial services, insurance stands out for its unique applications of artificial intelligence. These include:

Claims Processing

- Today, artificial intelligence can handle much of the claims process for simple claims. i.e.

  – Using machine vision to assess auto damage

  – Handling client interactions through chatbots (like Progressive's Flo)

  As machine vision and AI capabilities increase, human involvement will likely play less of a role in claims decisions.

  … hmmmm, how about that Claims Adjuster?

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CHANGING EMPLOYMENT LANDSCAPE
&
THE WAR FOR TALENT!

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A few recent headlines:

New Era Of Turbulence': The World Economic Forum
Predicts 25% Of Jobs Will Change Over The Next Five Years

Management consulting giant PriceWaterhouseCoopers reported, "AI, robotics
and other forms of smart automation have the potential to bring great
economic benefits, contributing up to $15 trillion to global GDP by 2030."

However, it will come with a high human cost.
"This extra wealth will also generate the demand for many jobs, but there are also
concerns that it could displace many existing jobs."

Training, retraining and up-skilling will be crucial.

Around 60% of the global workforce will
require upskilling to keep up with AI advancements.

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Where Are We?
Artificial Intelligence
Considerations – Employment & Workplace Outlook (Goldman's Report)

As AI comes to fruition:

- Job categories possibly impacted by AI/automation?
    - Office administrative support
    - Legal
    - Architecture
    - Engineering
    - Business and financial operations
    - Management
    - Sales
    - Healthcare
    - Art and design are some sectors that will be impacted by automation.
    - Truck and cab drivers
    - Cashiers
    - Retail sales associates
    - People who work in manufacturing plants and factories

- The combination of significant labor cost savings, new job creation, and a productivity boost for non-displaced workers raises the possibility of <u>a labor productivity boom, like those that followed the emergence of earlier general-purpose technologies like the steam engine, electric motor and personal computer.</u>

    …. Perhaps the next industrial or economic revolution?

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Where Are We?
Artificial Intelligence
Considerations – AI Related Outlook & Opportunities

The World Economic Forum (WEF) concluded in a 2020 report … 25% of jobs will change over the next five years.

- Global employers anticipate creating 69 million new positions by 2027 and eradicating 83 million jobs—a net loss of 14 million roles.

- Clerical workers will bear the brunt of the fast-moving changes.

    - Around 26 million jobs in administrative positions will be cut due to AI.

    - Additionally, macro-economic events, including slower economic growth, supply shortages and inflation, will pose more serious job threats than AI.

- According to WEF, the proliferation of green technologies and renewable energy will be a key driver of job creation in the future of work.

- There will be a high demand for:

    - Forest, water, crop and environmental management
    - Sustainability specialists
    - Business intelligence analysts
    - Information security analysts
    - Renewable energy engineers and specialists
    - Solar energy installation and system engineers

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Reverberations of AI
Talent Pool
Considerations

There is an active war being waged for talent.

JPMorgan Chase

CASE: JPMorgan Chase

- JPMorgan, the largest US lender.

- Spends more than $15 billion a year on technology, where it deploys almost one-fifth of its approximately 300,000 employees.

- An AI research group employs 200.

- AI enables hundreds of uses ranging from prospecting and marketing to risk management, fraud prevention, credit card applications, and more.

- AI also runs across payment processing and money movement systems worldwide.

- In June 2023, JPMorgan Chase & Co. had 3,600 AI help-wanted postings.*

Chief Executive Officer Jamie Dimon told shareholders in April – "It is an absolute necessity!"

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Reverberations of AI
Talent Pool
Considerations

- Demand for AI / Finance talent is surging – globally!

- Three of the top 10 cities in Evident's talent index are in India.*

- <u>New York is the global center for AI talent as measured by number of staff, followed by</u> …
    - London
    - Toronto
    - Bangalore (Bengaluru)
    - Paris

- Companies will have to actively keep pace with or 'leap-frog' over competitors.

* Source: Evident Insights Ltd., a London-based start-up tracking AI capabilities across financial services companies.
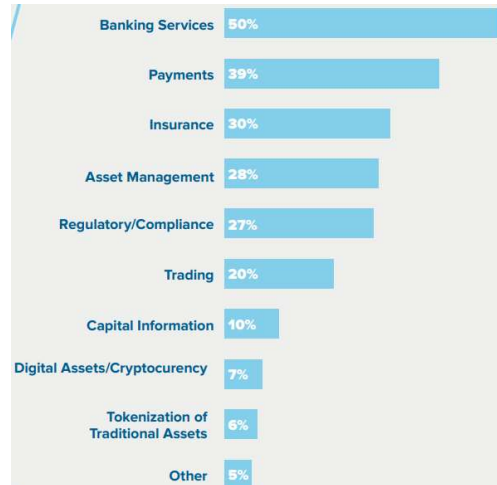
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Reverberations of AI
Looking Forward
Considerations

LOOKING A BIT FORWARD

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Reverberations of AI
Looking Forward
Considerations – Primary Uses of FinTech In the Workplace

- Survey of 700 cross-industry decision-makers in the US, UK and Europe.

- Half say their organizations are primarily using banking services, which encompasses a wide array of fintech.

- The UK uses, and are twice as likely to be using digital assets and cryptocurrency than the average internet user. implying digital banking and payments are on the rise.

- Use of AI tolls will be widely dep

Banking Services	50%
Payments	39%
Insurance	30%
Asset Management	28%
Regulatory/Compliance	27%
Trading	20%
Capital Information	10%
Digital Assets/Cryptocurency	7%
Tokenization of Traditional Assets	6%
Other	5%

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Reverberations of AI
Looking Forward
Considerations – Both Questions & Opportunities Abound!

- Will AI transform industries?

- If so, will it democratize or consolidate them?

- Will it create better or worse outcomes?

- Outlines of answers can be found in the world of finance which has been tran

The experience of finance is both encouraging and sobering for an AI-dominated future.

The forces of the diffusion of ever more powerful computing and the profusion of date will continue for the time being.

Suggests that …

- AI will transform some (but not all) industries.

- That it will benefit larger players most (at least in early stages) … however,

- … may help make individuals and smaller players and individuals smarter and more included.

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Reverberations of AI
Looking Forward
Considerations

- Like other technological breakthroughs … AI <u>offers fresh potential ... accompanied by novel risks</u>.

- The financial services industry may be among the biggest beneficiaries of the technology.

- May enable them to better protect assets and predict markets.

- Or, the sector may have the most to lose if AI spurs theft, fraud, cybercrime, or even a financial crisis that investors can't conceive of today.

- It's also a priority to avoid abuses and ensure that AI is used within a secure, ethical, and compliant framework.

  … will at some point give rise to the need for consideration to!

    - Audit, Risk Management and Fraud Prevention
    - Privacy and Intellectual Property
    - Energy and ESG
    - Compliance Policies
    - AI Ethics Framework

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Reverberations of AI
Looking Forward
Considerations – Financial Stability Risks & Crisis Concerns

The View of Gary Gensler, Chair, US Securities and Exchange Commission.

- Warning: that AI demand (in markets) could spark a financial crisis!

- Reflective of his work as global economics and management professor at the Massachusetts Institute of Technology, where he published a 2020 paper with Lily Bailey on deep learning.

- He is charged with protecting a $46 trillion stock market …

- … which makes up two-fifths of the world total.

- Suggests "new thinking on systemwide or macroprudential policy interventions" will be needed. "Herd investing concerns"

THE POLYCRISIS!

Gary Gensler

Born: October 18, 1957

Chair of the U.S. Securities and Exchange Commission
- Former professor at the MIT Sloan School of Management
- Former chair of the U.S. Commodity Futures Trading Commission (CFTC)
- Has mostly worked in government, but began his career at The Goldman Sachs Group, Inc. (GS)

The "dot.com" bubble (crash) was **triggered by the rise and fall of technology stocks.** The growth of the Internet created a buzz among investors, who were quick to pour money into startup companies. These companies were able to raise enough money to go public without a business plan, product, or track record of profits!

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Where Are We?
Crypto
Considerations:

Crypto Investments & Alliances

BLOCKDATA

TOP BANKS INVESTING IN CRYPTO & BLOCKCHAIN COMPANIES (AUGUST 2021— MAY 2022)

PROFILE/COMPANY	HQ	ASSETS UNDER MANAGEMENT	# OF INVESTMENTS	SIZE OF FUNDING ROUNDS AS A PROXY OF INVESTMENT	COMPANIES INVESTED IN
Morgan Stanley	New York, United States	$1,400B	2	$1,110M	Figment, NYDIG
Goldman Sachs	New York, United States	$2,000B	5	$698M	Certik, Coin Metrics, Elwood Technologies, Blockdaemon, Anchorage Digital
BNY MELLON	New York, United States	$2,300B	3	$690M	Talos, Coin Metrics, Fireblocks
Commonwealth Bank	New South Wales, Australia	$785M	4	$421M	Lygon, Xpansiv, Gemini
citi	New York, United States	$2,291B	6	$215M	Talos, TRM, Contour, Blockdaemon, Amberdata
UOB 大华银行	Singapore	$1,450B	7	$204M	Kyro, Play It Forward DAO, ADDX, Assembly, Evrynet, Yield Guild, Jambo
HSBC	London, United Kingdom	$3,021B	1	$200M	Consensys
WELLS FARGO	California, United States	$1,940B*	2	$365M	Talos, Elliptic
KB 금융그룹	Seoul, South Korea	$970B	8	$143M	Streami, Buysell Standards (PIECE), Xangle, Uprise, Kodebox, Lambda 256, Block Odyssey

*Numbers of the "Group Company"
Note: The # of deals and size of funding rounds are inclusive of group companies and their subsidiaries

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Considerations

Artificial Intelligence tools and applications could represent one of the most significant and powerful breakthroughs in productivity in the history of industry and commerce.

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Q&A

THOUGHTS

CLOSING COMMENTS

THANK YOU!

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54th Annual Virginia Accounting & Auditing Conference

The Reverberations, Impacts & Transformational Aspects of AI in Finance & Financial Services

THANK YOU!

Jeffrey Lewis

MBA RR CTP AAP

September 2024

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