



**The Institute of Chartered Accountants of India**  
(Set up by an Act of Parliament)



# Women & Young Members Excellence Committee

*Organises*

**यशस्विनी - An IDOL- Live Webinar**



**CA. Priti Paras Savla**  
Chairperson, WYMEC, ICAI



**CA. Ravi Kumar Patwa**  
Vice Chairman, WYMEC, ICAI

A photograph of a business meeting with a semi-transparent circular overlay. The overlay contains the text 'AI in Finance and Audit' and 'Presented by CA (Dr.) Pinky Agarwal'. The background shows people in business attire looking at a tablet and holding coffee cups.

# AI in Finance and Audit

Presented by  
CA (Dr.) Pinky Agarwal

# Variants of Generative AI



Text generation tools include GPT, Jasper, AI-Writer and Lex.



Image generation tools include Dall-E 2, Midjourney and Stable Diffusion.



Music generation tools include Amper, Dadabots and MuseNet.



Code generation tools include CodeStarter, Codex, GitHub Copilot and Tabnine.



Voice synthesis tools include Descript, Listnr and Podcast.ai.

# Benefits of Generative AI



**Convenience and Efficiency-**Smartphones, Smart Homes, Navigation Apps, Streaming Services, Online Shopping



**Productivity and Automation-** Email Management, Social Media Management, Customer Service Chatbots, Data Analysis and Reporting, Manufacturing and Logistics



**Innovation and Problem-solving-** Healthcare, Scientific Research, Financial Services, Environmental Sustainability, Education

# AI: Transforming the Finance Sector



# AI ACHIEVEMENTS RELATED TO FINANCIAL SERVICES (2014-2023)



## 2014: Apple Pay Launch

Apple introduced Apple Pay, a mobile payment and digital wallet service, incorporating AI for secure and convenient transactions.



## 2015: Robo-Advisors

Robo-advisors grew in popularity, using AI algorithms to offer investment advice and portfolio management.



## 2016: Adoption of AI-Driven Chatbots

AI chatbots in customer service gained momentum, improving efficiency and response times.



## 2017: Facial Recognition in Banking

Face ID by Apple and other similar technologies were integrated into banking apps for user authentication.



## 2018: AI-Focused GDPR Compliance

The General Data Protection Regulation (GDPR) in Europe prompted FIs to leverage AI for data privacy and compliance management.



## 2022: Launch of ChatGPT

ChatGPT and similar language models understand and generate human-like text, and can be used for financial services use cases



## 2021: DeFi Boom

The growth of Decentralized Finance projects and AI-powered smart contracts sought to transform traditional finance through blockchain and cryptocurrency technologies.



## 2020: Pandemic Response

COVID-19 accelerated the adoption of AI for fraud detection, customer service, and remote operations for financial institutions.



## 2019: Voice-Activated Banking

Integration of voice assistants like Amazon's Alexa into banking allowed customers to perform tasks and transactions through voice commands.



## 2023: Amazon uses GenAI for Just Walk Out

Amazon used GenAI to create photorealistic sets of synthetic data, such as video clips of synthetic shoppers, to train the system to make independent decisions. Just Walk Out makes the purchasing experience more convenient for consumers

**2024 till now:  
Sky is the limit**

# Banking, Financial and Service Sector (BFSI)

- BFSI sector is the backbone of Indian economy
- undergoing a significant transformation driven by Artificial Intelligence (AI) and digitalization-mobile banking, online payments, and AI-powered financial tools
- AI systems are programmed with algorithms that allow them to analyse data, identify patterns, and make predictions

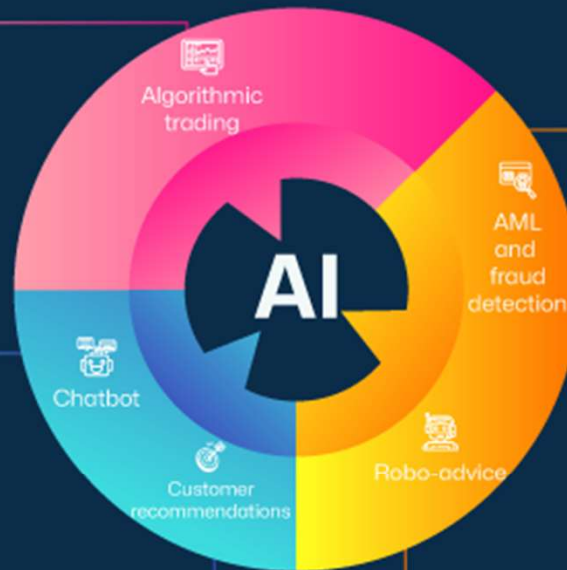


# AI Applications in Financial Services

**Cognitive Computing**

**Machine Learning**

**Natural Language Processing**





# Case Studies-



# In the area of accounting

## Challenge

- Manual processing of complex documents of forms, invoice , reports

## AI tools

- JP Morgan- AI powered platform “DocLLM and SpectrumGPT
- Ernst & Young- AI-powered platform called "Accounts Payable Smart Processing."
- Xero- integrated AI features into its accounting software

## Impact

- automatically extract data from invoices and receipts, categorize expenses, and ensure proper coding
- reduced processing time for vast amounts of invoices
- improving accuracy by minimizing errors,
- manage the finances without needing extensive knowledge

# In the area of auditing

## Challenge

- Analysis of vast amounts of financial data for fraud detection, anomaly identification, and risk assessment

## AI tools

- Price Water House (PwC)- Halo platform
- Ernst & Young- Auditor in a Box
- KPMG- Clara platform

## Impact

- Conduct preliminary testing and analysis of controls
- Perform data analytics to identify anomalies and potential risks
- Generate audit reports with explanations and visualizations based on data analysis
- Perform continuous auditing by monitoring transactions and controls in real-time

# Anomaly Detection in Financial Transactions

**Scenario:** An external auditor at a bank wants to identify fraudulent transactions from millions of entries.

**AI Tool: CaseWare IDEA, MindBridge AI Auditor**

## **How AI Helps:**

- The AI model scans transactional data and flags unusual patterns, such as duplicate payments, unauthorized transactions, or payments to unknown vendors.
- The auditor then investigates flagged transactions for potential fraud.

# Risk-Based Sampling for Audits

A statutory auditor needs to audit expense claims from employees but cannot check each claim manually.

**AI Tool: ACL Robotics (Galvanize), Deloitte Omnia**

## **How AI Helps:**

- AI selects high-risk transactions instead of random sampling.
- It identifies transactions where an employee claims unusually high expenses, submits duplicate receipts, or uses personal cards.

# Contract & Document Review for Compliance

**Scenario:** A corporate auditor must review hundreds of supplier contracts for compliance with ESG and IFRS standards.

**AI Tool: Kira Systems, ThoughtTrace**

**How AI Helps:**

- AI scans and extracts key terms from contracts (e.g., payment terms, ESG clauses, IFRS compliance).
- The auditor receives a summary of non-compliant clauses, saving hours of manual work.

# Continuous Auditing & Real-Time Monitoring

**Scenario:** An internal auditor at a retail company needs to monitor inventory transactions in real time.

**AI Tool:** Alteryx, SAP AI Core

**How AI Helps:**

- AI continuously tracks inventory records and detects discrepancies, such as stock shrinkage or unrecorded sales.
- The system sends alerts if a particular store has excessive inventory adjustments.

# Cybersecurity Audit of Third-Party Vendors

**Scenario:** A financial institution wants to audit third-party vendors (e.g., Zoho, Salesforce) for cybersecurity compliance.

**AI Tool: Darktrace, IBM Watson Security**

**How AI Helps:**

- AI scans vendors' cloud systems for vulnerabilities and checks compliance with security frameworks like ISO 27001.
- It alerts auditors if vendors have misconfigured access controls or weak encryption.



# Automated Financial Statement Analysis

**Scenario:** A forensic auditor is investigating possible financial manipulation in a company's financial statements.

**AI Tool: MindBridge AI Auditor, EY Helix**

## **How AI Helps:**

- AI analyzes journal entries, ratios, and trends to detect revenue overstatement or expense misclassification.
- The model highlights unusual spikes in revenue or transactions made outside office hours.

# Chatbot-Assisted Audit Queries

**Scenario:** Junior auditors need quick guidance on IFRS compliance while auditing a multinational firm.

**AI Tool:** PwC GL.ai, ChatGPT (fine-tuned for accounting)

## **How AI Helps:**

- The AI chatbot answers audit-related queries (e.g., IFRS 15 revenue recognition rules).
- It helps auditors apply the right accounting standards without searching through lengthy manuals.

# In the area of taxation

## Challenge

- Tax calculations, identifying potential tax deductions and credits, and streamlining compliance processes

## AI tools

- **Intuit**- TurboTax
- **Thomson Reuters** - Checkpoint
- **Price Water House (PwC)**- Tax Assurance AI

## Impact

- Identify potential tax credits and deductions
- Import tax data from various sources and automatically populate tax forms.
- Identify and analyse relevant legal precedents and case law based on specific tax situations.
- Provide insights and recommendations to tax professionals for tax planning and compliance thereby minimizing the risk of tax errors or penalties



 Intuit Assist

INTUIT

# In the area of corporate governance

## Challenge

- **Apart from monitoring** compliance with regulations and identifying potential governance risks compiling accurate and comprehensive ESG reports

## AI tools

- JPMorgan's COIN system saved \$1.5 billion in legal costs by drafting 83 per cent of subsidiary disclosure materials
- **Unilever-** AI-powered legal research tool,
- **Mastercard AI driven** risk management platform
- **Shell -**AI-powered ESG

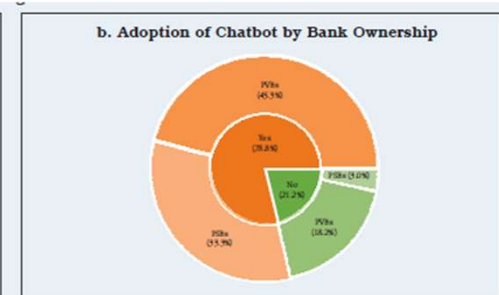
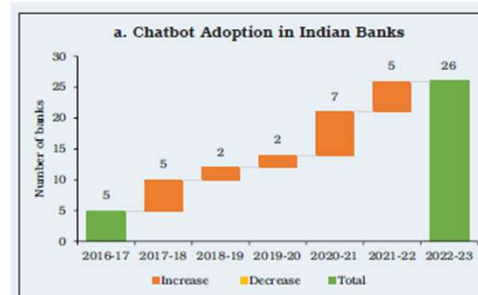
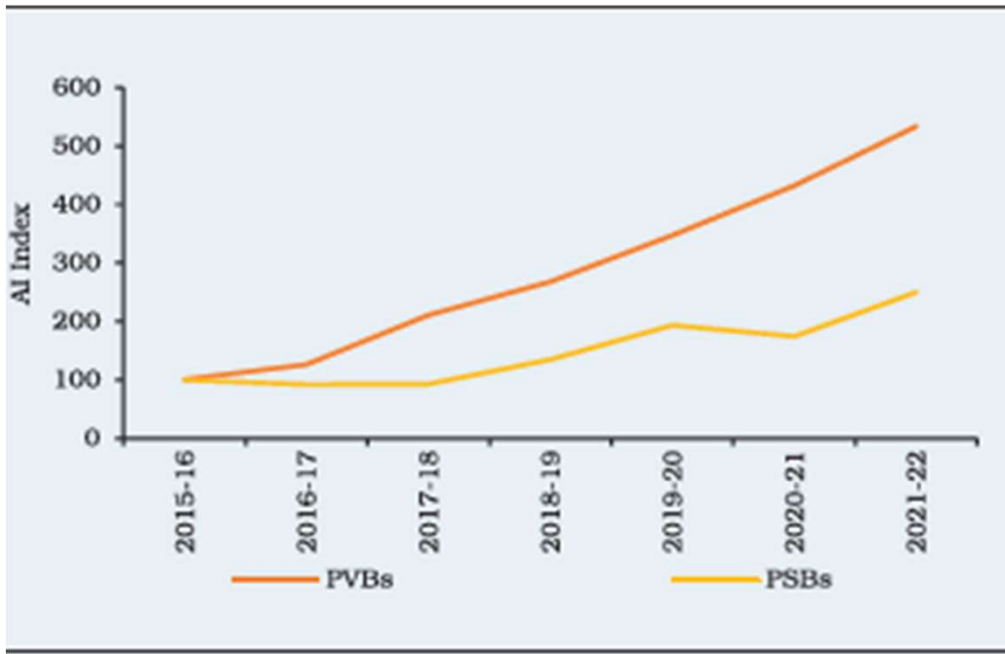
## Impact

- identify suspicious activities and potential fraud attempts
- proactively manage risk and protect its network from financial crime.
- automates data collection and analysis for ESG reporting.
- extract relevant data from diverse sources, identify trends, and generate reports that meet regulatory requirements
- ensuring transparency and accountability to stakeholders

# Few Free AI tools

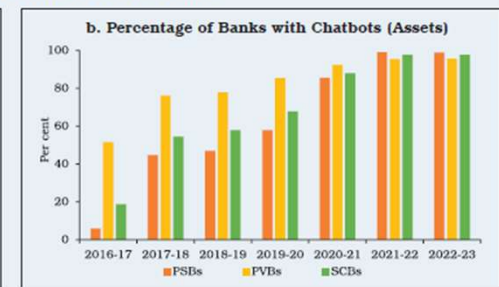
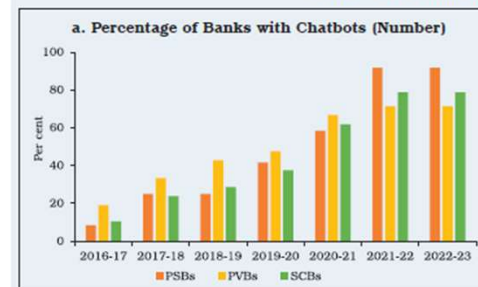
	AI Tool Used	Use Case
Data Collection	Yahoo Finance API, Alpha Vantage	Gather financial market data
Market Sentiment Analysis	FinBERT, Alpha Vantage	Analyze financial news sentiment
Algorithmic Trading	QuantConnect, Backtrader	AI-driven trading strategies
Stock Price Prediction	Darts, AutoTS	AI-based forecasting
Risk & Fraud Detection	H2O.ai, PyCaret	Identify fraudulent transactions
Compliance & Reporting	FraudLabs Pro, H2O.ai	Automate KYC & AML checks

# Adoption of AI and digitalization by Indian banks



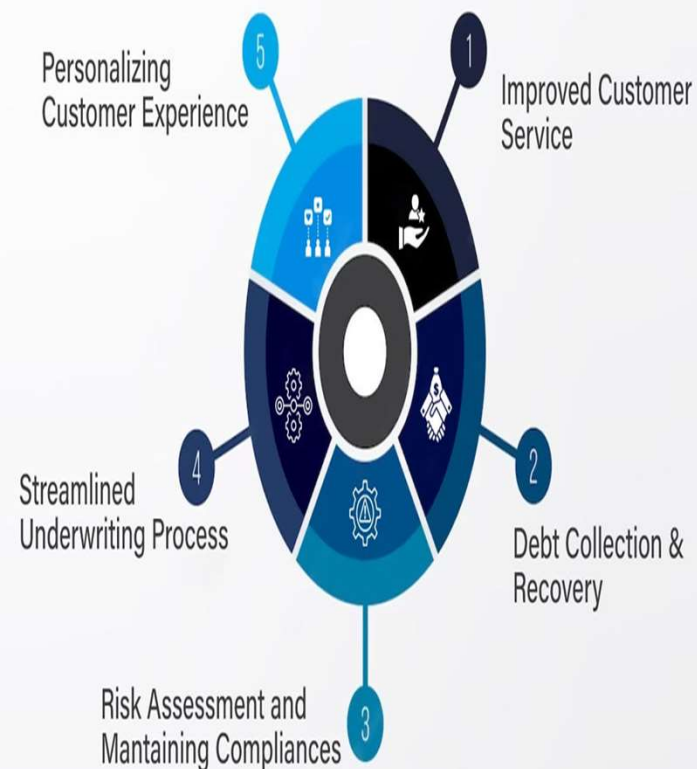
Source: RBI staff compilation using annual reports of banks.

Chart II.2.4: Evolution of Chatbots in Indian Banks



Source: RBI staff compilation using annual reports of banks.

## AI in Finance - 5 Benefits for Better Banking



## Impact in the banking Sector

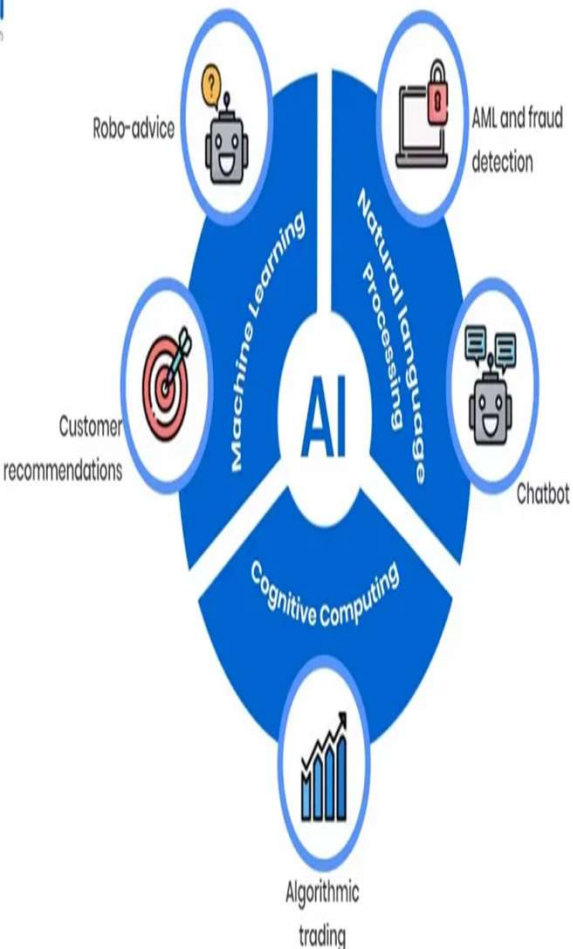
- answer frequently asked questions about balance inquiries, mini-statement generation, and fund transfers (within limits), schedule appointments with branch representatives for complex issues requiring human interaction
- identify suspicious activity and potential fraud attempts
- credit risk assessment

## Case Studies

- HSBC- Amy and Ava provides tailored investment advice to wealth management clients scrutinize billions of transactions, communications, and documents, detecting money laundering with 65 per cent higher accuracy processing over 3million reports in Q1 2024
- ICICI Bank –iPal and HDFC Bank’s –EVA



## AI Applications in Financial Services



## Impact in the Financial Services

- analyzes stocks, market trends, and suggests potential opportunities
- Algorithmic trading tools to build customized trading strategies based on AI-powered insights.
- automate tasks like portfolio rebalancing, data aggregation, and report generation

## Case Studies

- Two Sigma - Cosmos funds outperformed the S&P 500 by over 40 per cent in 2023 followed by Rebellion Research Augur which outperformed by 35 percent
- Bank of America's Merrill Lynch- Wealth Management platform named Erica handled over 200 million cl
- Capital One - Eno system let customers snap pictures of documents to get information and advice
- Standard Chartered- Dot allows clients to visually explore and get advice on financial products using voice commands
- Zerodha - Investment Platform like Kite Connect, Pi bridge, Coin, recently introduced streak

# Impact in the Insurance Sector

- Faster claim processing
- Fraud detection

**AIG- Claude system-** generate thousands of tailored letters, policy documents, and communications, reducing turnaround times by 60 per cent

**Bajaj Allianz General Insurance –Insurance Samjho Chatbots** collects basic claim information from customers and guide them through the claims process.

**ICICI Lombard General Insurance - RIA** analyses various data points associated with insurance claims and identify potentially fraudulent claims with high accuracy, allowing for faster investigation and intervention

FRAUD DETECTION & PREVENTION PROVIDERS



RISK MANAGEMENT PROVIDERS



CUSTOMER SERVICE & ENGAGEMENT PROVIDERS



FINANCIAL COMPLIANCE & REGULATORY REPORTING PROVIDERS



INVESTMENT & PORTFOLIO MANAGEMENT PROVIDERS



END USERS



## 80% of AI implementations fail

Despite the immense potential of AI,  
over 80% of AI implementations fail.

### Why?

Lack of profitability.

Security problems.

Hallucination & bias.

Regulatory and compliance obstacles.

Scalability issues.

Dependence on generic solutions.

Deploying tools without adequate verification.

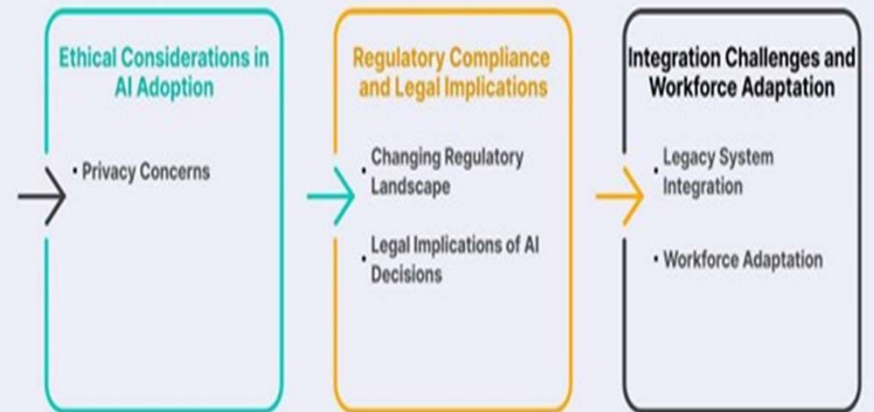
Lack of talent for building and maintaining AI.

Lack of talent for building and maintaining AI.

Inadequate knowledge management.



## Challenges and Concerns





# AI IN FINANCIAL SERVICES: 10 CHALLENGES & CONSIDERATIONS



**Data Privacy  
& Security**



**Model Interpretability  
& Explainability**



**Regulatory  
Compliance**



**Integration With  
Legacy Systems**



**Data Quality  
& Availability**



**Reliability of  
AI Systems**



**AI Bias  
& Fairness)**



**AI Talent Gap  
& Expertise**



**Cost & Resource  
Allocation**



**Customer Trust  
& Acceptance**

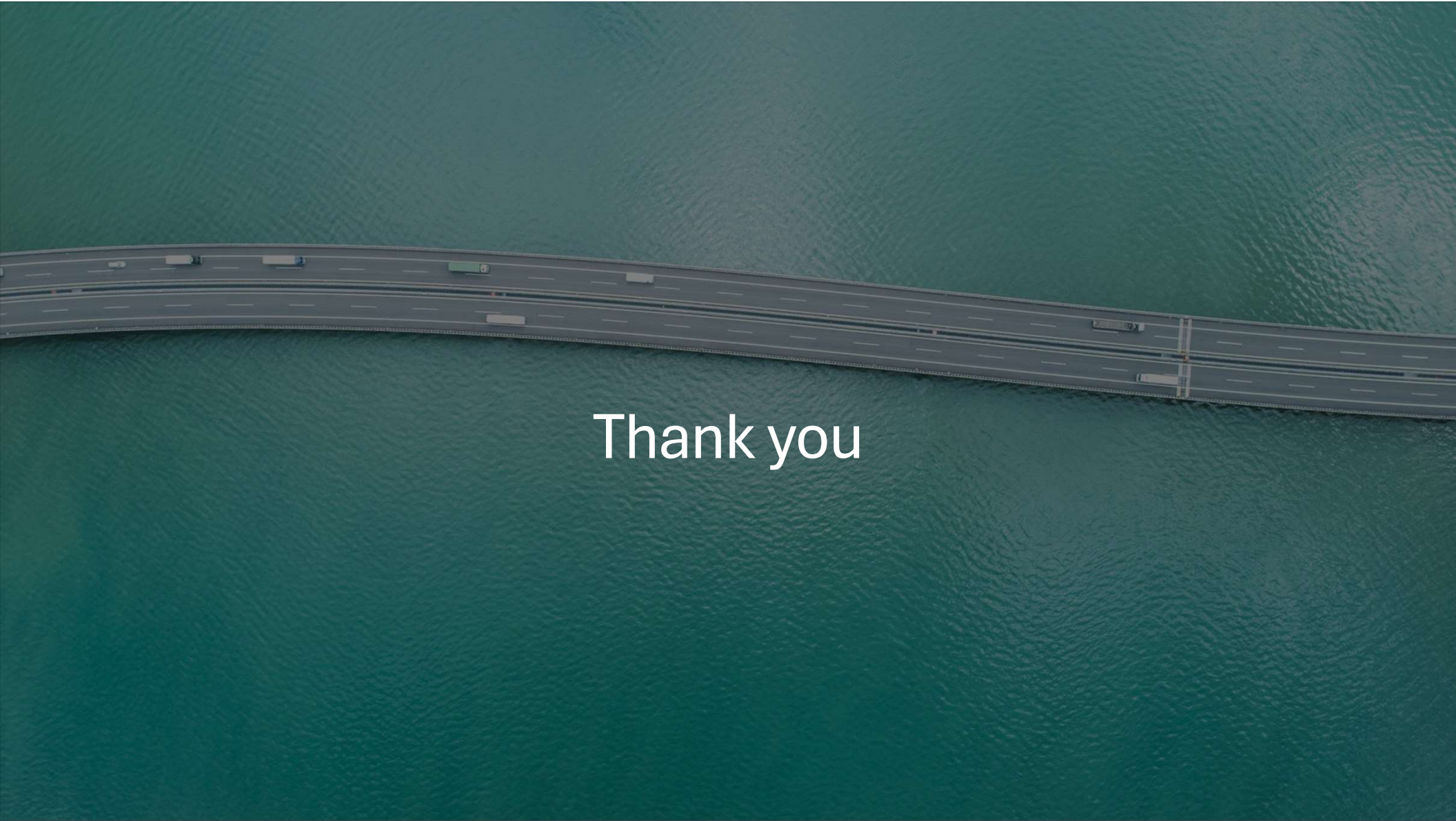
# Conclusion

Thus, adoption of Gen AI can:

- transform the accounting profession from a transactional function to a strategic one
- monitor a company's financial data, enabling ongoing risk assessment and improved detection of anomalies
- personalize financial advice and investment strategies based on individual circumstances and risk tolerance

However,

- careful consideration needs to be given to potential biases, complexity and the need for transparency and responsible use
- develop the necessary skillsets of accountants and auditors to improve efficiency, accuracy, and client service
- robust security measures to protect sensitive financial data with proper adaptation of regulatory frameworks



Thank you