

# INNOVATIONS IN FINANCE

LECTURE 4 : AI, APIs & EMBEDDED FINANCE: THE INVISIBLE REVOLUTION

*Make an impact*



# INTRODUCTION



*Make an impact*



# OUR GOAL : UNDERSTAND THE FUTURE OF FINANCE

How many of you have already used  
ChatGPT for financial advice ?



# LEARNING OBJECTIVES

## ◆ Knowledge (know/understand):

- Explain how artificial intelligence is transforming financial services
- Describe the role of APIs and open banking in enabling data access, interoperability, and improved customer experience.
- Define RegTech
- Understand the concept of embedded finance

## ◆ Skills (be able to):

- Compare traditional vs. AI-powered decision-making models
- Analyze how open banking APIs can be used to design a customer-centric financial service.
- Discuss strategic implications for banks, fintechs, and big tech companies

➔ Curiosity, creativity and critical thinking will be rewarded



# SESSION 4 AGENDA

- ◆ AI in Finance
- ◆ Open Banking and APIs
- ◆ Embedded Finance
- ◆ RegTech and Risk Automation
- ◆ The invisible revolution : Putting it all together





# AI IN FINANCE



*Make an impact*



# EARLY DAYS: SYMBOLIC AI & EXPERT SYSTEMS (1960S–1980S)

- ◆ **Concept:** Computers mimicking human reasoning with explicit rules (“if–then” logic).
- ◆ **Applications in finance:**
  - Early credit scoring models.
  - Rule-based fraud detection (e.g., “flag if transaction > \$10,000”).
- ◆ **Limits:** rigid, needed constant manual updating, couldn’t handle complexity.
- ◆ **Example : operation categorization**



# THE RISE OF MACHINE LEARNING (1990S–2000S)

- ◆ **Concept:** Instead of programming rules, feed data → model learns patterns.
- ◆ **Techniques:**
  - Decision trees, regression, support vector machines.
- ◆ **Finance applications:**
  - Risk modeling & Value-at-Risk.
  - Algo trading (pattern recognition).
  - Credit scoring using more variables.
- ◆ **Impact:** Better at handling large datasets, but still limited by computing power.
- ◆ **Example : operation categorization**





# BIG DATA + DEEP LEARNING REVOLUTION (2010S)

- ◆ **Concept:** Neural networks inspired by the brain, layered models (deep learning).
- ◆ **Why now?** Explosion of data (social media, mobile banking, transactions) + stronger computing (GPUs).
- ◆ **Finance applications:**
  - High-frequency trading strategies.
  - Chatbots & virtual assistants in banking.
  - Image/text recognition for compliance (e.g., document verification in KYC).
- ◆ **Key event: 2012** “ImageNet breakthrough” → deep learning hype spreads into finance.



# GENERATIVE AI ERA (2020S–)

- ◆ **Concept:** Large Language Models (LLMs) like GPT can generate text, code, images.
- ◆ **Difference:** From prediction to creation.
- ◆ **Finance applications:**
  - Report writing,
  - portfolio commentary, compliance summaries.
  - Conversational banking assistants (personalized financial advice).
  - Scenario generation for risk management.
  - Code generation for faster model development.
- ◆ **Risks:** hallucinations, bias, explainability, regulatory scrutiny.



## WRAP-UP: EVOLUTION IN ONE SENTENCE

◆ From **rules** (1960s) → to **patterns** (1990s) → to **deep insights** (2010s)  
→ to **creation & interaction** (2020s).

➔ Each stage expanded the role of AI in finance, from back-office number crunching to front-office decision-making.



# LLM TRAINING & FINANCE: GARBAGE IN, GARBAGE OUT

## ◆ How LLMs are trained ?

- Massive web content: Wikipedia, blogs, forums, news, social media
- Learns patterns → predicts next word

## ◆ Problem in finance

- Online finance content often:
  - ◆ Oversimplified
  - ◆ Biased/promotional
  - ◆ Wrong or misleading⇒ Risk of hallucinations & low-quality answers

## ◆ Use case:

- Portfolio commentary
- Model trained on poor data → exaggerated, incorrect, or invented narratives
- Example: “Dollar rose because of oil prices” (no evidence)

## ◆ Solutions

- Fine-tuning on reliable financial datasets (Bloomberg, in-house research)
- RAG (Retrieval-Augmented Generation) → grounding answers in trusted data

# FIRST CONCLUSION : SO SAD

◆ 😞 *“As a financial advisor, I’m sad...  
...because everyone says that I will  
be replaced soon by the guy on the  
right picture...”*

◆ AI knows everything, right? It can  
predict markets, manage portfolios,  
even write reports...

◆ 💡 **But is that really true?**

👉 *Let’s check together...*



# DEFINING AI IN FINANCIAL SERVICES

## ◆ What is AI?

- Artificial Intelligence (AI) refers to machines that mimic human intelligence — learning, reasoning, problem-solving.

## ◆ Types of Learning in Finance:

- **Supervised Learning:** Labeled data → Used in credit scoring and fraud detection
- **Unsupervised Learning:** Finds patterns in unlabeled data → Used in customer segmentation and anomaly detection

## ◆ Machine Learning vs Deep Learning:

- **Machine Learning (ML):** Algorithms learn from structured data
  - e.g., detecting suspicious card activity
- **Deep Learning (DL):** Neural networks mimic the human brain
  - e.g., understanding financial documents or voice commands

## ◆ Natural Language Processing (NLP):

- Used to interpret and generate human language ➤ e.g., Chatbots for customer support or sentiment analysis in stock markets

## 💡 Key Use Cases in Finance

**Fraud Alerts:** Real-time anomaly detection using ML

**Robo-Advisors:** Portfolio allocation powered by AI

**Chatbots:** 24/7 support using NLP and ML



# AI-DRIVEN CREDIT SCORING

## Traditional Credit Scoring

- ◆ Based on limited financial history (e.g. income, debt ratio, credit history)
- ◆ Use of fixed rules and linear models (e.g. FICO score)
- ◆ Binary decision-making (approve/reject)
- ◆ Often excludes thin-file or unbanked customers

## AI-Based Credit Scoring

- ◆ Uses machine learning to analyze large, complex datasets
- ◆ Continuously learns from past defaults, repayment patterns, and customer behavior
- ◆ Offers more granular risk predictions (probabilistic)
- ◆ Can adapt scoring models in real time
- ◆ Alternative Data in AI Models:
  - Behavioral data: payment patterns, app usage, browsing behavior
  - Social data: online presence, peer associations (controversial)
  - Transactional data: bank and mobile wallet activity (especially in emerging markets)

### Benefits & Challenges:

- ✓ More inclusive, especially for gig workers and unbanked populations
- ✗ Raises concerns about **bias**, **explainability**, and **data privacy**



# CASE STUDY – UPSTART'S AI CREDIT SCORING MODEL

## ◆ Who is Upstart?

- A U.S.-based fintech founded in 2012
- Uses AI/ML to assess borrower creditworthiness
- Partners with banks to offer loans based on alternative risk assessment

## ◆ How Upstart Scores Credit Differently

- Considers more than 1,000 variables, including:
  - ◆ Education (college, major, GPA)
  - ◆ Employment history
  - ◆ Income stability
  - ◆ Digital footprint
  - ◆ Behavioral signals
- Uses supervised machine learning models
- Continuously retrains models using repayment performance

## ⚠ Challenges & Risks

- Regulatory attention on model fairness & explainability
- Scrutiny over potential bias in non-traditional inputs
- Transparency remains a key issue for consumers

## Key Outcomes

### ◆ 43% Higher approvals :

- Improved accuracy allows bank partners to approve more applicants.

### ◆ 33% Lower APR (Annual Percentage Rate):

- Improved accuracy also allows bank partners to offer lower APRs at the same approval rates.

### ◆ 92% Fully Automated :

- Upstart enables banks to respond instantly to a customer's loan request 24/7

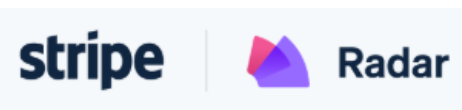
# REAL-TIME FRAUD PREVENTION WITH AI

## Traditional Fraud Detection

- ◆ Rule-based systems
- ◆ Static thresholds (e.g., transactions > \$5,000 flagged)
- ◆ Delayed alerts — often post-transaction
- ◆ High false positives & poor user experience
- ◆ Hard to adapt to evolving fraud techniques

## AI-Driven Fraud Detection

- ◆ Real-time transaction monitoring
- ◆ Machine learning models identify subtle patterns
- ◆ Anomaly detection (behavioral or network-based)
- ◆ Dynamic risk scoring per transaction
- ◆ Continuously improves with new data
- ◆ Better accuracy, fewer false positives



### Use Case Examples

- Pattern: User usually shops in Paris, suddenly a charge from Singapore — flagged instantly
- Behavior: Device change, login time shift, or typing speed — real-time alerts



# CASE STUDY – HOW STRIPE RADAR DETECTS FRAUD

## ◆ What is Stripe Radar?

- A machine learning–powered fraud detection tool built into the Stripe payment platform
- Designed to block fraudulent transactions in real-time while minimizing false positives
- Used by millions of businesses globally

## ◆ How It Works

- Machine learning model trained on billions of transactions
- Analyzes 1,000+ signals: IP address, device fingerprint, purchase history, email reputation, etc.
- Behavioral pattern analysis: Time of purchase, velocity of transactions, etc.
- Real-time decisioning: Accept, block, or flag transactions
- Custom rules: Merchants can define rules tailored to their risk profile

## Key Outcomes

### ◆ 89% of high-risk payments blocked

- Reduces chargebacks and fraud-related losses significantly
- Improves conversion by reducing unnecessary declines
- Used by companies like Amazon, Shopify, and Slack

# FROM HUMAN ADVISORS TO ROBO-ADVISORS

## Traditional Investment Advisory

- ◆ Manual risk profiling through interviews and forms
- ◆ Portfolio constructed and rebalanced periodically by hand
- ◆ Tax strategies planned yearly or upon request
- ◆ High entry costs (fees + minimum investment)
- ◆ Personalized service, but less scalable
- ◆ Requires scheduled consultations

## AI-Powered Robo-Advisors

- ◆ Automated risk profiling via online questionnaires and AI pattern analysis.
- ◆ Continuous, algorithmic portfolio rebalancing based on market conditions
- ◆ Automated tax-loss harvesting and optimization, done routinely
- ◆ Low or no minimums, reduced fees, accessible to all
- ◆ Standardized personalization at scale through AI
- ◆ 24/7 digital access through apps and dashboards



### Benefits

- AI democratizes wealth management by making professional-grade investment services available to everyday investors.





# CASE STUDY – HOW BETTERMENT AUTOMATES INVESTMENT

## ◆ Risk Profiling

- Users complete a quick questionnaire assessing time horizon, financial goals, and risk tolerance
- Betterment assigns a personalized risk score (0–100)How It Works

## ◆ Portfolio Selection

- Based on Modern Portfolio Theory (MPT)
- Diversified across ETFs (U.S. stocks, international stocks, bonds, etc.)
- Includes socially responsible options (ESG portfolios)

## ◆ Automatic Portfolio Rebalancing

- Monitors portfolio drift daily
- Automatically buys/sells assets to maintain target allocation
- Also adjusts after deposits, withdrawals, or dividends

## ◆ Low & Transparent Fees

- 0.25% annual fee for digital plan (no minimum balance)
- Optional premium plan: 0.65% with access to human advisors
- No trading fees or rebalancing fees

## Key Outcomes

- ◆ Delivers consistent returns aligned with client risk levels
- ◆ Improves user behavior (e.g., reduces panic selling)
- ◆ Helps optimize tax efficiency via Tax Loss Harvesting+ (for eligible accounts)





# OPEN BANKING, APIS

THE NEW DATA LAYER



*Make an impact*



# BEFORE APIS: CLOSED BANKING (PRE-2000S)

- ◆ Banks as **closed fortresses**
  - Data locked inside each bank
  - No interoperability between institutions
- ◆ Customers had **fragmented access**
  - One login per bank
  - No consolidated view of accounts
- ◆ Technology was **siloed**
  - Legacy systems, little communication between apps
  - Manual processes for transfers & reporting
- ◆ **Key idea:**
  - 👉 Finance was *closed, slow, and isolated*.



# EARLY APIS (2000S): FIRST EXPERIMENTS

## ◆ APIs emerge in tech world

- Amazon, eBay, Google Maps start exposing data via APIs
- Developers can plug services together

## ◆ Banks begin experimenting (internally)

- APIs used for internal systems, not for customers
- Focus on efficiency, not openness

## ◆ Customer experience unchanged

- Still no cross-bank visibility
- Finance remained closed to outsiders

## ◆ Key idea:

👉 APIs were born in tech... but banks kept the gates closed.



# THE REGULATORY PUSH (2010S)

## ◆ EU PSD2 (2015)

- Banks must open customer data (with consent)
- Third-party providers (TPPs) can access via APIs

## ◆ Open Banking UK (2018)

- Standardized API framework for all major banks
- Sparked fintech innovation ecosystem

## ◆ Impact

- Customers gained control over their data
- Explosion of account aggregators, budgeting apps, new payments solutions

## ◆ Key idea:

👉 Regulation forced banks to open the gates — and fintechs rushed in.



# FROM OPEN BANKING TO OPEN FINANCE (2020S)

## ◆ **Beyond banking data**

- APIs extend to insurance, pensions, investments, loans
- Towards full **Open Finance**

## ◆ **Embedded Finance**

- Financial services integrated into non-financial apps
- Example: Uber (payments, driver loans), Shopify (merchant lending)

## ◆ **Platform economy**

- Tech players + fintechs embed finance into daily life
- Banks risk becoming “invisible pipes”

## ◆ **Key idea:**

👉 From *open banking* to *finance everywhere*.



# WHAT IS AN API?

## ◆ API = Application Programming Interface

- A “digital plug” that lets two apps talk to each other

## ◆ How it works:

- App A asks: *“Give me the balance of this account”*
- Bank’s system answers: *“Here it is: €1,254”*

## ◆ Metaphors:

- Like a **waiter** taking your order to the kitchen and bringing back the food
- Or a **Lego connector** that allows different blocks to fit together

## ◆ Key idea:

- 👉 APIs are the invisible **pipes** of modern finance.



# LET'S PLAY: WHAT IS AN API?

## ♦ Activity: Restaurant Analogy 🍽️

- One student = **Customer** (wants food → bank data)
- One student = **Waiter (API)** (takes order → brings result)
- One student = **Chef (Bank system)** (cooks → holds the data)

## ♦ Rules:

- Customer tells the **Waiter** what they want.
- Waiter goes to the **Chef**, asks for it.
- Chef prepares it and gives it back.
- Waiter delivers to the Customer.

♦ 💡 Without the waiter (API), the customer can't enter the kitchen.

## ♦ Key takeaway:

👉 API = the **messenger** between you and the system.



# USE CASE: ACCOUNT AGGREGATION

- ◆ See all bank accounts in one app
- ◆ Budgeting tools & expense tracking
- ◆ Example: Plaid, Tink, Yolt
- ◆ **Key idea:**
  - 👉 APIs give customers a **360° financial view**.



# USE CASE: PAYMENTS

- ◆ Instant payments via APIs
- ◆ Cheaper & faster than cards
- ◆ Example: Stripe, Adyen, Open Banking payments
- ◆ **Key idea:**
  - 👉 APIs are the **rails** for e-commerce and digital wallets.



## USE CASE: FX & TREASURY

- ◆ Real-time FX rates and payments
- ◆ Automated treasury dashboards
- ◆ Example: Wise, Currencycloud
- ◆ **Key idea:**
  - 👉 APIs let companies manage **global money flows** in real time.



# USE CASE: LENDING & CREDIT SCORING

- ◆ Instant access to bank data for credit checks
- ◆ Faster loan approvals
- ◆ Example: Klarna, Tink, Credit Karma
- ◆ **Key idea:**
  - 👉 APIs reduce **friction** in lending decisions.






# USE CASE: INVESTMENTS & WEALTH

- ◆ Aggregation of portfolios (stocks, funds, pensions)
- ◆ Robo-advisors building full financial picture
- ◆ Example: Robinhood API, Moneybox, Wealthfront
- ◆ **Key idea:**
  - 👉 APIs democratize **investment services**.



# LET'S BUILD OUR FIRST FINTECH

## Use Case: Personal Finance Assistant App (Smart Budgeting & Savings Coach)

 Customer Journey Step	 API Needed	 Function
1. User signs up and authenticates	Authentication API (OAuth2)	Securely verify user identity and consent
2. App connects to user's bank	Account Aggregation API (AIS)	Retrieve account balances, transaction history
3. Analyze spending habits	Transaction Categorization API	Classify expenses (food, rent, travel, etc.)
4. Budget & savings plan	AI/ML Recommendation API	Propose personalized budget & savings goals
5. Automated savings transfers	Payment Initiation API (PIS)	Move money to a savings account based on rules
6. Notifications & insights	Notification / Messaging API	Send alerts, tips, and behavioral nudges
7. Optional: investment offer	Robo-Advisory API	Offer investment suggestions based on savings behavior

# LET'S BUILD OUR SECOND FINTECH

## Use Case: Embedded B2B Lending Platform for SMEs



### Customer Journey Step



### API Needed



### Function

1. Business signs up on platform

KYC/KYB API

Verify company identity (Know Your Business)

2. Platform connects to business bank

Account Aggregation API (AIS)

Fetch bank account data, cash flow history, and account activity

3. Creditworthiness analysis

AI Credit Scoring API

Use bank & accounting data to assess risk profile

4. Loan offer generation

Loan Origination API

Automatically propose loan terms & repayment schedule

5. Contract signing

eSignature API

Let users securely sign loan agreements digitally

6. Funds disbursement

Payment Execution API

Transfer approved loan to the company account

7. Repayment tracking & reminders

Webhook or Notification API

Send payment due alerts and track repayment status

8. Monitoring business health

ERP or Accounting Data API

Track company performance post-lending

# API DANGERS & DRAWBACKS

## ◆ Security risks

- API breaches can expose sensitive financial data
- Example: poorly protected endpoints = hacker's paradise

## ◆ Standardization issues

- Different banks, different API formats
- Painful integration for fintechs


## ◆ Dependency on third parties

- If a provider's API goes down, your app breaks
- Vendor lock-in risks

## ◆ Disintermediation risk for banks

- Big techs & fintechs own customer relationship
- Banks reduced to invisible “pipes”

## ◆ Key takeaway:

 APIs are powerful, but fragile — finance must balance **openness and control**.



# CASE STUDY: CAPITAL ONE API BREACH (2019)

## ◆ Who is Capital One?

- Major US bank, ~100 million customers
- Known for being tech-forward, heavy use of cloud & APIs

## ◆ What happened (2019)?

- **API misconfiguration** in AWS firewall
- Hacker exploited the flaw to access customer data
- Exposed ~100M credit card applications, personal info, SSNs

## ◆ Impact:

- \$80M fine from US regulators
- Huge reputational damage
- Sparked debate on **API security & cloud risk**

## ◆ Key lesson:

👉 APIs are doors into bank systems — if left unlocked, the entire vault is at risk.



# EMBEDDED FINANCE

INVISIBLE BANKING



*Make an impact*



# BEFORE EMBEDDED FINANCE: BANKS AS A DESTINATION

## ◆ Traditional banking

- Customers had to **go to the bank** (branch, app, or website)
- All financial services delivered *inside the bank's walls*

## ◆ Customer experience

- Separate logins, paperwork, approvals
- Finance felt like a **chore**

## ◆ Limited integration

- Buying → one place
- Paying → through the bank
- Borrowing → back to the bank again

## ◆ Key idea:

👉 Finance was a *destination*, not a layer.



# WHAT IS EMBEDDED FINANCE?

## ◆ Definition

- Integration of financial services into **non-financial platforms**
- Customers access loans, payments, insurance, investments *without leaving the app*

## ◆ Examples

- Buy Now Pay Later (Klarna, Affirm, Apple Pay Later)
- Uber: payments + driver financing
- Shopify Capital: loans for merchants

## ◆ Metaphor

- Like **electricity**: you don't go to the power company, you just flip the switch

## ◆ Key idea:

👉 Finance stops being a *destination* → becomes a *layer of life*.



# USE CASE: BUY NOW PAY LATER (BNPL)

- ◆ **At checkout:** Instant credit option
- ◆ **Players:** Klarna, Affirm, Apple Pay Later
- ◆ **Customer benefit:** Frictionless purchase, no bank visit
- ◆ **Risk:** Easy debt trap for consumers
- ◆ **Key idea:**
  - 👉 Credit is **embedded in shopping**, not in the bank.





# USE CASE: RIDE-HAILING & GIG ECONOMY (UBER)

- ◆ **Invisible payments:** No cash, no card input each ride
- ◆ **Driver services:** Instant payouts, microloans
- ◆ **Customer benefit:** Seamless experience
- ◆ **Risk:** Who regulates Uber as a financial player?
- ◆ **Key idea:**
  - 👉 Payments and loans are **baked into the platform.**



## USE CASE: E-COMMERCE & MERCHANT PLATFORMS (SHOPIFY/AMAZON)

- ◆ **Shopify Capital:** Loans for small merchants
- ◆ **Amazon Lending:** Credit to sellers on its marketplace
- ◆ **Customer benefit:** Financing at the point of need
- ◆ **Risk:** Big Techs control credit flows, bypassing banks
- ◆ **Key idea:**
  - 👉 Platforms become **banks for businesses**.



## USE CASE: B2B EMBEDDED LENDING

- ◆ **SMEs apply for financing directly in accounting software**
- ◆ APIs pull accounting + banking data → instant scoring
- ◆ Loans disbursed via partner banks
- ◆ **Customer benefit:** No paperwork, instant cashflow support
- ◆ **Risk:** Dependency on single platform provider
- ◆ **Key idea:**
  - 👉 Lending becomes **invisible, inside business tools.**



# EMBEDDED FINANCE: BENEFITS & RISKS

## ◆ Benefits

- Seamless **user experience** (finance feels invisible)
- New **revenues** for platforms & fintechs
- Greater **financial inclusion** (SMEs & underserved customers)

## ◆ ⚠ Risks

- **Regulatory gray zones** → who is responsible?
- **Consumer protection** → risk of over-lending (BNPL, easy credit)
- **Bank disintermediation** → banks become invisible pipes
- **Systemic risk** if Big Techs dominate finance

## ◆ Key idea:

👉 Embedded Finance = convenience & growth, but also hidden dangers.

# WHY EMBEDDED FINANCE THREATENS BANKS

## ◆ The Traditional Banking Fortress Is Under Siege

- Embedded finance shifts core banking services (payments, lending, insurance, investing) into **non-financial platforms** — and banks are losing their edge in 4 critical areas:

### ⚠️ 1. User Control (UC) Moves Away from Banks

Platforms like Shopify, Uber, or Agicap now own the **customer interface**.

Banks become invisible utilities, while users engage with platforms they trust and use daily.

### 🔧 3. Distribution Is Redefined

Traditional branches and apps are being bypassed.

APIs allow fintechs and platforms to embed financial services directly where customers already are.

### 📊 2. Data Is Collected Elsewhere

Platforms gather richer contextual data: Sales, inventory, behavior, creditworthiness.

This allows better underwriting, tailored offers, and faster decisions — without the bank.

### 🔒 4. Trust Is Fragmenting

Consumers and businesses increasingly trust digital-first platforms.

Banks lose brand equity when they operate behind the scenes as “just the rails”.

**Embedded finance unbundles banking into services delivered at the point of need, threatening banks' relevance, margins, and role in the financial value chain.**



# REGTECH

COMPLIANCE & RISK AUTOMATION



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# BEFORE REGTECH: COMPLIANCE THROUGH THE AGES




- ◆ **Pre-2000s:** Paper forms, fax machines, filing cabinets 📁
- ◆ **2000s:** Excel spreadsheets & clunky databases 💻
- ◆ **2010s:** Post-crisis regulation boom = compliance overload 📄💥
- ◆ **2020s:** Rise of **RegTech** → AI + APIs = automated guardrails 🤖
- ◆ **Key idea:**  
👉 Compliance evolved from **paperwork hell** → to **data overload** → to **automation hope**.

# WHAT IS REGTECH?

## ◆ Definition

- *Regulatory Technology* = using AI, APIs, and digital tools to automate compliance & risk management

## ◆ Purpose

- Lower costs 
- Reduce human error 
- Improve speed & transparency 

## ◆ Analogy

- Like an **autopilot for compliance**: still needs human oversight, but makes the journey smoother

## ◆ Key idea:

👉 RegTech = **compliance that scales with technology.**





# REGTECH IN ACTION: KYC & DIGITAL IDENTITY

- ◆ **Challenge:** Manual onboarding = slow, paperwork-heavy
- ◆ **Solution:** Automated ID checks (scan ID, selfie, biometrics)
- ◆ **Examples:** Onfido, IDnow, Jumio
- ◆ **Key idea:**
  - 👉 APIs + AI make **onboarding instant and secure.**



# REGTECH IN ACTION: AML & FRAUD DETECTION

- ◆ **Challenge:** Billions of transactions to monitor
- ◆ **Solution:** AI detects unusual patterns in real time
- ◆ **Examples:** ComplyAdvantage, Ayasdi, Feedzai
- ◆ **Key idea:**
  - 👉 From sample-based checks → to **continuous surveillance at scale.**



# REGTECH IN ACTION: REGULATORY REPORTING

- ◆ **Challenge:** Endless reports to multiple regulators
- ◆ **Solution:** Automated data pipelines & real-time dashboards
- ◆ **Examples:** Wolters Kluwer, AxiomSL (Adenza), BearingPoint
- ◆ **Key idea:**
  - 👉 From Excel hell → to **push-button compliance**.



# REGTECH IN ACTION: RISK AUTOMATION

- ◆ **Challenge:** Complex risks (credit, market, liquidity) need fast detection
- ◆ **Solution:** AI models monitor risks in real time
- ◆ **Examples:** BlackRock Aladdin, SAS Risk Management, Moody's Analytics
- ◆ **Key idea:**
  - 👉 Risk managers get **radar screens, not rear-view mirrors.**



# REGTECH: BENEFITS & CHALLENGES

## ◆ Benefits

- Faster onboarding & monitoring
- Lower compliance costs
- Greater accuracy, fewer human errors
- Enables **real-time supervision**

## ◆ ⚠ Challenges

- **Black-box AI** → hard to explain decisions
- **False positives** → alert fatigue for compliance teams
- **Data privacy risks** → sensitive info shared widely
- **Regulators catching up** → tech moves faster than rules

## ◆ Key idea:

👉 RegTech = the **guardrails** of invisible finance — but guardrails can fail if not maintained.



# INVISIBLE REVOLUTION

PUTTING IT ALL TOGETHER



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# THE INVISIBLE REVOLUTION: PUTTING IT ALL TOGETHER

- ◆ **AI = the brains** 🧠
  - Smarter decisions, automation, personalization
- ◆ **APIs = the plumbing** 🔌
  - The invisible pipes connecting finance everywhere
- ◆ **Embedded Finance = the experience** 📱
  - Banking dissolves into daily life, frictionless & seamless
- ◆ **RegTech = the guardrails** 🛡️
  - Keeps the invisible system safe, compliant, and trusted
- ◆ **Key idea:**
  - 👉 Finance is no longer a **destination** — it's becoming a **layer of life**.



# WRAP-UP



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# KEY TAKEAWAYS FROM TODAY

- ◆ **AI is transforming finance** through smarter credit scoring, real-time fraud detection, and automated investment advice.
- ◆ Robo-advisors and AI-based portfolio tools are **democratizing wealth management** via personalization, rebalancing, and cost efficiency.
- ◆ APIs are the **building blocks of modern finance**, enabling seamless integration and modularity across platforms and services.
- ◆ **Embedded finance** is moving financial services into everyday platforms and apps — disrupting traditional distribution and user relationships.
- ◆ **Banks are being disintermediated:** user control, data ownership, and trust are shifting to platforms — challenging the role of legacy institutions.

➔ *what role will traditional banks play in 10 years? Will they adapt or be replaced?*



# THE INVISIBLE REVOLUTION

**What is one major benefit of using AI in credit scoring compared to traditional models?**

- A. It reduces the need for customer service teams
- B. It only uses the customer's credit card history
- C. It can incorporate alternative data and uncover hidden patterns
- D. It guarantees higher approval rates



# THE INVISIBLE REVOLUTION

**What is the main function of an API in modern financial services?**

- A. To replace human advisors
- B. To store banking data
- C. To enable secure, modular connections between services
- D. To mine cryptocurrencies





# THE INVISIBLE REVOLUTION

**What does “Embedded Finance” mean?**

- A. Banks buying fintech companies
- B. Financial services integrated seamlessly into non-financial platforms
- C. Finance lectures given online
- D. Offline banking systems



# THE INVISIBLE REVOLUTION

**What's a key advantage of RegTech solutions for compliance?**

- A. They allow banks to avoid regulation
- B. They make all financial activity anonymous
- C. They automate risk monitoring and reduce compliance costs
- D. They delay onboarding processes



# THE INVISIBLE REVOLUTION

**Why is open banking considered a game changer for customer experience?**

- A. It hides user data from third parties
- B. It centralizes all financial services into one app
- C. It allows third-party providers to access banking data securely and personalize services
- D. It replaces traditional banks completely



*Make an impact*

