

Lesson 10: RegTech

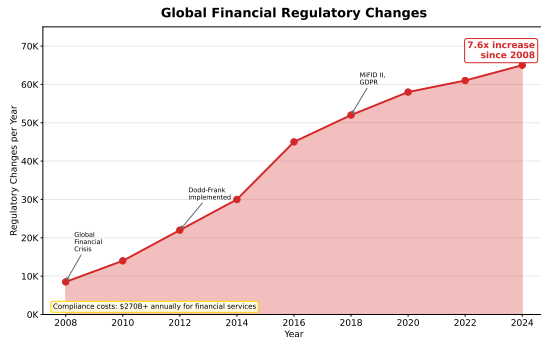
Module 1: FinTech Fundamentals

Digital Finance

Regulatory Complexity Crisis

Compliance Burden

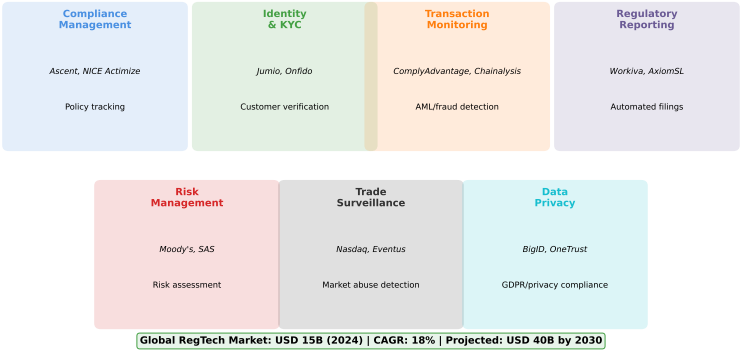
- 300M+ pages of regulation
- \$270B annual compliance cost
- 500+ updates per day
- Manual processes fail



Source: Thomson Reuters Regulatory Intelligence (2024)

RegTech Landscape Overview

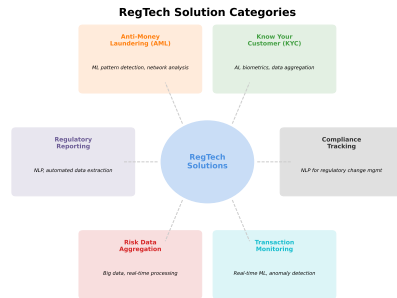
RegTech = Technology solutions for regulatory compliance



Source: Grand View Research, Juniper Research (2024)

Five Core Areas

- Compliance management
- Transaction monitoring
- Regulatory reporting
- Risk management
- Identity verification



Source: Deloitte RegTech Universe (2024)

Anti-Money Laundering (AML)

AML Challenge

- **\$2T** laundered annually
- 0.1% detected (UN estimate)
- **\$26B** in fines (2008-2023)
- False positive rate: 95%

The Scale of Money Laundering



Source: UN Office on Drugs and Crime, FATF, McKinsey (2024)

Traditional AML Process Flow



Typical Monthly Volume:

Transactions:	1,000,000
Alerts:	10,000
Investigations:	1,000
SARs Filed:	50-100

Traditional Approach Problems:

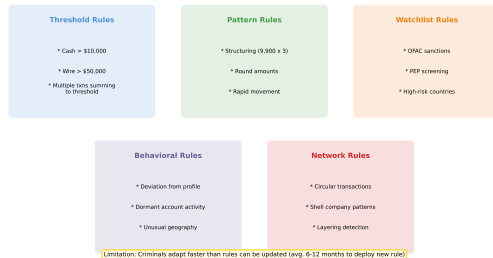
- Static rules miss evolving patterns
- 95%+ false positive rate
- Analyst fatigue
- Slow adaptation to new threats
- Siloed data

[ILLUSTRATIVE WORKFLOW]

Rule-Based Systems

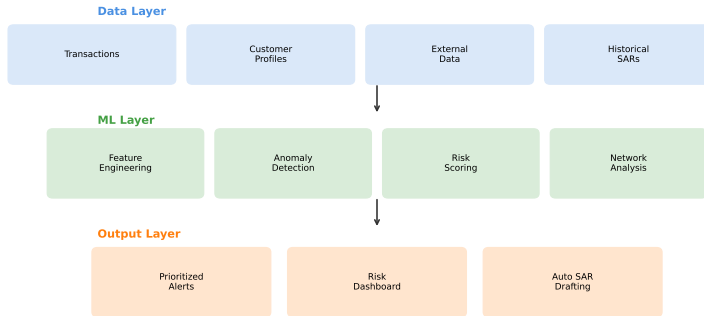
- Threshold triggers (\$10K)
- Velocity checks
- Geographic patterns
- 99% false positives

Traditional AML: Rules-Based Detection



[TYPICAL RULE CATEGORIES]

ML-Powered AML Architecture



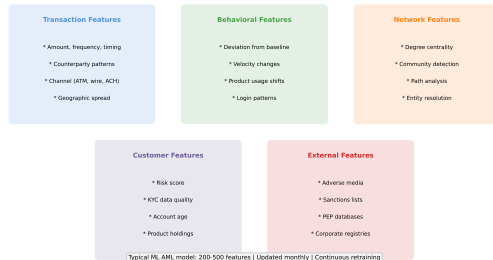
Benefits: 50-70% fewer false positives | 80% faster investigation | Continuous learning

[CONCEPTUAL ARCHITECTURE]

Behavioral Features

- Network graph analysis
- Time-series patterns
- Entity relationships
- Reduces FP to 70%

ML Features for AML Detection



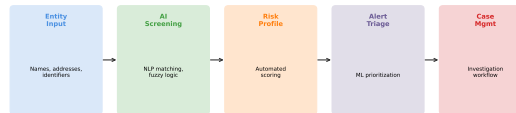
(TYPICAL FEATURE ENGINEERING)

AI-Powered Screening

- Real-time sanctions screening
- Natural language processing
- Dynamic risk scoring
- 2,000+ financial institutions

ComplyAdvantage: AI-Powered AML

Real-world RegTech Case Study



ComplyAdvantage Data Sources:

- * 10,000+ sanctions & watchlists
- * Adverse media (50+ languages)
- * PEP databases (1.4M+ profiles)
- * State-owned enterprises
- * Crypto wallets & exchanges

Results: 70% reduction in false positives | 60% faster screening | Used by 1,000+ FIs

Source: ComplyAdvantage company materials (2024)

Reporting Requirements

- MiFID II: 65 data fields
- EMIR: Trade reporting
- Basel III: Risk metrics
- Frequency: Daily/real-time

Regulatory Reporting Requirements



Reporting Challenges:

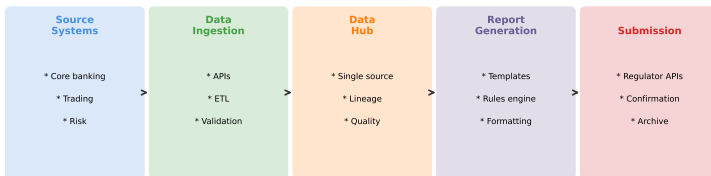
- 60+ regulators for global banks
- Varying formats (XML, XBRL, CSV)
- Different data taxonomies
- Manual reconciliation errors
- Penalties for late/incorrect filings

RegTech Solution:

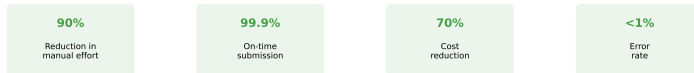
- Automated data extraction
- Format transformation
- Validation rules
- Audit trails
- On-time submission

Source: BIS, FSF regulatory reporting surveys (2024)

Automated Regulatory Reporting Flow



Automation Benefits:



[CONCEPTUAL WORKFLOW]

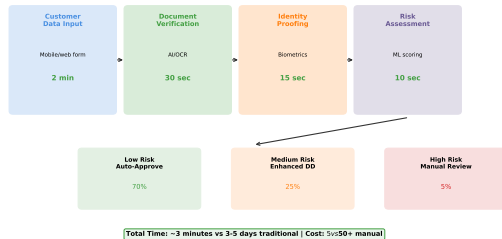
Know Your Customer (KYC) Technology

Digital KYC

- Document verification (OCR)
- Biometric authentication
- PEP/sanctions screening
- Continuous monitoring

Automated KYC/CDD Process

Know Your Customer / Customer Due Diligence

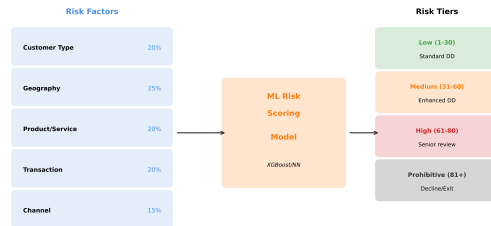


Source: Jumio, Onfido customer case studies (2024)

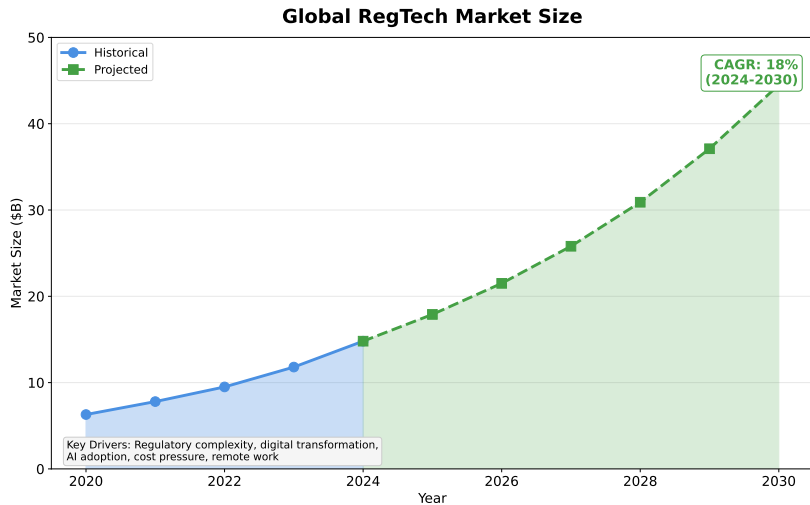
Dynamic Risk Scoring

- Real-time risk calculation
- Multi-dimensional factors
- Regulatory change tracking
- Stress testing automation

Customer Risk Scoring Model



[ILLUSTRATIVE MODEL STRUCTURE]

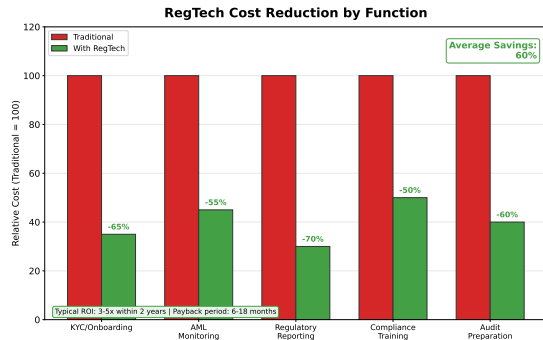


Source: Grand View Research, MarketsandMarkets (2024)

Cost Reduction Analysis

Efficiency Gains

- AML analysts: 50% reduction
- Reporting costs: 70% lower
- False positive rate: 30% reduction
- Time to compliance: 80% faster

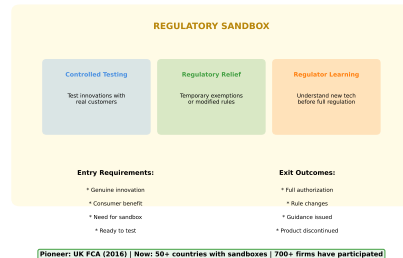


Source: Deloitte RegTech study, McKinsey analysis (2024)

Innovation Testing

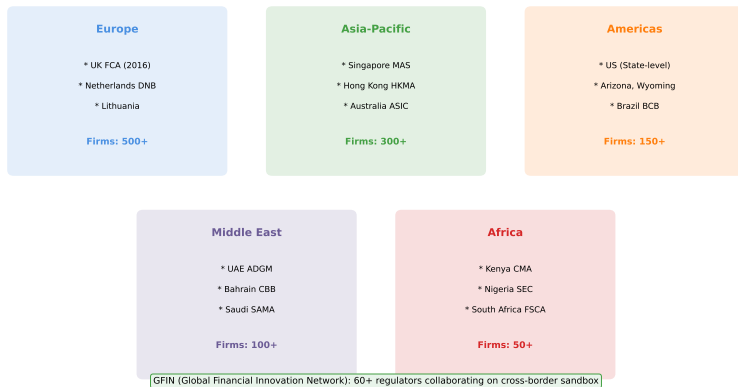
- FCA (UK) pioneer
- Limited-scope testing
- Regulatory guidance
- 80% go to market

Regulatory Sandbox Concept



Source: FCA, BIS regulatory sandbox report (2024)

Global Regulatory Sandboxes



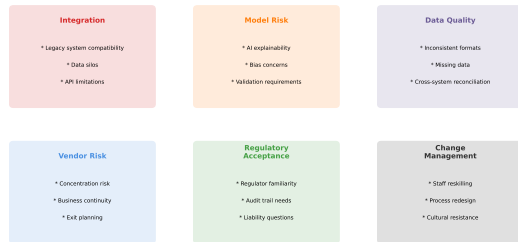
Source: World Bank, BIS, individual regulator websites (2024)

Challenges and Limitations

Implementation Barriers

- Legacy system integration
- Data quality issues
- Regulatory acceptance lag
- Explainability requirements

RegTech Adoption Challenges



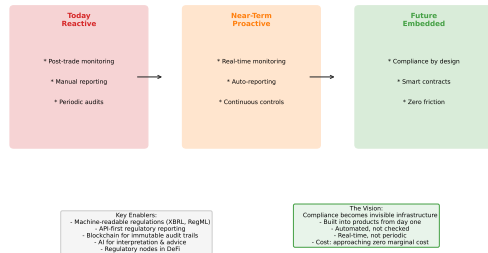
Success Factors: Executive sponsorship, phased rollout, vendor due diligence, regulator dialogue

[INDUSTRY ANALYSIS]

Next Generation

- Real-time compliance
- Machine-readable regulation
- Automated policy updates
- Suptech convergence

The Future: Embedded Compliance



[FORWARD-LOOKING ANALYSIS]

- **Problem:** \$270B compliance costs, 95% false positives
- **ML AML:** Reduces false positives from 99% to 70%
- **Automation:** Reporting costs down 70%, time down 80%
- **Sandboxes:** 80% of tested innovations go to market
- **Future:** Real-time embedded compliance automation