

Lesson 10: RegTech

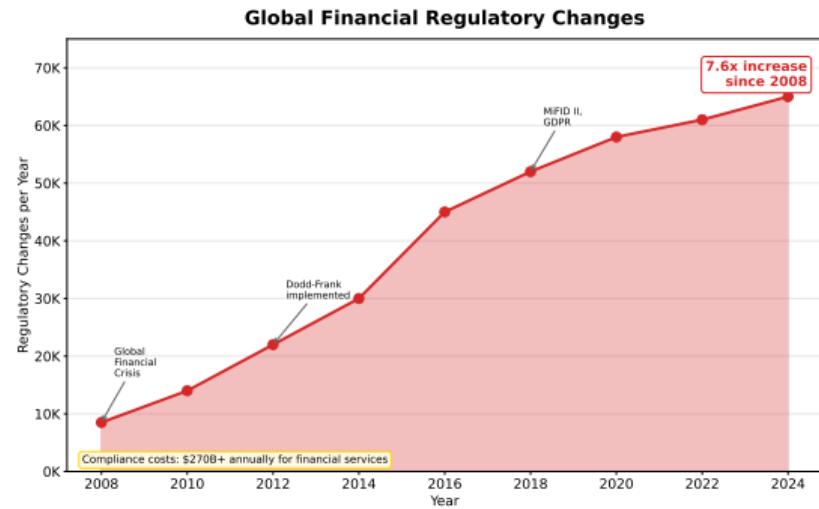
Module 1: FinTech Fundamentals

Digital Finance

Regulatory Complexity Crisis

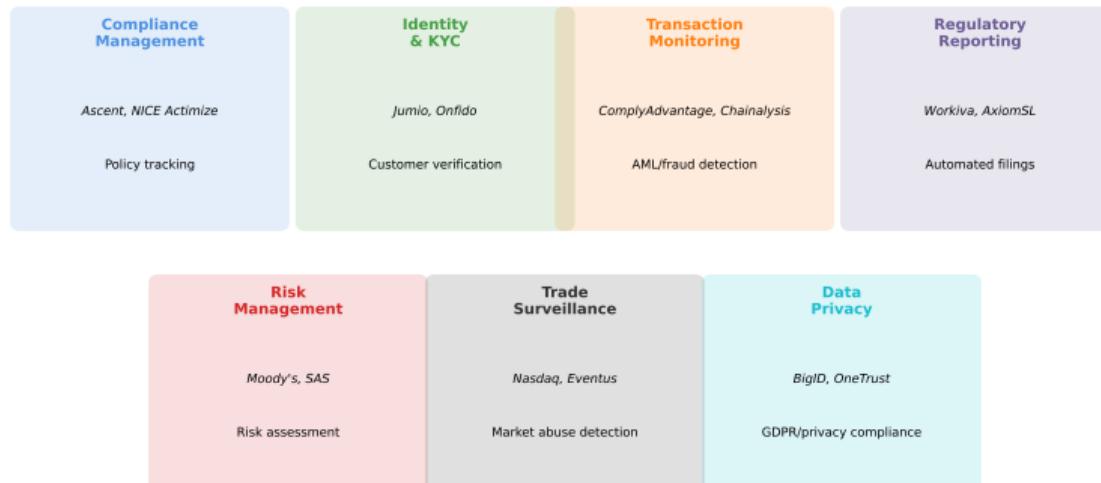
Compliance Burden

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



RegTech Landscape Overview

RegTech = Technology solutions for regulatory compliance



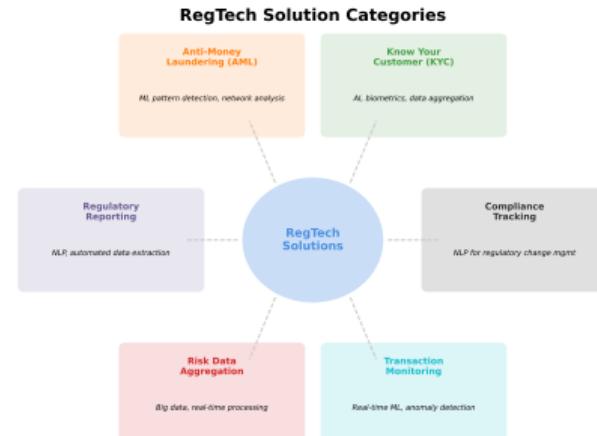
Global RegTech Market: USD 15B (2024) | CAGR: 18% | Projected: USD 40B by 2030

Source: Grand View Research, Juniper Research (2024)

RegTech Categories

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



Current System Challenges:

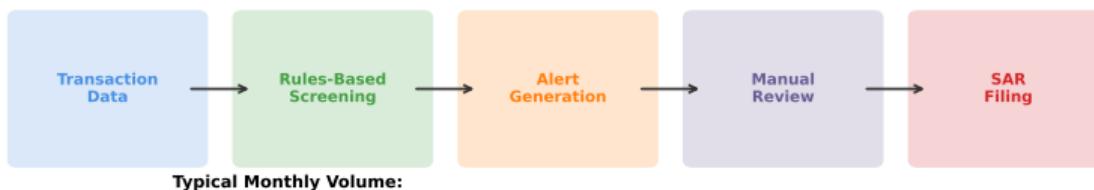


RegTech Opportunity: AI/ML can reduce false positives by 50-70%, cut investigation time by 80%

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

Traditional AML Process

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

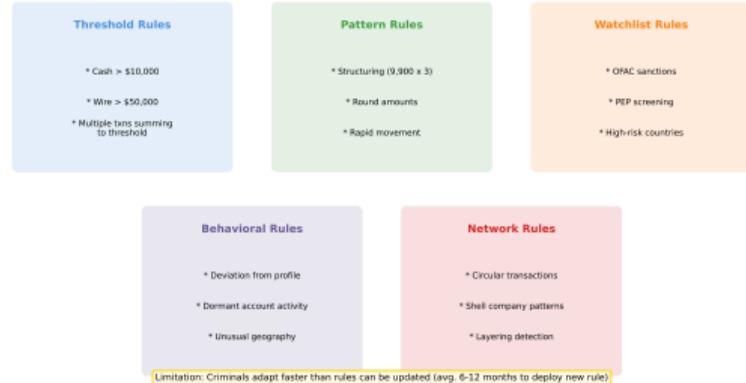
[ILLUSTRATIVE WORKFLOW]

Transaction Monitoring

Rule-Based Systems

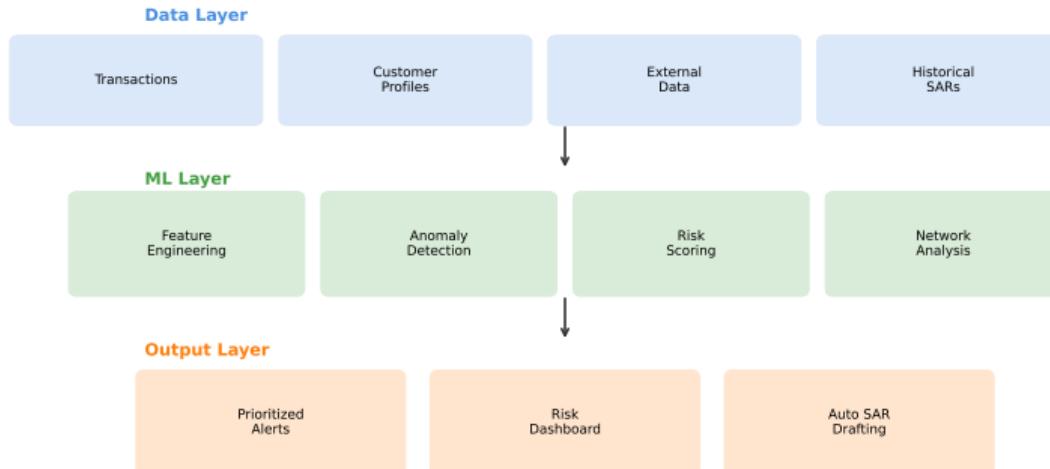
- Threshold triggers (\$10K)
- Velocity checks
- Geographic patterns
- 99% false positives

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



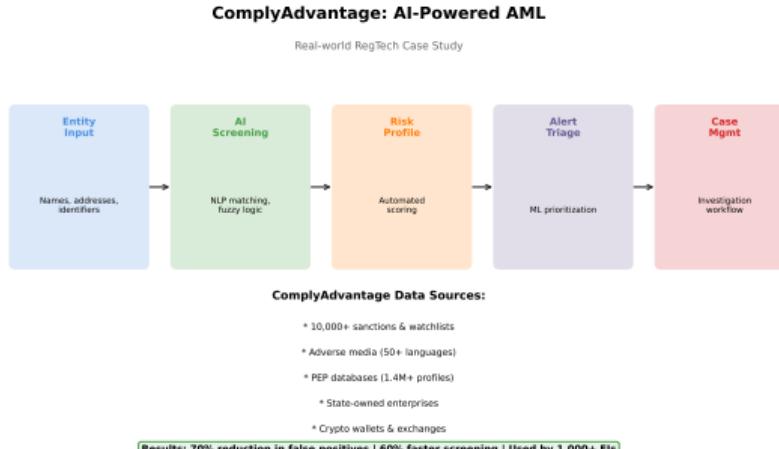
Typical ML AML model: 200-500 features | Updated monthly | Continuous retraining

(TYPICAL FEATURE ENGINEERING)

ComplyAdvantage Case Study

AI-Powered Screening

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



Source: ComplyAdvantage company materials (2024)

Regulatory Reporting Automation

Reporting Requirements

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

Regulatory Reporting Requirements

AML/SAR	Prudential	Transaction	Tax
* FinCEN (US) * FCA (UK) * BaFin (DE)	* Basel III/IV * CRD IV * CCAR	* MiFID II * EMIR * Dodd-Frank	* FATCA * CRS * 1099s

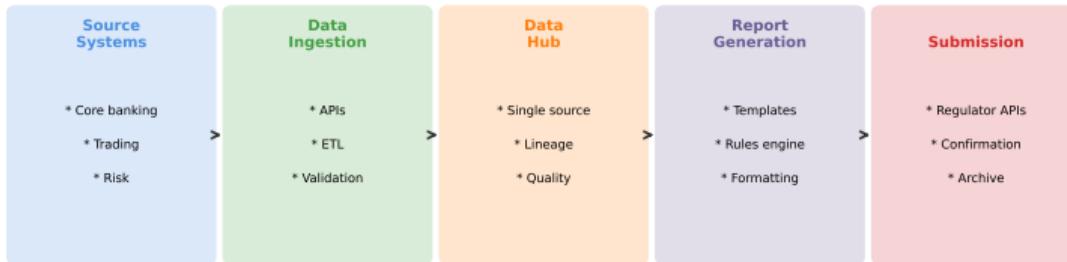
Freq: Event-driven Freq: Quarterly Freq: T+1 daily Freq: Annual

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

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

Source: BIS, FSB regulatory reporting surveys (2016)

Automated Regulatory Reporting Flow



Automation Benefits:

90%

Reduction in manual effort

99.9%

On-time submission

70%

Cost reduction

<1%

Error rate

[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)

Risk Assessment Platforms

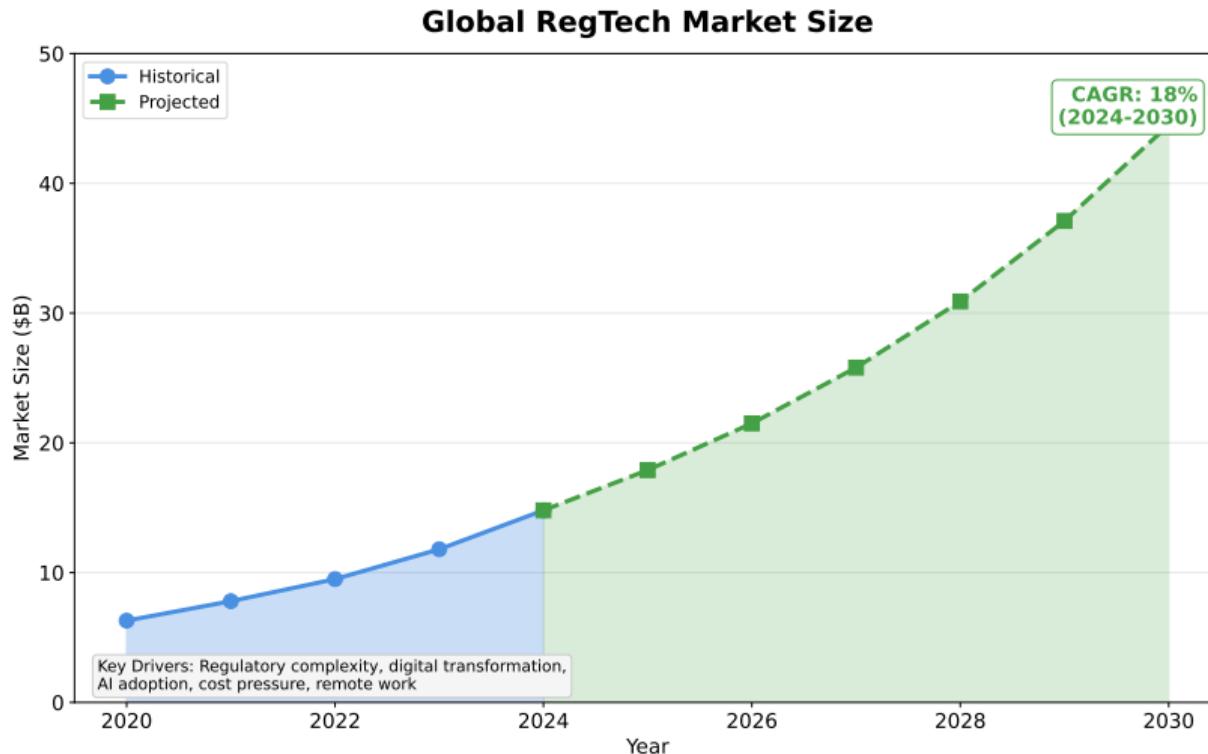
Dynamic Risk Scoring

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

Customer Risk Scoring Model



(ILLUSTRATIVE MODEL STRUCTURE)

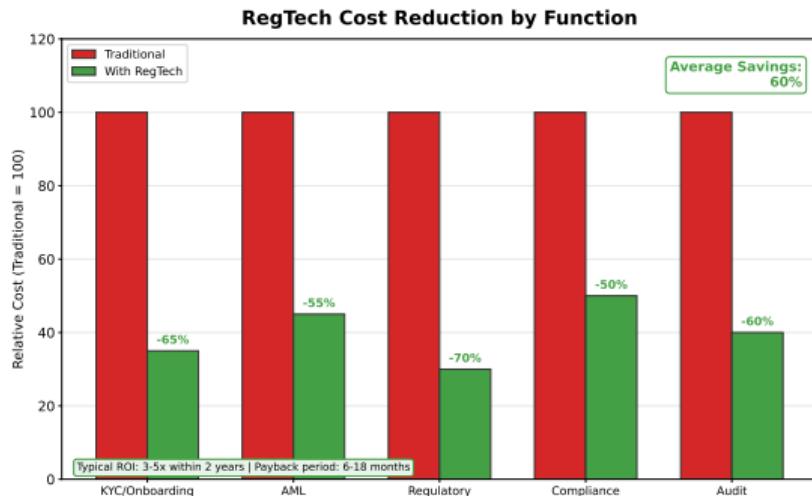


Source: Grand View Research, MarketsandMarkets (2024)

Cost Reduction Analysis

Efficiency Gains

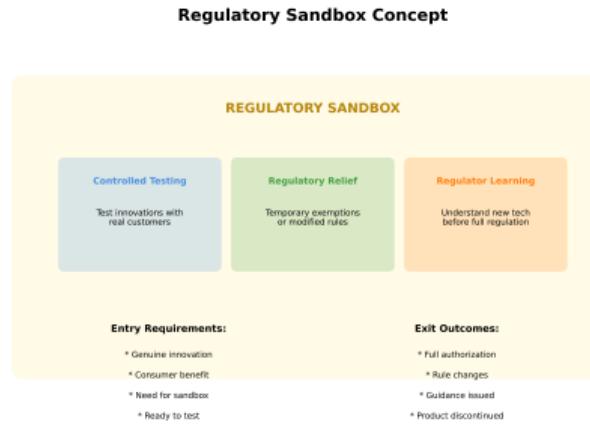
- AML analysts: 50% reduction
- Reporting costs: 70% lower
- False positive rate: 30% reduction
- Time to compliance: 80% faster



Regulatory Sandboxes

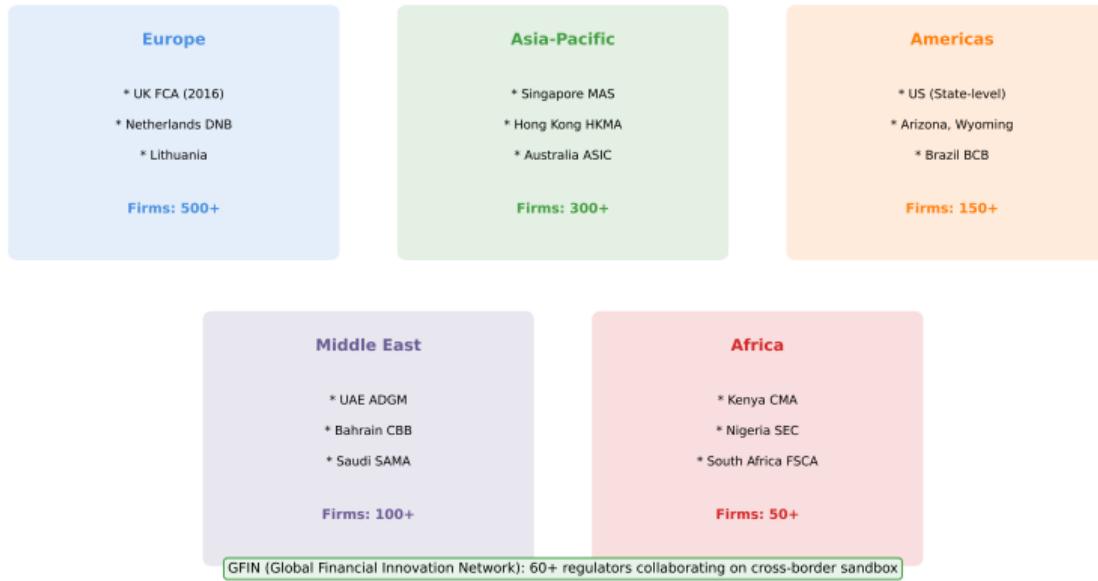
Innovation Testing

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



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



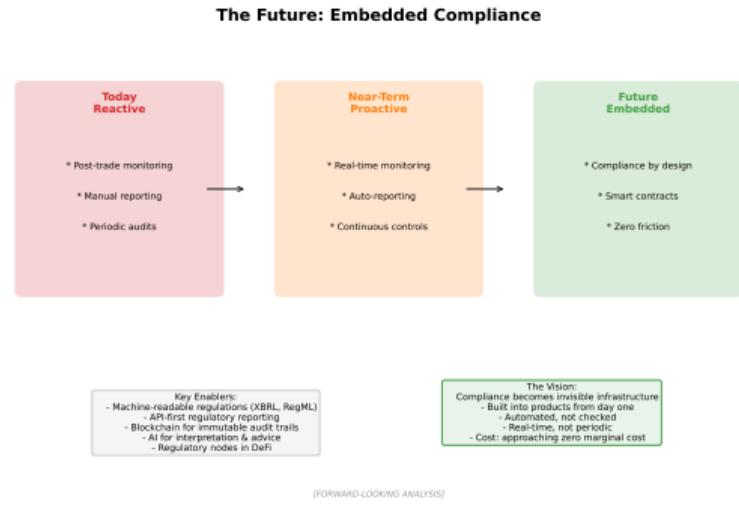
Success Factors: Executive sponsorship, phased rollout, vendor due diligence, regulator dialogue

[INDUSTRY ANALYSIS]

Future: Embedded Compliance

Next Generation

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



- **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