

Lesson 10: RegTech

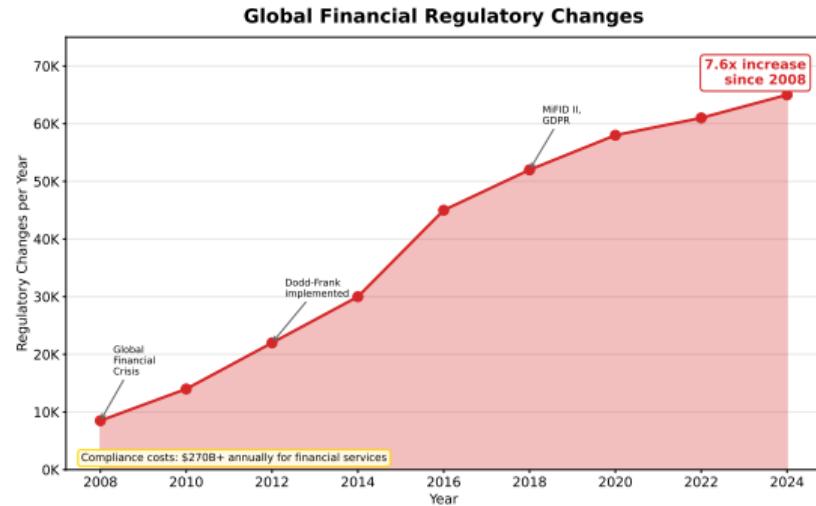
Module 1: FinTech Fundamentals

Digital Finance

Regulatory Complexity Crisis

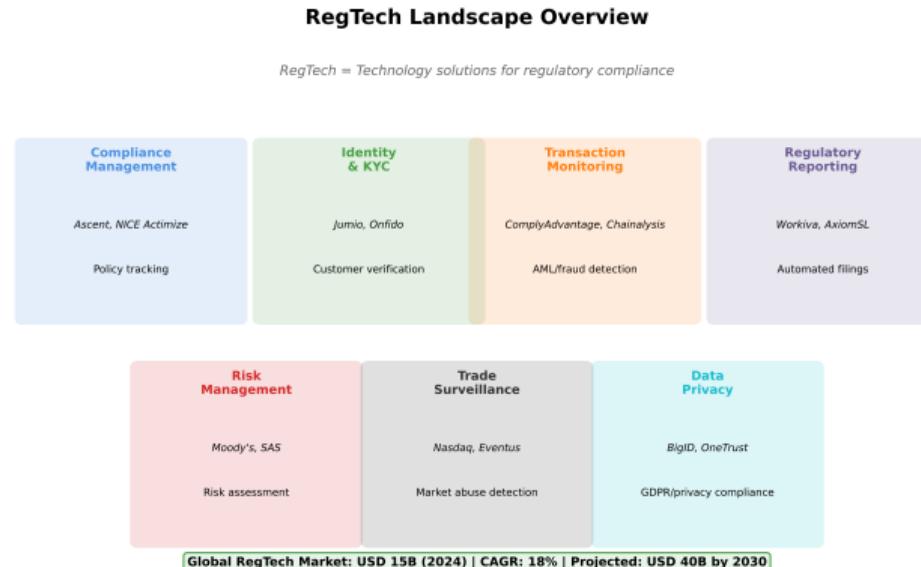
Compliance Burden

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



Source: Thomson Reuters Regulatory Intelligence (2024)

Financial institutions face 300M+ pages of regulation with 500+ daily updates—manual compliance is impossible.



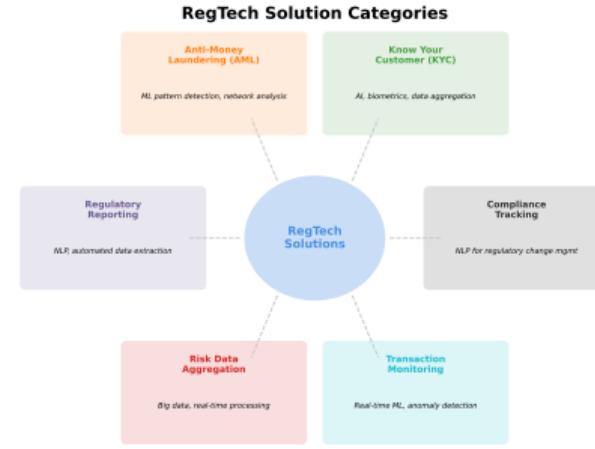
Source: Grand View Research, Juniper Research (2024)

RegTech applies technology to regulatory compliance—automating monitoring, reporting, and risk management.

RegTech Categories

Five Core Areas

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



Source: Deloitte RegTech Universe (2024)

Five core RegTech areas: compliance management, transaction monitoring, reporting, risk management, and identity.

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:

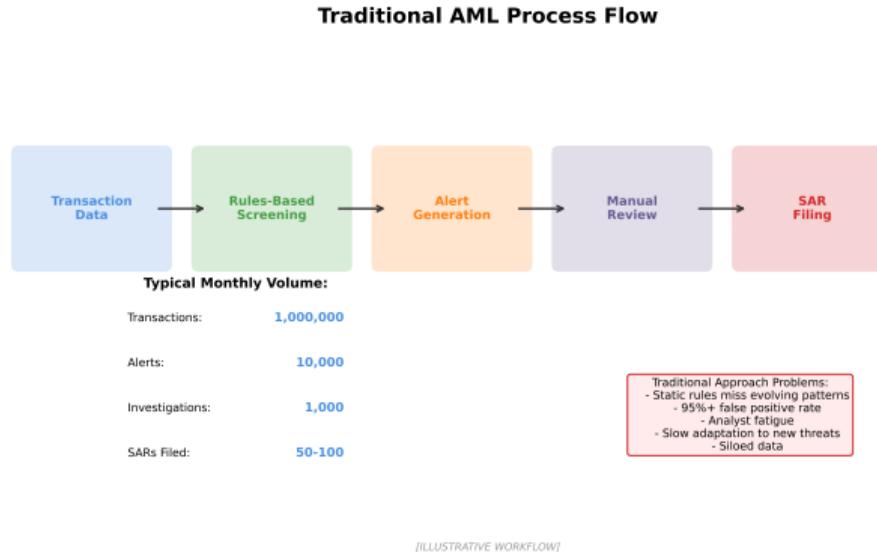
False Positives	Investigation Time	Compliance Cost	Fines (2023)
95-99%	30-60 min	\$30B+	\$6B+

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)

\$2T laundered annually with only 0.1% detected—\$26B in fines since 2008, 95% false positive alerts.

Traditional AML Process



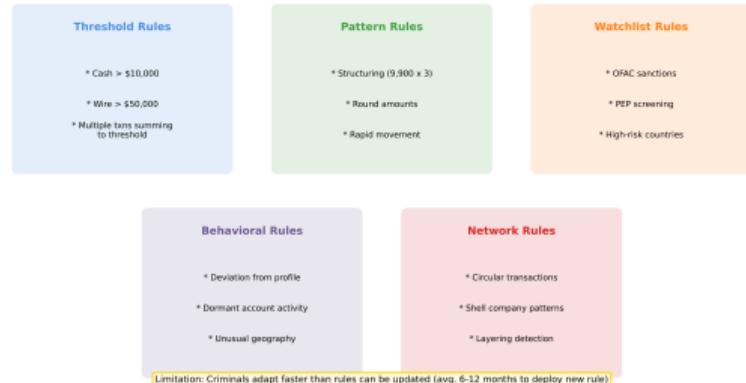
Traditional AML relies on rule-based systems—manual investigation creates bottlenecks and high costs.

Transaction Monitoring

Rule-Based Systems

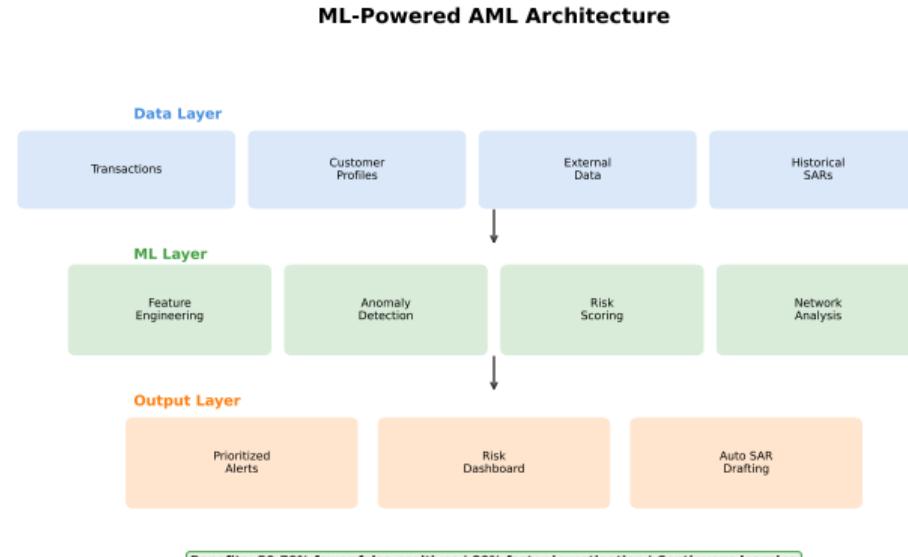
- Threshold triggers (\$10K)
- Velocity checks
- Geographic patterns
- 99% false positives

Traditional AML: Rules-Based Detection



(TYPICAL RULE CATEGORIES)

Rule-based monitoring uses threshold triggers (\$10K) and velocity checks—generating 99% false positives.



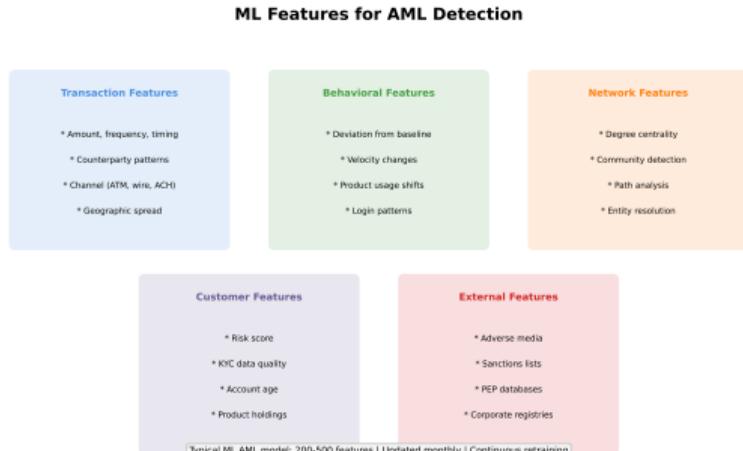
(CONCEPTUAL ARCHITECTURE)

ML-based AML uses neural networks and graph analysis—reducing false positives significantly.

ML Feature Engineering

Behavioral Features

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



(TYPICAL FEATURE ENGINEERING)

Network graph analysis and time-series patterns reduce false positives from 99% to 70%.

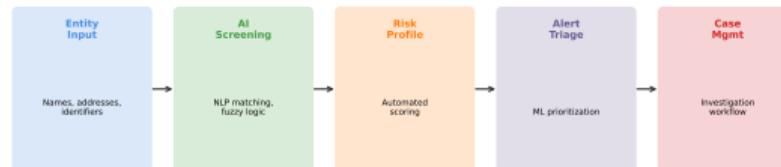
ComplyAdvantage Case Study

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)

ComplyAdvantage serves 2,000+ financial institutions with AI-powered real-time sanctions screening.

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 EUV * CRD IV * CCAR	* MiFID II * EMIR * Dodd-Frank	* FATCA * CRS * 1099s

Freq: Event-driven

Freq: Quarterly

Freq: T+1 daily

Freq: Annual

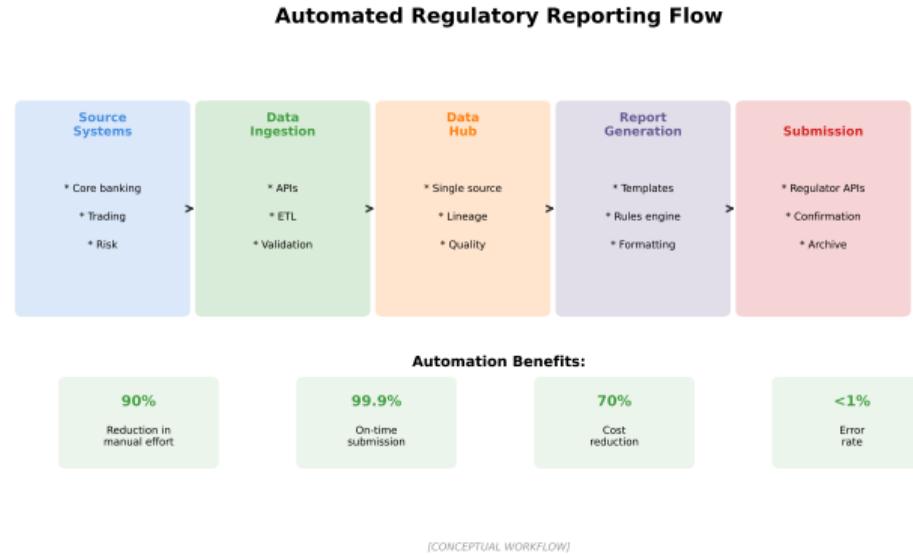
Reporting Challenges:
- 60+ regulators for global banks
- Various formats (XML, XBRL, CSV)
- Different data taxonomies
- Manual reconciliation errors
- Penalties for late/incorrect filings

RegTech Solution:
- Automation for data collection
- Format transformation
- Validation rules
- Audit trails
- On-time submission

Source: BIS, FSB regulatory reporting surveys (2024)

MiFID II requires 65 data fields; EMIR mandates trade reporting—daily/real-time frequency demands automation.

Automated Reporting Flow

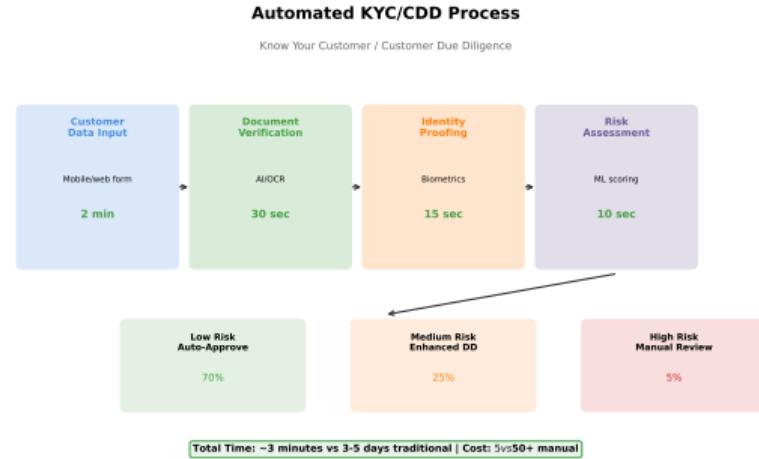


Automated reporting extracts, transforms, validates, and submits data—reducing manual work by 80%.

Know Your Customer (KYC) Technology

Digital KYC

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



Source: Jumio, Onfido customer case studies (2024)

Digital KYC combines OCR document verification, biometrics, and continuous monitoring for real-time compliance.

Risk Assessment Platforms

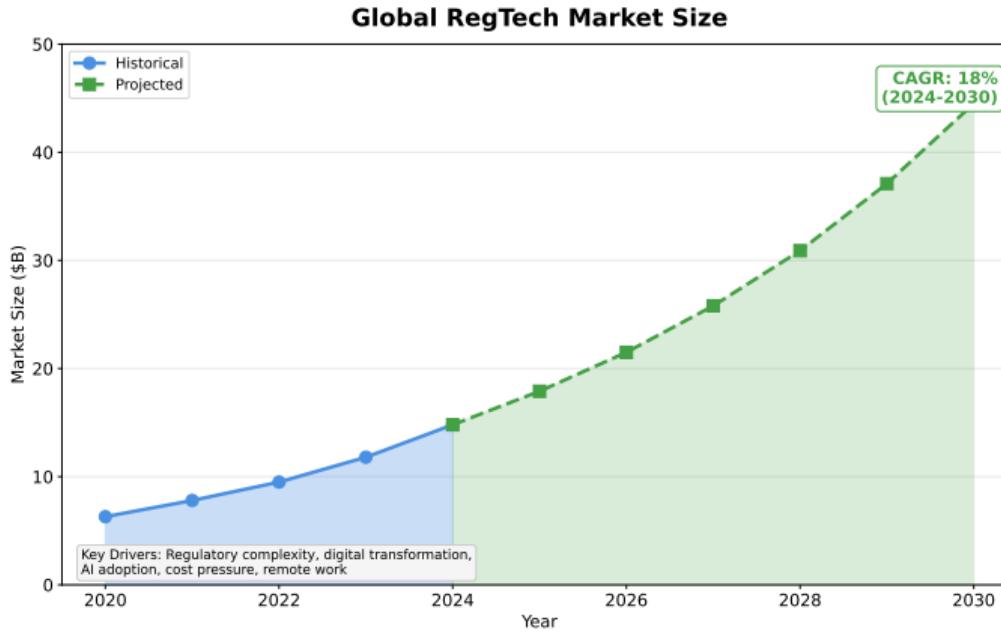
Dynamic Risk Scoring

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



(ILLUSTRATIVE MODEL STRUCTURE)

Dynamic risk scoring integrates multi-dimensional factors with regulatory tracking and automated stress testing.

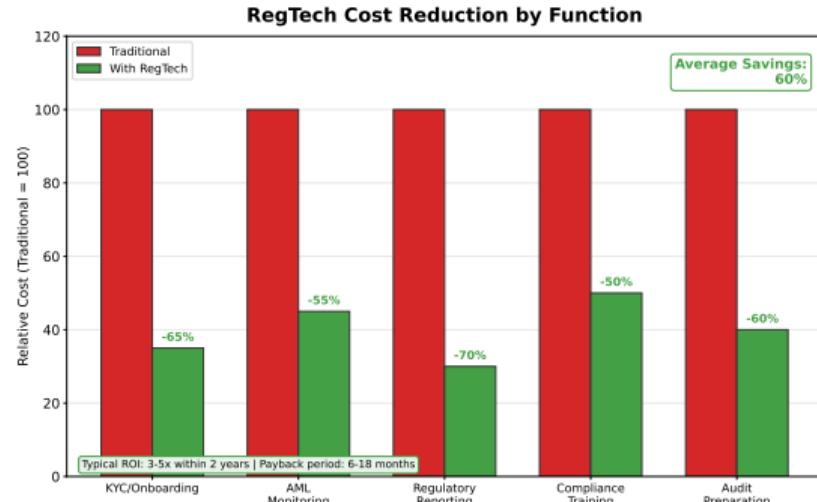


Global RegTech market projected to grow from \$12B to \$45B by 2028—driven by regulatory complexity.

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)

RegTech delivers 50-80% cost reductions—AML analysts down 50%, reporting 70% cheaper, 80% faster compliance.

Regulatory Sandboxes

Innovation Testing

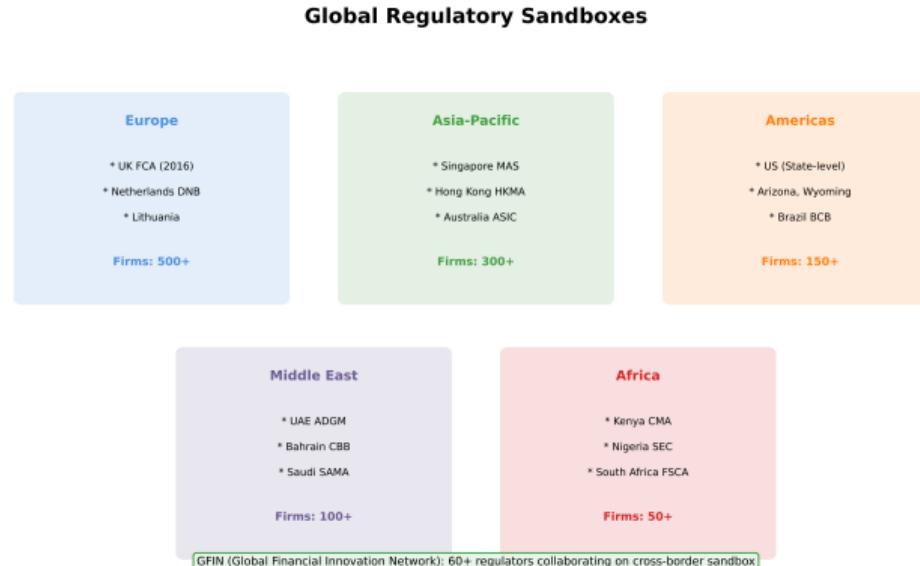
- FCA (UK) pioneer
- Limited-scope testing
- Regulatory guidance
- 80% go to market



Source: FCA, BIS regulatory sandbox report (2024)

Regulatory sandboxes allow limited-scope testing with guidance—FCA pioneered this with 80% go-to-market rate.

Global Sandbox Programs



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

50+ countries have launched regulatory sandboxes—UK, Singapore, Australia, and Hong Kong lead adoption.

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)

Key barriers: legacy integration, data quality, regulatory acceptance lag, and AI explainability requirements.

Future: Embedded Compliance

Next Generation

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

The Future: Embedded Compliance



Key Enablers:
- Machine-readable regulations (XBRL, RegML)
- API-first regulatory reporting
- Blockchain for immutable audit trails
- AI for interpretation & advice
- Regulatory nodes in DeFi

The Vision:
Compliance becomes invisible infrastructure
- Built into products from day one
- Automated, not checked
- Real-time, not periodic
- Cost: approaching zero marginal cost

(FORWARD-LOOKING ANALYSIS)

Future: real-time compliance, machine-readable regulation, automated policy updates, and SupTech convergence.

Key Takeaways

- **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

RegTech transforms compliance from cost center to competitive advantage—automation is essential.