

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

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Five Core Areas

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

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Anti-Money Laundering (AML)

AML Challenge

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

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Transaction Monitoring

Rule-Based Systems

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

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Behavioral Features

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

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AI-Powered Screening

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

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Reporting Requirements

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

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Know Your Customer (KYC) Technology

Digital KYC

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

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Dynamic Risk Scoring

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

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Cost Reduction Analysis

Efficiency Gains

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

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Innovation Testing

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

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Challenges and Limitations

Implementation Barriers

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

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Future: Embedded Compliance

Next Generation

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

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- **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