Payment Systems & FinTech Innovation (ISO 20022 & PSS)

Duration: 8 Days

Objective: To build practical expertise in global payment systems, ISO 20022 messaging, and the evolving FinTech landscape within the Payment System Supervision (PSS) framework.

Day 1: Foundations of Payment Systems

- 1.1 Evolution of Global Payment Systems
- 1.2 Types of Payment Systems: RTGS, NEFT, ACH, SWIFT, Card Networks, Digital Payments
- 1.3 Key Participants – Banks, PSPs, Payment Gateways, Central Banks, and FinTechs
- 1.4 Overview of Payment Flows – Clearing, Settlement, and Reconciliation
- 1.5 Concepts of Gross vs. Net Settlement
- 1.6 Role of Central Banks and System Operators (RBI, ECB, Fed, etc.)
- 1.7 Case Study: Global Payment System Models (India, EU, UK, USA)

Day 2: Regulatory Framework and Payment System Supervision (PSS)

- 2.1 Overview of Payment System Supervision (PSS) – Definition, Objectives, and Scope
- 2.2 Legal and Regulatory Framework for Payment Systems
- 2.3 Role of the Central Bank and Payment System Regulator (e.g., RBI-PSS Act, BIS Principles)
- 2.4 Key Regulatory Standards – CPMI-IOSCO Principles for FMIs
- 2.5 Oversight of Payment Service Providers (PSPs), Wallets, and FinTechs
- 2.6 Risk Management in Payment Systems – Operational, Settlement, and Liquidity Risks
- 2.7 Case Study: PSS Implementation in India and the EU

Day 3: ISO 20022 – Global Messaging Standard

- 3.1 Introduction to ISO 20022 Standard – Why It Matters
- 3.2 Key Concepts – Data Dictionaries, Business Process Modeling, Message Components
- 3.3 Comparison of ISO 20022 vs SWIFT MT Formats
- 3.4 Structure of ISO 20022 Messages – XML, MX, and Schema Overview
- 3.5 Payment Message Types – pacs., pain., camt., and acmt. Series Explained
- 3.6 Benefits of ISO 20022 Adoption – Interoperability, Data Richness, Compliance
- 3.7 Case Study: SWIFT ISO 20022 Migration (Timeline and Global Readiness)

Day 4: ISO 20022 Implementation & Use Cases

- 4.1 Global ISO 20022 Implementation Framework
- 4.2 Data Harmonization and End-to-End Payment Messaging
- 4.3 Payment Data Enrichment for AML/CFT and Compliance Screening
- 4.4 Implementation Challenges for Banks and Payment Hubs
- 4.5 Case Study: ISO 20022 in Real-Time Payments (RTP) Systems
- 4.6 Practical Workshop: Interpreting ISO 20022 Payment Messages

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Day 5: Emerging Payment Technologies & Digital Infrastructure

- 5.1 Real-Time Payments (RTP) and Instant Payment Systems
- 5.2 CBDCs (Central Bank Digital Currencies) – Design and Implications
- 5.3 Tokenization, Blockchain, and Distributed Ledger Technology in Payments
- 5.4 Open Banking & APIs in Payments
- 5.5 Payment Gateways, Aggregators, and Acquirer Models
- 5.6 Case Study: UPI, FedNow, PIX, and SEPA Instant Credit Transfer Systems

Day 6: FinTech Innovation and Ecosystem

- 6.1 FinTech Business Models – Payments, Lending, InsurTech, RegTech, WealthTech
- 6.2 Digital Wallets, BNPL (Buy Now Pay Later), and Embedded Finance
- 6.3 Interoperability and Cross-Border Payment Innovations
- 6.4 Regulatory Sandboxes and Innovation Hubs for FinTech
- 6.5 Risk and Compliance in FinTech – AML, KYC, and Data Privacy
- 6.6 Case Study: FinTech Innovation in GCC / India / EU Market

Day 7: Risk Management, Cybersecurity, and Compliance in Payment Systems

- 7.1 Operational and Transaction Risk in Payment Systems
- 7.2 Cyber Threats and Fraud Detection in Digital Payments
- 7.3 Payment Security Frameworks (PCI DSS, ISO 27001, NIST)
- 7.4 AML/CFT Requirements and FATF Guidelines for PSPs
- 7.5 Data Privacy and Consumer Protection Laws (GDPR, DPDP Act)
- 7.6 Incident Response and Payment Continuity Planning
- 7.7 Case Study: Risk Event Analysis – Cross-border Payment Fraud Scenario

Day 8: Future of Payments & Strategic Outlook

- 8.1 AI and Machine Learning in Payments & Fraud Detection
- 8.2 Quantum Computing, Tokenization, and Next-Gen Encryption
- 8.3 Global Cross-Border Payment Interlinkages – BIS & G20 Roadmap
- 8.4 Sustainability and Green Payments – ESG in FinTech
- 8.5 The Future of Payment Ecosystems – Digital Currency Interoperability
- 8.6 Capstone Project: Design a Next-Gen FinTech Payment Solution
- 8.7 Final Assessment and Certification Ceremony

Learning Outcomes

By the end of this 8-day program, participants will:

- Understand end-to-end payment system design and supervision frameworks (PSS).
- Decode ISO 20022 message structures and their application in real-time payments.
- Identify innovations in FinTech and how they reshape global payment systems.
- Evaluate cybersecurity and compliance challenges in payment ecosystems.
- Gain practical exposure to digital transformation and payment modernization strategies.