TRANSFORMING DEPOSITORY SERVICES WITH API MARKET PLACE

Presenter:
Faisal Ishaque, Senior Manager IT
Central Depository Company of Pakistan Limited
FLOW OF PRESENTATION

- CDCPL (Brief Profile)
- CDC Initiatives.
- Information Security Measures.
- API Security Measures
- Lesson learnt
- Q & A
Only Depository in Pakistan

• Established under the Companies Ordinance 1984.
• Incorporated as public limited company in 1993.
• Principally acting as depository
• Providing Trustee, Registrar/Transfer Agent as well as Back Office Operations functions.
• Regulated by Securities & Exchange Commission of Pakistan.
CDCPL (BRIEF PROFILE)

• Settling Book Entry Securities Transactions electronically governed under the Central Depositories Act 1997 and the Central Depository Company of Pakistan Limited Regulations for the all three stock exchanges of Pakistan.
• Licensed under the Central Depository Companies (Establishment and Regulations ) Rules 1996.
• The shareholders of the Company represents Stock Exchanges of Pakistan, a Foreign Bank and Local Institutions including Banks, DFIs and NBFIs.
CRITICAL ROLE OF CDCPCL

• As an important post-trade infrastructure organization in the country, we have a central role in the functioning of the capital markets.

• Through its subsidiaries CDC provide settlement and custodial services for virtually all trades in the Capital markets.

• This translates into billions of worth of transactions processed each business day.
CDCPL BUSINESS SERVICES

- Depository Services
- Investor Account Service
- Trustee and Custodial Services
- Shares Registrar Services
- Investor Portfolio Services
- Roshan Digital Account
- Shared KYC
- Centralized Solution of Insurance Industry
- Centralized Gateway Project
• Roshan Digital Account.
• An initiative by the Central Depository Company of Pakistan Limited under the regulatory ambit of State Bank of Pakistan (SBP) and Securities & Exchange Commission of Pakistan (SECP) to facilitate Overseas Pakistanis.

• Investment options are
  • Bank Fixed Deposit Products
  • Stocks / Equities
  • Government Bonds
• Shared KYC.

• CDC, along with the Banking Industry and Capital Market institutions, is making headways on the path of digital account opening for capital market accounts of local resident bank account-holders.

• The pilot implementation of this project is now Live with 5 banks and 8 Brokers.

• Investment options are
  • Stocks / Equities
  • Mutual Funds
• Centralized Gateway Project.
• An initiative by the Central Depository Company of Pakistan Limited under the regulatory ambit of Securities & Exchange Commission of Pakistan (SECP) to facilitate Resident Pakistanis.

• Investment options are
  • Stocks / Equities
  • Mutual Funds
  • Mercantile
  • Insurance
CDC API INTEGRATION WITH ENTITIES

Payment Gateways

- **Payment through RTGS**
  - # Payments: 11,475
  - Paid Amount (Rs): 8,750,352,339
  - Today: 0

- **Payment through MPG**
  - # Payments: 102,774
  - Paid Amount (Rs): 15,891,525,750
  - Today: 7

- **Raast**
  - # Payments: 9,709
  - Paid Amount (Rs): 22,717,758
  - Today: 13

- **easypaisa**
  - # Payments: 75
  - Paid Amount (Rs): 36,781
  - Today: 0

- **PayFast**
  - # Payments: 3
  - Paid Amount (Rs): 35,000
  - Today: 0

Partner Organizations

- ETF Data Transmission: 6,985,005
  - Today: 5,791

- Stock Settlemtn BO: 60,511,330
  - Today: 22,037

- Vesting: 2,298,021
  - Today: 612

- Pledge Release: 2,387,093
  - Today: 340

Technology Integrations

- **Bulk Emails**
  - 55,352,696
  - Today: 26,359

- **SMS**
  - 12,708
  - Today: 7

- **IBAN Title Fetch**
  - 527,229
  - Today: 137

- **Emails**
  - 2,881
  - Today: 2

- **OTP Emails**
  - 137,977
  - Today: 82

Confidential
INFORMATION SECURITY

ES security policy

- RED Team & Penetration testing
- Real-time SOC monitoring
- Multiple BCP drills
- ISO27001 & ISO22301 audits
- Secure SDLC
- ISAE 3402 Certified
- Risk assessments
- Regular SMG meetings
- Awareness for all staff
- Continuous IT Audit & Compliance

Confidential
Ransomware Resilience.

– Ransomware resilience exercise is being undertaken to handle ransomware situations and ensure a graceful recovery.
– CDC also undertook this exercise in 2020 when a major utility company got affected by the ransomware.
– Bare metal recovery from ransomware is not a common practice in the industry. CDC is amongst very few organisations to practice it.
Cyber Risk Assessment.

- CDC engaged Thomas Murray to assess internet attack surface. It has helped to improve overall cybersecurity posture and ranking with global CSDs. TM is a team of 100 analysts, consultants and technologists, based in London with a presence in the US, Canada, Colombia, Hong Kong and Australia.
INFORMATION SECURITY CONT.
API FUNCTIONAL SECURITY

Authority Management System

- Binding of Beneficiaries
- Login Credentials / Terminal binding
- Tokenization
- Password Policy & Expiry
- User locking after invalid attempts
- Alerts / Notifications

Input / Output Validations

Audit logging / Report Logging

OTP sent over SMS / Email

Alerts / Notifications

Auditing and logging / Report Logging

Central Depository Company
SECURE SDLC

- Security Checklist
- Secure coding practices
- Automated & Manual Code Reviews
- Application upgrades
- Penetration Testing
- Awareness / Trainings of Software Engineers
- Avoid Third Party APIs
- Quality Assurance for Security
- Risk Assessment in Projects
- Segregated Teams and Setups
- Security Checklist
- Secure coding practices
- Automated & Manual Code Reviews
- Application upgrades
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LESSON LEARNT
API INTEGRATION

• Build integrated system based on best practices will ensure smooth and secure transaction execution.
• Regular monitoring via Dashboards.
• Penetration Testing.
• Standardization of integration protocols between entities.
• Role of API Gateway
THANK YOU

Q&A ARE WELCOME