

Lesson 3: Digital Payments II – Mobile Wallets

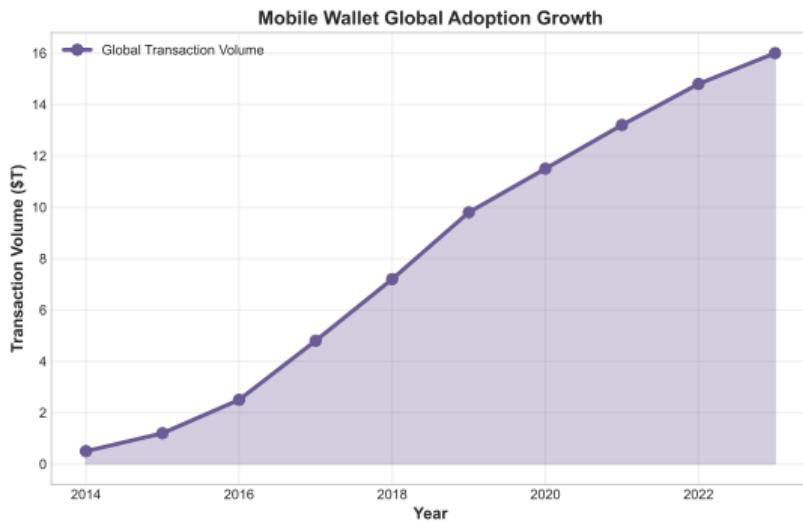
Module 1: FinTech Fundamentals

Digital Finance

Mobile Wallet Revolution

Evolution of Payments

- Cash → Cards → Mobile
- 2014: Apple Pay launch
- 2023: \$16T global volume
- Smartphone = payment terminal

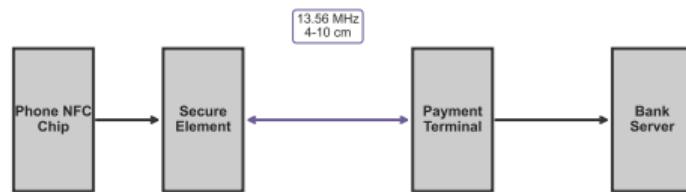


Near Field Communication (NFC) Technology

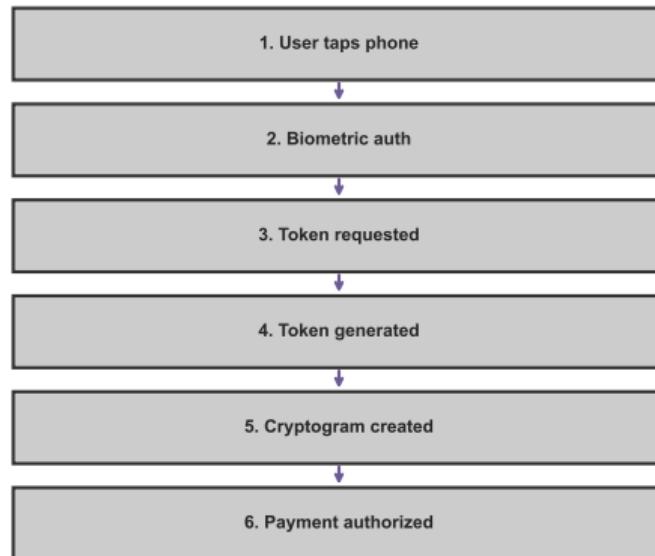
Technical Foundation

- 13.56 MHz radio frequency
- Range: 4-10 cm proximity
- EMV tokenization standard
- Secure Element (SE) storage

NFC Technology Architecture



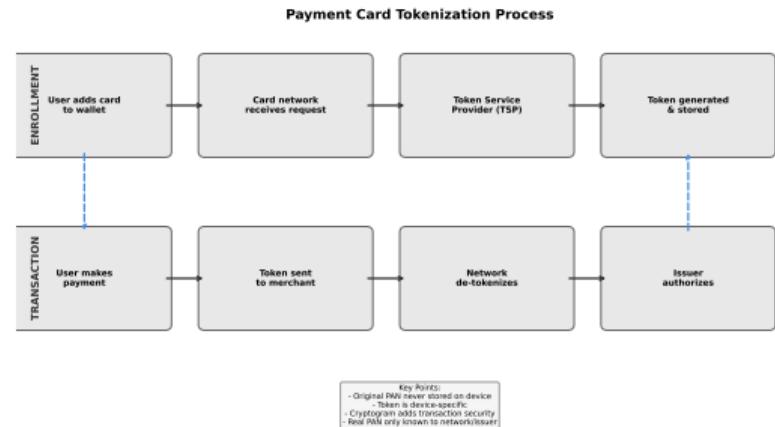
Apple Pay Transaction Flow



Tokenization Security

Dynamic Token Generation

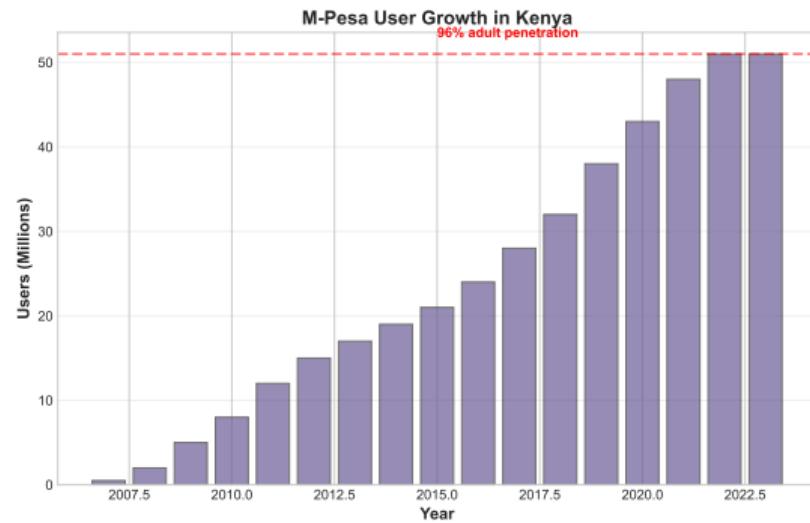
- PAN replaced by token
- One-time cryptogram
- Device-specific identifier
- Reduces fraud by 98%



M-Pesa: Mobile Money Pioneer

Kenya Success Story

- Launch: 2007 by Safaricom
- 51M users (2023)
- 96% adult penetration
- SMS-based transactions

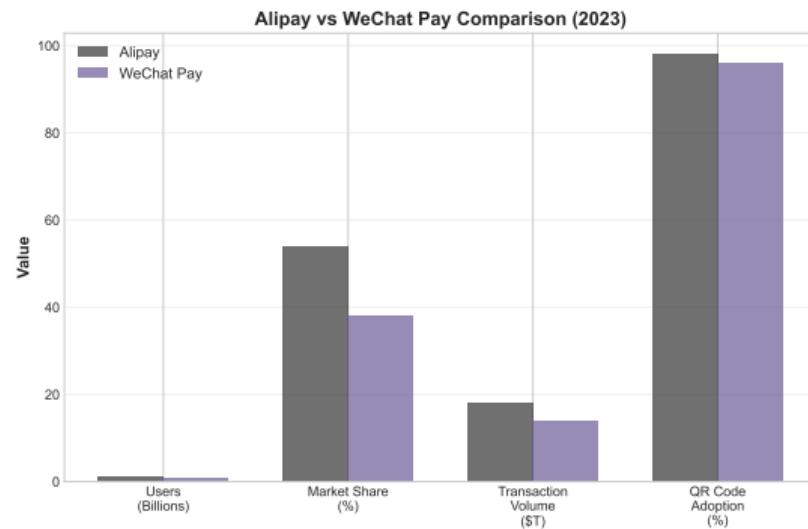




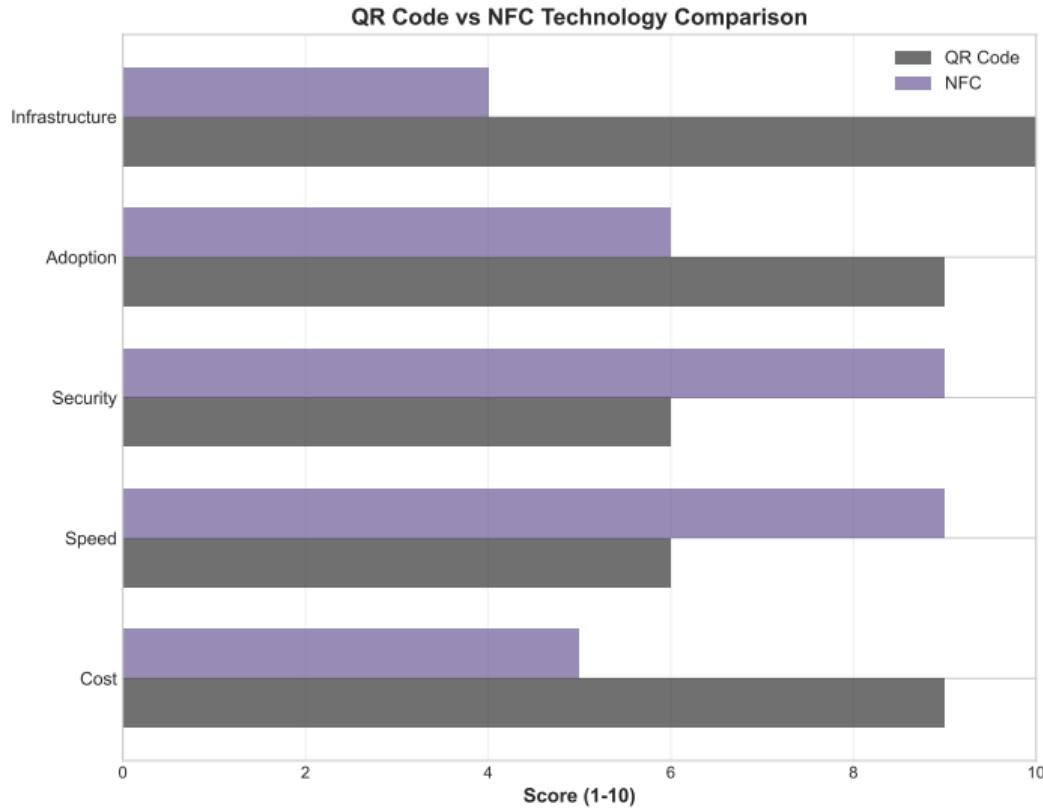
Alipay and WeChat Pay Dominance

Chinese Market Leaders

- Alipay: 1.3B users
- WeChat Pay: 1.0B users
- QR code-based
- 92% mobile payment share



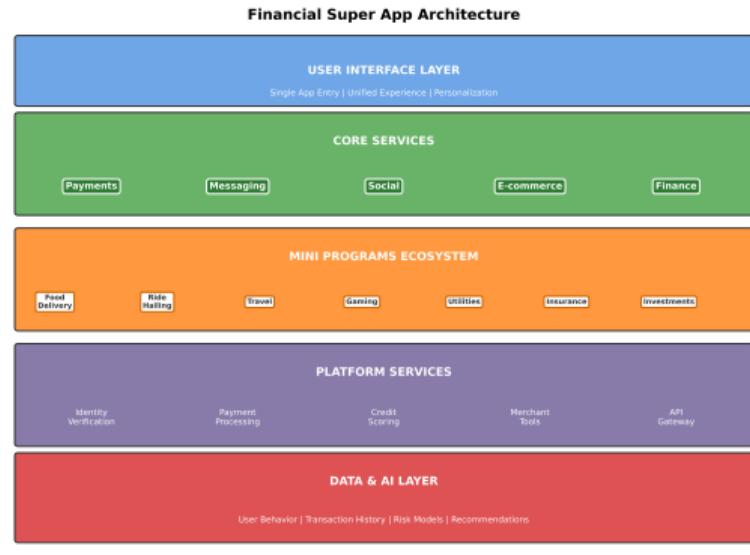
QR Code vs NFC Technology



Super-App Strategy

WeChat Ecosystem

- Messaging + Payments
- E-commerce integration
- Mini-programs platform
- 1M+ services embedded

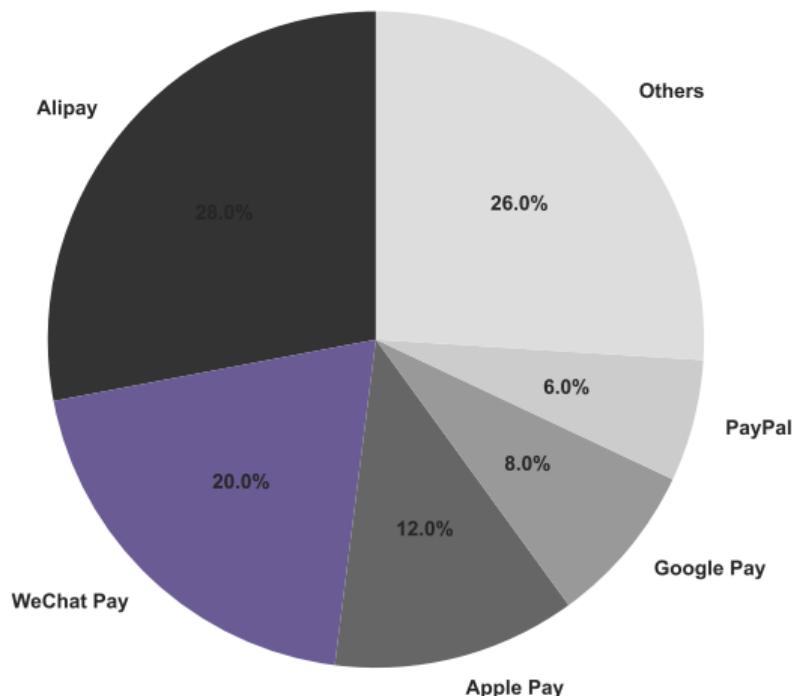


Examples: WeChat, Alipay, Grab, Gojek, PayTM

[ILLUSTRATION]

Global Wallet Market Share

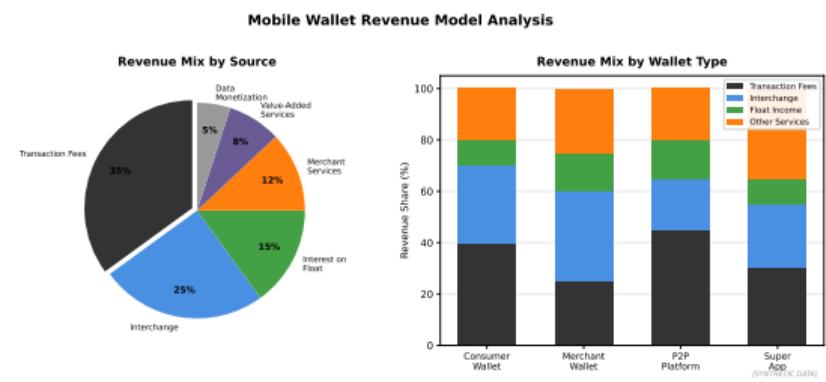
Global Mobile Wallet Market Share (2023)

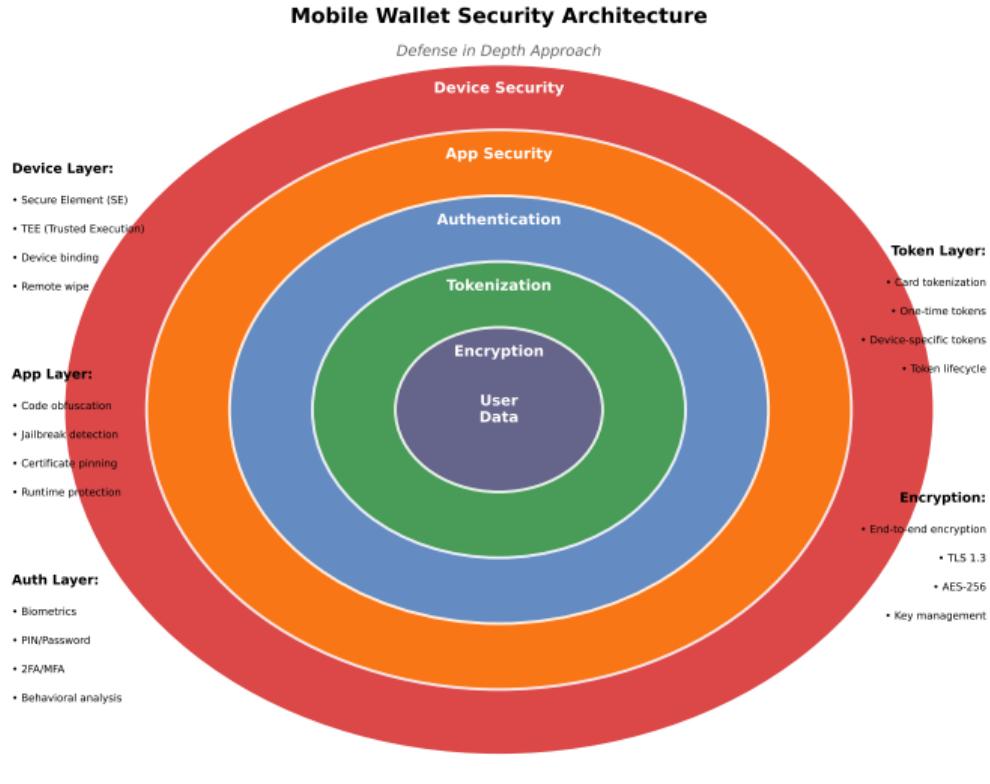


Mobile Wallet Business Models

Revenue Streams

- Transaction fees (0.15%-3%)
- Data monetization
- Cross-selling services
- Merchant partnerships



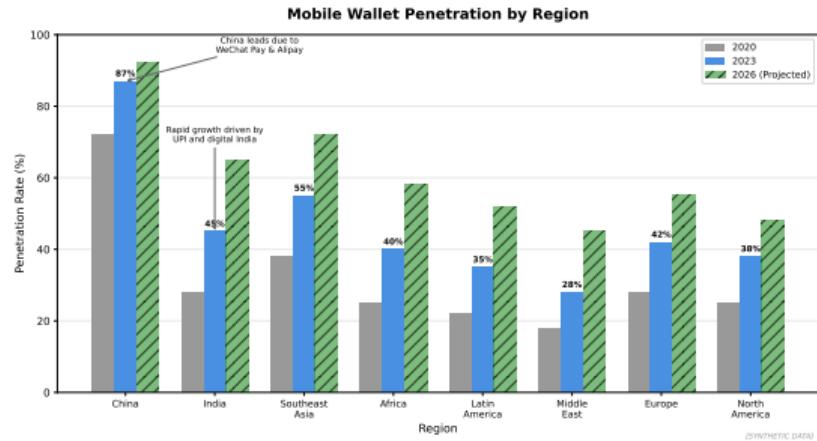


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Emerging Markets Leapfrogging

Infrastructure Bypass

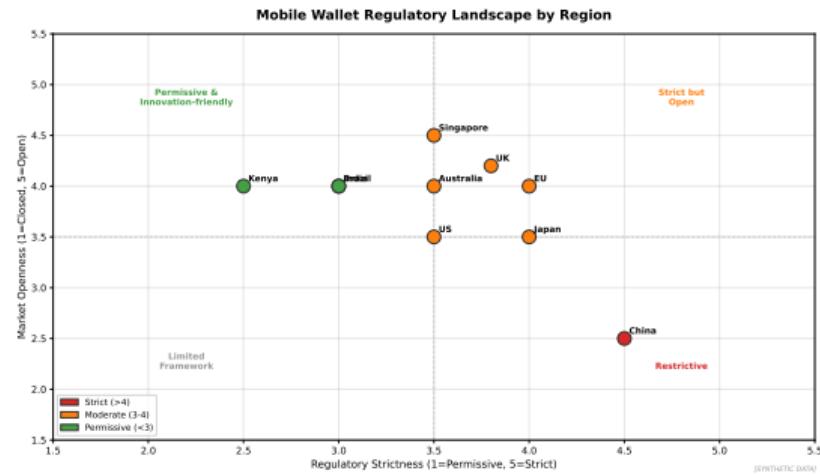
- Skip card infrastructure
- Mobile-first adoption
- Agent network model
- Financial inclusion impact



Regulatory Challenges

Global Fragmentation

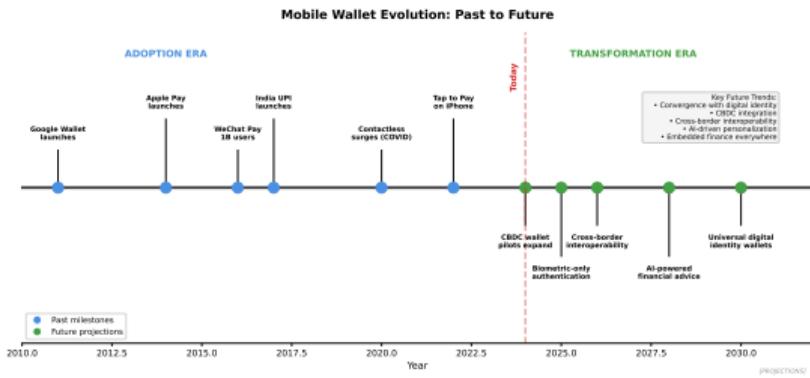
- Cross-border restrictions
- Data localization laws
- Licensing requirements
- Interoperability gaps



Future: Embedded Wallets

Next Generation

- IoT payment devices
- Wearables integration
- Biometric authentication
- CBDC compatibility



- **Technology:** NFC for proximity, QR codes for scalability
- **Regional Patterns:** Super-apps in Asia, NFC in West, SMS in Africa
- **Business Models:** Transaction fees + ecosystem monetization
- **Security:** Tokenization reduces fraud dramatically
- **Impact:** Financial inclusion through mobile-first design