



Real Time Retail Payment Systems & Open API based payments

Key Design Considerations and the experience of UPI in India

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Moving to Digital Payments

1

Mobile is changing
user habits and
expectations



Moving to Digital Payments

1

Mobile is changing user habits and expectations

2

Offline and Online are merging



Moving to Digital Payments

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Mobile is changing user habits and expectations



2

Offline and Online are merging

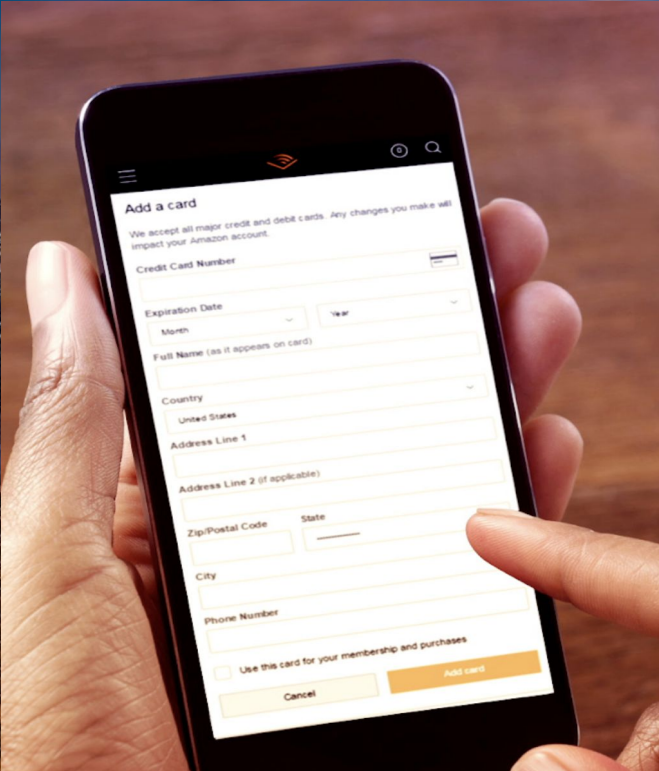


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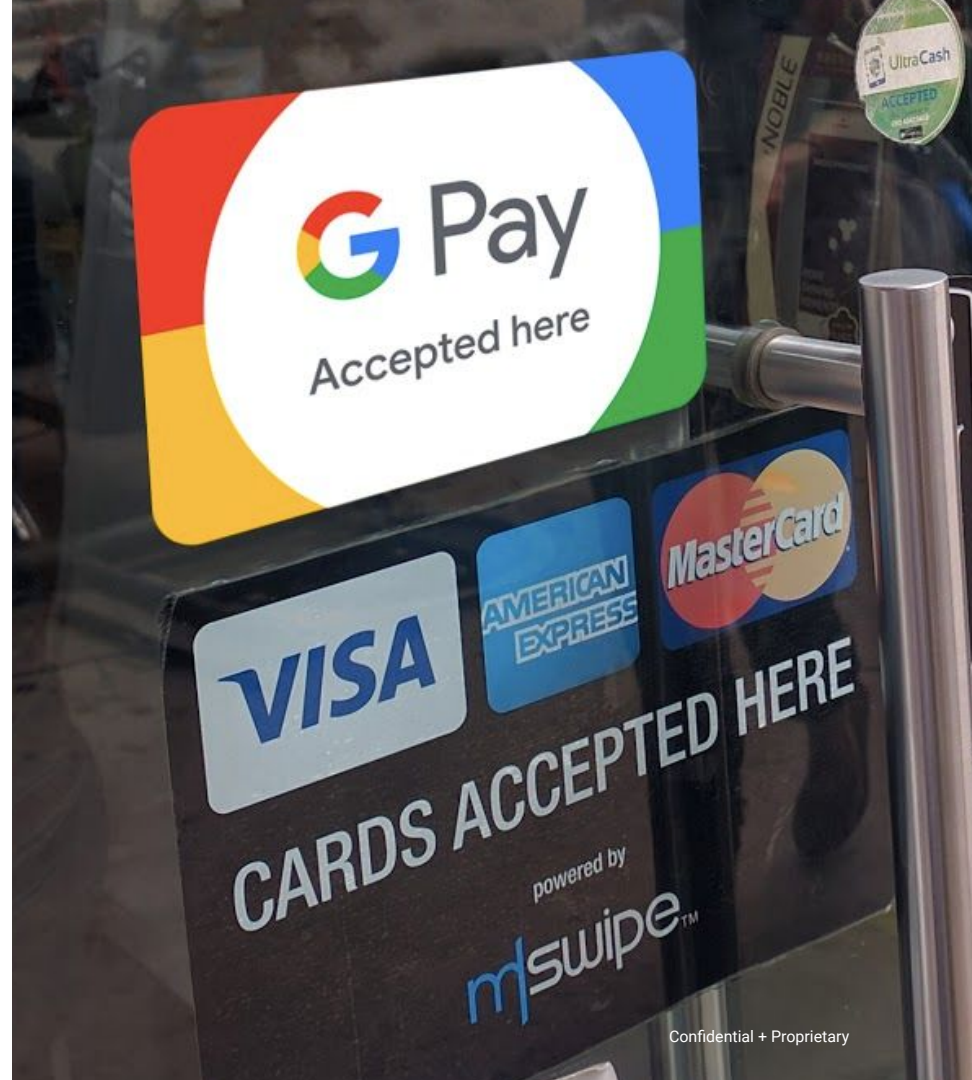
Countries are increasingly going digital



But payments are still far from digital globally



Delivering rich experiences
grounded in principles



Delivering rich experiences grounded in principles

1

Partner with Banks

2

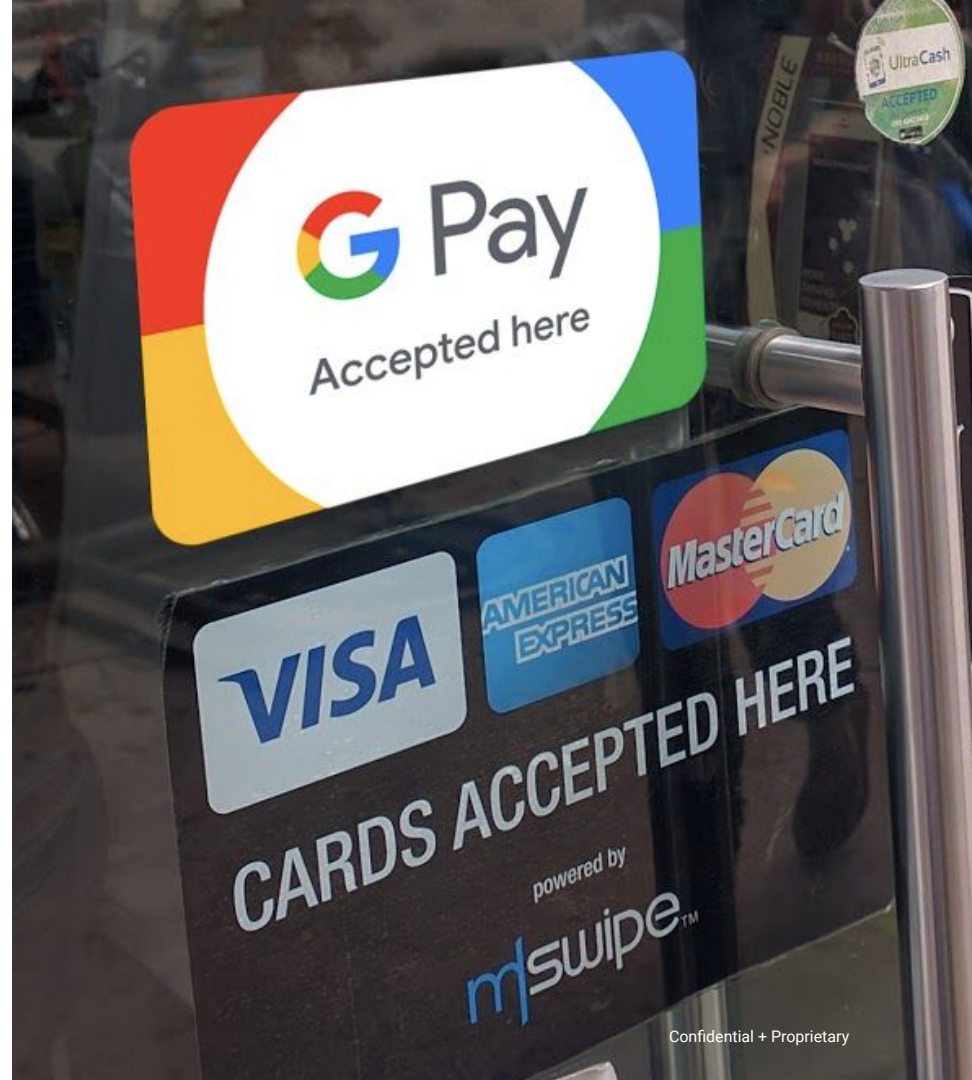
Leverage National Rails & Networks

3

Fast, Instant, Global & Secure

4

Drive Innovation in the Ecosystem

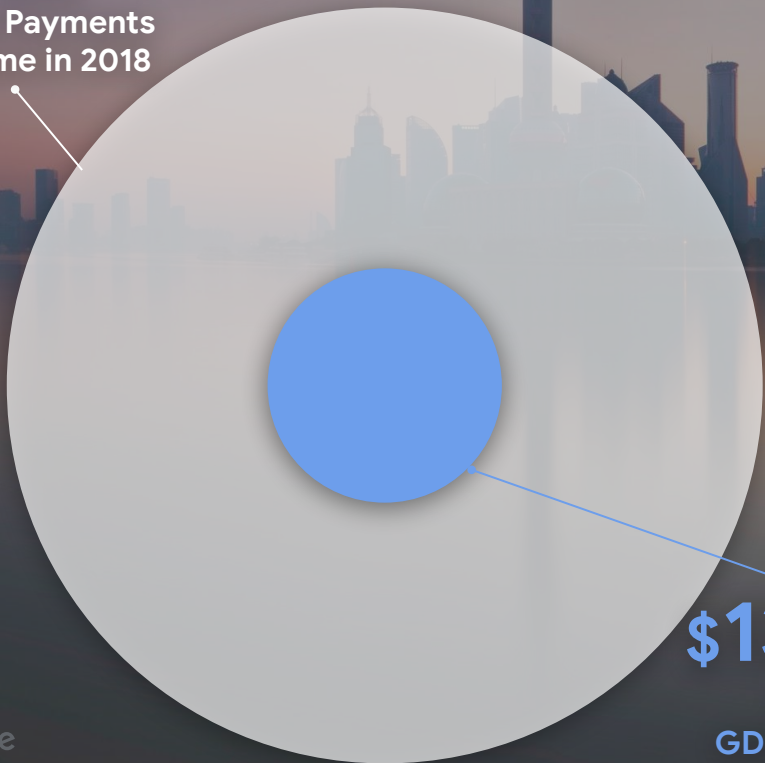


We have seen the China story

\$41T

China
Digital Payments
Volume in 2018

China



\$13.6T

China
GDP in 2018

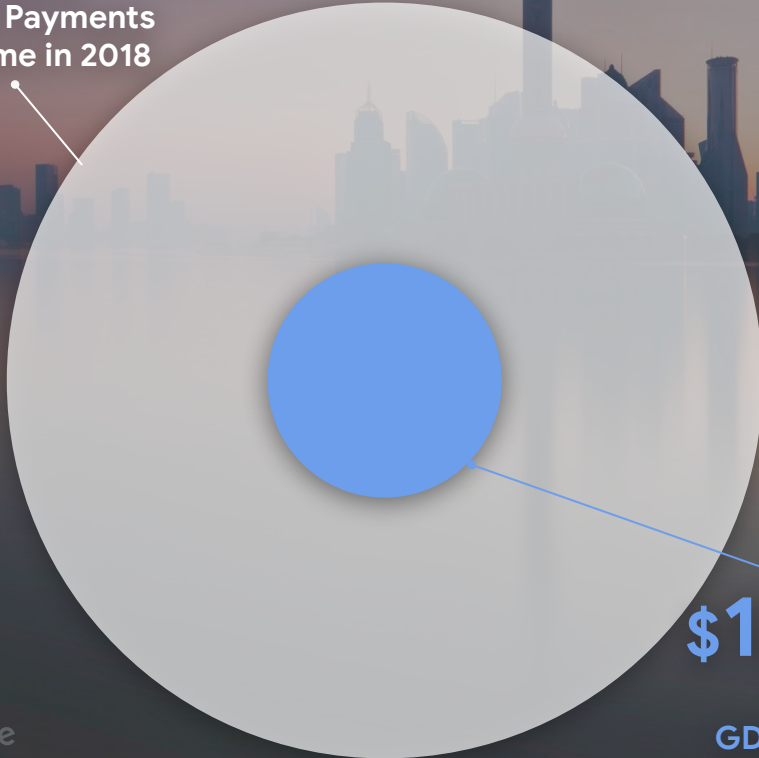
We have seen the China story

\$41T
China
Digital Payments
Volume in 2018

China

\$7T
US
Total Credit Card
Processing Volume 2018

USA



\$13.6T
China
GDP in 2018



\$20.5T
US
GDP in 2018

Case studies provide insights into scaling Real Time Payments Proprietary & Confidential

3 different markets

3 different approaches & impact to adoption



Europe

Regulatory enablement

PSD2



Southeast Asia

End-user activation

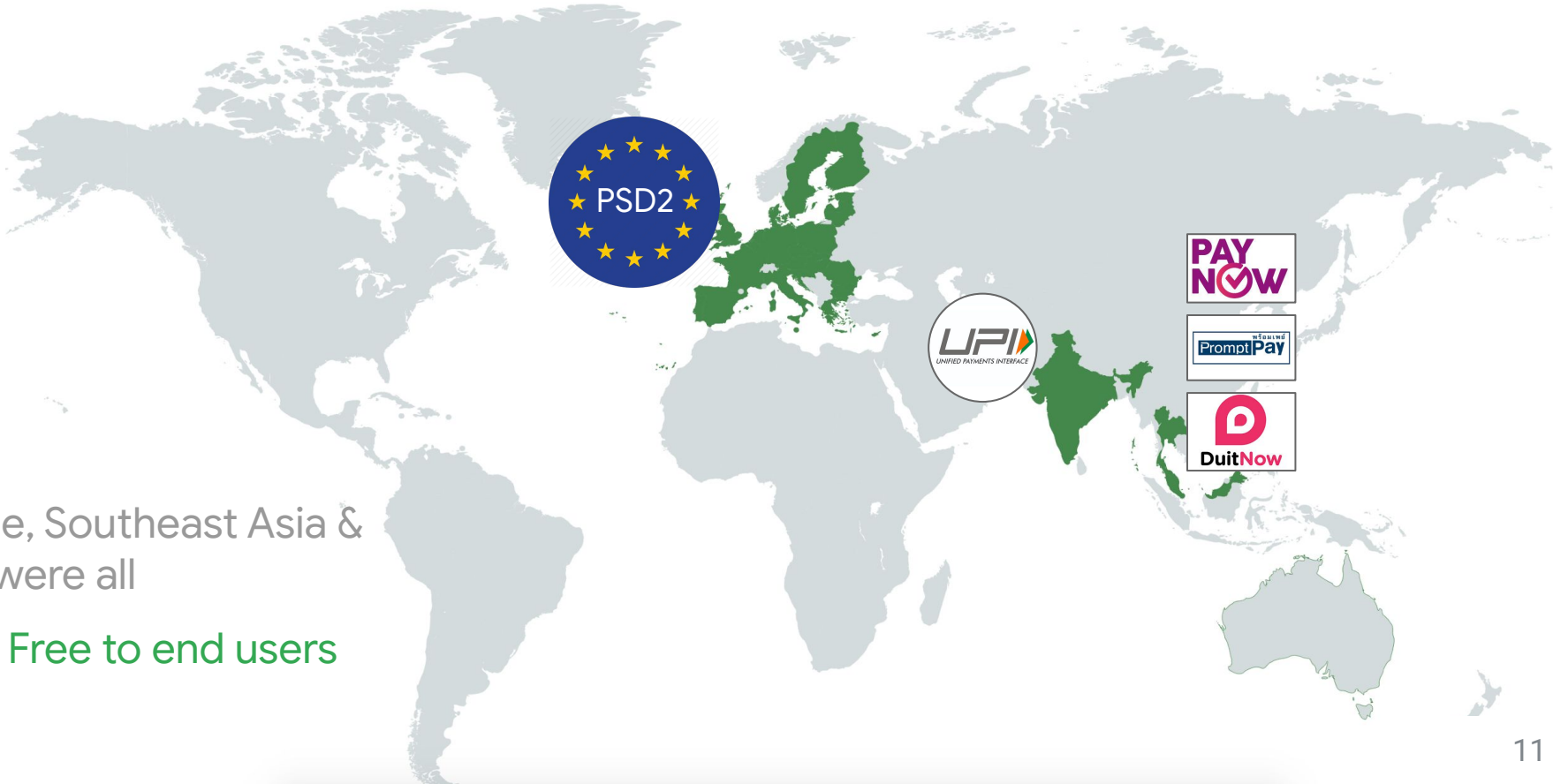


India

Ecosystem development



Learnings from across the world



Europe, Southeast Asia & India were all

+ Free to end users

Learnings from across the world

Europe	
+ Structured API standards for banks, including account information	
+ Tech player needs one license, not bilaterals per bank	
Southeast Asia	
+ Phone number to bank account mapping directories	
India	
+ One central API integration for tech players	
+ Simpler and more secure authentication user experience	

How Google has been helping

Europe	
+ Structured API standards for banks , including account information	API recommendation
+ Tech player needs one license, not bilaterals per bank	
Southeast Asia	
+ Phone number to bank account mapping directories	National Addressing Database recommendation
India	
+ One central API integration for tech players	System design recommendation
+ Simpler and more secure authentication user experience	Authentication recommendation

Example: Mexico

Google is **deeply engaged** with the Central Bank of Mexico



Google has been **collaborating** on

- **Securely** opening instant payments system to third party apps
- How end users can **securely authenticate** on a third party app
- How third parties can **securely send instructions** to the payment system
- How to design the **best user experience**

Banxico is designing something like India's UPI, but with added security, including recommendations provided by Google.

Hot off the **press**...
We have collated our recommendations

Real-Time Payments Systems & Third Party Access

A perspective from
Google Payments

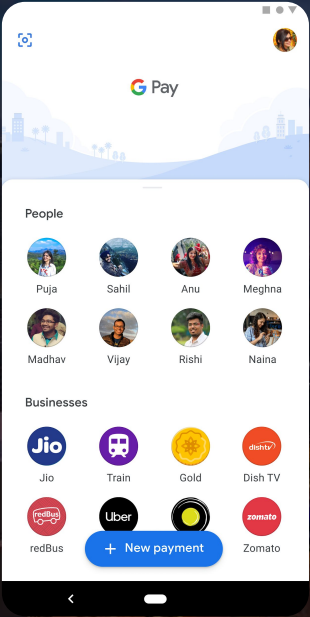
November 2019



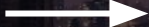
Our technical recommendations

- **Authentication** and **adequate trust delegation** important to find balance between **safety** and **convenience** for adoption
- **Third party access: Standardized APIs** the best way to provide access to both FIs and third parties
- **National addressing database:** Identifiers that are (i) Easy to remember, (ii) Easy to share without risk, (iii) Interoperable (e.g., email addresses, phone numbers)
- **Tiered KYC:** Build **tiered levels of KYC/ AML** for consumers and smaller merchants; upgrade KYC with scale
- **Conveyance mechanisms:** Build ecosystem for multiple ways of transacting, including **QR Codes & NFC**

India's Digital Payments Strategy



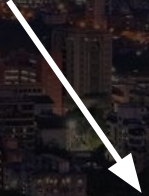
PSP



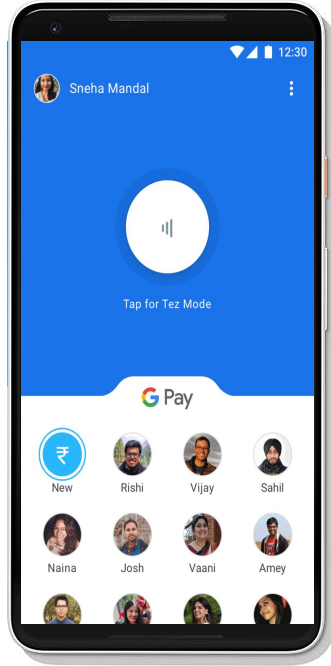
Bank



Bank



Bank



G Pay India

Conversational UI

Built on UPI

Partner with Banks

All Things Money

Power Businesses, Large and Small
- Spot Platform

India moving rapidly toward digital payments

BHIM-UPI transactions

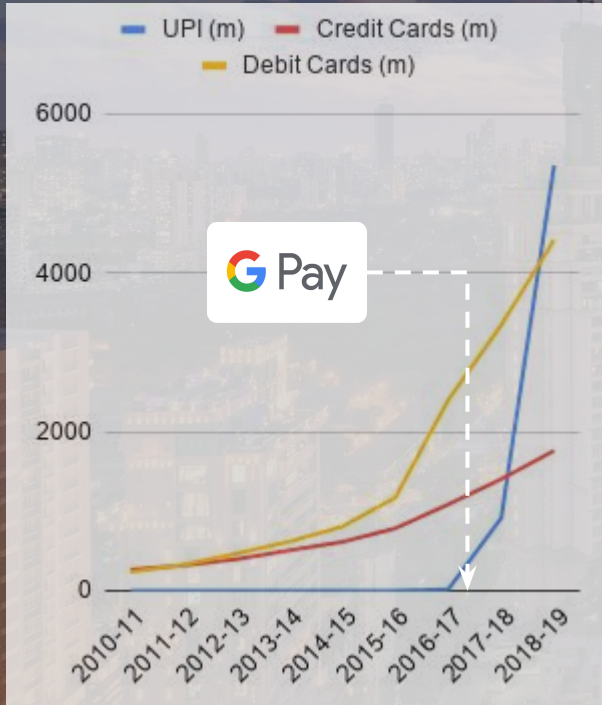


Source: National Payments Corporation of India (NPCI)

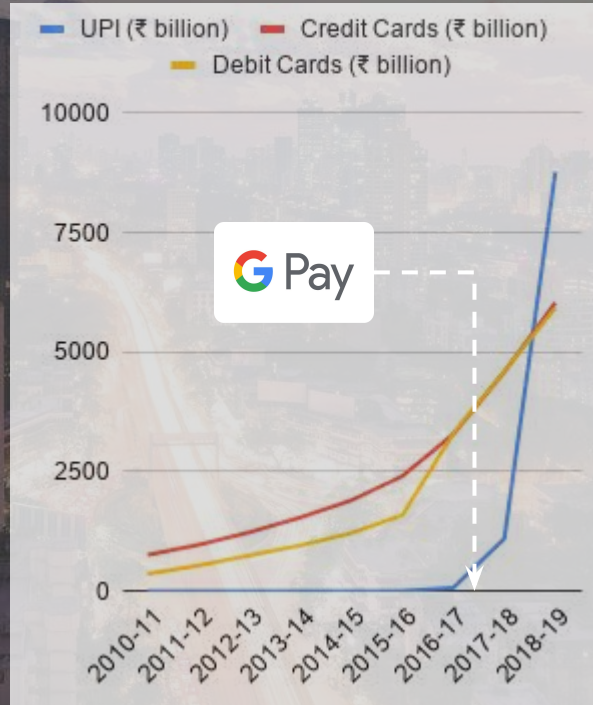
India is pivoting rapidly with digital payments now ~10% of GDP

UPI, Credit Cards, Debit Card Growth

Volume



Value



Google Pay in India

67M

**2019 monthly
active users**

\$110B

**2019 transaction
value annualised**



APPENDIX

Google's Technical Recommendations

- **Allow refunds:** Refunds important alongside user-to-merchant purchases, in accordance with individual merchants' policies and without user interaction; require **unique identifier linked to original transaction**
- **Clear & traceable merchant settlement:** Transfer information related to **taxes, fees** & transaction **identifiers**
- **Conveyance mechanisms:** Build ecosystem for multiple ways of transacting, including **QR Codes & NFC**
- **Tiered KYC:** Build **tiered levels of KYC/ AML** for consumers and smaller merchants; upgrade KYC with scale
- **Deterministic status of transactions:** Ensure each transaction reaches terminal state (**Success** or **Failure** in real time.)
- **Idempotency:** Incorporate idempotency ID for each transaction so **same transaction is not executed twice** when networks are unstable and unreliable.