

Student research report

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Student research report - google pay (online payments & UPI )

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Group name :\_\_\_\_\_\_\_\_ Innovation chosen: google pay

Student research report - google pay (online payments & UPI )

1. Title of innovation

Google pay (online payments & UPI )

# 1.Founder

Founder name with picture



founder 1:Sundar Pichai

# Introduction

Google Pay (GPay) is a mobile payment application developed by Google. It allows users to make payments via smartphones using methods such as the Unified Payments Interface (UPI) in India and PayNow in Singapore. The app supports peer-to-peer (P2P) transfers, in-store payments via NFC, online purchases, and bill payments.

# Founders and Innovators:

**Sundar Pichai**: As the CEO of Google and its parent company Alphabet, Sundar Pichai oversees all major product initiatives, including Google Pay. He has been instrumental in Google's expansion into digital payments, particularly in India, where Google Pay has achieved significant success.

* **Caesar Sengupta**: Former Vice President and General Manager of the Payments & Next Billion Users initiative at Google, Caesar Sengupta led the development of Tez, Google's mobile payments service in India, which later evolved into Google Pay.
* **Vikas Gupta**: Founder of Jambool, a company acquired by Google in 2010. After the acquisition, Gupta became the Head of Consumer Payments at Google, contributing to the development of Google's payment platforms

# real world problem did they solve

## ✅ 1. Cash Dependency

* **Issue**: In many countries (like India), daily transactions were largely dependent on cash, which was inconvenient, untraceable, and unsafe.
* **Google Pay’s Solution**: Enabled **cashless digital payments** via smartphones using **UPI (Unified Payments Interface)** in India and similar technologies elsewhere, reducing the need to carry cash.

### ✅ 2 Complex, Fragmented Digital Payment Systems

* **Issue**: Traditional online banking and payment apps were often **complex, fragmented**, or required multiple steps to send money or pay bills.
* **Google Pay’s Solution**: Offered a **simple, unified interface** that allowed users to send/receive money, pay bills, and make in-store or online purchases **in just a few taps**.

#### ✅ 3.Lack of Access to Formal Banking for Many Users

* **Issue**: In developing countries, a large portion of the population was **unbanked or underbanked**.
* **Google Pay’s Solution**: By integrating with UPI and mobile numbers, users could send and receive money even without having a traditional bank interface or credit/debit cards. This **democratized access to digital payments**.

##### ✅ 4. Security Concerns with Mobile Payments

* **Issue**: People were hesitant to adopt mobile payments due to **security risks**.
* **Google Pay’s Solution**: Added multiple layers of security such as:
  + Device-level authentication (PIN, fingerprint, etc.)
  + Tokenized transactions (real card numbers aren’t shared)
  + Google’s fraud detection and real-time alerts

###### ✅ 5. Inconvenience in Paying Small Businesses & Utility Bills

* **Issue**: Small vendors often accepted only cash, and paying bills involved long queues or multiple apps.
* **Google Pay’s Solution**: Empowered even **small street vendors and local shops** to accept digital payments easily, and allowed users to pay utility bills (electricity, water, phone) **within the app**.

✅ 6. Fragmented Peer-to-Peer (P2P) Money Transfers

* **Issue**: Sending money to friends or family was often limited to bank timings or required bank account details.
* **Google Pay’s Solution**: Enabled **instant, 24/7 P2P transfers** using just a mobile number or UPI ID, making money transfers quick and effortless.

# 💡 Google Pay: Founders' Thought Process

1. **Build for the Next Billion Users**
   * Make digital payments easy for people who were **new to smartphones and banking**—especially in countries like India.
2. **Simplicity Like Cash**
   * Design an app that was **as easy as handing over cash**, even for people unfamiliar with technology or finance.
3. **Privacy and Trust**
   * Let users pay **without sharing sensitive information**, using features like **Cash Mode**.
4. **Use Local Infrastructure**
   * Integrate with India’s **Unified Payments Interface (UPI)** to enable **instant, direct bank transfers**.
5. **Promote Financial Inclusion**
   * Empower those without access to formal banking to participate in the **digital economy**.
6. **Grow into a Financial Ecosystem**
   * Start with payments, then expand to services like **savings, loans, and insurance** to support long-term financial growth

# **🚀 How They Started Google Pay (originally Tez)**

**🔍 1. Research & Problem Discovery**

* They **studied user behavior** in India and other emerging markets:
  + Heavy dependence on **cash**
  + Low **trust** in digital systems
  + Limited access to traditional banking
* Focus groups, field interviews, and on-the-ground research revealed:
  + Users wanted **simple, secure, and instant** ways to pay
  + Even smartphone users often avoided online banking due to complexity

# Did they start innovation

**🧠 1. The Plan**

* **Objective**: Build a payment app for users new to digital payments, especially in India
* Key design goals:
  + Work on **any smartphone**
  + Support **multiple languages**
  + Enable **instant bank-to-bank transfers** via UPI
  + Require **minimal user input** (no card numbers, IFSC, etc.)
  + Prioritize **privacy and security**

**🛠️ 2. Tools & Technology**

* **UPI (Unified Payments Interface)**:  
  Core technology for connecting user bank accounts and enabling real-time transactions
* **Android platform**:  
  Optimized for wide range of Android phones, including low-cost models
* **Google's security stack**:  
  Integrated encryption, fraud protection, and biometric authentication
* **Cash Mode**:  
  Created to allow payments via audio signals, mimicking the simplicity of handing over cash without exchanging phone numbers

**🌏 3. Testing & Pilot (Tez App Launch – 2017)**

* **Launched Tez** first in India as a pilot
* Partnered with **major Indian banks** and **NPCI** (National Payments Corporation of India)
* Used **data and feedback** from early users to improve the user experience

**🔄 5. Evolution into Google Pay**

* After seeing huge success with Tez in India, Google rebranded and **expanded the app as Google Pay** globally in 2018, integrating it with other Google services.

# Makes Google Pay’s Solution Creative?

**1. Cash Mode (Audio QR)**

* **What it is**: Let users pay nearby people using sound waves—no internet, phone number, or QR code needed.
* **Why it’s creative**: It mimics **cash transactions**, making digital payments feel simple and personal.

**2. Direct Bank-to-Bank Transfers via UPI**

* **What it is**: Uses **UPI** to send money directly from your bank account—no need for wallets or extra apps.
* **Why it’s creative**: It’s **instant, free, and doesn’t require card details or loading money** into a wallet.

**3. Local Language Support & Cultural Design**

* **What it is**: Google Pay works in **multiple Indian languages**, with a UI that feels familiar and festive.
* **Why it’s creative**: It connects with users at a **local, emotional level**, not just functional.

**4. Gamification (Scratch Cards & Rewards)**

* **What it is**: Users get **scratch cards**, cashback, and rewards for using the app.
* **Why it’s creative**: It makes payments **fun**, increasing usage and engagement.

**4. Designed for Everyone – Even on Basic Phones**

* **What it is**: The app works well on **low-end smartphones with slow internet**.
* **Why it’s creative**: It **includes millions of users** who are often left out by high-end apps.

**5. Strong Focus on Security**

* **What it is**: Uses **biometric login, encryption, and tokenization** for safe payments.
* **Why it’s creative**: It builds **trust**, which is critical for digital adoption.

# risk and challennges

**🔐 1. Security & Fraud Risks**

* **Phishing and Scams**: Users may be tricked into giving up personal info or OTPs.
* **Account Takeover**: If someone gains access to a user's Google account, they can access Google Pay as well.
* **App Cloning or Malware**: Fraudsters can create fake Google Pay apps to steal data or money.

**🛡️ 2. Privacy Concerns**

* **Data Collection**: Users may worry about how much payment and personal data Google collects and uses.
* **Third-party Sharing**: There are concerns about whether data is shared with advertisers or other Google services.

**🌐 3. Regulatory & Compliance Hurdles**

* **Varying Laws by Country**: Payment regulations differ widely — from GDPR in Europe to RBI regulations in India.
* **Antitrust Scrutiny**: Google faces regulatory investigations for potential monopolistic practices.

**📱 4. User Adoption & Competition**

* **High Competition**: Rivals like Apple Pay, Samsung Pay, PayPal, and local players (like PhonePe or Paytm in India) are strong competitors.
* **Platform Dependence**: Limited use on iOS compared to Android.

**🔌 5. Technical & Operational Risks**

* **Service Outages**: Downtime or app bugs can cause transaction failures and frustrate users.
* **Integration Issues**: Challenges in seamless integration with banks, merchants, and third-party apps.

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**💳 6. Trust & Reputation**

* **Misuse by Fraudsters**: If fraud happens through the app, even without Google’s fault, users may blame Google Pay.
* **Handling Disputes**: Poor resolution of payment issues can hurt trust.

# you learn adout innovation

**🌟 1. Innovation = Solving Real Problems with Simplicity**

Google Pay innovates not just with flashy features but by addressing **everyday payment frustrations**:

* Long checkout times,
* Insecure card use,
* Managing many loyalty programs or cards.

By making transactions **faster, safer, and smarter**, it delivers real-world value.

**🔗 2. Innovation Through Integration**

Google Pay shows that innovation can come from **deep integration**, not just stand-alone features:

* Embedded in Android OS, Chrome, Gmail, and Maps.
* Works across devices: phones, smartwatches, and even voice assistants.

This creates a **seamless user experience** across Google’s ecosystem.

**🛡️ 3. Innovation in Security and Trust**

Google Pay uses **tokenization**, biometric authentication, and device-level encryption — leading the industry in:

* **Invisible security** (users don’t see the complexity),
* **Convenience + safety** combined (e.g., one-tap pay with face unlock).

It shows that innovation in security can be **invisible but powerful**.

**🌍 4. Localized Innovation**

Google Pay adapts its approach for each market:

* **India**: Supports UPI and QR-based payments.
* **US**: Emphasizes contactless cards, loyalty, and offers.
* **Japan**: Integrates with prepaid systems like Suica.

This teaches that **global success requires local customization** — a key innovation strategy.

**🎁 5. Gamification and Engagement**

Google Pay innovatively includes **gamified rewards**:

* Scratch cards, cashback games, event-based promotions.
* Social sharing to encourage referrals and usage.

This approach boosts **user retention** and **emotional engagement**, showing innovation can also be fun.

**📊 6. Ecosystem Thinking**

Google Pay innovates by creating a **platform**, not just an app:

* Enables merchants, banks, and users to interact.
* Offers APIs and services for partners to build on.

This turns Google Pay into an **ecosystem** — a core principle of platform-based innovation.