PayNow Requests

Privacy-Preserving Payment Requests for Singapore

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🌏 **Seeking Opportunities in Singapore**
I am looking for roles in **Product Management, Fintech, Payments, RegTech**, and **Digital Assets**.

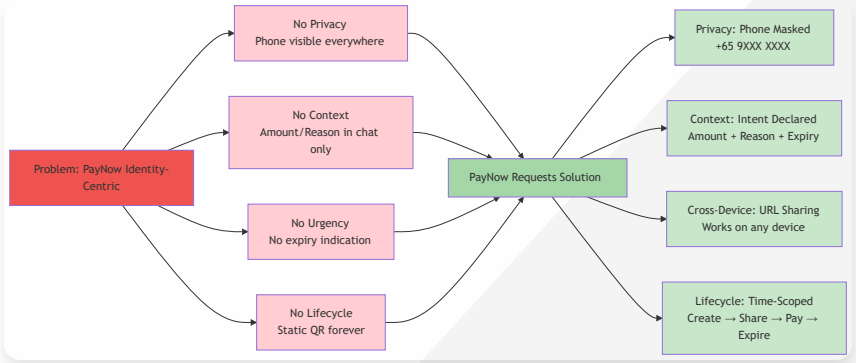
"I am not just a Product person. **I build.**"

I specialize in taking complex financial systems and structuring them into reliable products that bridge **policy** and **code**.

I care deeply about building products that create real impact.

The Problem Solved 🎯

What Problems Does PayNow Requests Address?



Problems → Solutions

Problem	Solution
No Privacy	Phone masked (`+65 9XXX XXXX`) in shared links
No Context	Intent declared: Amount + Reason + Expiry
No Cross-Device	URL-encoded sharing works on any device
No Lifecycle	Time-scoped: Create → Share → Pay → Expire

The Paradigm Shift 🔄

From Identity-Centric → Intent-Centric

Current (Identity-Centric):
"Here is my phone number (+65 91234567), pay me"

New (Intent-Centric):
"Alice requests SGD 50.00 for Friday dinner at Nando's, valid until 8 PM"

> *This treats the **payment request as a first-class object** — with lifecycle, state, and metadata — rather than just a QR code utility.*

Push vs Pull Payment Models 💳

Why India's UPI Discontinued P2P Collect Requests

IMPORTANT: NPCI permanently discontinued UPI "collect request" for P2P transactions from **October 1, 2025** due to rising financial fraud.

- P2P Collect: **Discontinued** (85% fraud increase year-over-year)
- Payer-Initiated Only: All personal transfers must now be **push** payments

Push vs Pull: Visual Comparison 📊

Key Difference

Aspect	Pull (UPI Collect - BANNED)	Push (PayNow Requests - SAFE)
Initiation	Payee sends notification	Payer opens link voluntarily
Control	Payee controls flow	**Payer has full control**
Verification	Single-tap approval	Scan QR in bank app + verify
Fraud Rate	0.05% - 0.12%	0.01% - 0.03%

Competitive Analysis 📱

What About DBS PayLah! Request Feature?

Feature	DBS PayLah!	PayNow Requests
Cross-Bank	❌ DBS/POSB only	✅ All Singapore banks
App Required	❌ Must have PayLah!	✅ Works via SMS link
SMS Fallback	✅ Downloads app prompt	✅ Opens in any browser
Privacy	❌ Phone visible	✅ Phone masked
Intent Display	Amount only	✅ Amount + Reason + Expiry
Open	❌ Closed ecosystem	✅ Web-based, open

PayLah! Innovation: When a recipient doesn't have PayLah!, it sends an **SMS asking them to download and pay** — but this is still a **closed ecosystem** requiring the DBS app.

PayNow Requests Advantage: Works with **any banking app** — DBS, OCBC, UOB, Standard Chartered — and only requires a **browser** to view the request.

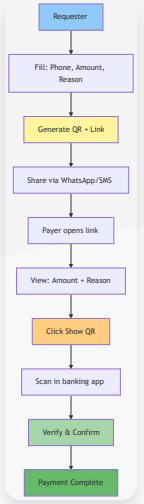
How PayNow Requests Works 🚀

For Requesters

1. Fill in: Phone, Amount, Reason, Expiry
2. Generate QR + Shareable Link
3. Share via WhatsApp/SMS/Email

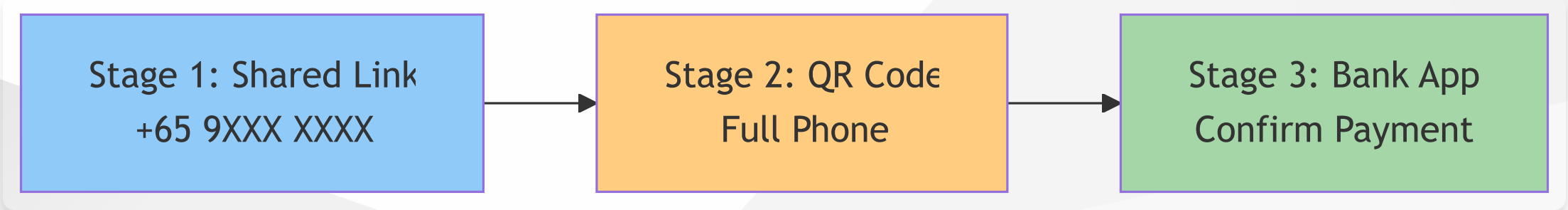
For Payers

1. Click shared link (opens in browser)
2. View: "X requests SGD Y for Z"
3. Click "Show QR to Pay"
4. Scan in **any** banking app
5. Verify and confirm



Privacy: Progressive Disclosure 🔒

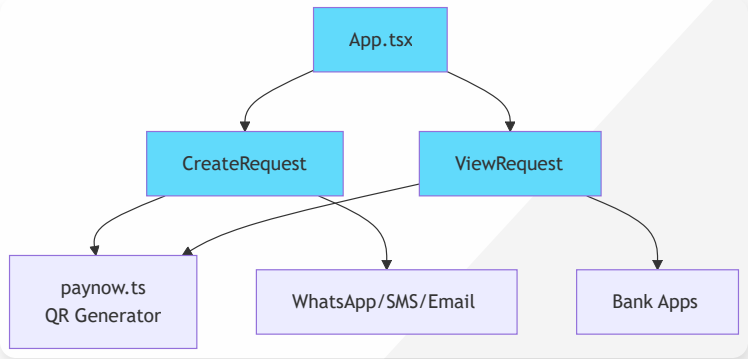
Three-Stage Privacy Model



Stage	Phone Visibility	Purpose
Shared Link	`+65 9XXX XXXX`	Prevents phone harvesting in group chats
QR Code	`+65 91234567`	Required by PayNow for payment execution
Bank App	`+65 91234567`	Standard PayNow confirmation flow

Technical Architecture ⚙

Client-Side Only, Serverless Design



Tech Stack

- **Frontend**: React 19, TypeScript, Vite
- **Styling**: Tailwind CSS
- **Routing**: React Router (hash mode for GitHub Pages)
- **QR Generation**: EMVCo-compliant PayNow QR
- **Deployment**: Static hosting (GitHub Pages, Netlify, Vercel)

Fraud Risk Assessment ✅

PayNow Requests vs Discontinued UPI Collect

Aspect	UPI Collect (DISCONTINUED)	PayNow Requests
Payment Model	Pull (payee-initiated)	**Push (payer-initiated)**
Initiation	Push notification to app	User clicks link voluntarily
Verification	None (direct approval)	Must scan QR in bank app
Phone Privacy	Full phone visible	Masked in link
Fraud Risk	**HIGH** (85% YoY increase)	**LOW-MEDIUM**

Why PayNow Requests is Safer

1. **Push Model**: Payer initiates via scan (same as discontinued UPI Collect)
2. **Manual Banking App**: Human-in-the-loop required
3. **Clear Intent Display**: Amount, reason, expiry shown
4. **Phone Masking**: Reduces social engineering risk
5. **No Artificial Urgency**: Expiry is UX-level only

Real-World Use Cases 💼

Problem → Solution Examples

Group Dinner

- *Before*: "How much do I owe? What's the reference?"
- *After*: Click link → See SGD 45 for "Friday dinner at Nando's" → Scan & Pay

Freelance Invoice

- *Before*: "Pay invoice #2025-001 to +65 91234567"
- *After*: Click link → See SGD 750 for "Logo design - Invoice #2025-001" → Scan & Pay

Event Payment

- *Before*: Organizer's phone shared publicly to 50+ people
- *After*: Link shared, phone masked until payment

Marketplace

- *Before*: Seller's phone visible to strangers on Carousell
- *After*: Link with masked phone, revealed only on payment

Engineering Decisions (ADRs) 📐

Key Architecture Decisions

ADR-001: URL-Based Data Encoding (No Backend)

- **Decision**: Base64 encode request data in URL fragment
- **Benefit**: Zero infrastructure, cross-device sharing, privacy (no server logs)

ADR-002: Hash-Based Routing

- **Decision**: Use React Router with hash mode
- **Benefit**: GitHub Pages compatible, no server config needed

ADR-003: Progressive Phone Disclosure

- **Decision**: Mask phone in link, reveal only in QR/bank app
- **Benefit**: Privacy preservation while maintaining PayNow compatibility

> *"**Philosophy**: Work within existing constraints rather than fighting them"*

What This Does NOT Do ⚠️

Honest Limitation Communication

Aspect	Capability
Execute Payments	❌ All payments occur in banking apps
Deep-Link Bank Apps	❌ Requires manual scan
Enforce Expiry	❌ UX-level only, expired QRs still scannable
Cryptographic Anonymity	❌ Base64 is encoding, not encryption
Fraud Prevention	❌ Users must verify through separate channels

What This DOES Do

Aspect	Capability
Reduce Ambiguity	✅ Clear intent: amount, reason, expiry
Protect Privacy	✅ Phone masked in shared links
Enable Cross-Device	✅ URL works on any device
Work with All Banks	✅ DBS, OCBC, UOB, Standard Chartered
Deploy Anywhere	✅ GitHub Pages, Netlify, Vercel

Market Opportunity 📈

Singapore PayNow Ecosystem (2024 Data)

Metric	Value
PayNow Users	3.5 million (60% of population)
Annual Transactions	100+ million
Annual Volume	SGD 15 billion
Growth Trend	+40% YoY

Market Gap Analysis

Competitor	Payment Requests	Privacy	Cross-Platform
DBS PayLah!	Yes (closed ecosystem)	❌	❌
OCBC Pay Anyone	Partial	❌	❌
GrabPay	Partial	❌	❌
This Project	✅	✅	✅

Development Roadmap 🗺️

Implementation Status

Phase 1: Core Functionality ✅ Complete

- [x] Request creation form (phone, amount, reason, expiry)
- [x] PayNow EMVCo QR generation
- [x] Base64 URL encoding/decoding
- [x] Phone masking display
- [x] Share buttons (WhatsApp, SMS, Email, Copy)

Phase 2: UX Polish ✅ Complete

- [x] Responsive mobile-first design
- [x] Expiry validation and warnings
- [x] How-to-pay instructions
- [x] Privacy notices

Phase 3: Future Enhancements 📋 Planned

- [ ] LocalStorage request history
- [ ] Dark mode support

Live Demo 🎬

Try It Now

Create a Payment Request:

1. Go to: paynow-demo.example.com
2. Enter: Phone, Amount, Reason, Expiry
3. Generate QR and shareable link
4. Share via WhatsApp/SMS/Email

View a Sample Request:

1. Click any shared request link
2. See: Masked phone, amount, reason, expiry
3. Click "Show QR to Pay"
4. Scan with your banking app

> *“All client-side. No backend. No data collection.”*

About the Builder 👨‍💻

Sivasubramanian Ramanathan
Product Owner | Fintech, RegTech & Digital Innovation

I specialize in taking messy, real-world complexity and structuring it into reliable products that bridge **policy** and **code**.

Experience:

- BIS Innovation Hub Singapore — Cross-border payments research
- Stablecoin Clearing & Settlement Engine — Full-stack Web3 development
- PayNow Requests — Privacy-preserving payment infrastructure

Philosophy: Build products that work within real-world constraints, don't overstate capabilities, and create genuine user value.

Let's Connect 🤝

I am ready to bring this level of engineering rigor and product thinking to your team.

- 🌐 **Portfolio**: sivasub.com
- 💼 **LinkedIn**: linkedin.com/in/sivasub987
- 💻 **Code**: github.com/siva-sub/PayNow-Requests
- 📚 **Docs**: Full Documentation

Live Demo: paynow-demo.example.com

Research: See UPI_RTP_FRAUD_RESEARCH.md for detailed fraud analysis