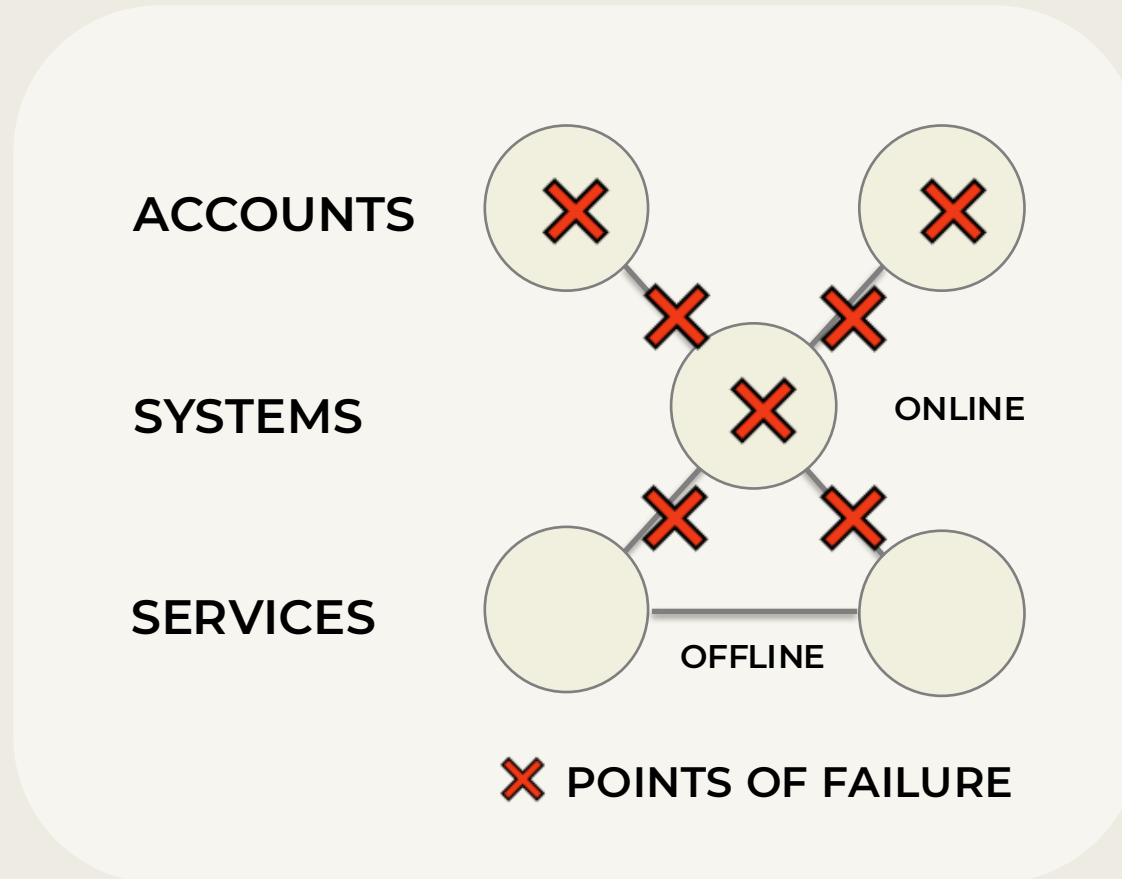


Communications Learned to Survive Failure. Payments Never Did.

How to packetize authorization, intent, and trust.

More than 30 years ago, the internet solved resilience for communications by decentralizing execution through governed protocols. Payments never made that leap. Crunchfish applies the same principles to applications, starting with payments, enabling local execution independent from the system, while governance remains central.

When Payments Fail – Societies Stop

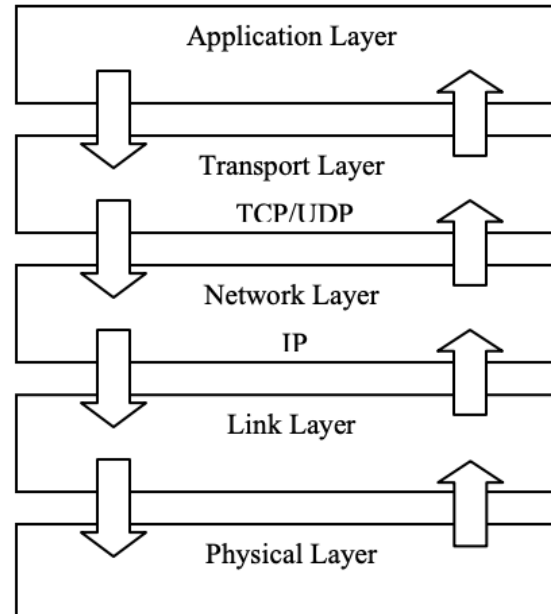


Payments do not fail because systems fail but because they depend on them.

Modern payment systems are critical infrastructure and architected as always-on systems, dependent on continuous availability, and online authorisation, clearing, and settlement. This is an architectural dependency and implies a systemic risk for societies.

The Internet Solved Communications – Decades Ago

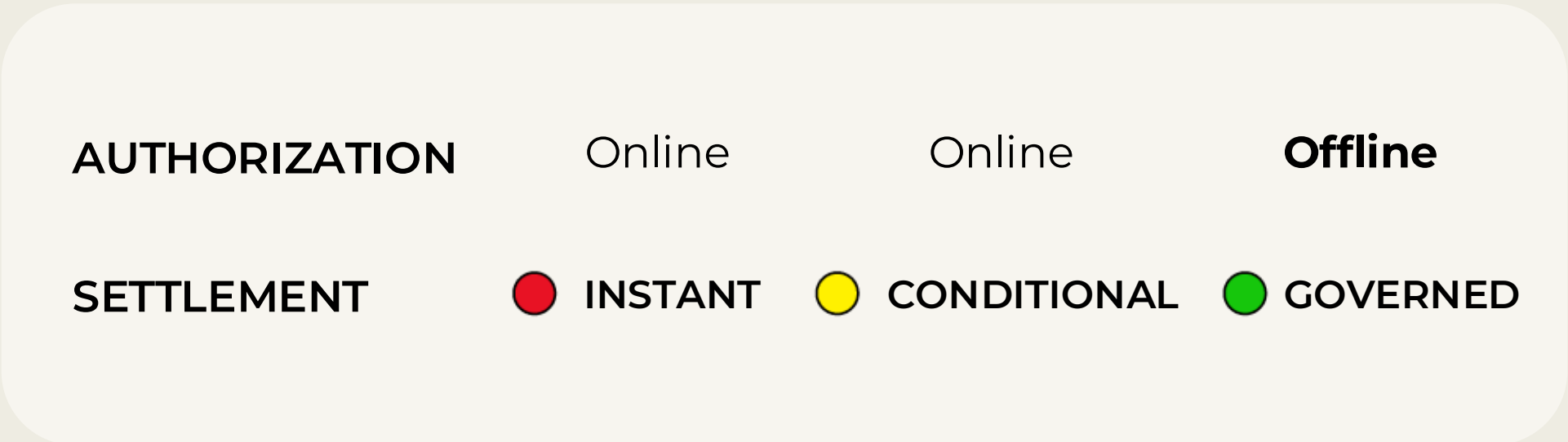
TCP / IP Protocol Stack



Applications today are where communications were before the internet.

Before the internet: communications depended on centralized circuits, failures interrupted communication. Survivability was limited. TCP/IP changed the model: packet-switched communication, decentralized routing, graceful degradation, and survivability in the face of failure. Applications still behave like pre-internet communications: dependent on continuous system availability, session oriented, and architecturally fragile.

From System Dependency to Governed Execution



Authorization decoupled from online sessions.

Governed execution replaces continuous online dependency with portable signed intent. Authorization becomes portable and independently verifiable, execution becomes survivable, and governance remains centralized. It is a new architecture for digital payments. Instead of packet-switched communication, governed execution packetizes authorization, intent, and trust.

Trust Travels with the Signed Intent

Emerging

Today

Authenticated Sessions
Online Authority

OAuth / OIDC
FIDO / Passkeys
Open Banking APIs

TAP

AP2

Verifiable Intent

Emerging

Signed Intent
Cryptographic Verification

TAP
AP2
Verifiable Intent

Portable survivable trust.

Governed signed intent introduces portable trust of intents, asynchronous authorization, survivable verification, and independently verifiable execution objects. That is genuinely a new category for establishing trust compared to the centralized session trust of today.

RBI mandates 2FA for all Digital Payments

RBI-mandated two-factor authentication for all digital transactions

Traditional OTP flows add:

- Friction
- Connectivity dependency
- Operational complexity

Signed intent inside governed wallet is:

- Signed and verifiable,
- Policy governed
- Trusted independently of system availability

Signed intent delivers the second factor natively in the payment intent itself.

Crunchfish's Trusted Application Protocol (TAP) is native to the application flow. No additional OTP step. Stronger cryptographic trust that supports online and offline payments. Improves both security and resilience.

The RBI Announces E-cheques



E-cheques are steps towards governed execution with signed intent.

The deeper innovation is the decoupling of authorization, clearance, and settlement. It enables local native authorization, authentication as conditional payments, and central settlement and governance. The foundation for resilient digital payments, both offline and online.

Offline is about Survivable Digital Money



● IMMEDIATE

Makes physical cash work digitally

Tested in CBDC projects

Money moves offline



● DEFERRED

Makes personal checks work digitally

Standard on EMVCo card rail

Unmanaged credit risks



● GOVERNED

Makes digital money work offline

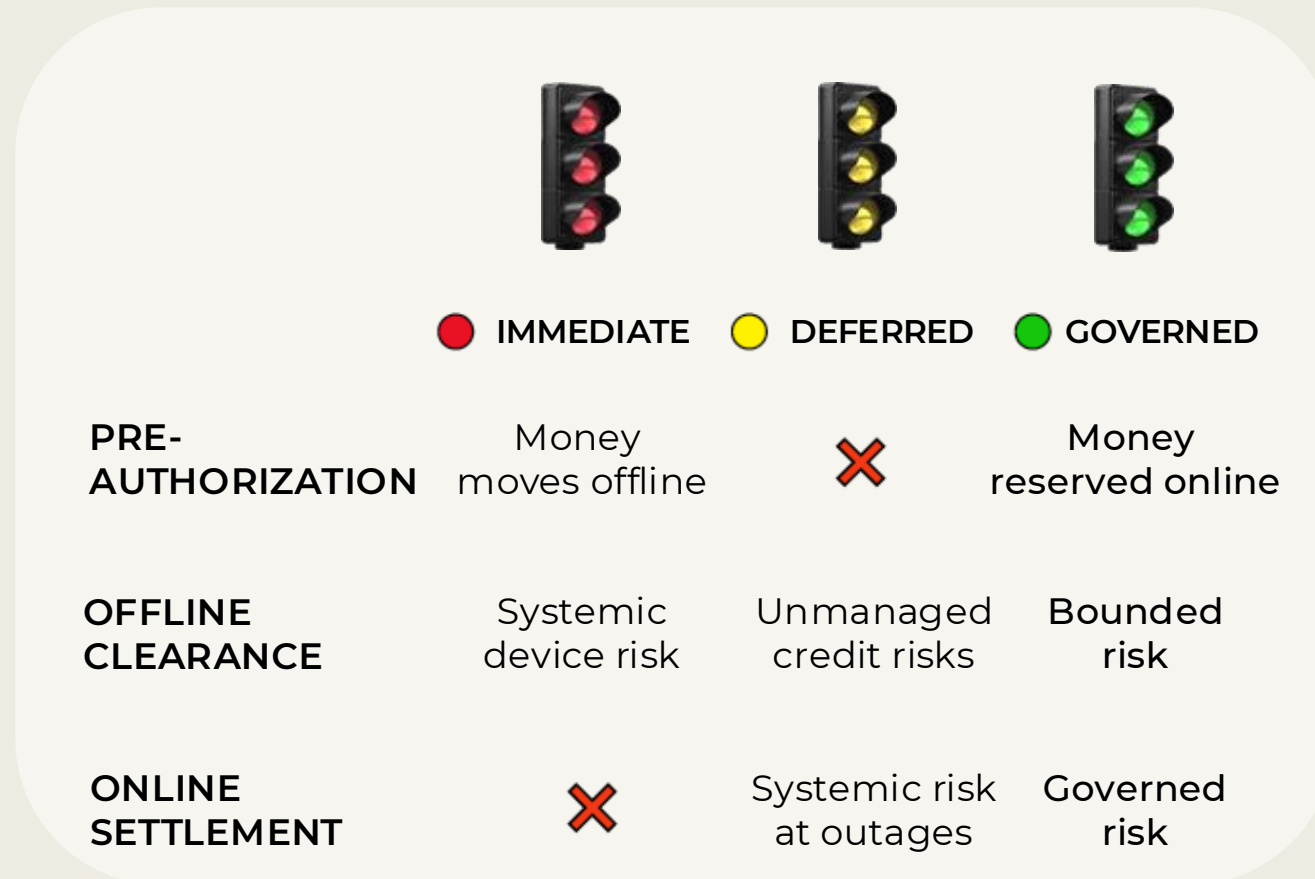
Crunchfish's model

Bounded and governed risk

Digital money should work offline too

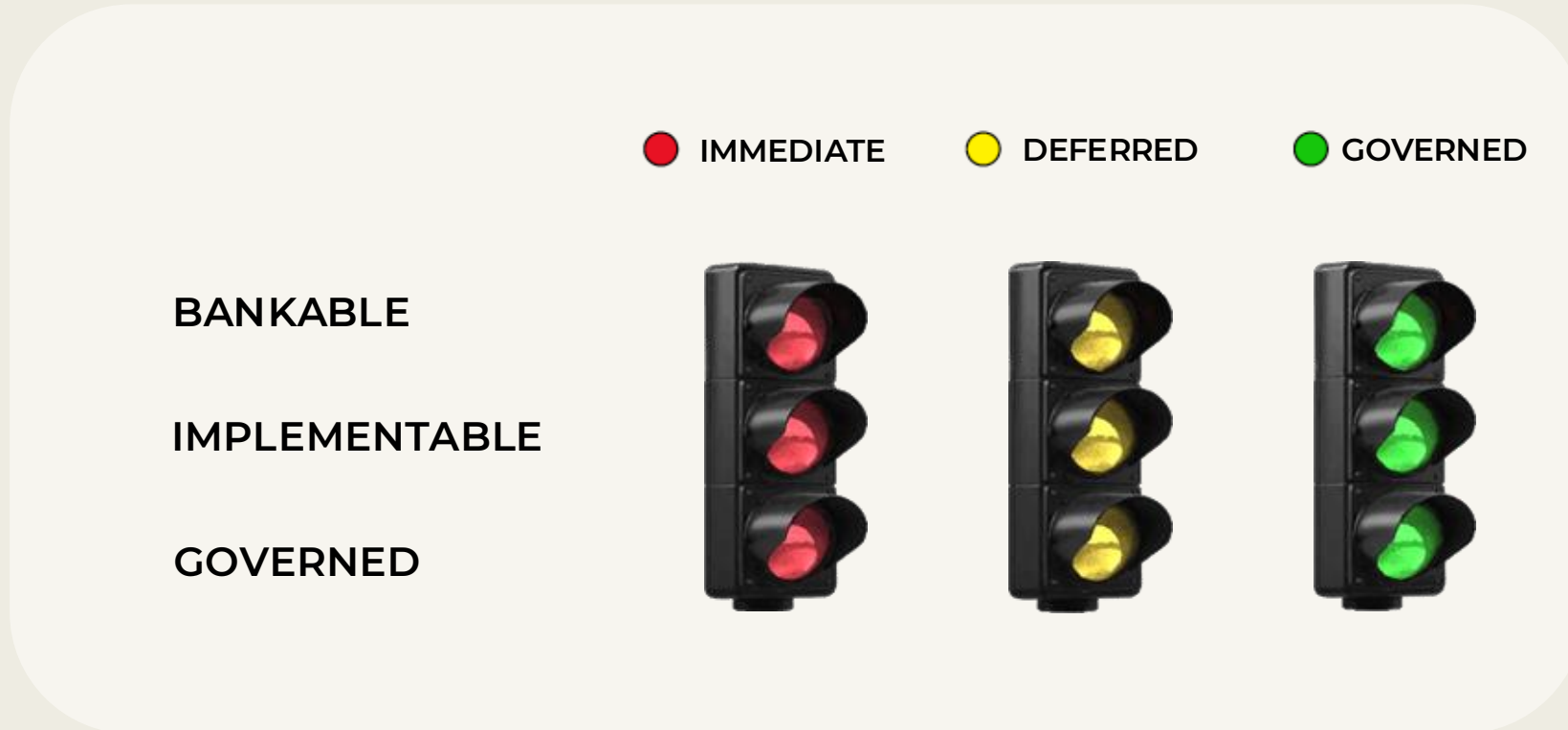
Legacy offline models focus on the wrong problem. It is not about making physical cash or personal checks work digitally. It is about making digital money work offline. The legacy models introduce trade-offs: either loss of control over digital money or unmanaged credit risks. Crunchfish's governed model eliminates these trade-offs.

Only Governed Removes the Systemic Risks



The key differences between governed offline and the legacy offline models are where money and risk reside. In governed offline, money is reserved by regulated institutions and risks are bounded and governed. Legacy offline models does not solve the systemic outage risk. They just move it. Governed offline eliminates it entirely. This makes the governed offline model superior and suitable for institutional and large-scale deployment.

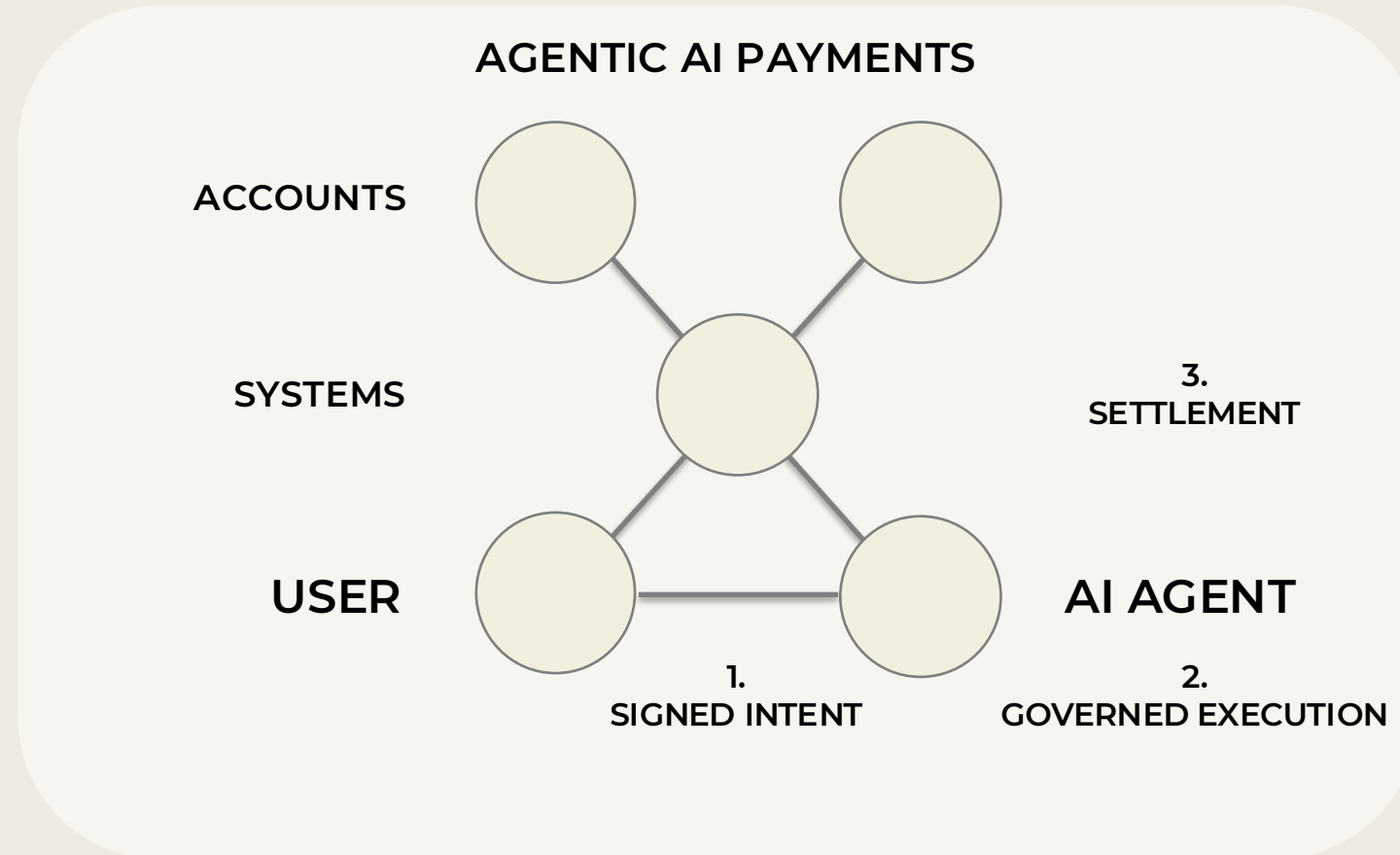
Architecture Defines the Institutional Impact



Governed is the only offline model that aligns with all institutional requirements.

Governed enables offline payment while keeping money central within regulated institutions and offers settlement without credit risks. This aligns Crunchfish's model with all stakeholder institutions - banks, wallets, payment systems and central banks. The architecture is banking-friendly, implementable for wallets, and governed from payment system and central bank perspectives.

Agentic AI Payments Require Signed Intent



Agentic AI payments are not autonomous execution. It is governed execution.

A central challenge is the interaction between probabilistic, adaptive decision making and the deterministic requirements of payment infrastructures. Need to separate (1) intent formation and orchestration, (2) authorization and control, and (3) settlement.

Are Applications Approaching Their Internet Moment?

Centralized online
authorization

Governed
Signed Intent

Governed signed intent may become the future trust architecture for digital systems.

The legacy online authorization model is fundamentally built around continuous sessions, real-time authentication, centralized authorization, and continuous system availability. But so was communication before the internet. The internet replaced continuous connection with survivable packet-switched communication. Governed execution applies similar principles to digital systems through signed intent, delegated authority, policy-governed execution, and portable survivable trust.

crunchfish 
RETHINKING PAYMENTS

