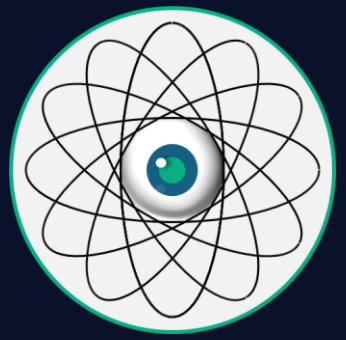
Retica Technologies

Building the future of identity infrastructure with combinational biometrics



Retica offering memorandum

August 2025

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The story: Ethical account hijack across digital and physical worlds

In July 2025, we used a recycled phone number to access someone's Amazon and Meta accounts. By enrolling my own biometrics (e.g., face, fingerprint, palm, and voice), I assumed their digital and physical identity. OAuth2 connections (e.g., "Sign in with Facebook") triggered a cascade of over a dozen additional account takeovers.

37M
phone numbers recycled annually in the U.S.[1]

7.2B
smartphones in use globally (2025)[2]

$12.5B+
in U.S. identity theft losses (2024)[3]

The problem: Current access systems rely on single-biometric, siloed enrollment processes that fail to cryptographically bind identity across platforms.

[1] *In the matter of advanced methods to target and eliminate unlawful robocalls: Second notice of inquiry* (FCC 17-90). (2017). Federal Communications Commission. https://docs.fcc.gov/public/attachments/FCC-17-90A1.pdf.
[2] Statista. (2023, November 16). *Forecast number of mobile users worldwide 2020-2025*. https://www.statista.com/statistics/218984/number-of-global-mobile-users-since-2010/.
[3] *New FTC data show a big jump in reported losses to fraud to $12.5 billion in 2024*. (2025, March 10). Federal Trade Commission. https://www.ftc.gov/news-events/news/press-releases/2025/03/new-ftc-data-show-big-jump-reported-losses-fraud-125-billion-2024.

The problem: Fragmented identity infrastructure and inefficient access

What's wrong with current security models?

- **Recycled identifiers** (phone numbers, emails) reused for login and registration
- **Unrestricted changes** to email/phone on file, often without safeguards
- **Device-based multi-factor authentication** and **fallback options** introduce vulnerabilities
- **Magic links** and password resets bypass robust authentication
- **OAuth2** (e.g., "Sign in with Facebook") undermines zero-trust principles
- **Single-biometric systems** lack cross-platform identity binding
- **Biometric data** stored in isolated silos (cloud or local) without cryptographic linkage to identity

Where and why current solutions fall short

Apple Face ID

- Siloed biometric enrollment
- Isolated local storage environment
- Single-biometric solutions

Amazon One

- Siloed biometric enrollment
- Isolated cloud storage environment
- Single-biometric solutions

Google Passkeys

- Siloed biometric enrollment
- Isolated local storage environment
- Single-biometric solutions

Apple: “Is this biometric associated with this **device**?”

Amazon One: “Is this biometric the same as that stored in AWS for this account?”

Google: “Is this biometric associated with this **device**?”

The solution: Combinational biometrics + distributed architecture (1/2)

1. **Unified biometric human profile**
   - Retica binds multiple biometric modalities into a single cryptographic identity
   - This identity is not tied to an email, phone number, or device; it's tied to you
2. **Cross-ecosystem identity resolution**
   - Retica enables platforms to recognize the same user across ecosystems
     - Prevents duplicate subscriptions and enables benefit portability
3. **Privacy-preserving interoperability**
   - Using zero-knowledge proofs, Retica allows platforms to verify identity without sharing sensitive data
     - Critical for meaningful compliance and user trust

The solution: Combinational biometrics + distributed architecture (2/2)

4. **Decentralization of user data + MPC**
   - Shredding biometric data into incomplete pieces, distributing incomplete pieces across cloud nodes and local store
     - Eliminates single points of failure and insider threat risks
5. **Temporal audit and subscription intelligence**
   - Retica's biometric code chain creates an immutable audit trail of subscription and access events for users

Result: Cryptographic identity binding with stronger security, creation and preservation of privacy, and user effort minimized to a simple touch or gesture

Why hasn’t someone else done this already? (1/3)

- What do **Microsoft**, **Apple**, **Google**, and **Amazon*** have in common? (1/2)
  - **Platform-centric (identity) models**
    - They’ve built identity systems to serve their own ecosystems
    - Their identity anchors are account-based, not human-based
  - **Fragmented modalities and siloes**
    - All platforms use **different modalities** with **different standards**
    - Lack of **cross-platform biometric binding** (i.e., users are treated as different people across services)
  - **Privacy and regulatory constraints (1/2)**
    - Centralized identity systems raise **privacy concerns** and face **regulatory hurdles**;
      - All existing systems centralize identity data either on a device or in their own clouds

* Amazon has ventured into extending its single-biometric identity platform to other enterprises, using an isolated, Amazon-owned cloud environment. Retica will never own or store user biometric data in an isolated cloud.

Why hasn’t someone else done this already? (2/3)

- What do **Microsoft**, **Apple**, **Google**, and **Amazon*** have in common? (2/2)
  - **Privacy and regulatory constraints (2/2)**
    - No company has built a privacy-preserving, decentralized identity infrastructure that satisfies global compliance
  - **Lack of incentive to solve the whole problem**
    - Fragmenting identity **locks users into their ecosystems** (discouraging cross-platform user experiences)
    - Solving identity fragmentation would reduce their control and increase user **interoperability**

Tldr: Retica doesn’t compete with the core businesses of Microsoft, Apple, Google, or Amazon. Retica solves a problem that these companies *cannot* and *will not* solve due to structural and strategic constraints.

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Why hasn't someone else done this already? (3/3)

Feature	Big Tech	Retica
Competes in subscriptions, ads, devices	**Yes**	**No**
Identity tied to platform	**Yes**	**No**
Incentivized to silo users	**Yes**	**No**
Privacy-preserving by design	**No**	**Yes**
Built for interoperability	**No**	**Yes**
Multi-modal biometric binding (+ to identity)	**No**	**Yes**

Retica doesn't sell devices, ads, or content. Our sole focus is building our identity infrastructure, which allows us to:

- Bridge ecosystems without bias
- Resolve subscription fragmentation across platforms
- Enable user-centric control over identity and access

Immediate market applications

Digital platforms
Passwordless registration and sign in, social media verifications, dating app safety, bot detection, and impersonation prevention

E-commerce + marketplaces
Seller verification, buyer protection, review authenticity, dispute resolution

Developer experience
Git integrations, open-source secure and accountable development, project management and team collaboration

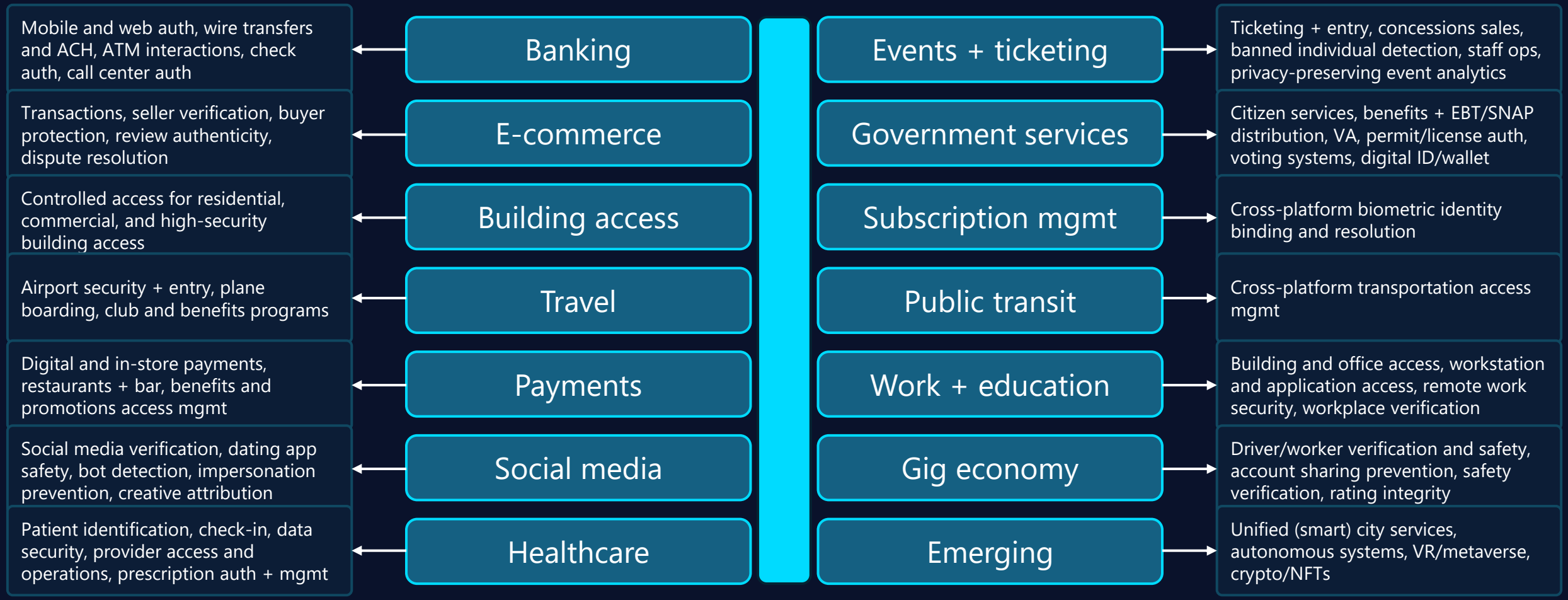
Consumer banking
Mobile and web auth, check deposit, wire transfers and ACH, ATM interactions

Government
Government services integrations, DoD defense and operational applications, FINCEN, IRS, more.

Building access
Keyless and card-less residential access, controlled commercial building and office access, secure facility access

The biometric human profile: Your backbone for access

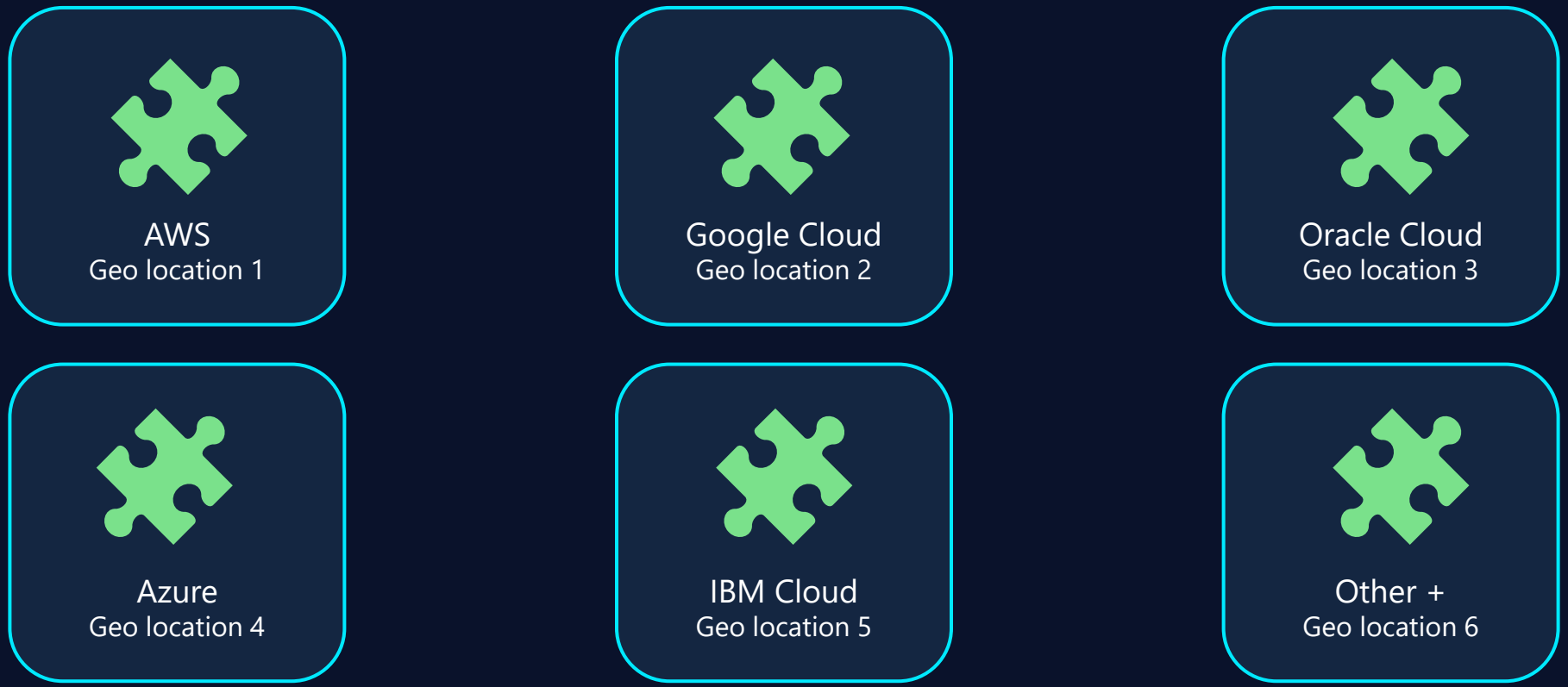
Your secure, private backbone for digital and physical world access



Your biometric identity becomes the secure foundation for the resources you need and love

Multi-party computation: Your data shredded and distributed

No single entity, including Retica, ever has your complete biometric data



Threshold requirements for verification / geographic distribution / no single point of failure or compromise / insider threat mitigation

Business model: Diverse and integrated revenue sources

Platform licensing

$25K – 250K annually

Enterprise and government

Ex. 1,000 enterprise = $250M ARR

Per-authentication/verification

$0.05 – 0.10 per auth

Volume-based pricing

10B auths = $500M - 1B revenue

Transaction fees (biometric payments)

0.15% - 0.5% on secured transactions

High-value transfers

$780B volume = $1.2 – 3.9B revenue

Emerging revenue streams

Enterprise identity-as-a-service, enterprise subscription intelligence, PII data security orchestration, compliance and regulatory services

Market sizing and projections

$141T+
Total addressable market[4]

$1.4T
Serviceable market

$5M
Year 1 target

Year 1
$5M
Pilots, licensing, initial authentication fees

Year 2
$50M
Licensing, authentication, platform expansion

Year 3
$500M
Broader adoption across sectors

Year 4
$2B+
Full-scale rollouts across sectors

[4] *CB Insights. (n.d.). https://app.cbinsights.com/market-sizes*

Traction + Why now?

- **July 2025:** Discovered critical, cascading vulnerability through responsible and ethical research
- **Patents pending:** Filed two patents with work on broader portfolio:
  1. Pending patent covering mobile device-based Simultaneous Biometric Capture Protocol (SBCP) cryptographically bound to identity
  2. Pending patent covering multi-modal (multiple simultaneous biometric factors) authentication APIs for expansive market applications (not a standalone solution)

Why now?

- Biometric authentication system done right will have substantial, positive second-order effects
  - Collapse of account-based identity silos
  - Subscription ecosystem optimization
  - Decentralization of identity control; new strategies for data privacy protection and security
  - Profound impacts on fraud
  - Changing UX and access models that benefit humans and re-allocate opportunities for enterprise investment
  - Rise of identity-driven commerce in which transactions are authorized by biometric identity, not cards or passwords
  - Platform neutrality becomes a competitive advantage

The team

Jon Newman
Product
MBA; security research, uncovered vulnerability

Josh Woolf
BD and growth
Revenue strategist, experience scaling enterprise security solutions

Nihar Lodaya
Engineering
MS, Computer Science; Aurionpro software engineer

Siddhi Sunil Nalawade
Data science
MS, Data Science; ex-Accenture software engineer

Supported by advisors from tech, government, finance, and other

The opportunity

Seeking $5M seed round

Use of funds

- Salaries and living
- Office space for small team
- Team expansion
- Pilot programs
- Security audits and compliance

18-month milestones

- 10 enterprise pilots
- $5M ARR
- Series A ready

Appendix: Technical dive

How Retica works

1. **Multi-modal biometric capture:** Simultaneous face, iris, palm, and behavioral biometrics
2. **Local ZKP generation:** Device creates proof without revealing biometrics
3. **MPC verification:** Distributed nodes verify without complete data
4. **Consensus required:** 3 of 4 nodes must approve

Competitive advantages

- **First-mover:** Architecture covered with provisional patent
- **API-first:** Easy integration, not rip-and-replace, light capital and operating requirements
- **Privacy-preserving:** We never see or store biometrics
- **Platform agnostic:** Works with all existing systems

Key metrics

- False acceptance rate: <0.000000002% (vs. 0.002% for Touch ID or 0.0001% for Face ID) [4]
- Targeted latency: <500ms

[4] Apple Inc. (2017). *Face ID Security Guide*. Retrieved from https://www.apple.com/business-docs/FaceID_Security_Guide.pdf.