Introduction to ayra

trusted relationship network

Synopsis

Ayra (eye-rah) is a new digital public utility for building trusted relationships online. It was conceived in March 2024 by a group of individuals and organizations who recognized that trust on the Internet has been steadily eroding—and that generative AI was now pouring gas on the fire. While there are many vendor-led and sector-specific solutions, piecemeal approaches are not enough to achieve the scale required for these efforts to rebuild and sustain trust online.

We need a new layer of infrastructure.

Just as the Internet solved the problem of decentralized data exchange by creating a network of networks, we need an "Internet of Trust" that solves the problem of decentralized trust by creating a trust network of trust networks. And we finally have the tools: open standards for cryptographically-verifiable identifiers, verifiable digital credentials, and trust registries.

Like the Internet, this layer of infrastructure can not be built by any single company, government, or open source project. It needs to be built, operated, and governed collaboratively by all stakeholders. Like the Internet, it needs a neutral international nonprofit governance organization designed to equitably represent the interests of people, organizations, and governments everywhere in establishing this new layer.

This is why we are announcing the Ayra Association, a new Swiss nonprofit association that will serve as the governing body for the Ayra Trust Network.

How is the Ayra network starting? The same way the Internet did: with the first trust networks who want to connect with each other to exchange and verify digital credentials. We call these **trust clusters**. Trust clusters are already forming in financial services, workforce credentials, supply chain & sustainability, personhood credentials, and organizational ID.

This is an invitation to leaders who see how a trusted relationship network will transform their businesses and their industries. Connect with us to start building your trust cluster today.

The Problem

Why has trust in the Internet decayed so much?

Many Internet users already know they need to be vigilant for scammers, phishers, and fraudsters. But in 2023 that paranoia shifted into overdrive. Why? The answer was splashed over headlines everywhere: generative AI was now giving attackers tools to quickly create deep fakes so realistic they can even fool CFOs and cybersecurity professionals.

As a result, starting in 2023 there was a 1,265% increase in phishing emails and a 967% rise in credential phishing—all attributed to AI-generated content that crafts more convincing and personalized fraudulent messages.[1] Is it any wonder ordinary Internet users feel helpless?

Why will the problem be even worse with AI agents?

Hundreds of billions are being invested to reach the AI promised land: AI agents who can automate every task from ordering coffee to booking trips—all by talking to other AI agents. Now the trust issue is *compounded*. How can you trust the output of an AI agent if you can't even be sure who it represents or what data it was trained on? Even worse: how will others trust *your* AI agent? *How will you prove YOU are not a scammer?*

How does this lack of trust harm businesses?

- **Potential customer loss**: 84% of customers would consider switching to a competitor if a company fails to manage digital trust effectively, with 57% making it a high priority..[2] And 47% of consumers will leave if they lose trust in digital security measures.[3]
- **Economic loss**: A World Economic Forum report from Accenture estimated that a growing lack of trust cost U.S. organizations $756 billion in 2017, underscoring the substantial economic impact of eroding digital trust.[4]
- **Reputation loss:** In September 2023, a Deutsche Bank subsidiary was fined $25m for breaches of trust in their anti-money laundering processes and sustainability claims.[5]
- **Loss of shareholder value**: In January 2023, Forbes reported that "trusted companies outperform their peers by up to 400%, directly correlating with the bottom line."[6]

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[1] https://www.investopedia.com/these-are-cyber-chiefs-biggest-fears-about-ai-8717374

[2] https://www.digicert.com/news/digicert-survey-highlights-importance-of-digital-trust-in-business-outcomes-customer-loyalty

[3] https://www.csoonline.com/article/574083/almost-half-of-customers-have-left-a-vendor-due-to-poor-digital-trust-report.html

[4] https://www.weforum.org/stories/2022/12/losing-digital-trust-will-harm-technological-innovation/

[5] https://www.sec.gov/newsroom/press-releases/2023-194.

[6] https://www.forbes.com/sites/bryanrobinson/2023/01/08/trusted-companies-outperform-their-peers-by-400-new-study-shows/

The Solution

How trust relationships work in everyday life

People instinctively know how to create new trust relationships—we do it constantly in our daily lives. If you meet someone new and want to know if you can trust them, you find out who they know in your personal network. Then you ask those people. It is the classic "friend-of-a-friend" pattern. It is also how "checking references" works in employment. *It bridges trust.*

This process can work online too—but only within your own circle of family, friends, colleagues and acquaintances. When you try to scale it up to the 5+ billion people on the Internet today…

…it quickly breaks down. No one has 5 billion friends-of-friends.

How did credit cards solve the problem?

In the early days, the credit card industry faced the same problem. Each bank issued its own credit card that only worked within its own "ecosystem" of merchants signed up with that bank. No matter how large the bank, their ecosystem could only cover part of the market. That limited the value of credit cards for everyone—consumers, merchants, and banks.

That barrier was finally overcome with *credit card networks*. Visa and Mastercard have become two of the largest payment networks—and best known brands—in the world. They solved the business, governance, and technical hurdles that prevented a credit card issued by any bank from being accepted by any merchant. Now a credit card was *everywhere you wanted to be*.

Ayra is a network for accepting all kinds of digital credentials

Now that digital wallets are arriving en masse—not just on Apple, Google, and Samsung smartphones, but in national-scale digital wallet projects happening in jurisdictions like the European Union, Bhutan, British Columbia, and Finland—the digital credential industry faces exactly the same problem. How can digital credentials issued in one digital trust ecosystem—a country, an industry, a university, a city, a social network—be accepted in another?

We need an acceptance network that works like the credit card networks but with several crucial differences:

- **It is decentralized**—not run by a single large company, but collaboratively by the participating ecosystems.
- **It is open standard**—like the Internet, it can support any credential from any ecosystem that follows the open standards.
- **It is nonprofit**—sustained by all stakeholders without competing with any of them.

That is the charter of the Ayra Association and the Ayra Trust Network.

Trust Clusters

Arya is focused on establishing the first set of **trust clusters** for trusted data exchange**. Trust clusters are the basis for business value in the Ayra Network.** They can be formed by any group of companies or ecosystems who need to exchange cryptographically verifiable data.

The initial trust clusters that Ayra members are forming fall into two categories:

1. **Industry-led clusters** are driven by companies who have an intractable digital trust pain point in their industry. They recognize it will require co-opetition and collaboration to develop the components necessary to solve it: credential definitions, governance policies (issuance, verification, revocation, monetization, liability, etc.), and trust registr(ies). The Ayra Association provides a neutral safe forum to do that work.

2. **Ayra-led clusters** are focused on a small set of credentials explicitly designed to be issued and accepted across the vast majority of Ayra ecosystems. These **Ayra Network Credentials** address basic requirements that are nearly universal for establishing trust relationships between people and organizations everywhere.[7]

Industry-Led Clusters

Financial Services

Trust is the bedrock of financial services. But it is not easy to maintain that trust as the industry navigates rapid technological change and major regulatory challenges, including financial crimes compliance and open banking.

This creates a major opportunity for financial institutions, fintechs, and technology leaders to develop clusters around KYC passporting, AI-driven compliance reporting, just-in-time insurance, and other innovations grounded in cryptographically verifiable trust relationships.

[7] See The Special Network Effects of Ayra Network Credentials for more details.

Workforce Credentials

Workforces are the engine house of every company. Every industry that needs skills verification, professional certification, or other worker compliance requirements shares the pain of high costs and inefficiencies due to fragmented, manual, error-prone verification systems that hinder speed, scalability and trust.

The National Health Service (NHS) Digital Staff Passport in the U.K. was one of the first major deployments of workforce credentials that saved thousands of hours for doctors and nurses who had to move rapidly between hospitals to deal with the COVID emergency. Besides healthcare, other target sectors for digital workforce credentials include construction, manufacturing, technology and IT, transportation, and financial services.

AI Agents

While the Content Authenticity Initiative is focused on using special content credentials to prove the provenance of digital content, the AI industry has the opposite problem: how do AI agents prove their own provenance—and that of their training models?

With Ayra, the answer is straightforward: **AI agent birth certificates**. This is not an entirely new idea—birth certificates for IoT devices was proposed in 2020 by Steve Clark of WISekey. But that was using traditional X.509 digital certificates. With the Ayra network, AI agents can have persistent verifiable identifiers and carry verifiable credentials of their bona fides that can be issued and verified across any number of participating ecosystems.

Supply Chain & Sustainability

EU digital product passports (DPPs) are an example of increasing regulatory requirements to improve corporate accountability, transparency, sustainability, and circular economy practices. Key industries affected include textiles and fashion, electronics and ICT equipment, IoT devices, batteries and vehicles, construction materials, and mining and energy.

Ayra-Led Clusters

Organization ID (“Org ID”)

In decentralized digital identity infrastructure, every organization can have its own cryptographically verifiable identifier and serve as its own root of trust. But this makes it *essential* to be able to verify the identity of the organization in control.

This is the job the Global Legal Entity Identifier Foundation (GLEIF) undertook with its vLEI (verifiable Legal Entity Identifier). The **Org ID Project** will build on that foundation with the goal of enabling every legal entity in the world to have an Org ID.

First Person Credentials

The ability of generative AI to defeat any CAPTCHA ever invented has triggered demand for a strong, durable solution to proof of personhood. A major new 2024 paper called Personhood Credentials posited the solution could be a carefully designed family of verifiable credentials.

The **First Person Project** will do just that by designing a personhood credential backed by a set of *verifiable relationship credentials* (VRCs). VRCs can be issued to people by any qualified business or community. However, by leveraging Ayra's decentralized network-of-networks model, VRCs can also be issued *person-to-person*. This results not only in a highly privacy-preserving First Person credential, but in each of us having our own *personal relationship graphs* (PRGs) that we control rather than a third-party social network. PRGs are a powerful new tool that enables everyone to control when and where they want to share their personal social capital.

Connect with Us

The Ayra Trust Network begins with you. Our mission is to help you solve your business cases. That is how we all build towards a more secure and trusted digital world.

If you're a first-mover looking to collaborate with like-minded leaders and build strategic partnerships, we invite you to connect with us today and start building your trust cluster.

Why join now?

- **Collaborate:** Work alongside visionary leaders and organizations to develop trust clusters that solve real-world business problems.
- **Lead:** Drive innovation in your industry and demonstrate your commitment to your stakeholders to restore trust online.
- **Influence:** Help shape the frameworks and infrastructure that will redefine digital trust.

Reach out to us at Join | Ayra or email us at membership@ayra.forum. Let us know the business problem you want to solve with your trust cluster and Ayra membership.

Further Reading

The following papers—and new releases—are available on the Ayra white paper page:

The Ecosystem of Ecosystems Model for Decentralized Digital Trust Infrastructure (19 pages): ➤ Interoperability challenges of digital trust ecosystems; ➤ Why the Ayra Trust Network follows a heterarchical "ecosystem of ecosystems" model; ➤ How this differs from the hierarchical model of DNS; ➤ The special role of Ayra trust clusters.

The Special Network Effects of Ayra Network Credentials (21 pages): ➤ The seven design principles for Ayra network credentials; ➤ The special roles of the First Person and Org ID credentials, ➤ Why Ayra network credentials have five compounding network effects.

Ayra Technical White Paper (50 pages): ➤ Core technical architecture of the Ayra Trust Network; ➤ The ToIP Trust Registry Query Protocol (TRQP); ➤ The Ayra Conformance Test Suite (CTS); ➤ The Ayra Type Catalogue; ➤ The Ayra Technical Working Group.