

Megatrends reshaping digital identity: security, agentic AI and wallet

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The mission and objectives of the Digital Identity & Wallet Observatory

MISSION

Develop and share **knowledge** on the potential of digital identity and wallet-based systems and contribute to the development of the **market** in Italy and Europe, generating opportunities for **networking** among the main players active on the topic

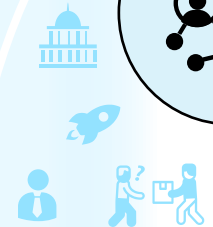
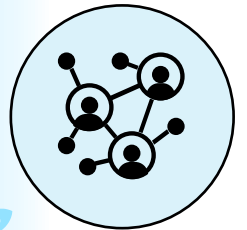
RESEARCH

Develop **robust empirical evidence** to help actors understand the opportunities offered by digital identity systems



NETWORKING

Create a qualified and independent table where **pre-competitive discussions** between Italian and international players can be fostered



COMMUNICATION

Create **culture** and contribute to the **dissemination of knowledge** on digital identity issues through high-impact media opportunities



CONTINUOUS UPDATING

Become a **point of reference** for stakeholders who want to stay constantly updated on digital identity issues



The research framework for 2026 edition

INTERNATIONAL CONTEXT



National digital identity systems and wallets



BigTech and international projects



EUDI Wallet



Economic sustainability



Digital identity systems in Italy

FOCUS ON ITALY

TECHNOLOGICAL PARADIGMS AND INNOVATION GUIDELINES



Biometrics and security



Digital wallet



Decentralized identity



Megatrends and future scenarios

ADOPTION AND USE



End user



Relying party (companies and PA)



Sustainability (users and companies)

ENHANCEMENT



Attributes



Electronic signatures

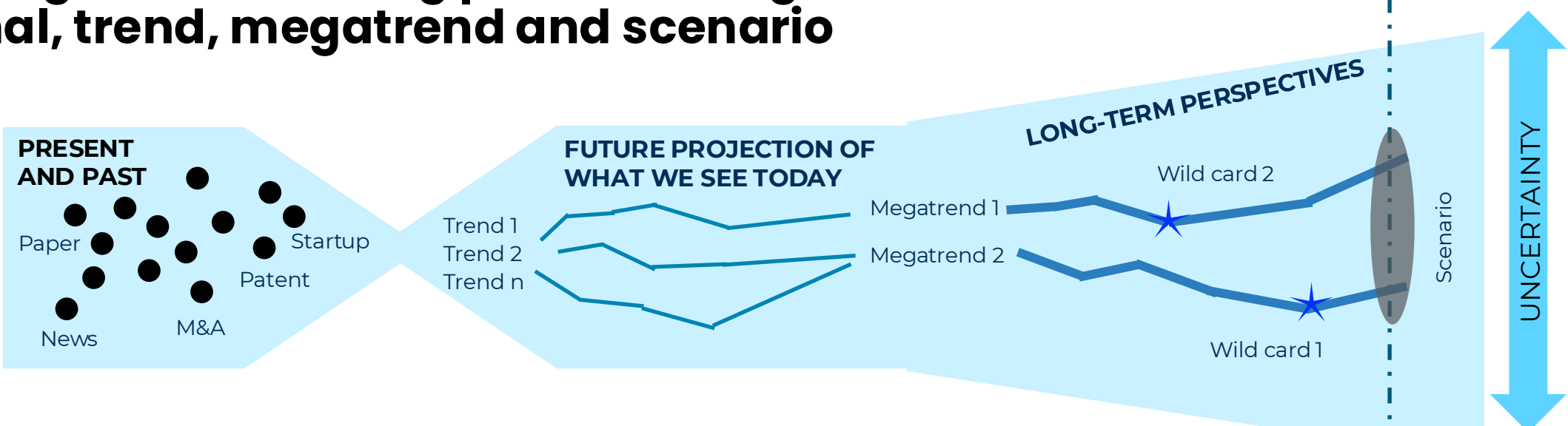


Enabled services



Business Wallet

The digital envisioning process of Digital Innovation Observatories: Signal, trend, megatrend and scenario



SIGNAL

A signal is a **specific and well-defined element** that serves as an **indication of potential future changes**, with the possibility of evolving into a consolidated trend. A signal can be **a new product, a new market strategy, a new policy, an event, a local trend, or an organization/startup**. It can also represent a problem or a newly revealed state of affairs. **Multiple signals** can be aggregated to build **weak or strong trends**.

TREND

A **strong trend** is based on **what is visible and foreseeable today**, explained by **multiple signals**, and is expected to shape the future, whether near or distant. It can pertain to various domains (technological, business, political-systemic, and social). If still in an **early or "immature" stage**, it is considered a **weak trend**—a signal of change that is not yet fully visible but has the potential to evolve into an established trend in the future.

MEGATREND

A **long-term, wide-reaching trend** formed by the convergence of **multiple trends**, influencing various sectors and areas of society. Megatrends drive **profound and lasting changes** in user habits, business and government strategies, and technologies on a global scale.

SCENARIO

An **imaginative representation** of a possible **future state** that could emerge under specific circumstances and within a defined time horizon. Scenarios are used to explore the consequences of present decisions/actions, identify future challenges and opportunities, and plan strategies. Each scenario is built upon **the development of wild cards (events)** and various megatrends, which may materialize to varying degrees—some fully realized, others only partially.

Megatrends reshaping the future digital identity market

Envisioning methodology on Digital Identity

INTELLIGENCE

Scouting and analysis of foresight reports

11 foresight reports on digital identity developed by companies and organizations specialized in these methodologies at an international level

Analysis of weak signals

Collection and analysis by keyword on:

- **Over 1.700 startups** (since 2021)
- **500 patents** (since 2019)
- **Over 1.000 news** (since 2019)
- **Over 100 academic papers** (since 2019)

CO-CREATION

Identifying trends and megatrends

- **83** detailed **trends** developed by the Research team
- **12** connected **megatrends**

Discussion with experts

Validation of identified trends and megatrends with digital identity experts both internal and external to the Research team

INTEGRATION

Scenario narration

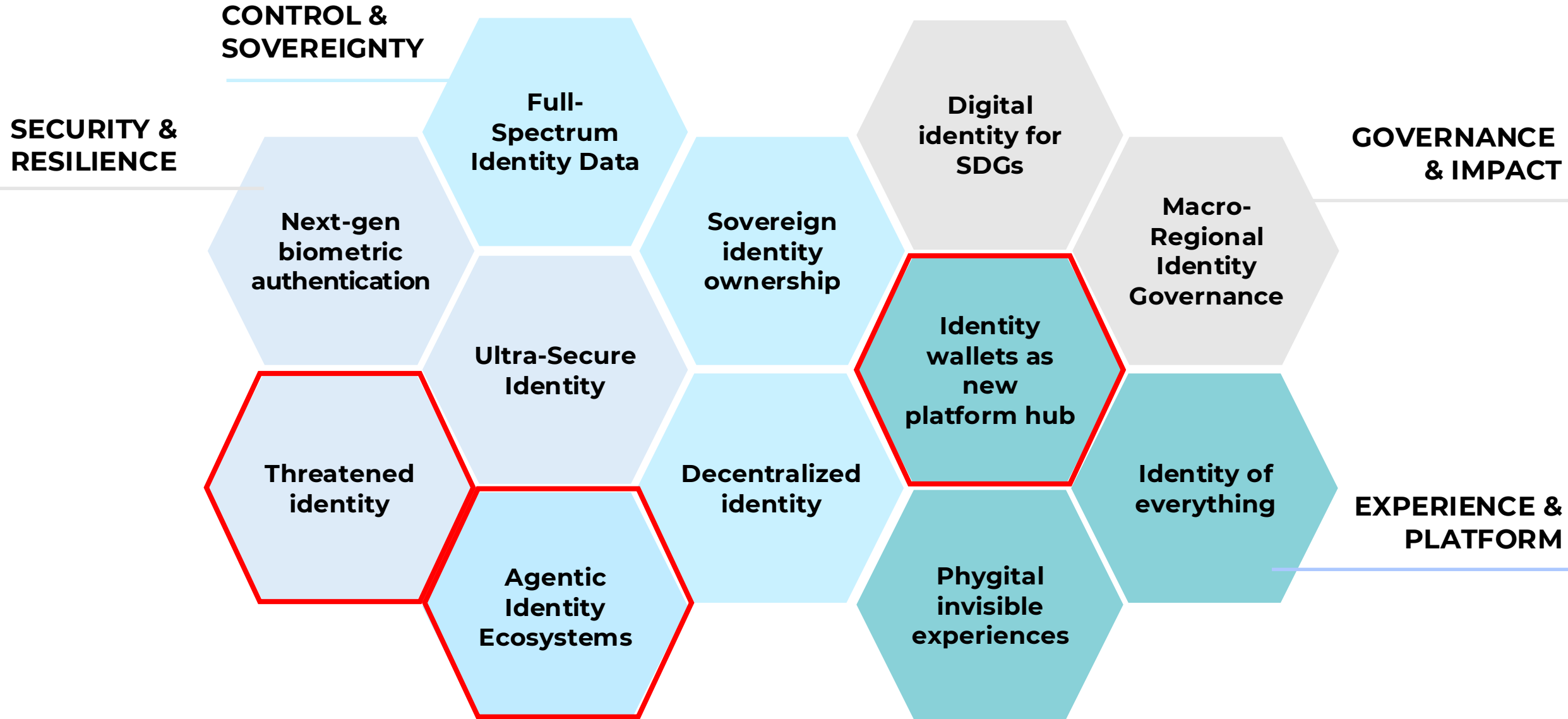
Qualification of possible future digital identity scenarios, identification of the **actors** involved and the **roadmap** to make them possible

Discussion with experts

Validation of identified trends and megatrends with digital identity experts both internal and external to the Research team



Megatrends reshaping the future digital identity market



Identity wallets as new platform hub

Identity wallets as new platform hub

Identity wallets evolve from simple credential containers into **comprehensive service hubs and orchestration platforms**. They become central interfaces where users manage credentials, authorizations, payments, consents, and interactions across digital ecosystems—seamlessly bridging government services, enterprise applications, and daily life. Through open architectures and APIs, wallets enable interoperability, modularity, and extensibility, transforming into **platforms where third-party services integrate, new user-centric business models emerge, and users regain control over their digital lives**.

EXAMPLES OF TRENDS

Wallet-as-a-service

Wallet-associated credential management services

Digital identity wallet interoperability efforts

Wallet-as-a-platform

Birth of aggregated actor ecosystems around shared standards

Short term Medium term Long term

SIGNALS FROM INTELLIGENCE

FORBES DIGITAL ASSETS
Google AI Stablecoin Payments: A First Protocol For Autonomous Agents
By **Sandy Carter**, Contributor. © Sandy Carter, COO at Unstoppable, Top 10...
Published Sep 2...

Amadeus and Lufthansa pilot EU Digital Identity Wallet for seamless travel
By **André Orban** · 16 September 2025

The European Digital Identity Framework

The **European Digital Identity Regulation (Regulation (EU) No 910/2014)** as amended by **Regulation (EU) 2024/1183** is a crucial component in the establishment of a secure and interoperable digital identity ecosystem across the Union. With the European Digital Identity Wallets ('wallets') being the cornerstone of the framework, it aims at facilitating access to services across Member States, for natural and legal persons, while ensuring the protection of personal data and privacy through secure and privacy-preserving digital identification across the EU.

It states that everyone in the EU has the *"right to a digital identity that is under their sole control and that enables them to exercise their rights in the digital environment and to participate in the digital economy."* In addition, the Regulation sets out the legal framework for (qualified) trust service providers and the services they provide.

digital Identity Wallet launch in 2026 that d biometric profiles.

What is a «*digital identity wallet*»

The key characteristics of a *digital identity wallet*



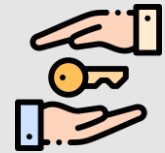
STORE DOCUMENTS

both digital identity and **other** documents



ENABLE TRANSACTIONS

in both **physical** and **digital** worlds



ALLOW AUTONOMOUS MANAGEMENT

the user has the freedom to request, delete and **share data**

FRAMEWORK DEVELOPED BY THE
DIGITAL IDENTITY & WALLET OBSERVATORY

The census of digital identity and wallet solutions: methodology

Sources

- Secondary source analysis
- News monitoring
- Institutional databases
- Monitoring of European Union member countries, G20 and the 20 nations with the largest populations.



306 CASES*
REGISTERED

Divided into:

- 105 digital identity systems;
- 201 digital identity wallets.

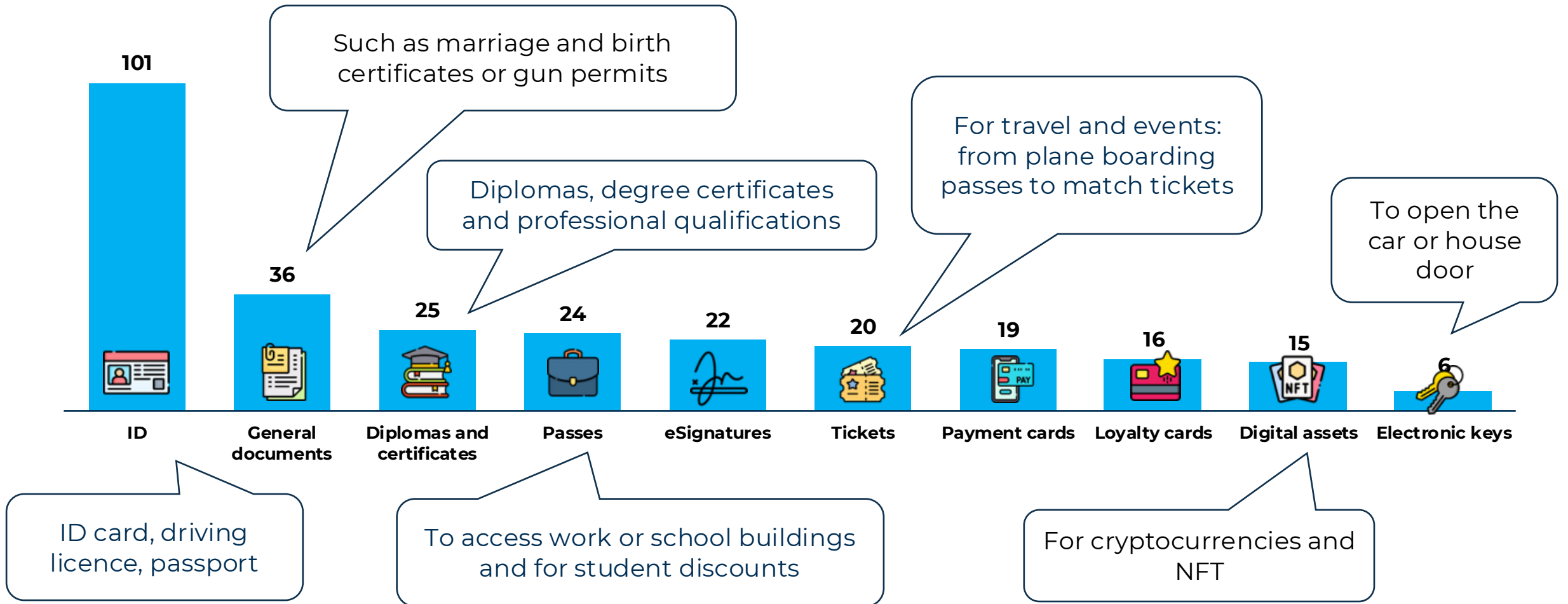
*Only non-terminated cases are considered

Collected data

- General information
- Geographic area
- Identified entity
- Architecture and Secure Element
- Usage and target Business model
- Trust services
- Metrics (Adoption and usage)
- Modes of access and usage
- Level of Assurance (LOA)

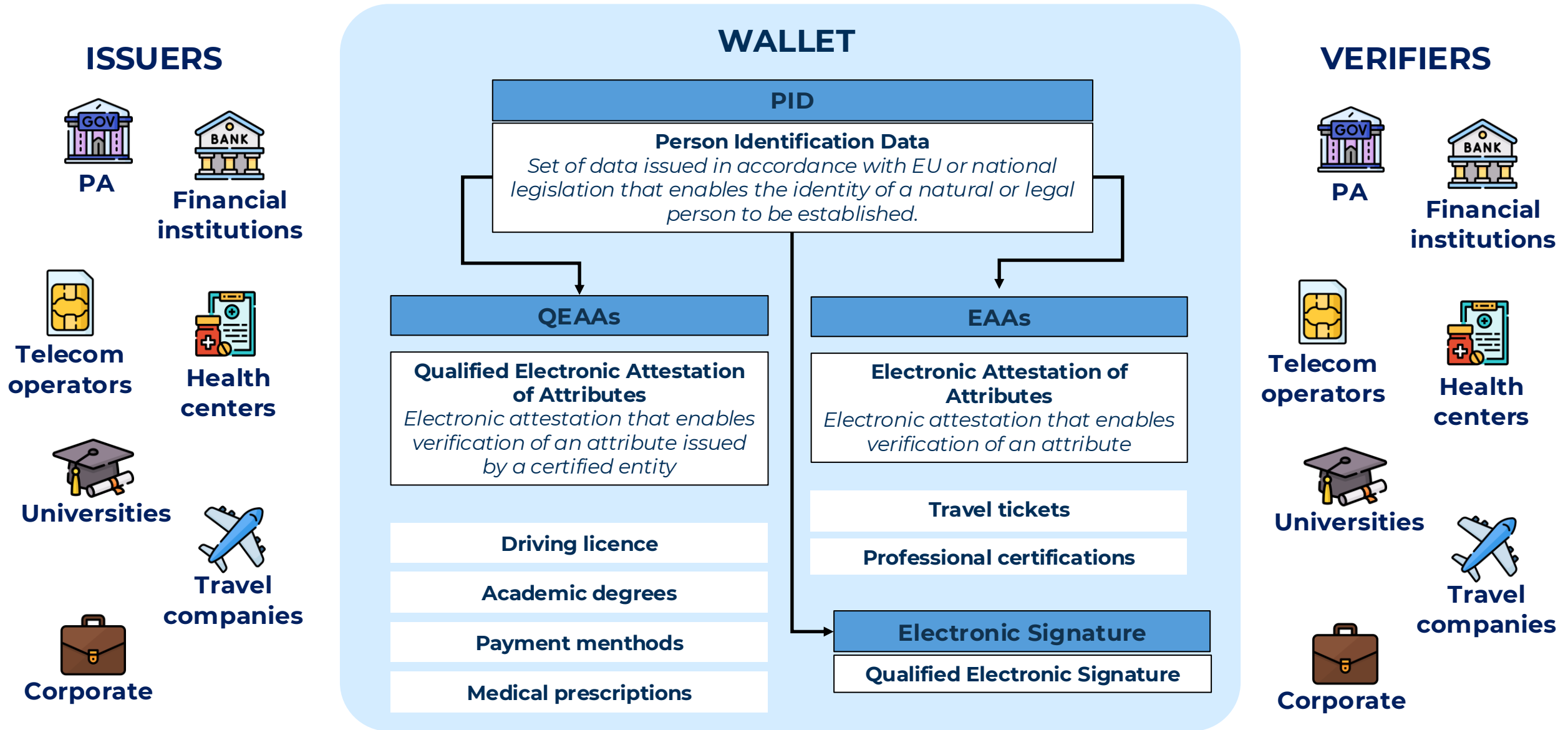
Different attributes contained within the wallet

The wallet model is **not limited to identity**: a wallet can contain multiple typologies of attributes



SAMPLE: 151 DIGITAL IDENTITY WALLETS

Inside the EUDI Wallet: PID and attribute attestations



“Identity wallets as new platform hub”: possible impacts on education



Wallets used for **internationally valid academic badges and credentials**, simplifying cross-border mobility



Reduced administrative costs and processing times through automated credential issuance and verification



Wallet as a tool for **automated disclosure** of AI agent delegations and usage in academic research



Positive impact



Negative impact

ABOUT DC4EU

DC4EU will contribute to a new paradigm in identity, data, and the once-only principle to enable the citizens' perspective

IT-Wallet si allarga: nel borsellino digitale in arrivo 200 documenti

L'aggiornamento potenzia la gestione digitale dei documenti personali, facilitando l'accesso e l'uso dei servizi pubblici attraverso un'unica piattaforma

di Antonio Larizza
2 aprile 2026

Dopo averci riempito le tasche per 98 anni, l'Istituto poligrafico e zecca dello Stato (Ipzs) è pronto a svuotarcele. Il progetto IT-Wallet – il portafoglio digitale che l'Istituto sviluppa e gestisce all'interno dell'app IO – è pronto per un salto evolutivo. Lanciato sperimentalmente nel 2024 per dare agli italiani un'identità digitale garantita e sicura, da dicembre è disponibile per tutti gli utenti dell'app. Poche settimane fa il servizio ha superato la soglia di 10 milioni di attivazioni, con 17,3 milioni di documenti caricati.

Dieci milioni di italiani hanno quindi già tolto, per sempre, dalle loro tasche, almeno uno dei tre documenti che oggi si possono caricare sull'app IO: la patente di guida, il documento di identità e il documento di nascita. Per usarli attraverso

Digital Credentials For Europe

Europe faces unprecedented changes, in which digital transition are fundamental elements for the future of Europe. Digital credentials are undoubtedly one of the pillars of the European Union, with their role in ensuring identity and trust in the digital world. The revision of this competence beyond identity, encompassing the electronic documents, is a key challenge.

Establishing the technical means and legal frameworks in sectoral areas will be a key challenge.

In this sense, DC4EU will focus on the digital field, focusing on the issuance and verification of digital credentials in the Social Security field by eIDAS and the European Health Insurance Card (EHIC).

Austria Rolls Out Nationwide Digital Student ID Through eAusweise App

May 1, 2026

Austria has launched a nationwide digital student ID through the eAusweise app, giving students access to a smartphone-based credential linked to the country's ID Austria digital identity system.

The digital student ID, delivered by younix Identity AG, a subsidiary of the Austrian State Printing House (Oesterreichische Staatsdruckerei), allows students to carry and present their identification digitally via the eAusweise mobile application. The credential is linked to each student's verified ID Austria profile, providing a high level of identity assurance.

The eAusweise app already hosts other government credentials in Austria, and the addition of the student ID extends the platform's utility to the education sector. Students can use the digital credential in scenarios where student identification is required, such as accessing campus facilities, claiming discounts, or verifying enrollment status.

Threatened identity

Threatened identity

Digital identity confronts an **escalating and complex threat landscape**, where cyberattacks, deepfake technologies, AI-powered impersonation, and synthetic identity fraud undermine authentication and trust at individual and systemic levels. In the era of hybrid warfare, identity infrastructures become high-value targets in geopolitical conflicts—used to destabilize critical services, disrupt economies, and manipulate populations. Cybercriminals and hostile states exploit **convincing fake biometrics, voice clones, and data breaches** to conduct targeted fraud, large-scale impersonation, and strategic subversion. Attacks aim not merely to steal data, but to **impersonate individuals, forge authorizations, and corrupt trust** at scale.

EXAMPLES OF TRENDS

Digital identity protection against cyber attacks

Growing need to protect wearable recognition devices

Resolving bias in biometric systems

Growing AI integration restrictions in identity

Quantum-resistant identity systems

■ Short term ■ Medium term ■ Long term

SIGNALS FROM INTELLIGENCE

Idea > Deepfakes and the crisis of knowing

Cybercriminals Attacked National Social Security Fund Of Morocco - Millions Of Digital Identities At Risk Of Data Breach

CYBER THREAT INTELLIGENCE

9 APR 2025
DATA BREACH, DATA LEAK, CONSUMERS, IDENTITY THEFT, PII, PRIVACY

TECH AI impacted US elections more than UK, French, and EU elections, reports new research

Disinformation generated through artificial intelligence or deepfakes did not significantly impact UK, French or European election results. The same cannot be convincingly said of the United States.

Xhoi Zajmi □ Euractiv's Public Projects

European Consortium Launches PQC4eMRTD Project to Enhance Security of Electronic Passports in the Quantum Era

Synthetic data for biometrics training: Addressing bias without privacy risks

“Threatened identity”: possible impacts on education



Data breaches and identity theft targeting **academic portals and institutional online services**



Deepfakes and AI-powered tools allow impersonation of students for **exams and access to resources**



Synthetic identities used to **fraudulently enroll to obtain economic benefits**



Positive impact



Negative impact

Time-Domain Voice Identity Morphing (TD-VIM): A Signal-Level Approach to Morphing Attacks on Speaker Verification Systems

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Public Notification – Western Sydney University cyber incident

28 August 2025

Abstract

In biometric systems, it is a common practice to allow multiple identities. Nevertheless, recent studies have demonstrated the effectiveness of matching multiple identities. These morph attacks on biometric systems can be used to impersonate legitimate users and gain access to sensitive information.

This public notification is to inform Western Sydney University's community that previously stolen personal information was unlawfully published on the open web and dark web, and to outline the steps people can take to protect themselves.

The University's enhanced cyber capabilities have detected the unlawful publication of personal information that was stolen through two previous cyber incidents:

- the Student Management System and other storage systems incident, notified on [31 October 2024](#), corrected on [11 February 2025](#); and
- the single sign-on (SSO) systems incident, announced on [10](#) and [15 April 2025](#).

This public notification is for the attention of former and current students and staff of the University, The College, The International College, and staff of Early Childhood Education and Rectifying this

Ghost Student Fraud Is a Digital Identity Failure

By [David Kertai](#) | March 2, 2026

Ghost student scams—a type of fraud where criminals enroll in colleges with stolen or fabricated identities to claim financial aid—are surging across U.S. colleges, draining taxpayer dollars and disrupting real students' access to classes. These schemes use AI-generated applications and exploit weak online identity checks, overwhelming higher education institutions, especially community colleges, and targeting financial aid systems at a massive scale. On top of the Department of Education's (ED) recent measures to strengthen ID checks, the federal government should establish and promote the use of secure, interoperable digital IDs. This durable, long-term solution would allow students to prove who they are through secure credentials, close the gaps exploited by ghost student scams, and ensure financial aid reaches real people rather than scammers.

ED reports that it dispersed \$150 million in aid in 2025 to ineligible students—including \$30 million sent to people who were dead—and California community colleges identified nearly a third of 2024 applicants as fraudulent. Delaware County Community College uncovered more than 500 fake students in 2023.

Agentic Identity Ecosystems

Agentic Identity Ecosystems

Digital identity evolves from a static set of credentials into **an integrated network of autonomous identity agents** empowered to act on behalf of the individual. By anchoring trust in the owner's explicit delegation, these systems ensure a secure, persistent binding between the human principal and their autonomous representatives, allowing for seamless interaction in hyper-automated ecosystems. This framework **maintains individual sovereignty while enabling agents to navigate complex digital and physical environments**, proactively defending privacy and executing intent without constant human intervention.

EXAMPLES OF TRENDS

Agent-to-Agent (A2A) Trust Frameworks

Intelligent objects as an extension of personal identity

Delegated Authority Protocols (DAP)

Smart device M2M interaction for fluid recognition

Short term Medium term Long term

SIGNALS FROM INTELLIGENCE

The collage features several key announcements:

- Google Cloud:** "Powering AI commerce with the new Agent Payments Protocol (AP2)" dated September 16, 2025.
- Microsoft:** "Microsoft Entra Agent ID" with the tagline "ACCESSO SICURO PER GLI AGENTI IA".
- OpenID:** "Identity Management for Agentic AI" with the tagline "The new frontier of authorization, authentication, and security for an AI agent world".

“Agentic Identity Ecosystems”: possible impacts on education



AI tools and agents being used for creating and implementing **personalized teaching paths**



AI agents supporting faculty in **research and teaching activities, demanding transparency and accountability**



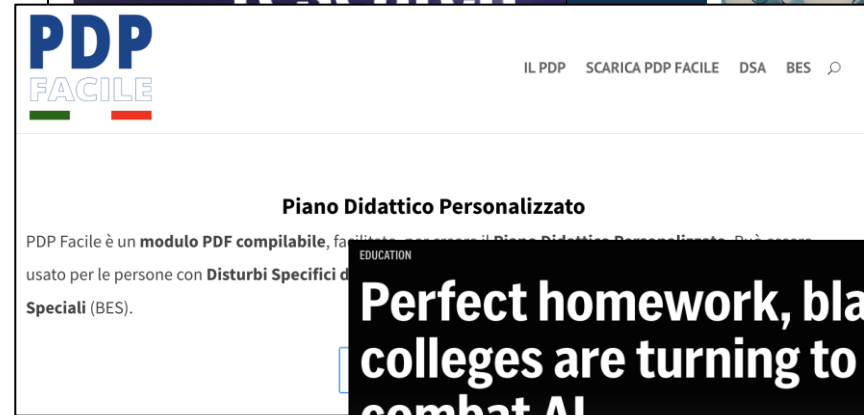
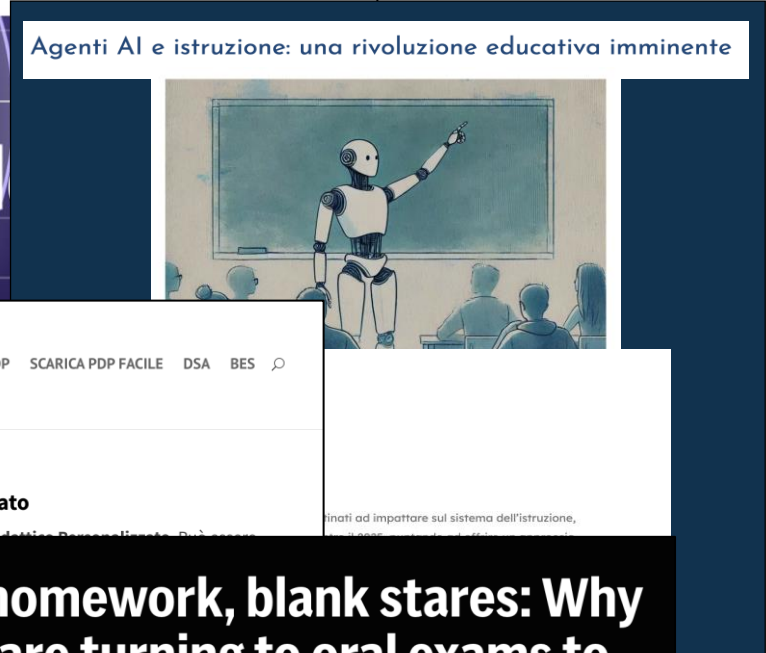
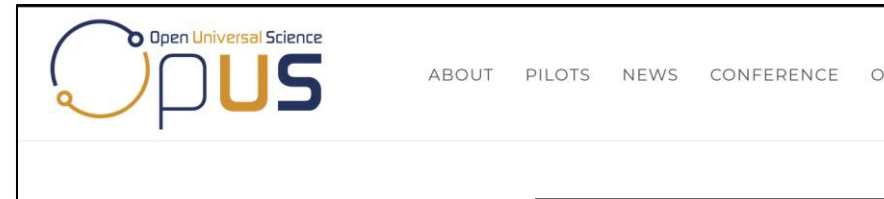
AI agents being used to partially or fully complete **assignments and exams on behalf of students**



Positive impact



Negative impact



Perfect homework, blank stares: Why colleges are turning to oral exams to combat AI

BY [JOCELYN GECKER](#)

Updated 9:09 PM GMT+2, April 22, 2026

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83

The assignment involves no laptop, no chatbot and no technology of any kind. In fact, there's no pen or paper, either.

The advent of artificial intelligence (AI) in academic research, presenting both opportunities for scholarly inquiry. While AI technology automation, they also introduce com

Transparency in AI research refers to the disclosure of AI implementations, and the disclosure

Key messages



Digital identity is at an inflection point, with several different **megatrends** across security, sovereignty, governance and experience fundamentally **reshaping how individuals, institutions, and systems interact in the digital world**



Identity wallets are emerging as the central hub for academic life, positioning **universities as trusted credential issuers and empowering students and faculty to manage their academic identity** with unprecedented ease



An escalating threat landscape poses **direct and concrete risks to the security of existing academic and education systems**, challenging how universities verify who their students, staff, and partners really are and how they can access services



The proliferation of AI agents in education demands robust identity and delegation frameworks to **preserve transparency while unlocking new opportunities for administrative automation and truly personalized learning experiences**

The Digital Identity & Wallet Observatory reports

From digital identity to digital identity wallets: international landscape and evolution strategies **FREE**

Free Content Report Digital Identity & Wallet Digital Identity March 2026 30 pages PDF

What you will learn

The report presents the results of the analysis of a census of international digital identity wallet projects, classified according to key variables. The report offers an up-to-date international landscape, analysing solutions according to their business model and the variety of technological and regulatory strategies. The variety of technological and regulatory strategies and market operators is also analyzed.

The Evolution of the Digital Identity Landscape in 2024 **FREE**

Free Content Report Digital Identity & Wallet March 2025 43 pages PDF

What you will learn

The report presents the ongoing evolution of the digital identity market in 2024, describing two processes: the consolidation of existing digital identity systems and the transition to the wallet model, in response to market dynamics and the eIDAS2 regulatory review. In detail, the report illustrates how these two processes impact the market globally, with a focus on what is happening in Europe. It also describes the point of views of companies adopting digital identity solutions, and how their business models are changing in response to the transition to the wallet. Finally, the report describes how technological innovation is reshaping the digital identity market, enabling new processes and use cases.

The new wallet paradigm for digital identity: characteristics and business models **FREE**

Free Content Report Digital Identity & Wallet April 2024 32 pages PDF

What you will learn

The report resents how the digital identity scenario is rapidly transforming driven by the wallet model. The paradigm, which originally originated in the finance world as a means of digitizing payment cards, has been introduced in the digital identity arena as well. The report outlines the characteristics of this new paradigm and presents an analysis of the current market landscape, identifying distinct value propositions and delivery models.

Digital identity wallets: features and diffusion **FREE**

Free Content Report Digital Identity & Wallet March 2025 31 pages PDF

What you will learn

The report presents the results of a survey of international digital identity wallet projects, classifying the projects based on their features and diffusion. The report also presents the results of subject tests on some wallets are illustrated, with a focus on the user experience, access and presentation of credentials. Furthermore, the report describes the initiatives of governments of European countries to develop the national digital identity wallets.

Evolution of the digital identity landscape in 2025 **FREE**

Free Content Report Digital Identity & Wallet Digital Identity January 2026 34 pages PDF

What you will learn

2025 has been a year of preparation and groundwork for building the future of digital identity. During this period, users and companies have awaited the official launch of the first Digital Identity Wallets, tested by European consortia in what stands as a significant example of collaboration on a strategic community infrastructure. This report explores in detail how the transition toward the wallet model is unfolding globally. It also examines the perspectives of users and companies, identifying actionable lines of development to guide the ongoing evolution of digital identity ecosystems.



Scan the **QR Code** or go to the **link** to download the **research reports** published by the Digital Identity & Wallet Observatory
[\(https://eng.osservatori.net/digital-identity-eng/\)](https://eng.osservatori.net/digital-identity-eng/)

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