



Digital
Identity
Wallets:

A Future
Vision

Jon Shamah
Global Trust Foundation
September 25 2024

Why is Digital Identity Important ?

Digital Identities are the single most important relationships between Government and Citizen

- They provide an **indisputable relationship** which establishes and maintains the obligations of the Citizen to its Government, and importantly also the Government to its Citizens.
- The absolute identification of Citizens also strengthens their ability to transact *between each other* either directly or remotely, but always safely and quickly, thus improving and opening up trade globally.

Why are Digital Wallets important ?

Digital Identity Wallets are the next phase of this relationship:

- Using their Digital Identity Wallets, Citizens will be able to transact privately and securely without always referencing central government services.
- They provide greater flexibility for the citizen or business to safely demonstrate permissions and share data assets without fear of compromise.
- Digital Identity Wallets have the functionality of both Identity Cards and Digital eID and can equally be used safely either remotely or in proximity.

The Current Focus for the EU Digital Identity Wallet

- Large Scale Pilots are currently being developed and deployed for a wide range of use-cases.
- They are all based on the broad specifications as outlined by the EU.
- They all concentrate on the use by the citizen or business of third-party credentials, either Government or other qualified/trusted sources such as passports, eIDs, Visas, boarding passes, etc.
 - Following the eIDAS 2.0 Regulation and Implementing Acts.
 - PIDs utilised at LOA3 only.
- **The governance for these transactions are predominantly based on regulation.**

Large Scale Pilots are acting as a small incremental positive step from the current transactions available on-line to citizens, with the added value of the transaction becoming independent of Government or the qualified credential issuers.

A photograph of a modern glass skyscraper with lush green trees in the foreground. The building is a multi-story structure with a grid of windows, reflecting the sky. The trees are dense and vibrant green, partially obscuring the lower part of the building. The sky is blue with some white clouds.

Consider a Future
Extended and Democratised
Digital Identity Wallet....

A photograph of a modern glass skyscraper with a curved facade, partially obscured by lush green trees. The sky is blue with scattered white clouds. A white rectangular box is overlaid on the center of the image, containing black text.

with the Goal to Enhance the Lives of
Every Citizen in the EU

A Future Vision – Prerequisites

Digital Identity Wallets are unlike previous EU initiatives as they have the power to radically transform the day-to-day life of citizens and SMEs, by delivering a historic new era of confident personal and business transactions for everyone.

But fundamental to being able to achieve ground-breaking success, the following aspects must be addressed:

- The current EUDIW functionality must be formally extended, or alternatively use a ‘certified’ Digital Identity Wallet to offer a more **‘flexible contractual governance’** to encompass all the everyday transactions that take place within the EU.
- This provides pre-agreed sets of Terms and Conditions (Rules of the Game) between the Relying Party(s) and the other participants, on a transaction-by-transaction basis, or use-case basis, not only those conditions governed by regulation.

A Future Vision – Prerequisites for Risk Management

- Like in any **other set of trading rules**, these will set agreed levels of assurance, participant validation (like an eID, driving licence or even something less assured such as a transport-pass).
- The trading rules can be automated to ensure multi-party compliance.
- The trading rules will always need to be absolutely clear and intelligible.
- To help the citizen and non-technical SME, template trading rules can be supplied and managed by commercial third parties.

A Future Vision – Making Wallets Easier To Do Things

- **Templates** can provide execution in transactions that ensure that the correct, verified and valid documents are exchanged/revealed, and any monies transferred.
- The more complex the workflow the higher the potential savings and efficiency.
- But like any automated business workflow, it is important to be aware of exactly the credentials and data that are required, and **all parties must have awareness of the terms and conditions of the transaction.** (“The Rules of the Game”) and agree to them potentially using a digital signature.
- The use of workflow templates which can be supplied and managed by commercial third parties.

A Future Vision – Essentials for SMEs

- Make APIs easily available for a range of services including external **Audit trails and accounting**, as well as wallet provider Qualified Archiving for transaction non-repudiation and transparency. APIs will also enable many “**off-wallet**” services that can then interact with wallets to add additional functionality.
- A Digital Identity Wallet desktop or web client, secured with digital signature login for in-office use.
 - **It is unrealistic to expect SMEs to use mobile devices for serious business transactions**

Additional Add-On Services for SMEs [1]

- User Payment interface
- Proof of execution / triggers
- Provider Payment Interface
- Consent management
- Product Wallet
- Personal Storage

Additional Add-On Services for SMEs [2]

- Logs / Audits
- Dispute Interface
- Bourse Capability
- Arbitrage management
- Transaction Rollback
- Resilience

General Additional Prerequisites

Basics

- Common EU PID standard
- Common Language
- Common Ontology / Semantics
- Common Clock / Timer

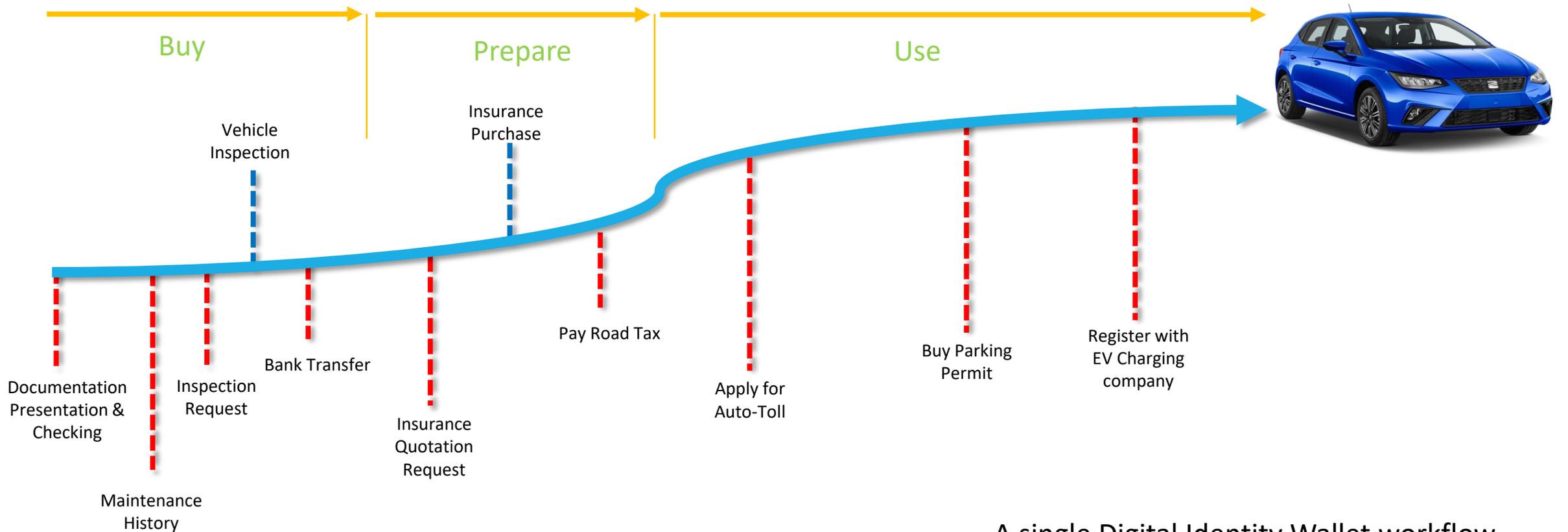
Optional

- AI* Ethics Monitor
- AI* Statement of Clarity / Intent

Simplifying Complex Customer Journeys



Vehicle Ownership Transfer Journey



Citizen Wallet or Car Wallet ?



Ownership Documentation
Maintenance History*
Vehicle Inspection Certificate*
Mandatory Insurance Certificate*
Road Tax Certificate *
Road Toll Token*
Parking Permit*
EV Charging Account*

Privacy Enhanced, Minimum Disclosure Inspection-on-Demand

*Zero Knowledge Proofs

Imagined Complex SME transaction



Imagined Complex SME transaction

- **Company A** contracts **Subcontractor B** to deliver assembled product to **Customer D**, using components it bought from **Supplier C**, and creating a Digital Product Wallet.
- Payment to be made to **Subcontractor B** on delivery and acceptance of product and its Digital Product Wallet, at **Customer D** and their subsequent payment.



Imagined Complex SME transaction

Benefits are:

- **Simpler management control**
 - A single point to keep track of transaction status
 - Digital Product Wallet for compliance, including certifications and references, as part of transaction
- **Reduction in financial risk to all participants**
 - Contract between parties
 - Payments are paid automatically and made when actions have occurred

Imagined Complex SME transaction

Benefits are:

- Arbitrating payments and **triggers**
- **Distributing micropayments** to wallet service providers
- Storing audit logs / proof of deliveries etc
- Providing problem/dispute resolution
- **Managing “Rules of the Game”**

New Digital Identity Wallet Participants

Participants in the 'Expanded Wallet':

- Micropayment Management Provider
- Framework *Business* Supervisory Authority

- Transaction Template Provider
- Workflow Generator Provider

The background of the slide features a close-up, slightly blurred view of Euro currency. Several banknotes are visible, including a 10 Euro note (green) and a 20 Euro note (yellow). Numerous Euro coins are scattered across the scene, including 1 Euro (gold), 2 Euro (gold), and 5 Euro (gold) coins. The European Union flag is also visible on the banknotes. A white rectangular box is centered over the image, containing the title text.

Ecosystem Charging Structure

Ecosystem Charging Structure

- The Relying Party will be the primary source of payment
- The End User may be an optional secondary source of payment
- **The Micropayment Manager Provider (MMP)** will be the central authority for the distribution of monies to the participants.
- The Micropayments will be partially paid utilizing **Zero-Knowledge Proofs** in order to:
 - Maintain audit trail and accounting practices at service providers
 - Preserve privacy and details of transaction
- A “**Trust Framework *Business Supervisory Authority***” would negotiate, determine and distribute fees to each of its TSPs and arbitrate any disputes.



In combination with the Digital Services Act*:

For the first time a common set of rules on intermediaries' obligations and accountability across the single market will open up new opportunities to provide digital services across borders, while ensuring a high level of protection to all users, no matter where they live in the EU.

*Digital Services Act:

https://commission.europa.eu/strategy-and-policy/priorities-2019-2024/europe-fit-digital-age/european-digital-identity_en

A Defining Moment for Europe

Digital Identity Wallets are unlike previous EU initiatives as they have the power to radically transform the day-to-day life of citizens and SMEs, by delivering a historic new era of confident personal and business transactions for everyone.

The EU must drive the initiative forward directly, above and beyond the LSPs, in order to assure the potential for Digital Identity Wallets for our future of true digital transformation for everyone.

As always, awareness must also be a key element in the drive.

A Call To Action

Please contact Global Trust Foundation if you are interested in collaborating in creating a future roadmap vision for Europe and Digital Identity Wallets

Thank you



JON SHAMAH

GLOBAL TRUST FOUNDATION

WWW.GLOBALTRUSTFOUNDATION.ORG