

Leveraging SSI for Secure, Hyper-Personalized and Seamless Travel Experiences

June 16, 2025



Speakers



Bill Carroll, Ph.D.

CEO, Marketing Economics
Retired Professor,
Cornell School of Hotel
Administration



Kim Hamilton Duffy

Executive Director
Decentralized Identity
Foundation



Nick Price

Founder, Netsys Technology
Former CIO, Mandarin
Oriental Hotel Group and
citizenM



Douglas Rice

Managing Director,
Hospitality Technology
Network
Founder & CEO Emeritus,
HTNG



Post-Presentation Link

<https://htwg.identity.foundation>

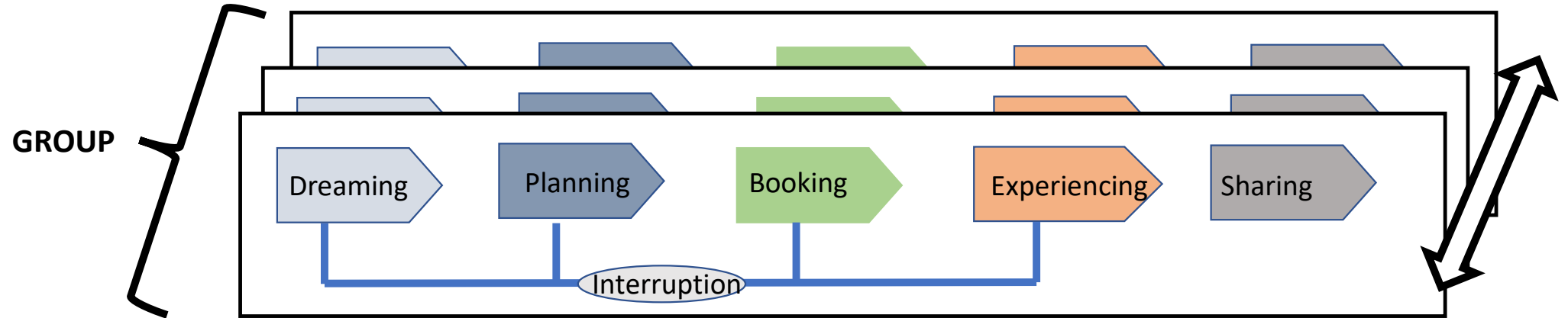
- Today's slide deck
- Documentation
- Contact information
- Sign up for newsletter
- How to get involved



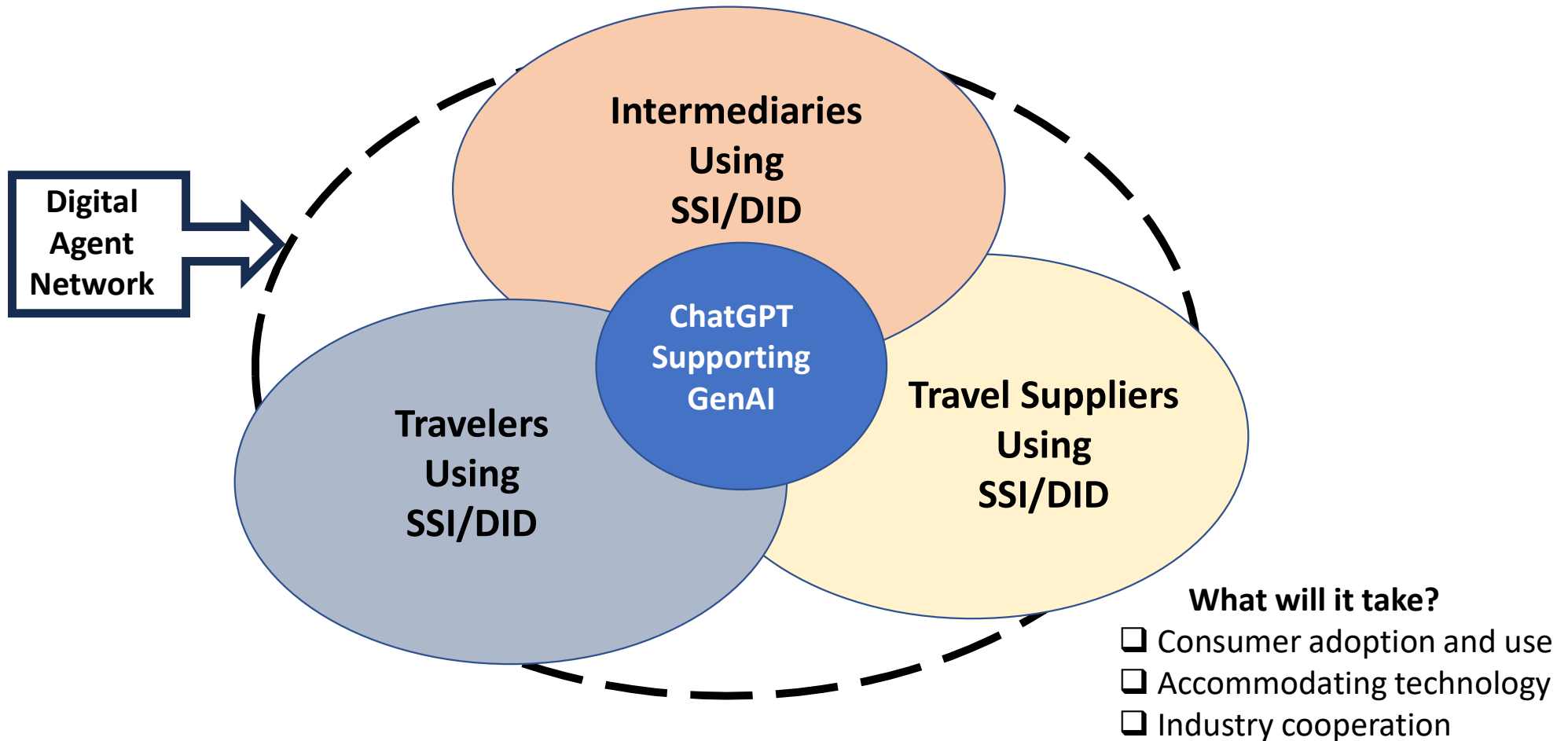
Consumers Control Content via Profiles



Travel Experience Process



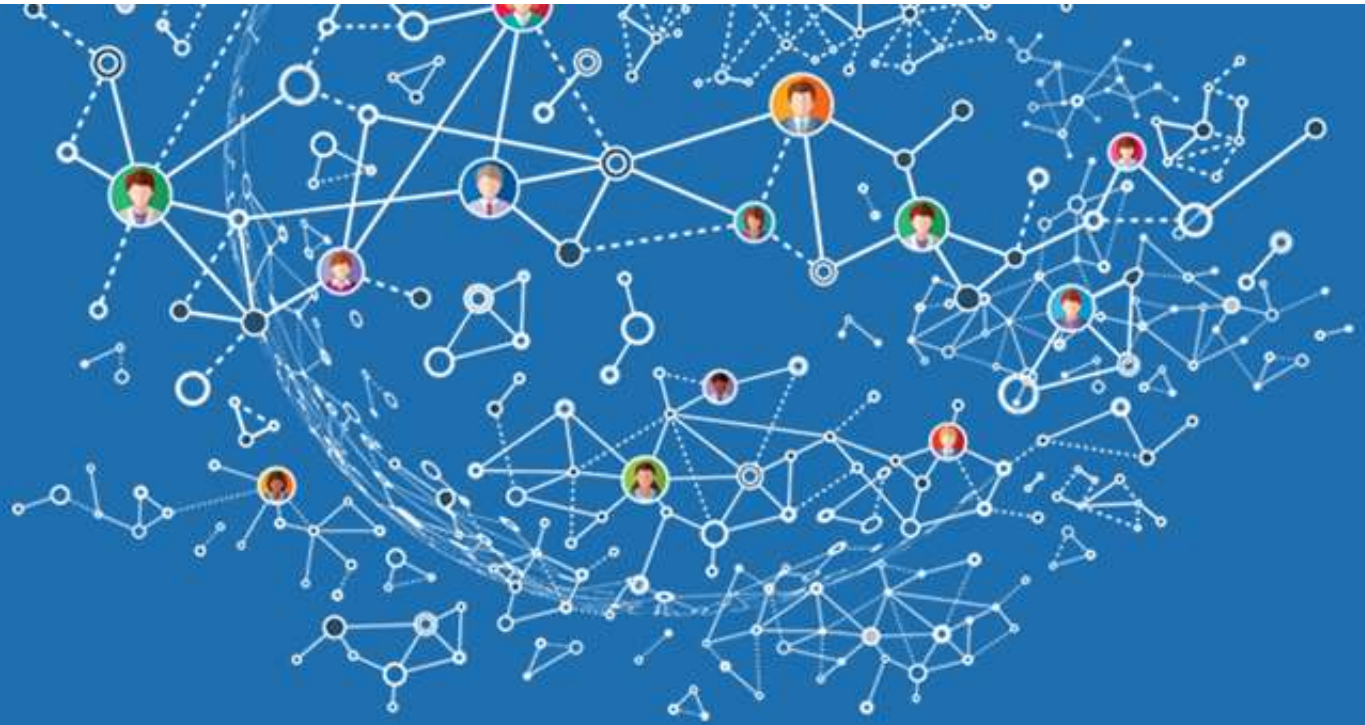
Digital-Agentic, AI-enabled Marketplace



Consumer Profile Schema

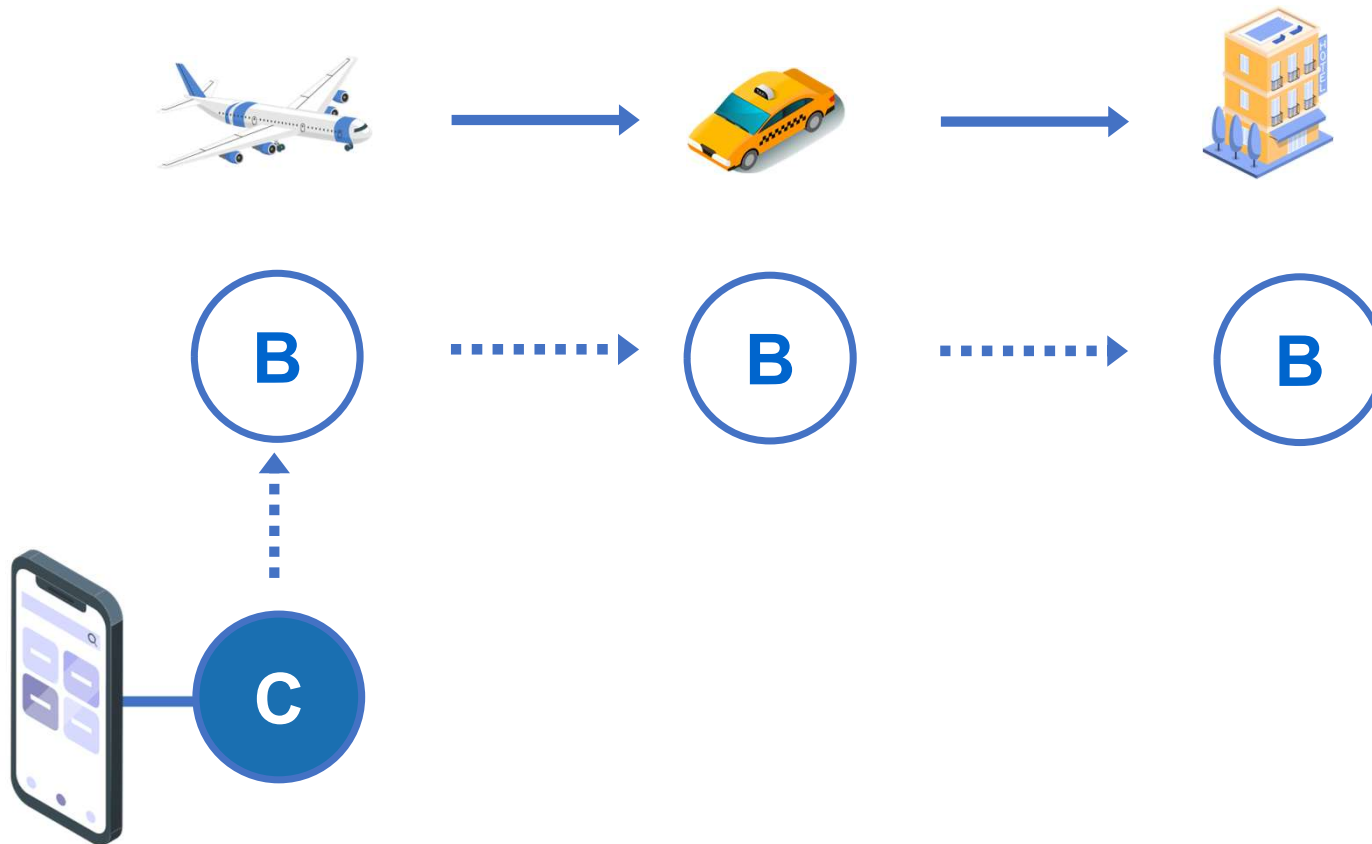


- ☐ Identity
- ☐ Preferences
- ☐ Requirements

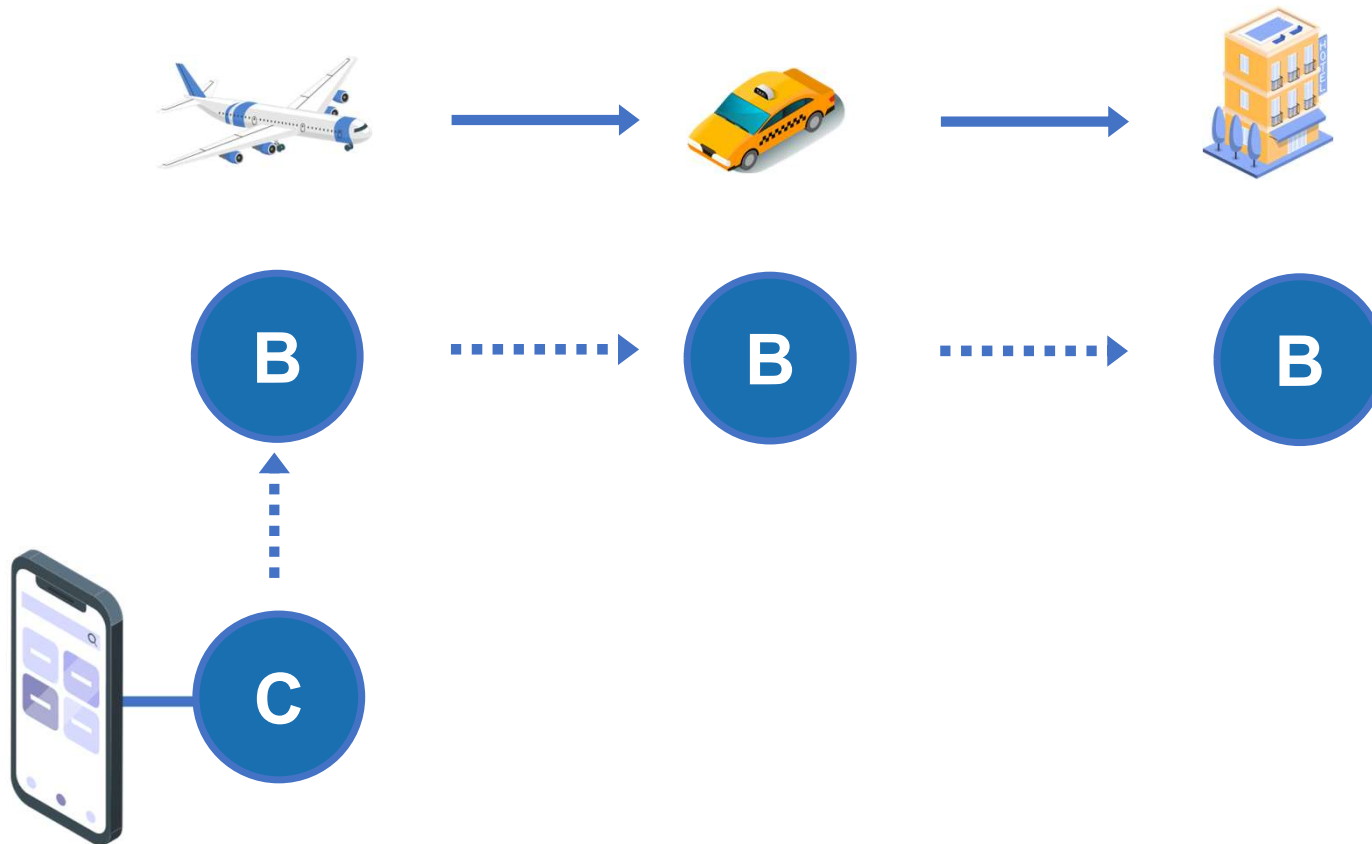


PART 1: DECENTRALIZATION & CONTROL

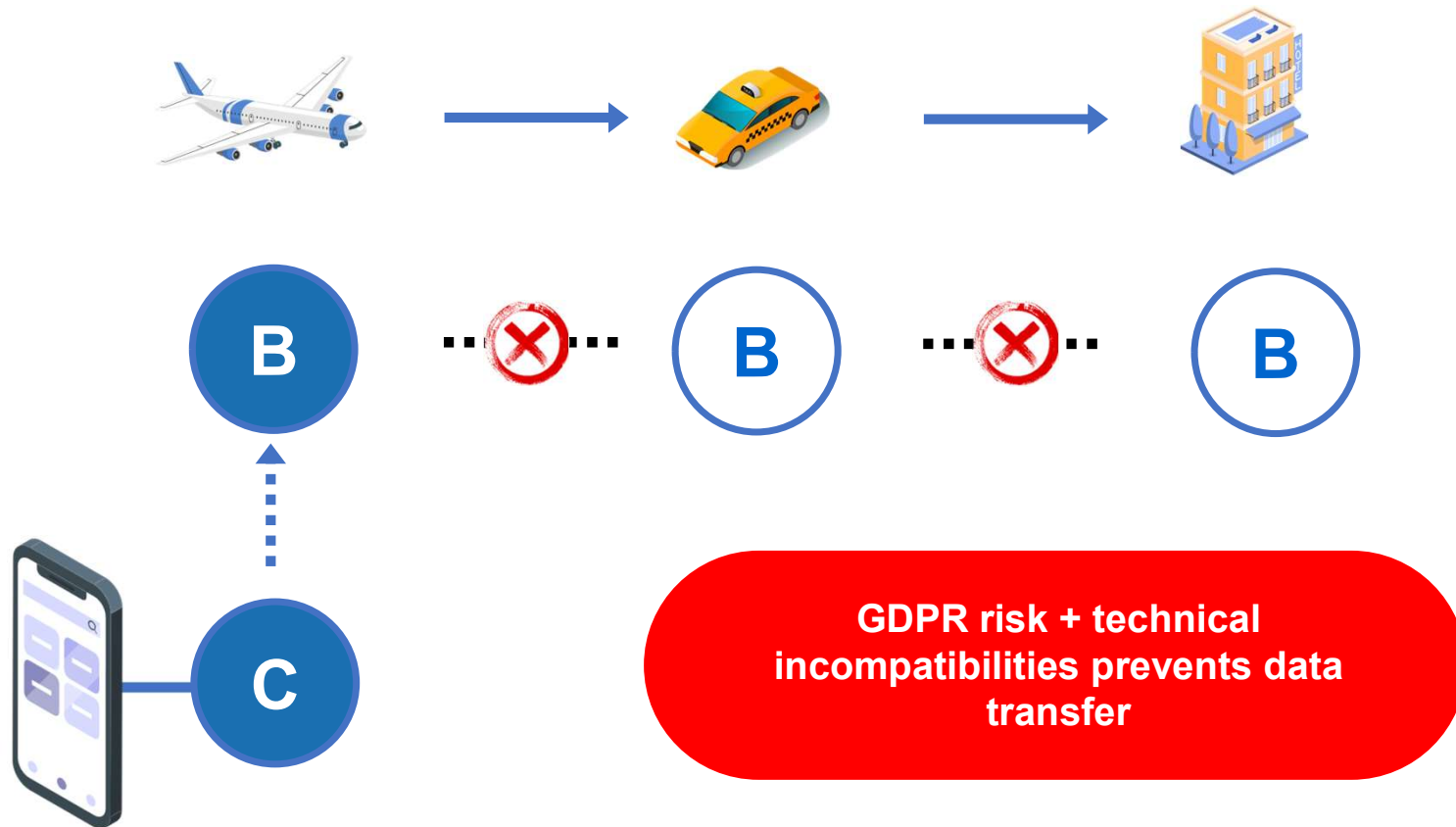
FLIGHT DELAY: desired behaviour



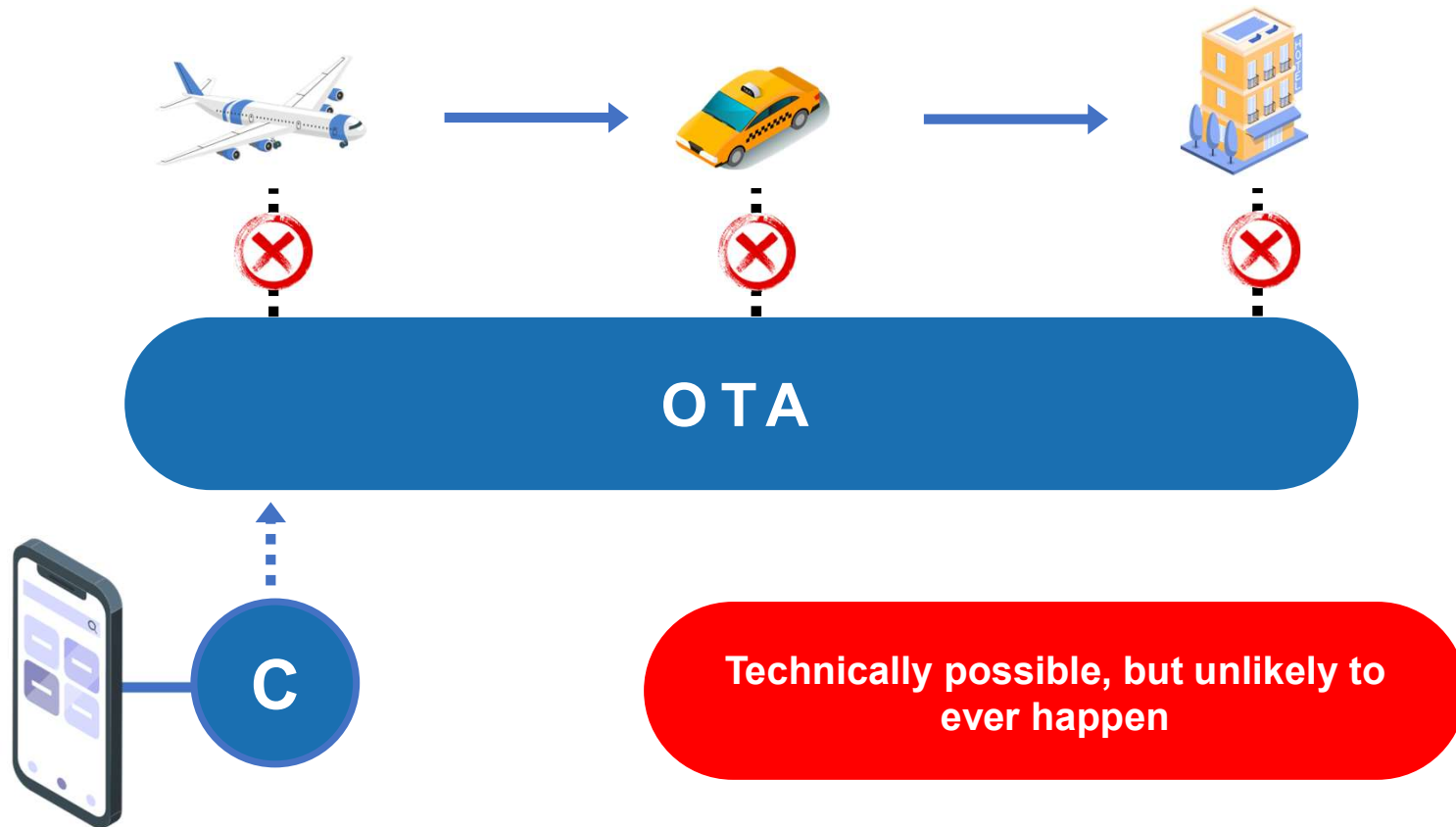
FLIGHT DELAY: desired behaviour



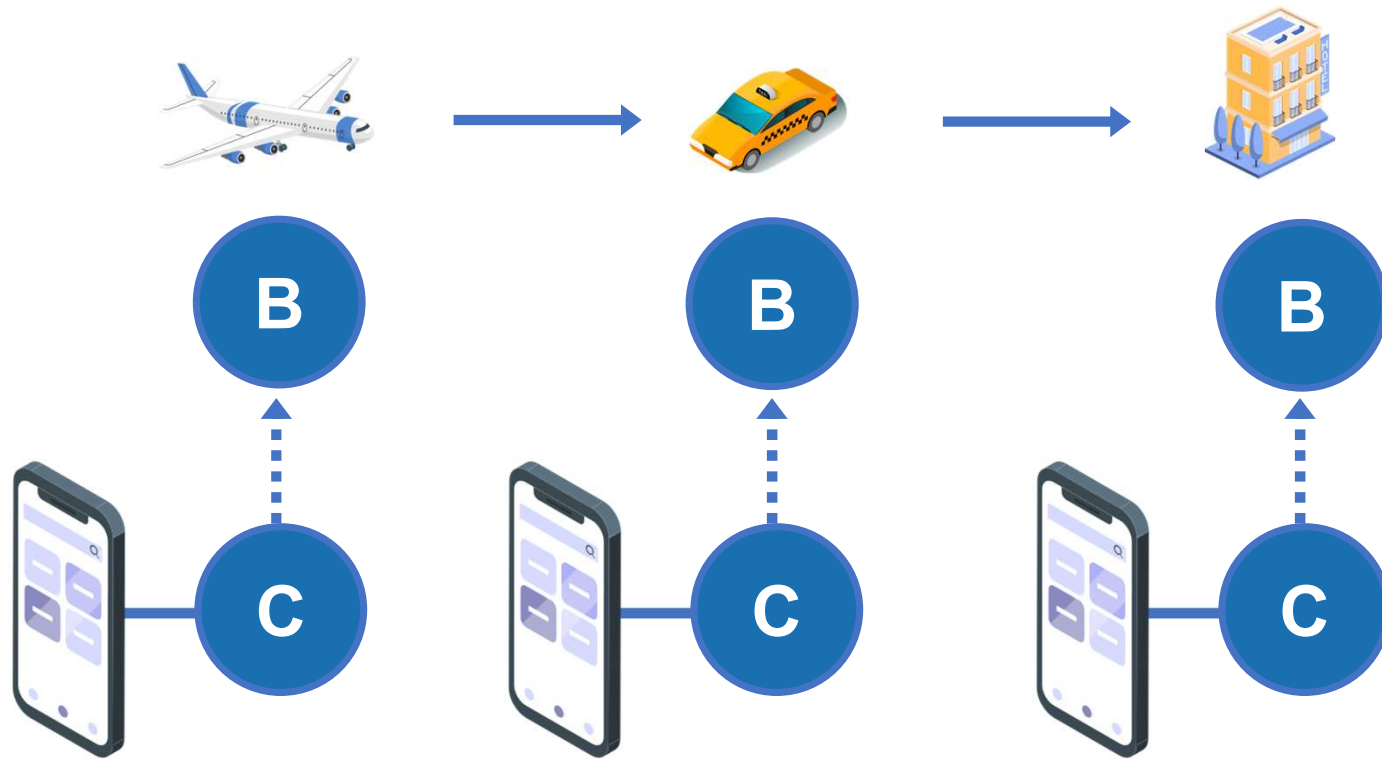
FLIGHT DELAY: actual behaviour



FLIGHT DELAY: actual behaviour

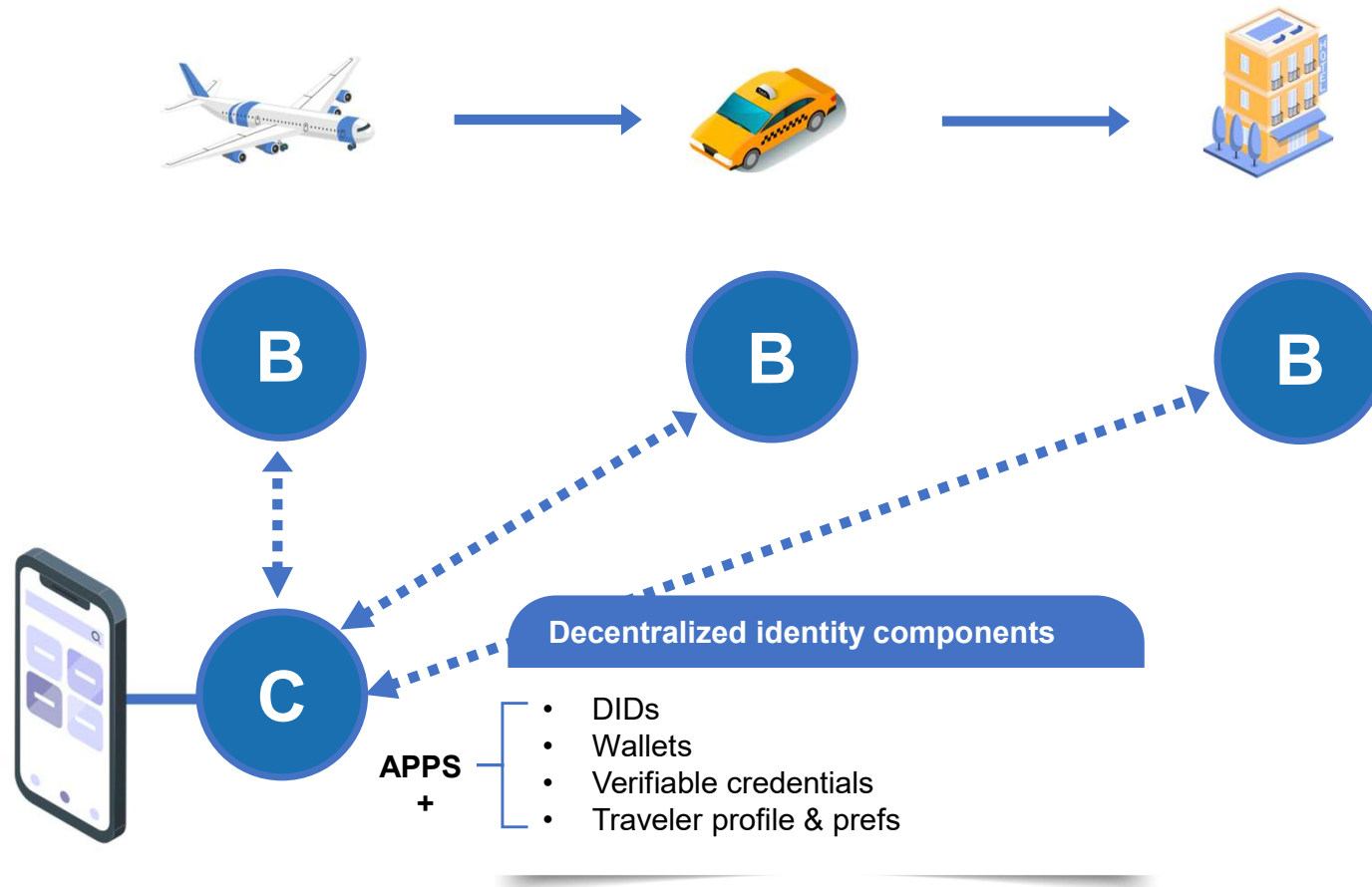


FLIGHT DELAY: multiple apps – the solution today



Inconvenient and does not scale

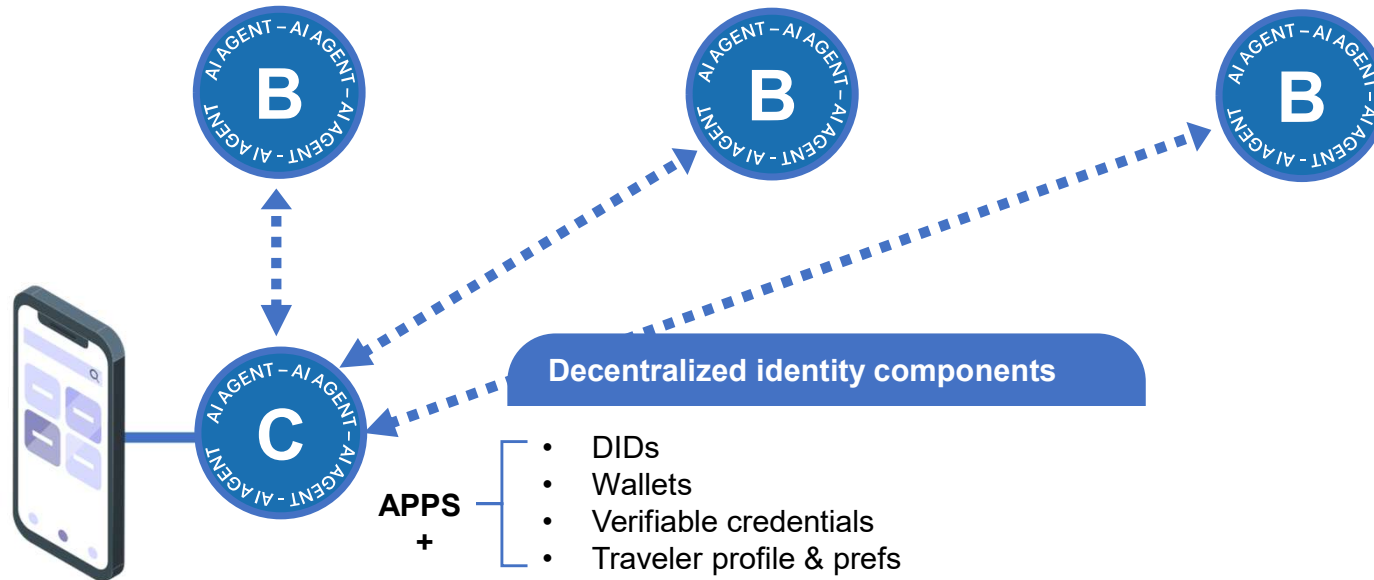
FLIGHT DELAY: data transfers now possible with SSI



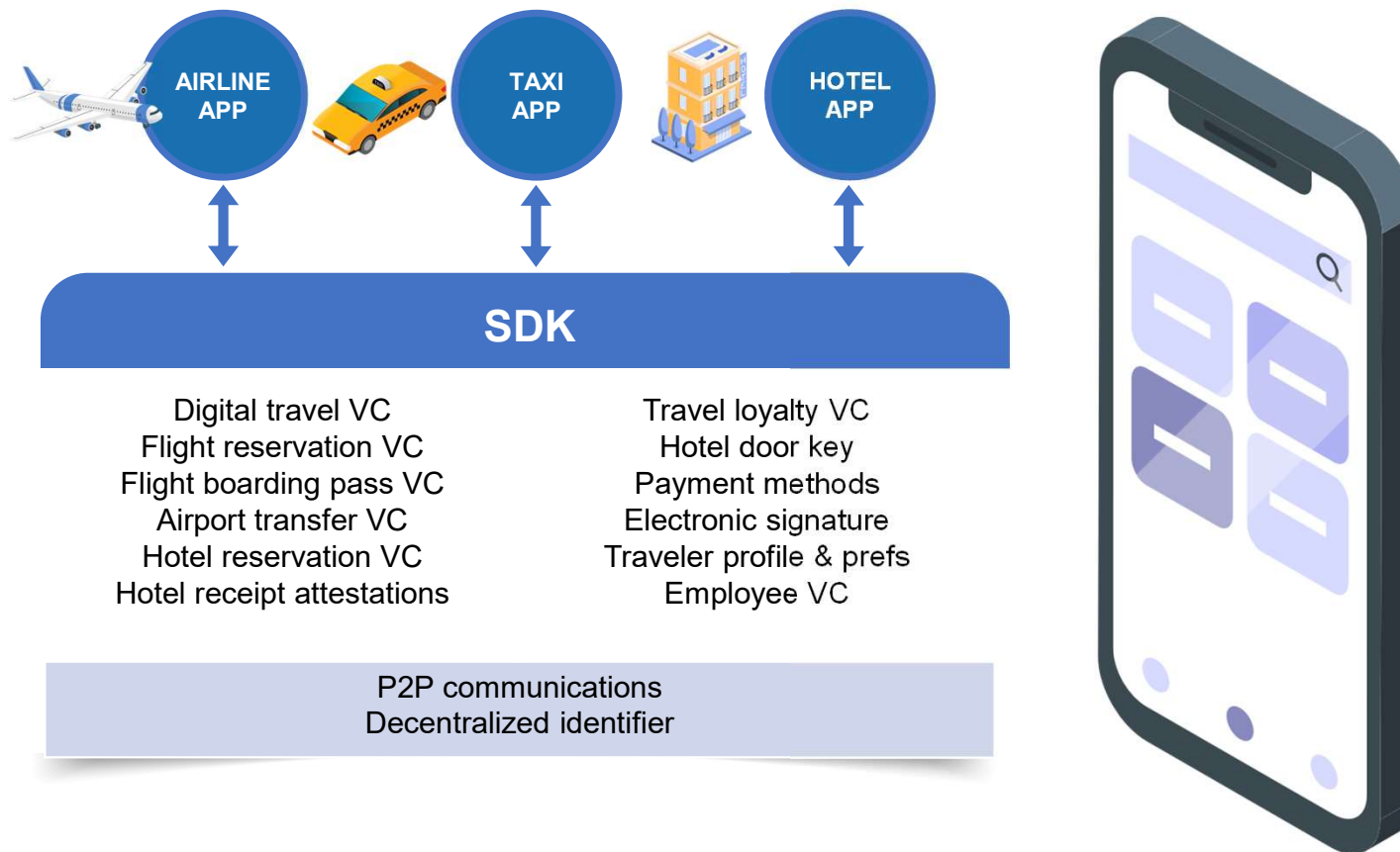
FLIGHT DELAY: data transfers now possible with SSI

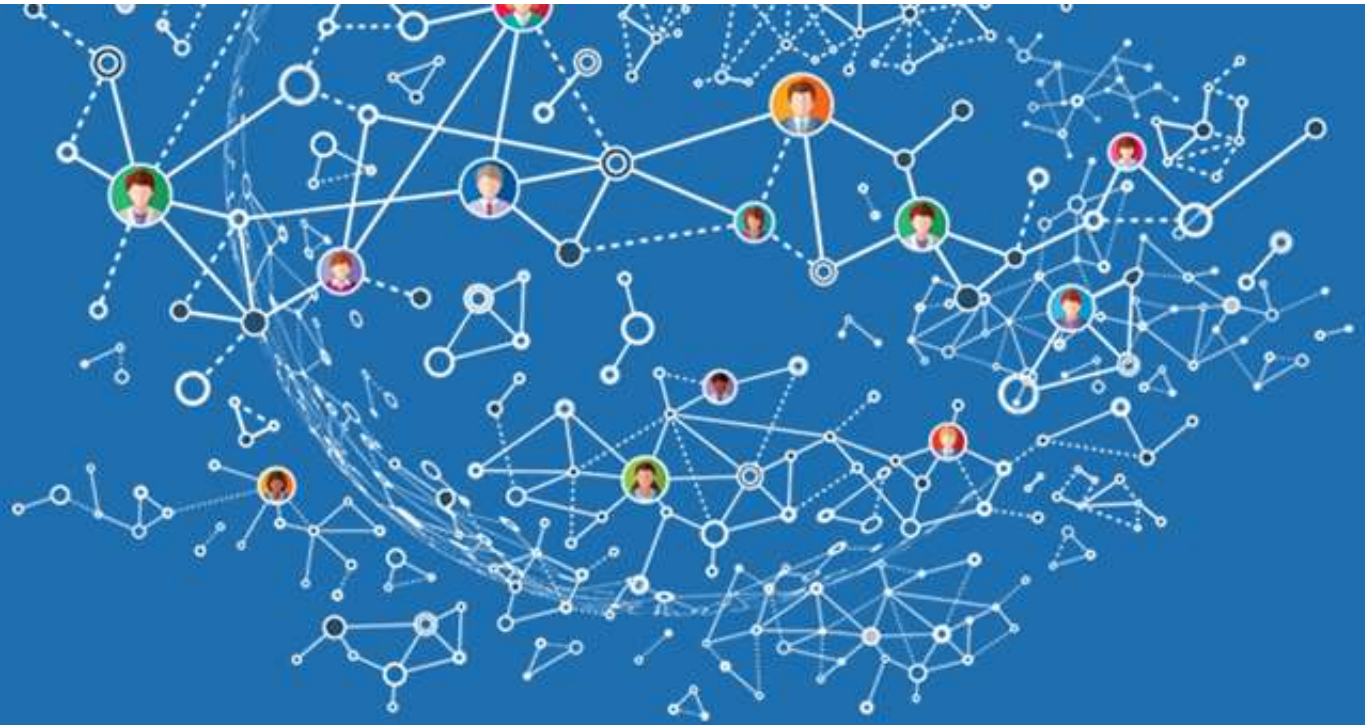


Enhanced with AI AGENTS delegated to represent traveller & travel providers



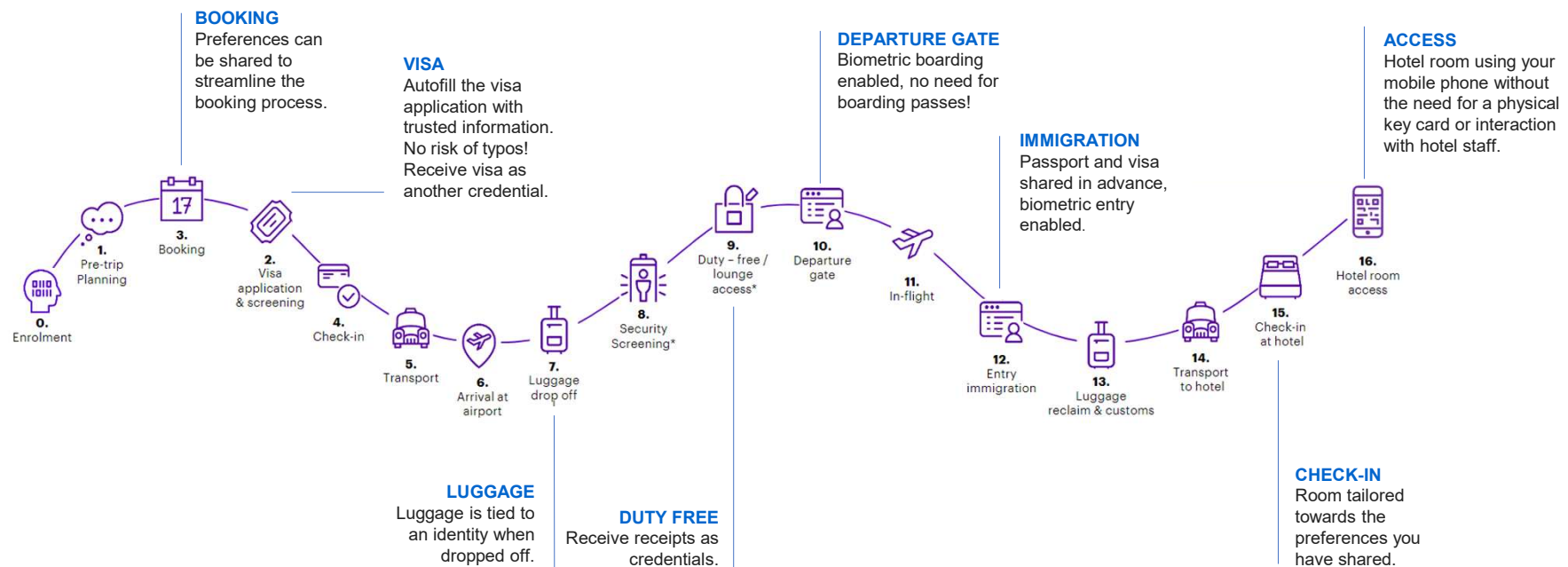
IDENTITY WALLET : Multiple apps with access to wallet.



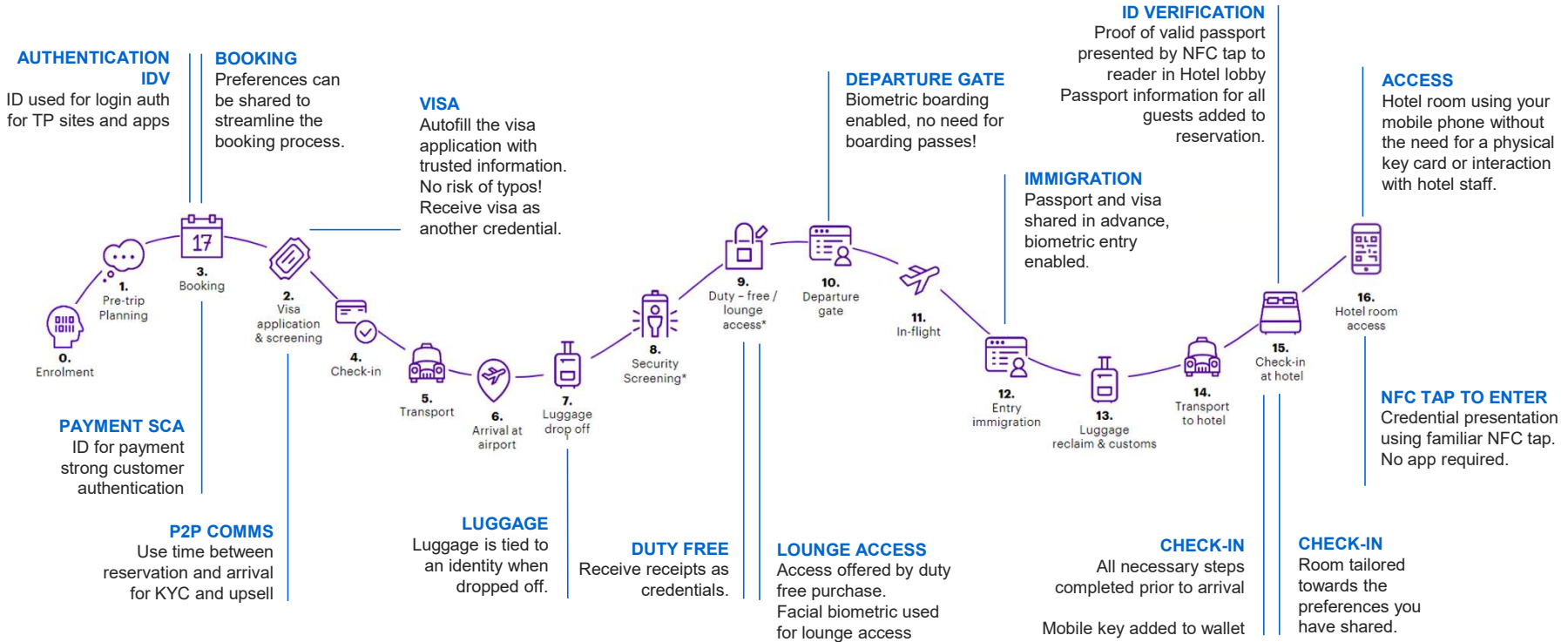


PART 2: USE CASES

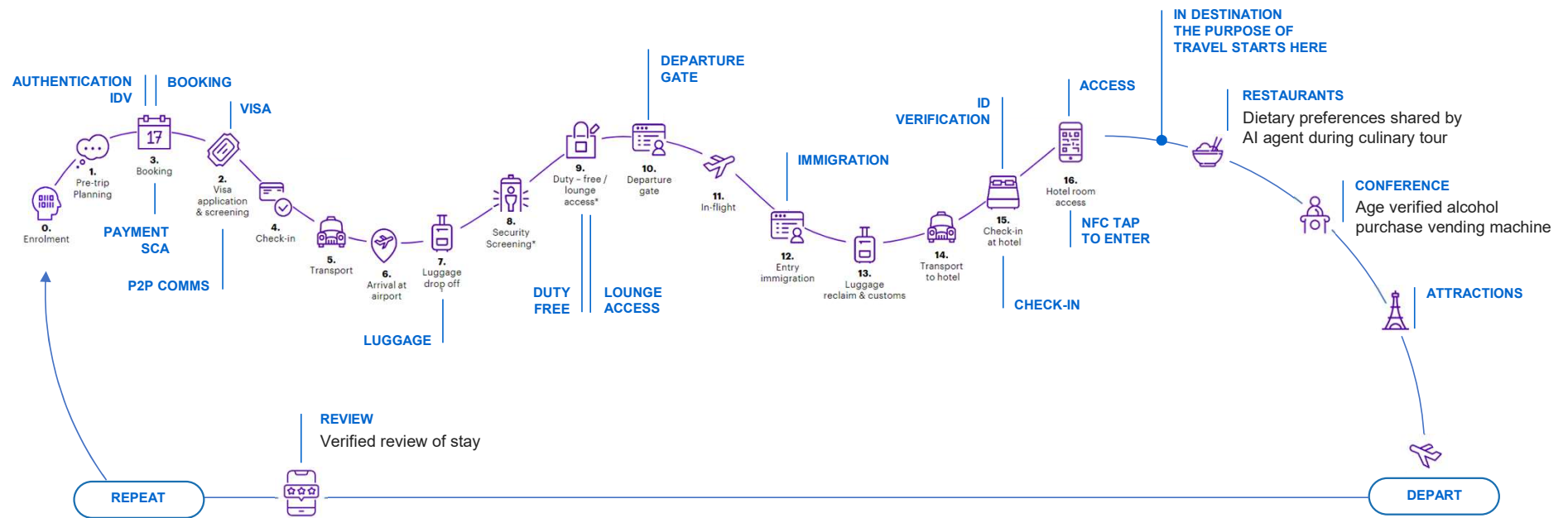
SEAMLESS TRAVEL JOURNEY



SEAMLESS TRAVEL JOURNEY



SEAMLESS TRAVEL JOURNEY



BETTER FOR TRAVELERS

BETTER FOR TRAVEL PROVIDERS

BETTER FOR DESTINATION

Source: Accenture
(extended)

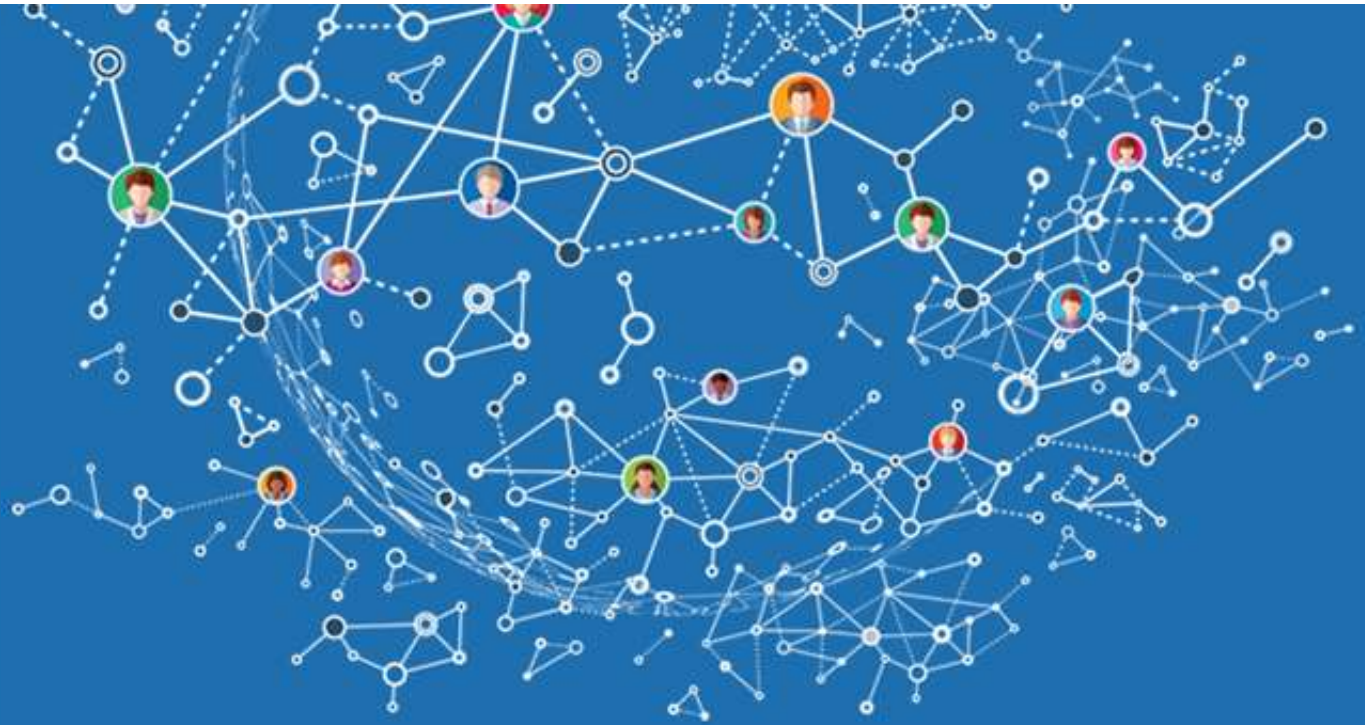
Traveler visit to destination – Me2B Use Cases



Onboarding	Booking	Border	Air	Taxi	Hotel	In-destination
Onboarding traveler to destination application	Biometric IDV for sign in	Biometric IDV and security access	Biometric IDV and boarding	Wheelchair accessible taxi reservation verification	Recognition of traveler upon arrival	Dietary preferences shared by AI agent during culinary tour
	Trip reservations (air, taxi, hotel, tourism)		Duty Free purchase receipt VC	Hotel address shared	IDV for government reporting	Age verified alcohol purchase vending machine
Preferences and special needs created	Preferences and special needs shared		P2P notification of lounge access reward	Pre-arrival hotel check-in	Entry to hotel room using digital key [NFC]	
Apply for and receive visa			Biometric IDV and lounge entry		Verified review of stay	
P2P comms with TPs throughout trip						

B2B Use Cases

B2B CATEGORY	WHERE	NOW
Employee recruitment & onboarding	HR	Qualification VCs
Contracts & e-signature	Purchasing Finance Legal	Integrated into wallet (EUID)
Employee ID verification	All depts	Employee ID VC + Biometric
Employee access control	All employees	Employee ID VC + Biometric
Third party access control	Housekeeping Maintenance	Contracted supplier ID + Biometric



PART 3: PROJECTS

European Digital Identity



The EU Digital Identity (eID) Wallet is Europe's answer to the challenges of identification. It will enable users to access online and offline public and private services, store and share digital documents, and create binding signatures.

Member States will make wallets available to every citizen, resident and business by the end of 2026.



Large Scale
Pilots

2024-7

Seamless
Travel

27 member
states of the
European
Union



Onboarding

Booking

Border

Air


Taxi

Hotel

In-destination

PROJECT TEAM


EU Commission + 27 EU member state governments + >200 private sector companies



Pilots for European Digital Identity Wallet

POTENTIAL aims to foster innovation, collaboration and growth in six digital identity sectors — governmental services, banking, telecommunications, mobile driving licenses, electronic signatures, and health.


[Visit Potential](#)



EU Digital Wallet Consortium

The EU Digital Wallet Consortium (EWC) is a joint effort to successfully leverage the benefits of the proposed EU digital identity in the form of Digital Travel Credentials across the Member States. The EWC intends to build on the reference wallet application to enable a use case focused on Digital Travel Credentials.


[Visit EWC](#)



NOBID Consortium

NOBID is a set of Nordic and Baltic countries who, together with Italy and Germany, will pilot the use of the EU Digital Identity Wallet for the authorisation of payments for products and services by the wallet user.

[Visit NOBID](#)



Digital Credentials for Europe

DC4EU provides tangible support to the public and private sectors in the educational and social security sectors by deploying and accessing state-of-the-art trans-European interoperable digital service infrastructures and their integration in a cross-border trust framework.

[Visit DC4EU](#)



Large Scale Pilots 2024-7

Seamless Travel 27 member states of the European Union



Onboarding	Booking	Border	Air	Taxi	Hotel	In-destination
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PROJECT TEAM EU Commission + 27 EU member state governments + >200 private sector companies

4 EU Large Scale Pilots

EWC European Wallet Consortium



27

EU-Member States and partners from other countries

41

Partners

35

Associated partners

Focusing on:

- Travel
- Payments
- Organization identity

Source: [Home - EUDI Wallet Consortium](#)



Large Scale Pilots 2024-7

Seamless Travel

27 member states of the European Union



Onboarding

Booking

Border

Air

Taxi

Hotel

In-destination

PROJECT TEAM

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Impacts on the whole travel journey



No more ...

- Manual entries
- Physical documents scans
- Email exchanges
- Pdf files
- Long & cumbersome processes



Booking

- ⇐ Loyalty card
- ⇐ IBAN/Credit Card details
- ⇒ Booking confirmation



Check-in

- ⇐ Passport attributes
- ⇐ Booking reference
- ⇒ Boarding Pass



Boarding

- ⇐ Biometric boarding
- ⇐ Boarding Pass
- ⇐ Passport attributes

29/04/2025

Co-funded by the European Union 10



Large Scale Pilots 2024-7

Seamless Travel 27 member states of the European Union



Onboarding

Booking

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BHUTAN'S PIONEERING NATIONAL DIGITAL IDENTITY

In October 2023, Bhutan made history by becoming the first country to implement a nationwide self-sovereign based, decentralized identity system known as the Bhutan NDI (National Digital Identity).

The National Digital Identity Act receiving royal assent in July 2023.

In a symbolic gesture, His Royal Highness, the seven-year-old crown prince, became the first digital citizen of Bhutan, marking a significant milestone in Bhutan's digital transformation journey.



LIVE 2023

**National ID
Digital Public
Infrastructure**

700k citizens
All
businesses



PROJECT TEAM

Internal Development +
Regula Forensics, Open Wallet Foundation, Avast, Ayanworks (CREDEBL), Animo (CREDO) Submsub

Onboarding

Booking

Border

Air

Taxi

Hotel

In-destination

NDI USE CASE EXAMPLES



GOVERNMENT SERVICES

Access all G2C services with NDI and Zest and Zest access only through NDI.



EDUCATION

Retrieve Verifiable Digital educational documents.



HEALTHCARE

Accessing healthcare services and managing medical records.



TELECOMMUNICATIONS

Using mobile numbers as identification identification documents.



BANKING

Full e-KYC to open a bank account



GYALSUNG

Register for Gyalsung Service using NDI credentials



EMPLOYMENT

integrated with public and private sector to provide verified employment details



PRIVACY & SECURITY

Use W3C, Anon Creds, and NIST Post Quantum Algorithms



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Onboarding

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FUTURE ROADMAP



TOUCHLESS DIGITAL TOURIST

Use the wallet for all ID, Preferences, Loyalty, Room Room Keys, Concierge, etc. etc.



DIGITAL PAYMENTS & STABLE COINS

Connect with international international digital payment gateways for wallet and token-based payments



DEEPER INTEGRATION WITH PUBLIC & PRIVATE SECTOR

Use NDI Wallet to complete online forms for all G2C services and automate approvals of complex use cases like issuing a passport



DIGITAL SIGNATURE AND ELECTRONIC SIGNATURE

Deploy digital signature signature and e-signature signature for RGoB to sign all documents for authenticity and verified verified creator



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700k citizens
All
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Onboarding

Booking

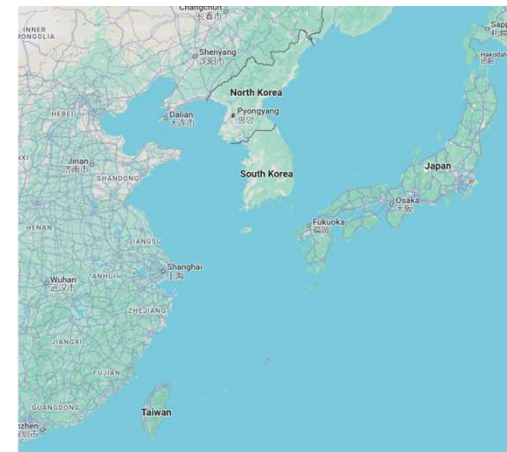
Border

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In-destination



POC 2024

SEAMLESS TRAVEL

HKG – NRT

7 VCs

- DTC
- Biometric
- Entry visa
- Company-ID
- Frequent flyer membership
- Flight booking
- Boarding pass



PROJECT TEAM



Cathay Pacific, Hong Kong International Airport, Narita International Airport, Branchspace, Facephi, NEC, Neoke, Northern Block, SICPA



The Aruba and Delta Air Lines Story



SITA DIF Hospitality and Travel - SIG 30/1/2025

7



POC 2024

SEAMLESS TRAVEL ATL - ARUBA

SITA

PROJECT TEAM



Govt. of Aruba, Indicio, Delta Airlines, IATA

The IATA One ID E2E PoC 6 weeks = lifetime of experiences

An aggressive timeframe was decided to demonstrate how easy IATA One ID can be introduced. Our principles were:

1. Demonstrate how IATA One ID + ICAO DTC + US CBP TVS can seamlessly co-exist;
2. Do not impact any existing airline or airport IT operations;
3. Leverage existing Aruba Happy One Pass (AHOP) foundation as the Digital Wallet;
4. Biometrically enable as much as possible; and
5. Push the boundaries to tourism stakeholders.

SITA DIF Hospitality and Travel - SIG 30/1/2025

The supported Digital Wallet can be anywhere: Airline / Government / 3rd party / Platform



POC 2024

SEAMLESS
TRAVEL

ATL - ARUBA

SITA

Onboarding

Booking

Border

Air

Taxi

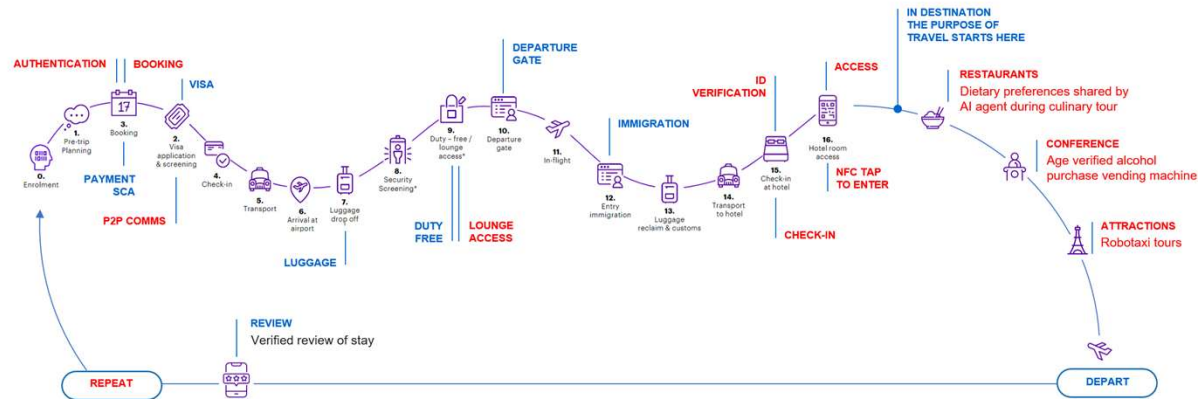
Hotel

In-destination

PROJECT TEAM

Govt. of Aruba, Indicio, Delta Airlines, IATA

SEAMLESS TRAVEL JOURNEY



BETTER FOR TRAVELERS

BETTER FOR TRAVEL PROVIDERS

BETTER FOR DESTINATION

Onboarding

Booking

Border

Air

Taxi

Hotel

In-destination

PROJECT TEAM

Publicis Sapient, Condatis, Walt.id, Neoke, Gimly, Passivebolt, Autoura



POC 2022-5

Seamless Middle East Travel

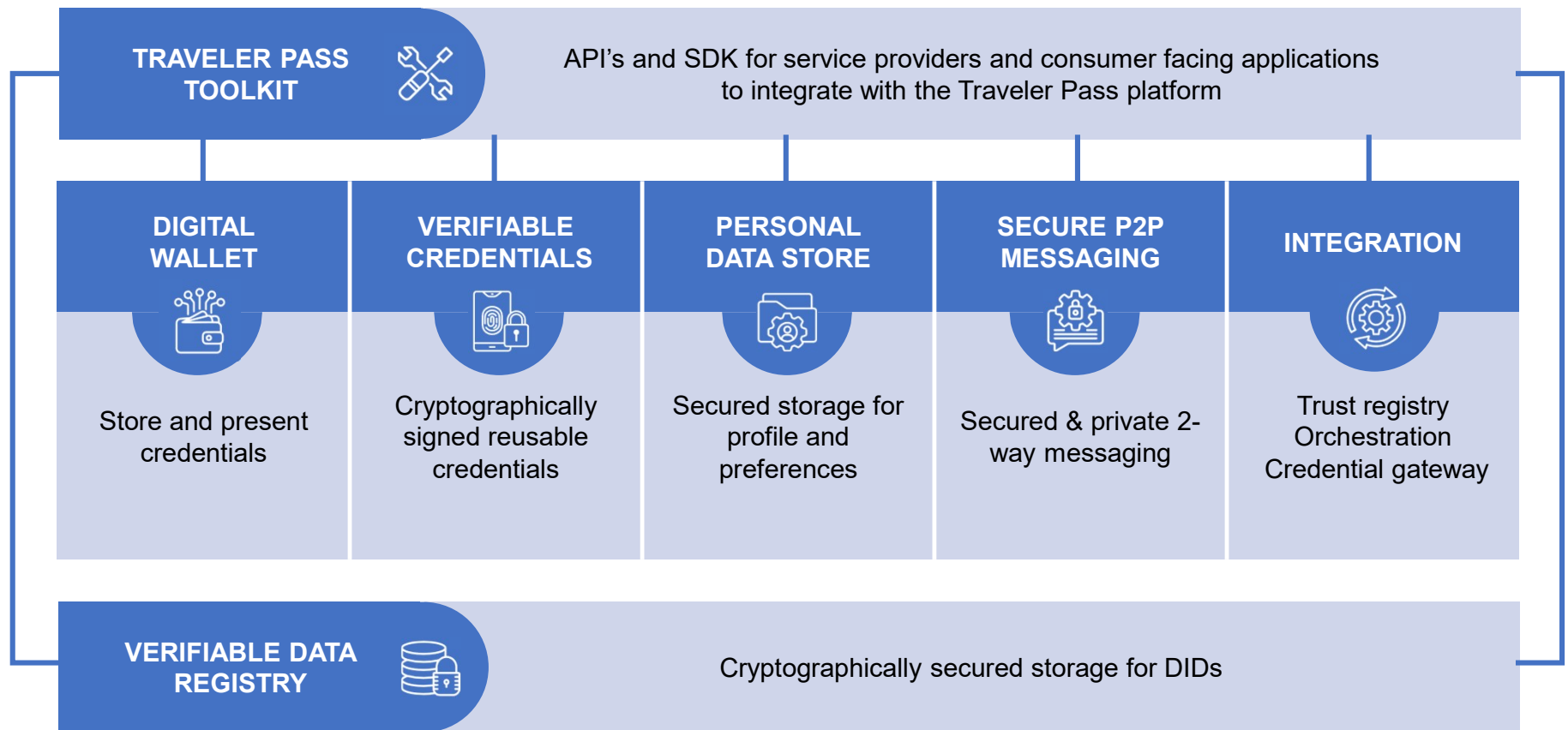
TRAVELER PASS: Phase 1 (execute use cases + video + animated traveler journey)

ONBOARDING	HOME	<ul style="list-style-type: none"> ID-Onboarding + Biometrics + Profile/Prefs. Traveler Pass issued to traveler wallet
BOOKING	HOME	<ul style="list-style-type: none"> Ground travel & Hotel booked (VCs received to wallet)
AIR	ARRIVAL AIRPORT	<ul style="list-style-type: none"> Hotel address + accessibility needs + taxi booking sent to taxi
TAXI	IN TAXI	<ul style="list-style-type: none"> Hotel receives arrival time from Traveler Pass
TAXI	IN TAXI	<ul style="list-style-type: none"> Hotel check-in completed in Taxi (DTC + Hotel Booking + Biometrics sent to hotel). Room key VC issued to Traveler Pass wallet
HOTEL	AT HOTEL	<ul style="list-style-type: none"> Room key VC presented (NFC) for room access
HOTEL	AT HOTEL	<ul style="list-style-type: none"> Guest P&P used for in-room gift
IN-DESTINATION	AT HOTEL	<ul style="list-style-type: none"> P2P comms from local diving center requesting diving certificate credential (3rd party) for scuba diving experience customisation. Diving experience booking VC issued to wallet
IN-DESTINATION	AT DIVE SITE	<ul style="list-style-type: none"> Offline (no internet) presentation/verification of diving experience booking
AIR	DEPARTURE AIRPORT	<ul style="list-style-type: none"> Lounge Access offered through P2P comms because of spend during trip. Biometric access to lounge.
BOOKING	HOME	<ul style="list-style-type: none"> Calculated sustainability footprint triggers a 10% discount reward for next trip which is communicated P2P.

TRAVELER PASS: PHASE 2 (Build towards production)

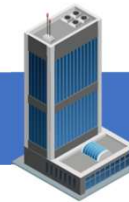
The 4 foundational capabilities of Traveler Pass

PROFILE & PREFERENCES	<ul style="list-style-type: none"> Traveler personal details & preferences entered once and updated throughout trip Travelers retain ownership and full control over their data
TRANSACTIONAL COMMUNICATION	<ul style="list-style-type: none"> Traveler Pass supports transactions over P2P communication Service Providers can issue & monetize receipts E2E encrypted communication for each transaction
SERVICE PROVIDER TOOLKIT	<ul style="list-style-type: none"> Service Providers can issue and verify traveler credentials Service Providers can personalize experiences against traveler P&P if shared
ACCESS CONTROL & IDV (virtual & physical)	<ul style="list-style-type: none"> Identity Verification for virtual (apps and websites) and physical access (hotel and in-destination)



Enabling the 'Long Tail' – Bringing Value to Service Providers of All Sizes

(Few IT services)



Mature IT services to verify, issue, communicate & reward

		MICRO ORGANIZATIONS	LARGE ORGANIZATIONS
Suggested Integration	EXAMPLES OF USE	<ul style="list-style-type: none"> ▪ Self-service Management Portal & APPs (simple operator-facing interface) 	<ul style="list-style-type: none"> ▪ API & Documentation (bespoke integration to their own digital consumer-facing products & applications)
Verification		<ul style="list-style-type: none"> ▪ Verify credentials 	<ul style="list-style-type: none"> ▪ Can define schemas for credentials across the ecosystem
Issuance		<ul style="list-style-type: none"> ▪ Doesn't need to issue if not relevant 	<ul style="list-style-type: none"> ▪ Issue & update credentials, can issue on behalf of third parties
Communication		<ul style="list-style-type: none"> ▪ Consume updates from organizers, can update bookings in real time 	<ul style="list-style-type: none"> ▪ Control communication channels & adjustment of schedules
Rewards		<ul style="list-style-type: none"> ▪ Contribute to larger reward schemes 	<ul style="list-style-type: none"> ▪ Own proprietary reward schemes, set the terms
Profile & Preferences		<ul style="list-style-type: none"> ▪ Only read data 	<ul style="list-style-type: none"> ▪ Read & write data



JOURNEASE THE NEW TRAVEL

Seamless Onboarding
Effortless Booking
Personalized Communication
Direct-to-Room Check-In
Interoperable Loyalty
Exclusive Perks



HACK 2024

Seamless
Travel

JOURNEASE
THE NEW TRAVEL

Onboarding

Booking

Border

Air

Taxi

Hotel

In-destination

PROJECT TEAM

Publicis Sapient, Condatis, Walt.id, Swiss SAFE

<https://devpost.com/software/journease>



Ethiopia:
<https://id.gov.et/>

Fayda Pass

Honduras:
[Tech5 press release](#)

Bien [Billetera Electronica Nacional]



White label Digital ID infrastructure using:
Passivebolt KeyShare

LIVE 2025

Digital Public
Infrastructure

Ethiopia
Honduras

PassiveBolt

Onboarding

Booking

Border

Air

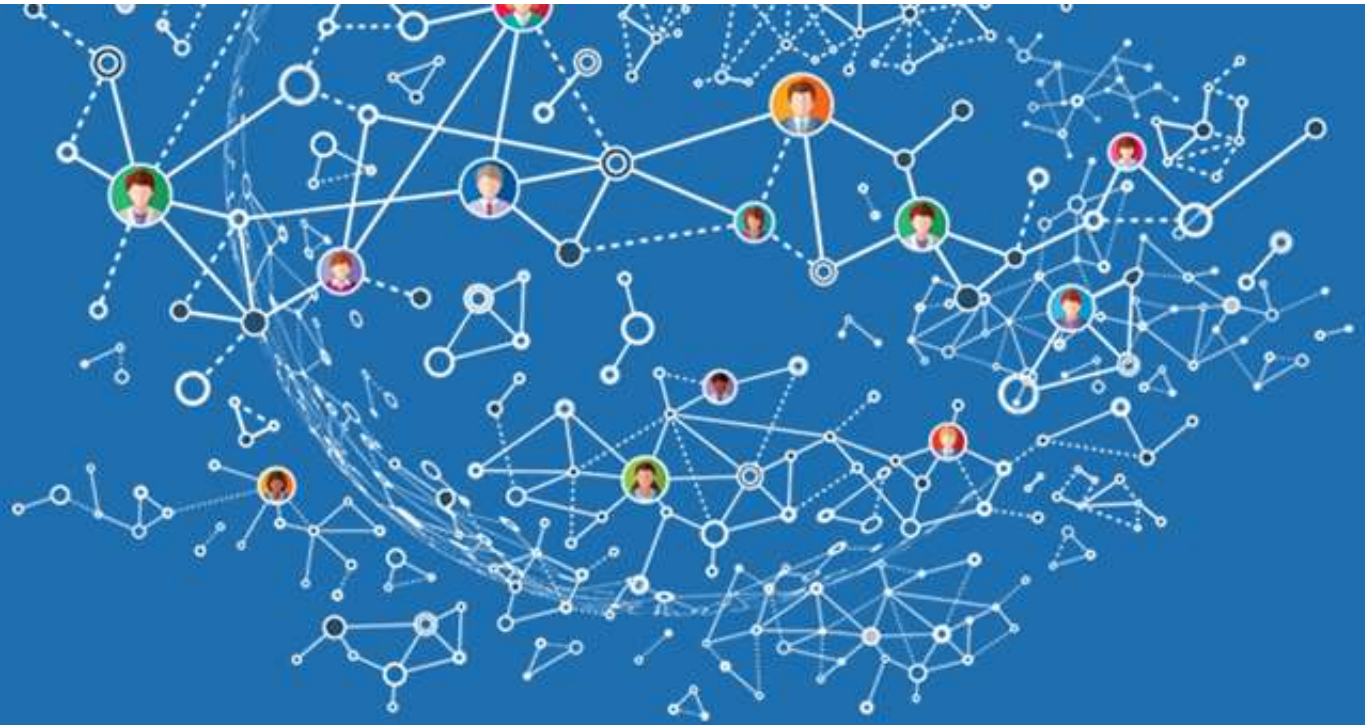
Taxi

Hotel

In-destination

PROJECT TEAM

Tech5, VISA, Passivebolt, Governments of Ethiopia and Honduras



PART 4: WRAP UP

Market opportunities

Digital ID

50% of the global population

Digital Identity is being embraced by governments around the world; in 5 years it will cover more than 50% of the global population

McKinsey | Aug 31, 2020

500M people

By 2026, at least 500 million people will regularly use digital wallets to manage and prove their ID

Gartner | Sep 24, 2024

\$4.6 billion in revenue

By 2029, digital identity within the travel sector is expected to generate over \$4.6 billion in revenue, with a CAGR of 22%

Identity Week | Aug 14, 2024

\$5B in infringement fines

GDPR in Europe has generated over \$5 billion in infringement fines from businesses since it was introduced in 2018.

Data Privacy Manager | Feb 12, 2024

77% of travellers

77% of travellers feel like they are not in control of their data.

TravelPerk | July 2, 2024

67% of travel companies

Say they are focusing on developing a first-party data strategy to deliver stronger personalisation for their customers.

Epsilon | Feb 4, 2022

Travel is the vanguard of digital identity innovation



Pressing identity challenges



Urgent need & demand for hyper-personalization



AI Travel Agents enhancing every experience



Travel Documents



Financial Credentials



Personal Preferences



Loyalty Benefits



Health Information

We have a community of experts that want to help



Collaborate with our global community

Hospitality & Travel Special Interest Group community of professionals



Incubate open standards

Hospitality & Travel Working Group developing Traveler Profile



Lead the way

Your participation gives you a front seat to the next wave of innovation; DIF partners with W3C, ISO, OIDF, IETF for global adoption

Decentralized Identity Foundation

A Linux Foundation Project

Thank you 🤝 Join Us

Decentralized Identity Foundation

Hospitality & Travel

Working Group | Special Interest Group



<https://htwg.identity.foundation>

Leveraging SSI for Secure, Hyper-Personalized and Seamless Travel Experiences

QUESTIONS?

<https://htwg.identity.foundation>