National Data Infrastructure for Tourism (NaDIT)

NaDIT Architecture and Framework
Workshop October 31st 2023

RESILIENT TOURISM

Business

Flagship supported by

Schweizerische Eidgenossenschaft
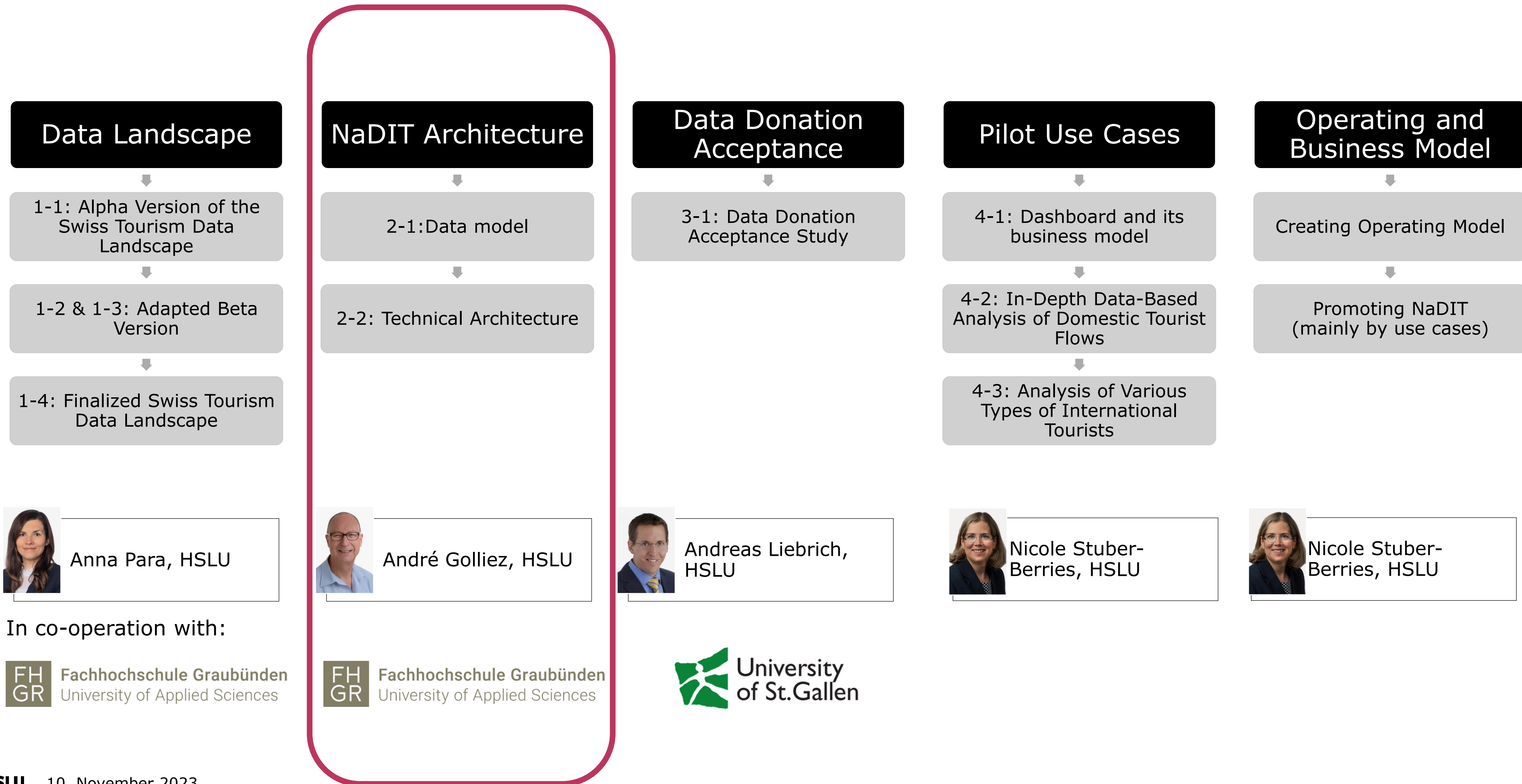Confédération suisse
Confederazione Svizzera
Confederaziun svizra

Swiss Confederation

**Innosuisse – Swiss Innovation Agency**

FH Zentralschweiz

Overview of NaDIT

Data Landscape	NaDIT Architecture	Data Donation Acceptance	Pilot Use Cases	Operating and Business Model
1-1: Alpha Version of the Swiss Tourism Data Landscape	2-1:Data model	3-1: Data Donation Acceptance Study	4-1: Dashboard and its business model	Creating Operating Model
1-2 & 1-3: Adapted Beta Version	2-2: Technical Architecture		4-2: In-Depth Data-Based Analysis of Domestic Tourist Flows	Promoting NaDIT (mainly by use cases)
1-4: Finalized Swiss Tourism Data Landscape			4-3: Analysis of Various Types of International Tourists	

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In co-operation with:

FH GR Fachhochschule Graubünden University of Applied Sciences

FH GR Fachhochschule Graubünden University of Applied Sciences

University of St.Gallen

NaDIT - Goal

"Objective: to create a National Data Infrastructure for Tourism (NaDIT) to connect data producers and providers with data users in order to develop innovative services, business models and processes to design resilient tourism systems in line with SDG objectives."
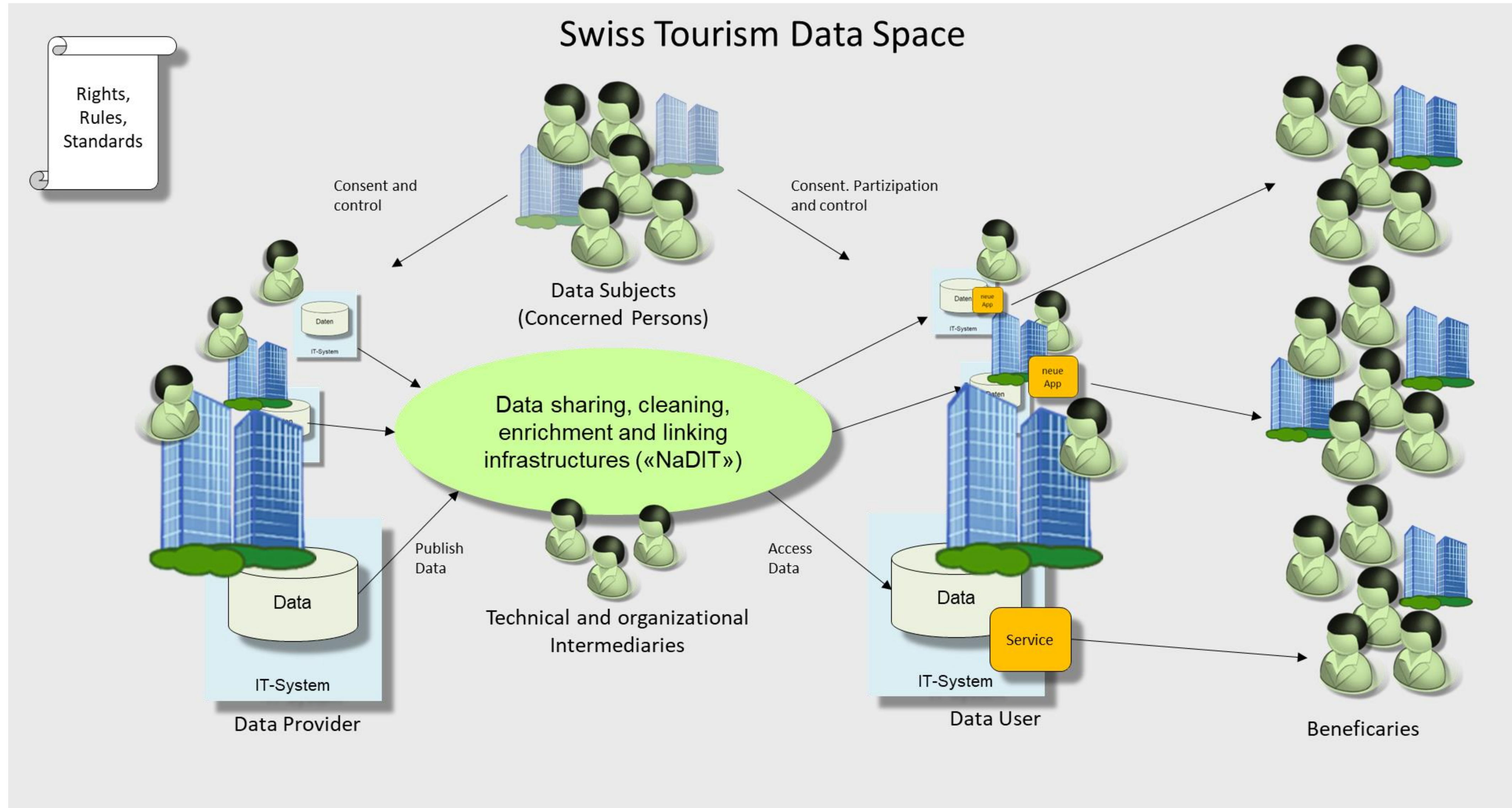
(Resilient Tourism Flagship Proposal, August 2021, p. 7)
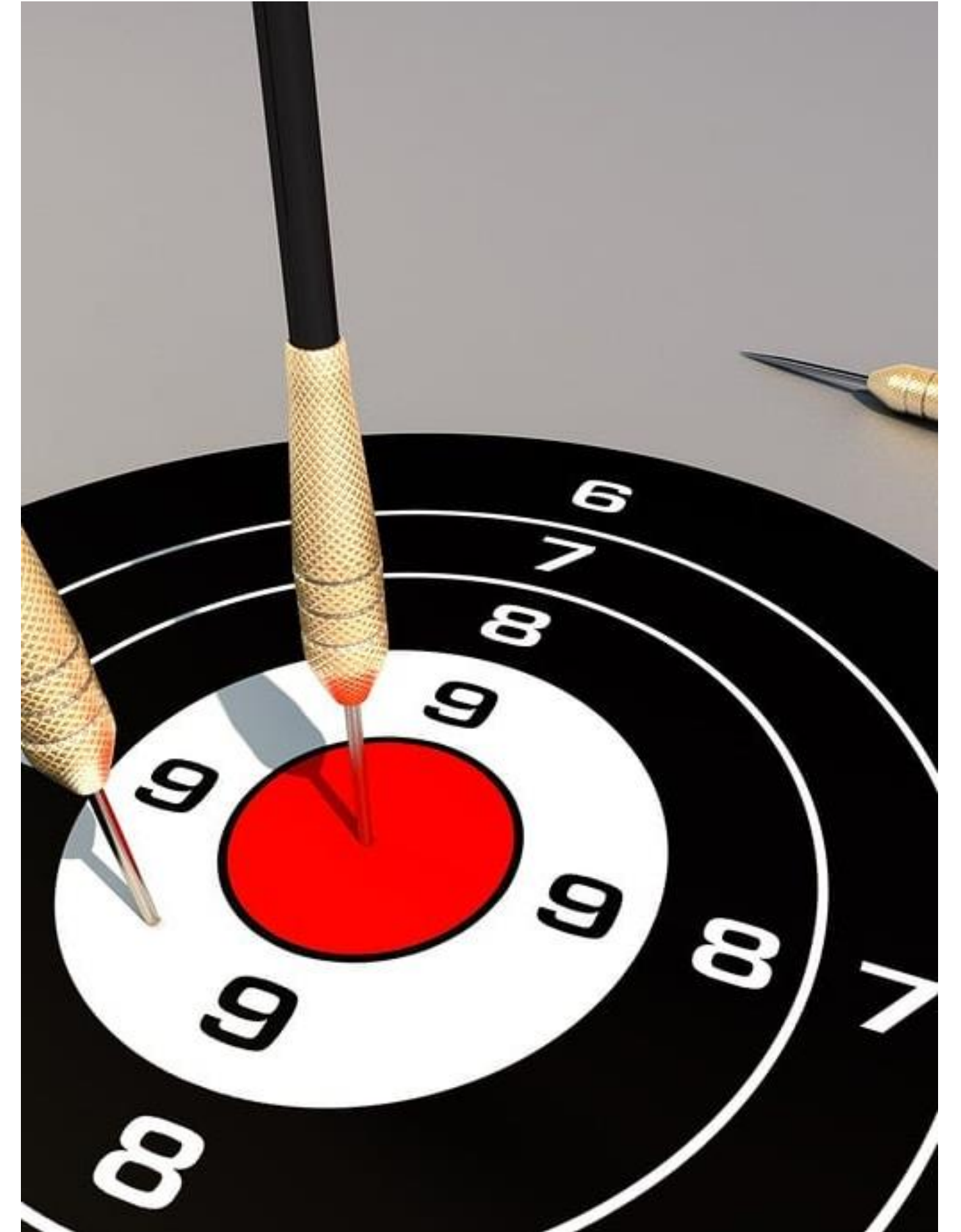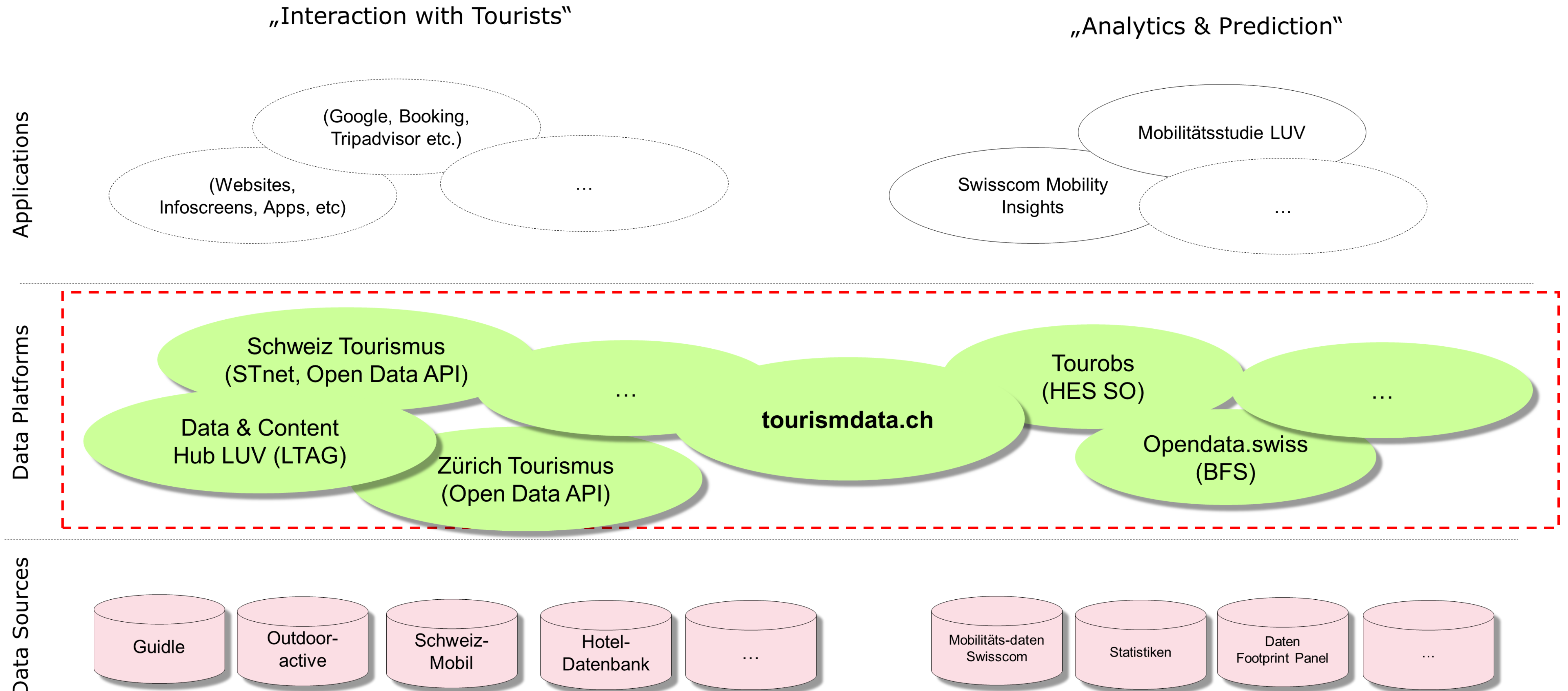
European Tourism Data Space Initiatives

"**Data Space**: A distributed system defined by a **governance framework** that enables secure and trustworthy **data transactions** between **participants** while supporting trust and **data sovereignty**. A data space is implemented by one or more **infrastructures** and enables one or more **use cases**."

(Data Space Support Center, https://dssc.eu/space/Glossary/176554052/2.+Core+Concepts)

NaDIT within Swiss Tourism Data Space / Collaborative («Big Picture»)

Infrastructures for Data Sharing in Swiss Tourism

„Interaction with Tourists"

„Analytics & Prediction"

Applications

(Google, Booking, Tripadvisor etc.)

(Websites, Infoscreens, Apps, etc)

…

Mobilitätsstudie LUV

Swisscom Mobility Insights

…

Data Platforms

Schweiz Tourismus (STnet, Open Data API)

Data & Content Hub LUV (LTAG)

Zürich Tourismus (Open Data API)

…

tourismdata.ch

Tourobs (HES SO)

Opendata.swiss (BFS)

…

Data Sources

Guidle

Outdoor-active

Schweiz-Mobil

Hotel-Datenbank

…

Mobilitäts-daten Swisscom

Statistiken

Daten Footprint Panel

…

NaDIT - Technical Challenges

"NaDIT serves the reuse of data relevant to Swiss tourism. This objective cannot be achieved with a central platform, but primarily requires **networking of the numerous tourism data sources**.

Major technical challenges lie in the following points:

- **Microservices connect loosely coupled data applications**, allow independent developments and are testable in small entities. To make NaDIT work properly this modern approach will be used.

- **Making data ready for reuse**: Data is often incomplete (e.g. missing values) or the level of detail does not fit to other data. They must therefore be cleaned. In addition, personal data must be aggregated to a level that is in line with the consent of the user and all legal requirements.

- **Data exchange**: Since the data in the individual systems are usually kept in proprietary formats, their reuse requires a conversion into existing standard formats such as schema.org and a properly described API.

- **Linked Data**: Data rarely stands singularly in space. They often have an implicit or explicit reference to other data. For data users, such reference data is particularly valuable.Therefore, there is a need for systematic enrichment and linking of data.

- **Data archive**: Not only current data is important for tourism, but also historical data. Partners of NaDIT should therefore include historical data which allows time series analysis. NaDIT will provide a central archive for partners not able to provide long-term access by themselves."

(Resilient Tourism Flagship proposal, 2021, p. 18)
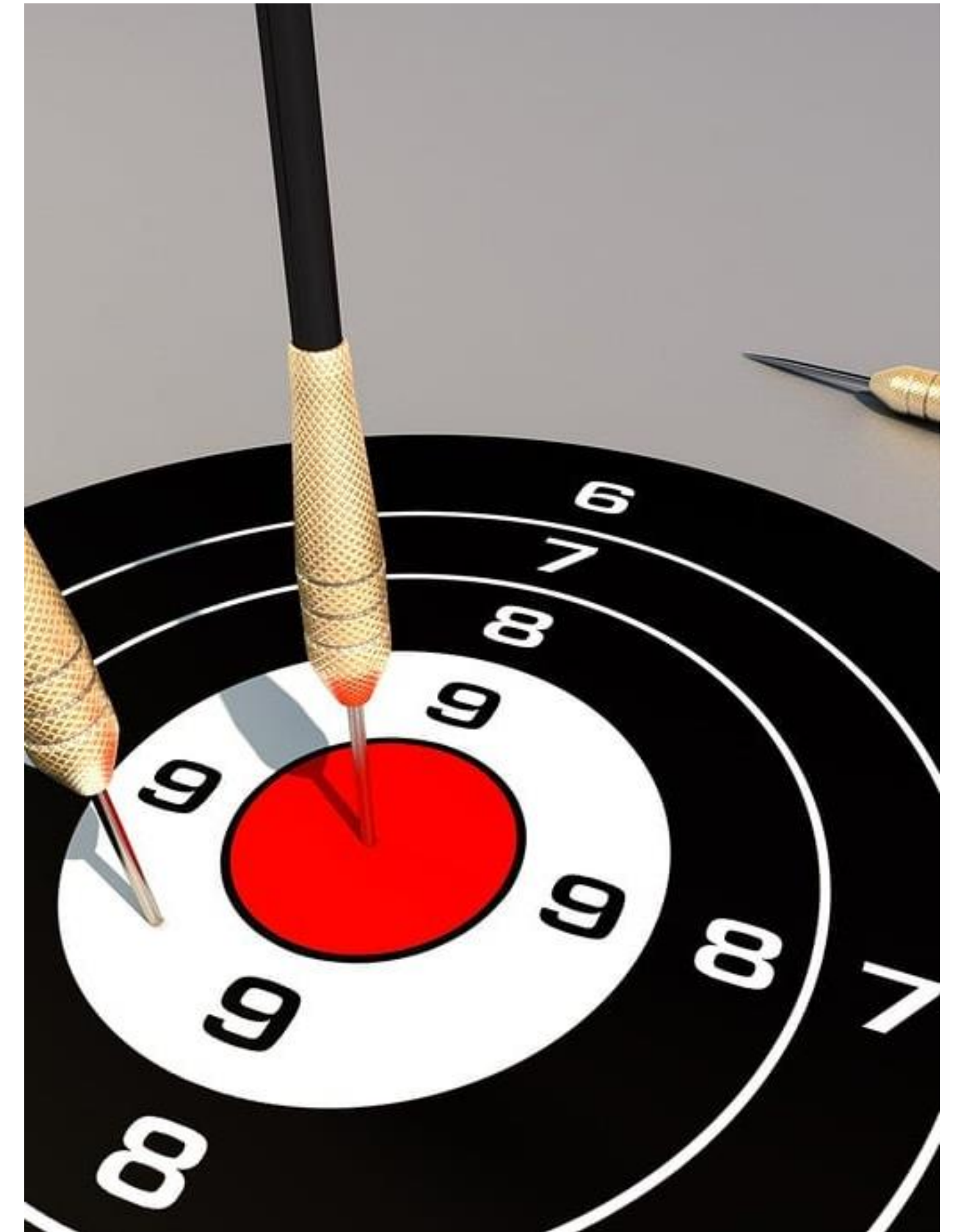
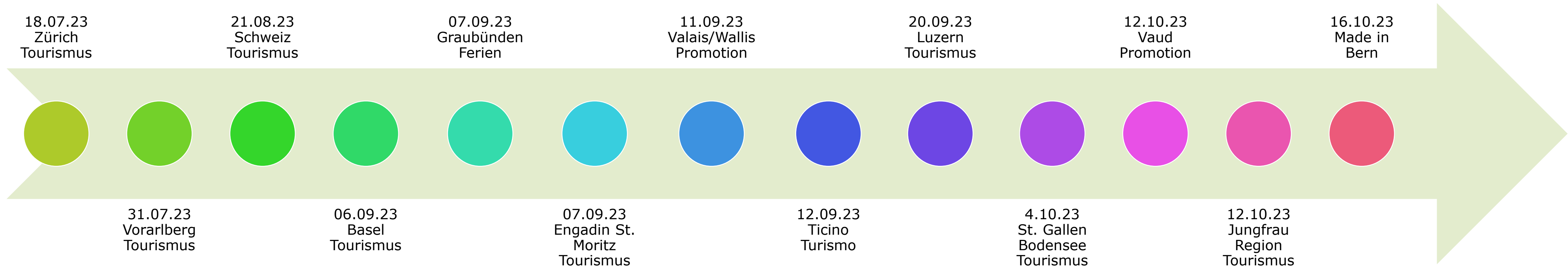# First Steps towards a Swiss Tourism Data Collaborative

1. Inventory and top-level system landscape of the data and system platforms currently in use or planned by **regional tourism organizations and Switzerland Tourism**. (May – October 2023)

2. Presentation to project partners for discussion and start defining goals for **tourism data collaboration** on national level in Switzerland (October 31st 2023)

3. Elaboration of a **organizational and technical foundation, roadmap (2030)** and **action plan (2024/25)** for the Swiss Tourism Data Space and NaDIT (November 2023 – April/May 2024).

4. Founding "**Digital & Data Collaboration** of (Regional) Swiss Tourism Organizations" (working title) (half day workshop onsite, Q2 2024, date tbd)
(Lead: Switzerland Tourism, Support: HSLU, FHGR)

5. **Implementing** Swiss Tourism Data Collaboration action plan 2024/25 (May 2024 – December 2025).
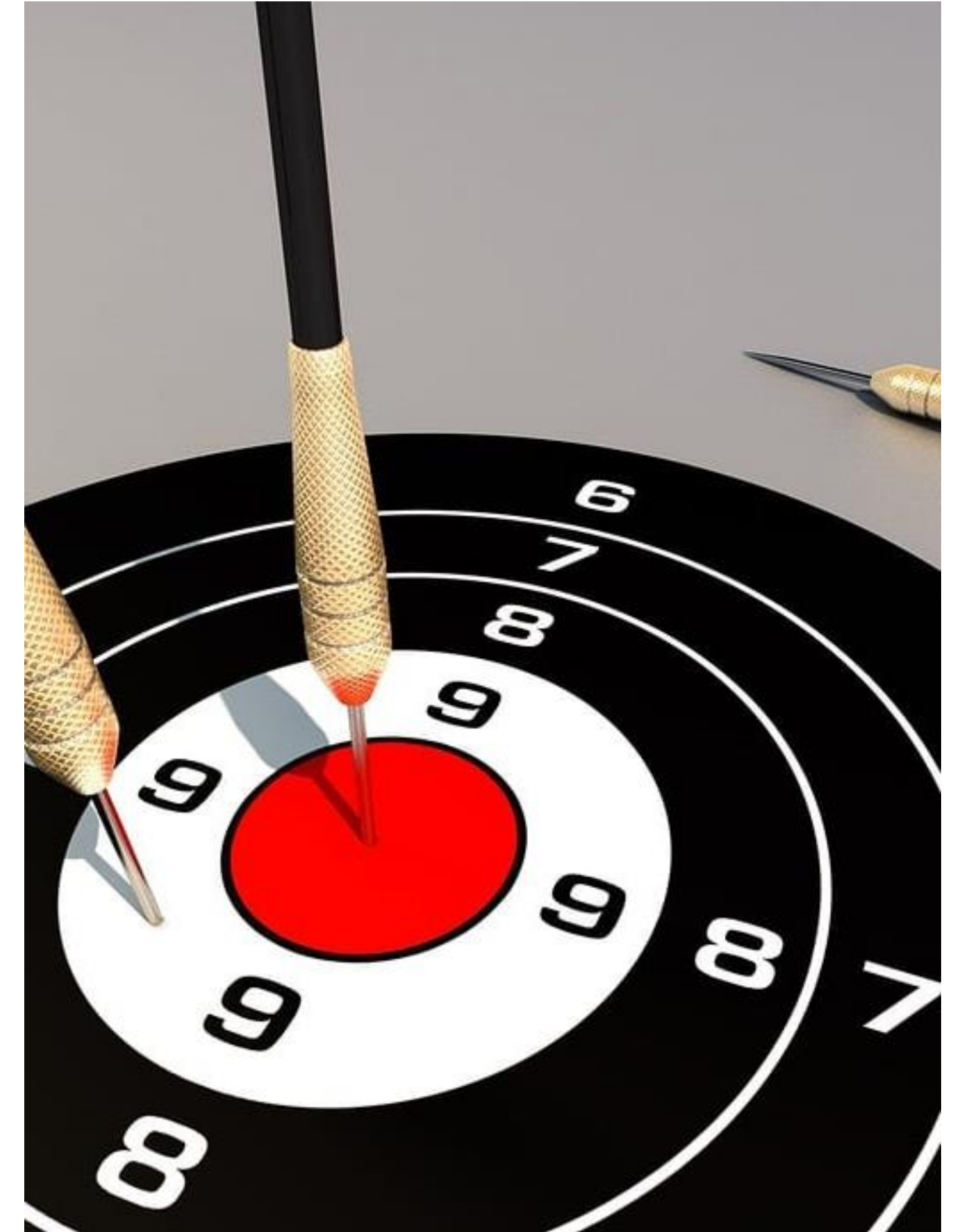
Interviews with regional tourism organisations

- Information about data infrastructure and system landscape

  - Inventory of the applications that are currently being operated by your DMO or are in the planning stage (time horizon: max. 2 years).
  - Inventory of the system platforms used for the development and operation of these applications.
  - For each system platform: inventory of the data objects that are managed with these systems
  - For each system platform: data import and export interfaces to third-party systems that are not operated by your DMO;
  - List of data objects transferred via these interfaces.
  - For each system platform: Open Data access to the data, if available.
  - Further essential information on the system and data landscape of your DMO

Interviews conducted with regional tourism organisations

18.07.23
Zürich
Tourismus

21.08.23
Schweiz
Tourismus

07.09.23
Graubünden
Ferien

11.09.23
Valais/Wallis
Promotion

20.09.23
Luzern
Tourismus

12.10.23
Vaud
Promotion

16.10.23
Made in
Bern

31.07.23
Vorarlberg
Tourismus

06.09.23
Basel
Tourismus

07.09.23
Engadin St.
Moritz
Tourismus

12.09.23
Ticino
Turismo

4.10.23
St. Gallen
Bodensee
Tourismus

12.10.23
Jungfrau
Region
Tourismus

Interview Partner (I)

- Schweiz Tourismus
- Basel Tourismus
- Engadin St.Moritz Tourismus
- Graubünden Ferien
- Jungfrau Region Tourismus
- Luzern Tourismus
- Made in Bern
- St.Gallen-Bodensee Tourismus
- Ticino Tourismo
- Valais Promotion
- Vaud Promotion
- Zürich Tourismus
- Vorarlberg Tourismus

(Not) Interview Partner (II)

Industry Partner ResTo AND NOT interviewed

- Anniviers Tourism
- Crans Montana Tourism
- Nendaz Tourism
- Sierre-Annviers Marketing

RDK-Member AND NOT interviewed

- Ostschweiz Tourismus
- Freiburger Tourismusverband
- Geneva Tourism & Conventions Foundation (FGT&C)
- Jura & Trois-Lacs
- Aargau & Solothurn Region

Not included: data platforms of (national) tourism associations (STV, HotellerieSuiss, GastroSuisse), data platforms of tourism service providers, global tourism related data platforms (Google, booking etc.), government tourism related data platforms (exception: FOS), public transport data platforms, others...

Overview of systems and providers used by regional tourism organizations

CONTENT
- stc switzerland travel centre
- hotelleriesuisse Swiss Hotel Association
- ginto
- OKGO
- OpenBooking
- e-domizil SUISSE
- lunchgate
- aleno
- Getlocal
- outdooractive
- HYLL
- Experience Bank
- Tourify gmbh
- SchweizMobil
- SISAG
- guidle
- Eventfrog
- feratel window to the world
- SRF METEO
- MeteoSwiss
- AccuWeather
- roundshot SMART IMAGE TECHNOLOGY
- meteonews
- meteoblue
- apidae DIGITAL
- Google My Business
- Schweiz Tourismus.

CRM / ENGAGEMENT
- Caymland
- SharpSpring
- salesforce
- NOVA Beta
- Dynamics 365
- HubSpot
- Wilken Software Group
- emarsys
- inxmail
- braze
- Campaign Monitor

TICKETING / BOOKING / E-COMMERCE
- e-guma
- SKIDATA KUDELSKI GROUP
- TicketGateway
- n-tree
- e-liberty
- AXESS
- TREKKSOFT
- WALDHART SOFTWARE
- CLUBINONE
- discover.swiss
- shopify
- ALTUROS destinations
- TOURISTDATASHOP
- feratel window to the world

CMS
- Magento
- Contentful
- Drupal
- magnolia
- CrowdRiff
- NEOS
- TYPO3
- SITECORE

DIGITAL ASSET MANAGEMENT
- bynder
- Keepeek
- AdmiralCloud
- pixx.io

CUSTOMER INFO
- TOURX
- inside labs / SPOTWERBUNG DIGITAL PARTNERSHIP
- AVS
- MASCH SOFTWARE SOLUTIONS
- 4tix

CUSTOMER SERVICE
- OpenAI
- goodguys
- guuru
- zendesk

SOCIAL MEDIA MANAGEMENT
- Flowbox
- buffer
- playable

CONTENT HUB
- mein.toubiz Touristisches Datenmanagement ♥ by land in sicht
- SANITY
- CONTENTDESK.IO YOUR DATA BUTLER
- neusta destination.one
- MYCITY

ANALYTICS/BI SYSTEMS
- Google Analytics
- AIRDNA
- Looker
- fusedeck
- CLICDATA
- tableau SOFTWARE
- Tourobs
- HBenchmark Hospitality Data Intelligence

First General Insights from the Interviews (I)

- Local and Regional tourism organisations have various approaches towards data infrastructure and system integration („local/regional optimisation")

- System landscapes of the interviewed DMOs are significantly different and almost not interconnected

- Numerous system components are under construction or will be replaced in the next two years

- "Two Worlds": DMOs in Romandie use other platforms and system providers (than DMOs in German-speaking Switzerland)

- Personal and financial resources for digitalisation and data infrastructures are (very) limited; numerous projects are funded by NRP, Innotour or other government financial sources

- Maturity level varies among destinations (remark: not all DMOs have a digital strategy)

- Cooperation, networking and data sharing between DMOs are rather rare (own worlds)

First General Insights from the Interviews (II)

- Numerous different platforms, applications and system/solution providers/integrators
  - Platforms used by at least 4 DMOs: TOMAS, Guidle (STnet), discover.swiss, Outdooractive, OpenBooking, Google Analytics, Alturos,
  - System providers for at least 2 DMOs: discover.swiss, TSO, Neusta, Sanity, Omniplatform Braze, Tableau, Looker Studio

- Attempts are being made within DMOs (regional/local) to integrate systems and create e.g. a content hub

- Numerous Common denominators/shared topics:
  Content Management (POIs, Events etc.), Webshops, CRM / Guest Cards, "Meldeschein", Analytics, Visitor Flow Measurement/Sensors, AI…

- There are numerous parallel projects in the tourism industry related to digitalization in tourism with 3 or more DMOs participating (POI data management, Event data consolidation, AI supported content creation, digital "Meldeschein" etc.)

- Only 4 of the interviewed DMOs have already an open data API: ST, ZT, LTAG, SBT

- 5 DMOs already publish data on tourismdata.ch, 3 DMO's are in process of publishing

**HSLU** Hochschule Luzern

Workshop & Discussion

Towards a Swiss Tourism Data Space

and a National Data Infrastructure for Tourism (NaDIT)

Goals of discussion

- A clear commitment of the DMOs present to purpose-oriented and data collaboration at national level ("Swiss Tourism Data Collaborative")

- Agreement that a framework proposal for Swiss Tourism Data Collaborative is being developed until Q2 2024 (lead: ST, support: NaDIT-Team HSLU & FHGR) and will approved on occasion of a next NaDIT workshop (May/Junde 2024).

- Definition of potential immediate measures (e.g. publishing metadata on tourism data sets on tourismdata.ch, implementation and publication of Open Data API's)

Question 1
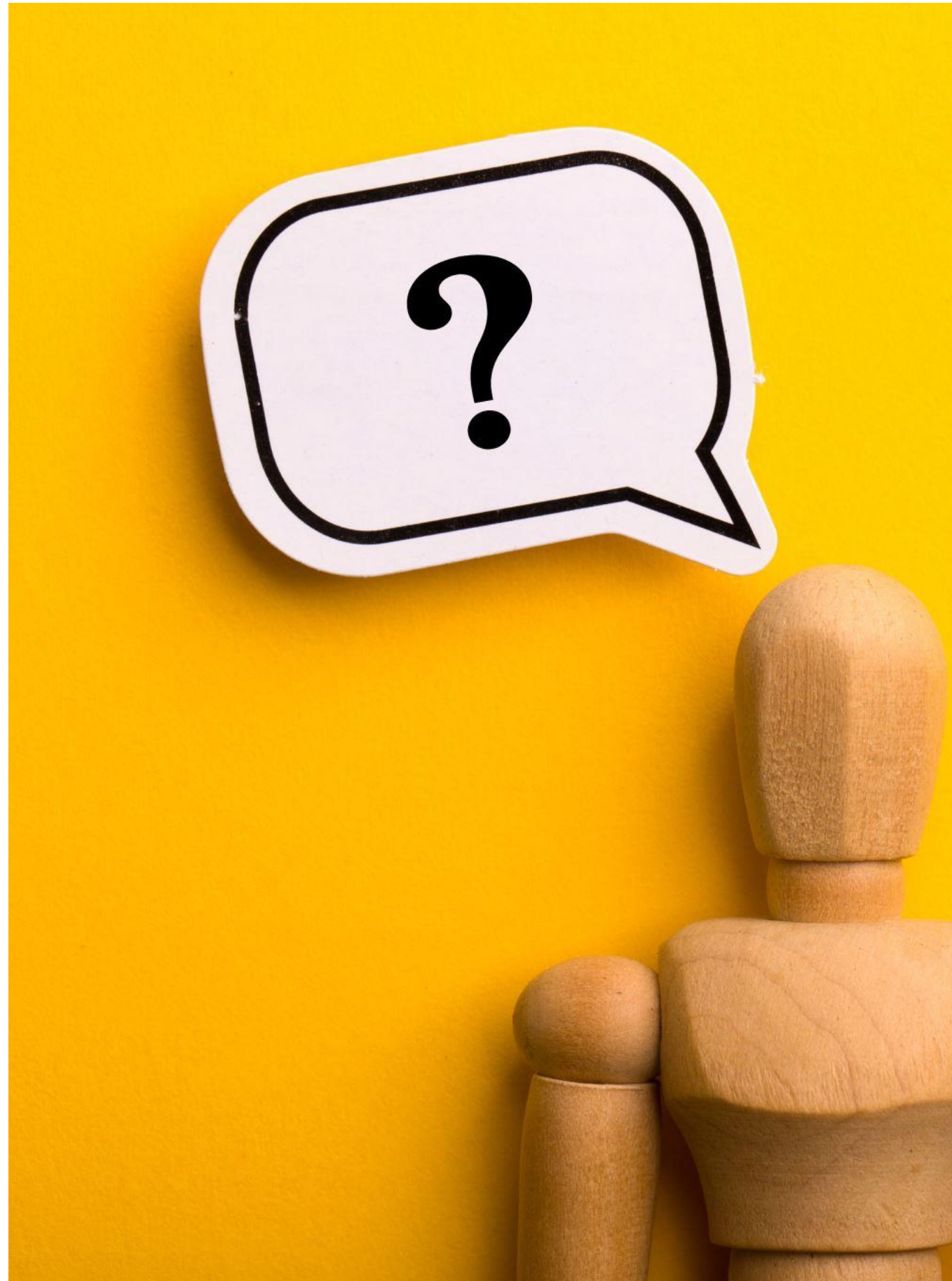
Where do you see the potential and motivation for your organization to participate in a future data collaborative at the national level?

- Please share the perspective of your organization
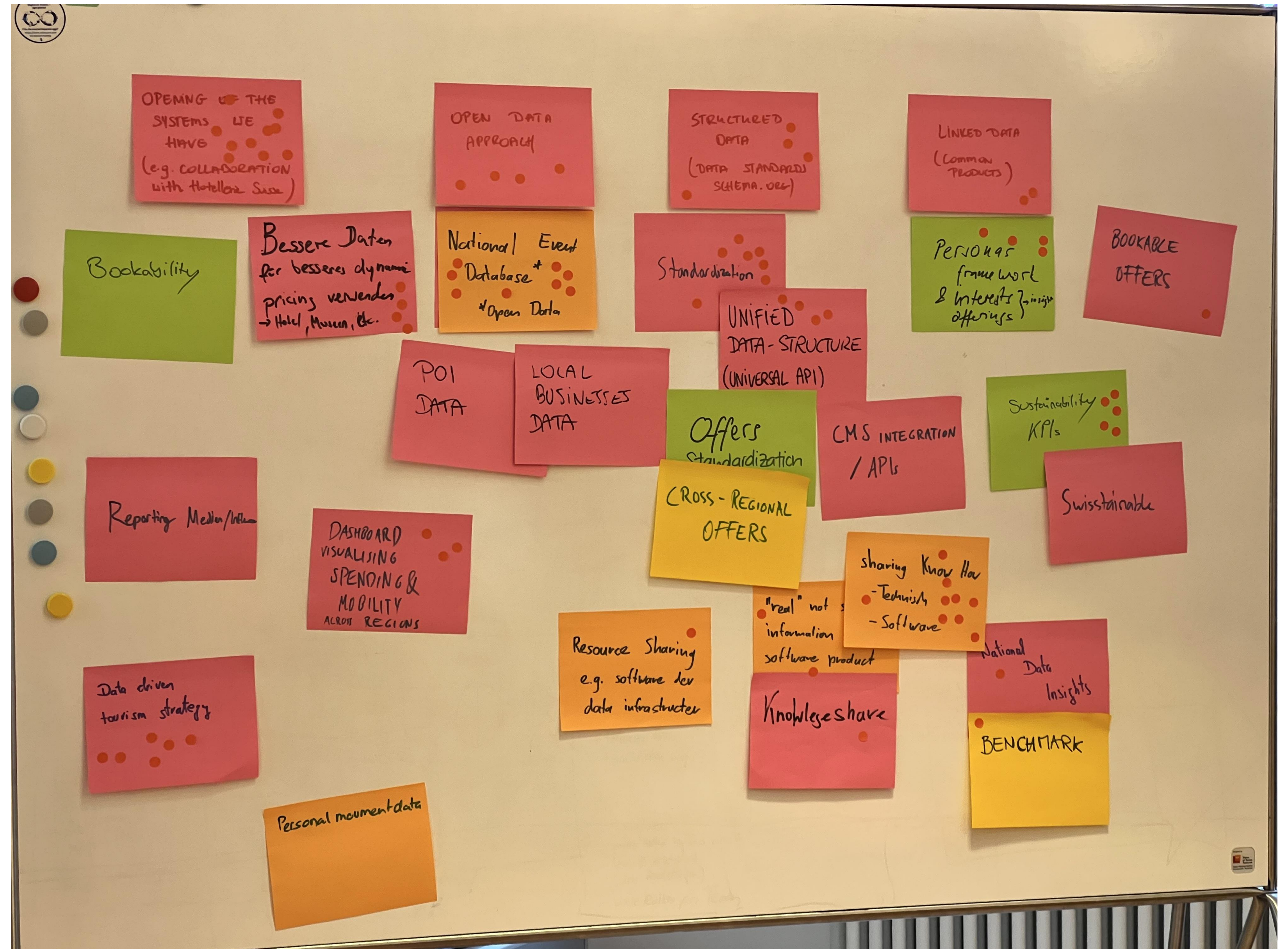- Please note one idea per post-it

Post Its Collection

In which specific areas would you find that data collaborative at the national level would make sense?

- Please try to prioritise the ideas on the flipchart.
- Each person gets 5 stickers.

Post Its Collection

Question 3

What hurdles does your organization face in joining the data collaborative?

What was mentioned during the discussion

- Budget

- Time

- Politics

- Competences and skills (human resources)

- Internal competencies

- Legal concerns

- Coordination by ST

- Ownership of the data

- Data governance

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Thanks a lot for your collaboration!

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