i4Trust

TOURiLab-SDG

Pioneering Data-Driven Sustainable Tourism

TOURiLab-SDG: Pioneering Data-Driven Sustainable Tourism

With the contribution of:

MNX Online S.L.

Consultores Canarios de Informática S.A.

Vancampers Experience S.L.

CleanCarbon Solutions S.L.


Padword S.L.

B-Graffos International S.L.

Challenge & Context

The tourism sector is undergoing a digital revolution, with data at the heart of innovation and personalization. In this ever-evolving landscape, TOURiLab-SDG emerges as a pioneering initiative leveraging data sharing to transform tourist destinations into smarter and more sustainable entities. This transformation not only elevates the tourist experience but also significantly impacts the quality of life for the residents of these destinations.

Tourism, as one of the world's largest industries, holds immense potential for digital transformation. However, it faces a significant hurdle: the reluctance to share data. Many tourism entities guard their data fiercely, fearing the loss of competitive advantage. This lack of collaboration hampers industry-wide innovation and limits the potential for holistic growth. Moreover, as the world becomes more conscious of sustainability and environmental impact, there's an increasing demand for tourism to align with these values. The challenge is twofold: to foster a culture of data sharing and collaboration and to pivot towards more sustainable tourism practices.

TOURiLab-SDG addresses these challenges head-on. By creating a trusted data-sharing environment, it encourages companies to collaborate, innovate, and drive the industry forward. Furthermore, by promoting sustainable tourism practices, it aims to reduce the carbon footprint of tourist activities, ensuring that tourism remains a joy for generations to come.
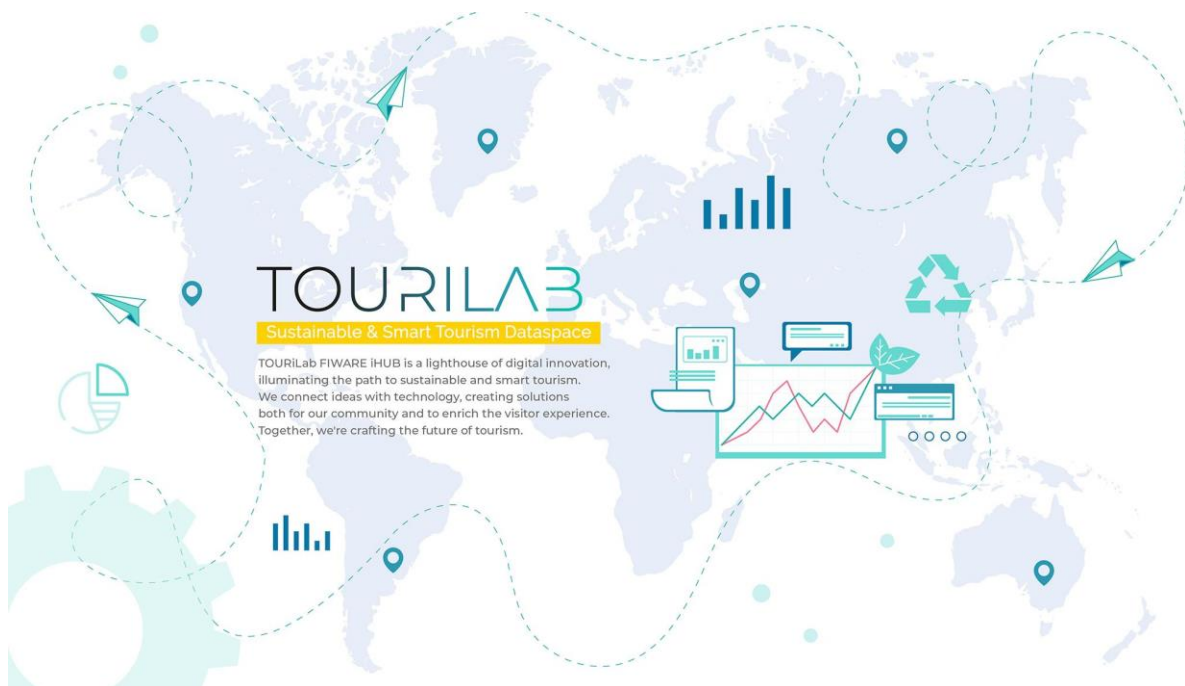
Solution

TOURiLab is an avant-garde data space solution tailored to redefine the tourism sector by championing sustainable and intelligent tourism initiatives. Rooted in the robust FIWARE technology and seamlessly integrated with iSHARE components, TOURiLab aspires to establish a secure and streamlined data exchange ecosystem.

This dataspace empowers various stakeholders in the tourism landscape to collaboratively share and access pivotal data, thereby refining their offerings and endorsing eco-friendly practices.

By eradicating data redundancy and championing real-time data access, TOURiLab not only champions efficiency but also underscores sustainability by curtailing superfluous infrastructure and conserving energy. This venture is championed by a consortium of industry frontrunners, each contributing their unique expertise, with a shared vision of crafting groundbreaking products and services that harness the potential of data.

A tangible application of TOURiLab is illustrated in the journey of a tourist. For instance, when a tourist interacts with VanCampers, the system can extract pertinent data from Noray to decipher the tourist's accommodation preferences. Further insights from CleanCarbon can anticipate the tourist's sustainability tendencies. This data-driven methodology empowers service providers like VanCampers to curate bespoke services, enriching the tourist experience while promoting eco-conscious behaviours.

Partners and Donors:

TOURiLab is a synergistic endeavour, buoyed by contributions from a diverse array of research, realization, and implementation collaborators. Prominent partners encompass:

- MNX Online: The pioneering technology firm at the helm of the initiative, with a specialization in FIWARE technology.
- Noray: A seasoned data provider in the tourism domain, offering invaluable tourist profiling insights.
- CleanCarbon: An industrial trailblazer with a focus on sustainability, curating the Sustainability Rating System.
- Padword: Dispensing datasets related to energy and water consumption, indispensable for hospitality entities.
- VanCampers: A visionary in the vehicle rental space, leveraging data to offer tailored services and promote sustainable tourism practices.
- Graffos: Augmenting user profiling through cutting-edge IoT devices, with an emphasis on tourist well-being.

This groundbreaking initiative has also garnered unwavering support and endorsement from a myriad of donors and stakeholders spanning the tourism and tech sectors.

How It Works: Exploring TOURiLab-SDG Through Tania's Journey

To best illustrate our experiment, let's delve into Tania's travel experience.


Tania is an eco-conscious traveller deeply committed to nature's well-being. To actively contribute to environmental sustainability, she establishes a Sustainability Rating Profile for herself.

Similarly, companies like VanCampers, recognizing the environmental impact of their operations, have initiated a shift towards sustainability by creating their own profiles.

② FIND SUSTAINABLE BUSINESSES

I'D LIKE TO TRAVEL

SEARCH SUSTAINABLE BUSINESSES

MOTEL 15
TICKET
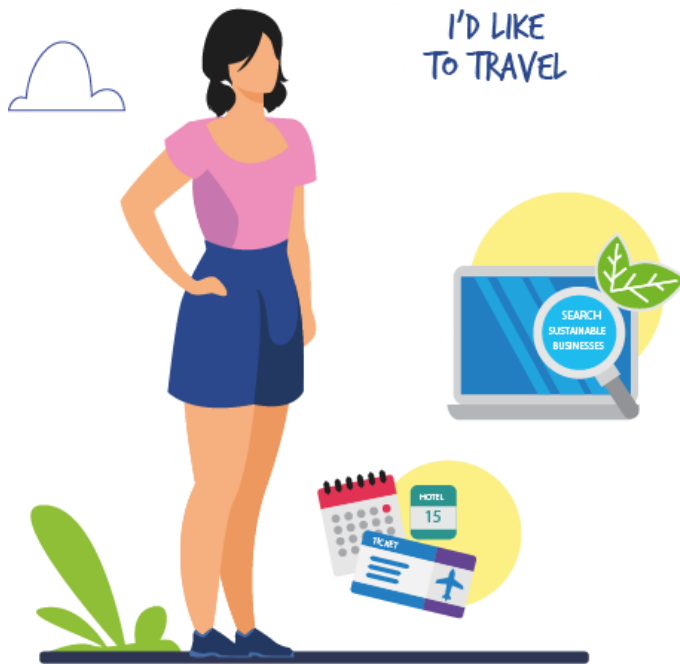
Facing personal challenges, Tania opts for a rejuvenating week in Lanzarote. She chooses to engage with eco-friendly businesses, such as VanCampers, aligning with her sustainability values.

## ③ TRAVEL & CHECK IN

ACCEPT CONDITIONS

By granting access to her profile and supplementing it with the TouristProfile data from Noray, Tania receives tailored product and service recommendations, enhancing her travel experience.

④ ROAD TRIP & CONSUMPTION

FREE GIFT!
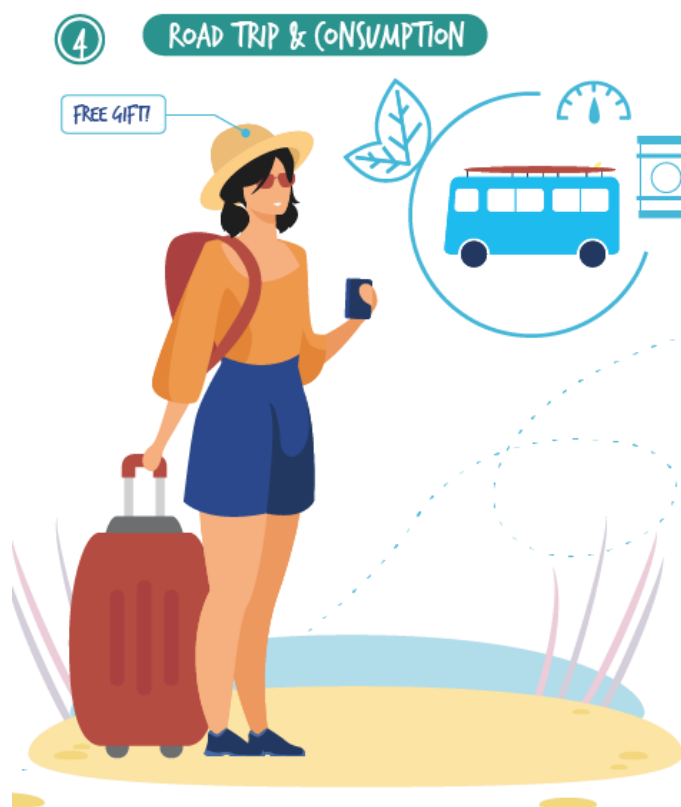
Her sustainability efforts don't go unnoticed. Based on her Rating, Tania is rewarded with complimentary perks to utilise during her journey.

⑤ CHECK IN MOOD 😊

HOTEL

ACCEPT CONDITIONS
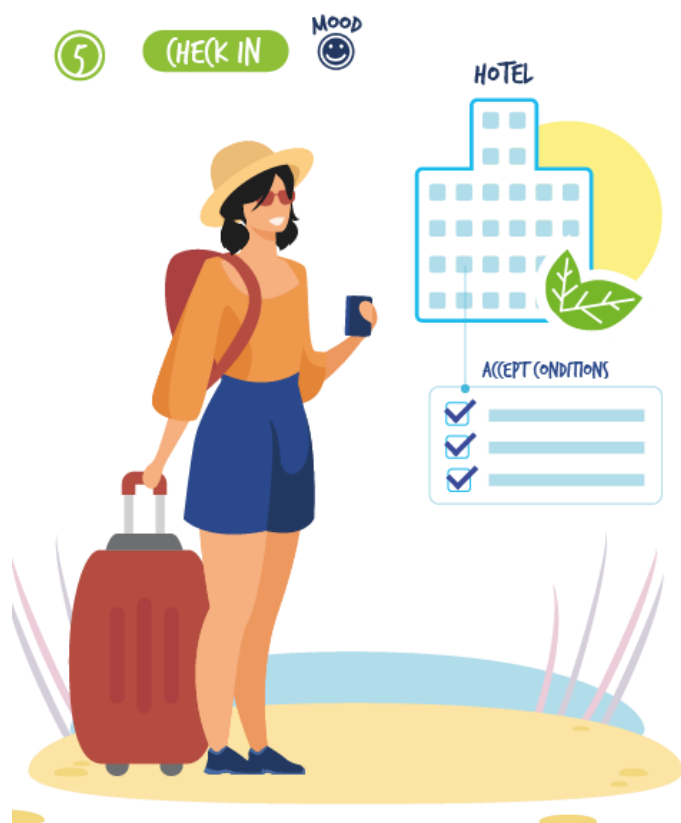
Towards the end of her stay, Tania checks into an eco-friendly hotel. Her Sustainability Rating and TouristProfile ensure she receives personalised attention.
Intrigued, she also undergoes a graphology test by Graffos to assess her emotional state.

6 STAY & CONSUMPTION — MOOD

Upon checking out, Tania's consumption patterns, specifically her water and electricity usage monitored by entities like Padword, are analysed. This data feeds into the Sustainability Rating System, updating her profile.

A positive rating increment earns her additional rewards and discounts. A subsequent graphology test reveals a notable improvement in her mood during her stay.

7 CHECK OUT & RETURN

As her memorable trip concludes, Tania returns the campervan. Her sustainable usage of the service positively impacts her Rating, culminating in a truly fulfilling travel experience.

This seamless experience was made possible by the data-sharing initiatives of companies like Noray, VanCampers, CleanCarbon, Padword, and Graffos and lead by the technical expertise of MNX Online.

Their collaboration within the trusted dataspace of TOURiLab ensures enhanced user experiences.

Demo Description:

Our experiment showcased this flow using profiling data. However, actual personal data will be incorporated in future iterations, post implementing measures ensuring visitor consent and data control.

In the M2M flow, each Service Provider and Consumer integrated an Orion-LD (context broker) + Keyrock (M2M Identity Manager) and Kong (PEP Proxy and secure gateway to Orion-LD) as fundamental i4Trust components. Keyrock verifies the data consumer's entitlement in the iSHARE Satellite of the trusted dataspace, granting an access token if validated. Kong, equipped with the ngsi-ishare-policies-plugin, post token verification, ascertains if the identified data consumer has the authorization to access the required resource, its attributes, and the HTTP actions involved. This is achieved by querying the Authorization Registry with a suitably formatted delegation request payload.

We've set up a policy generation tool that instructs the Authorization Registry to either allow or deny access, empowering trusted entities to either provide or withdraw data access permissions.

To demonstrate data consumption, we used frontend applications like the VanCampers booking platform powered by Wordpress and a Hotel Management System built on React.
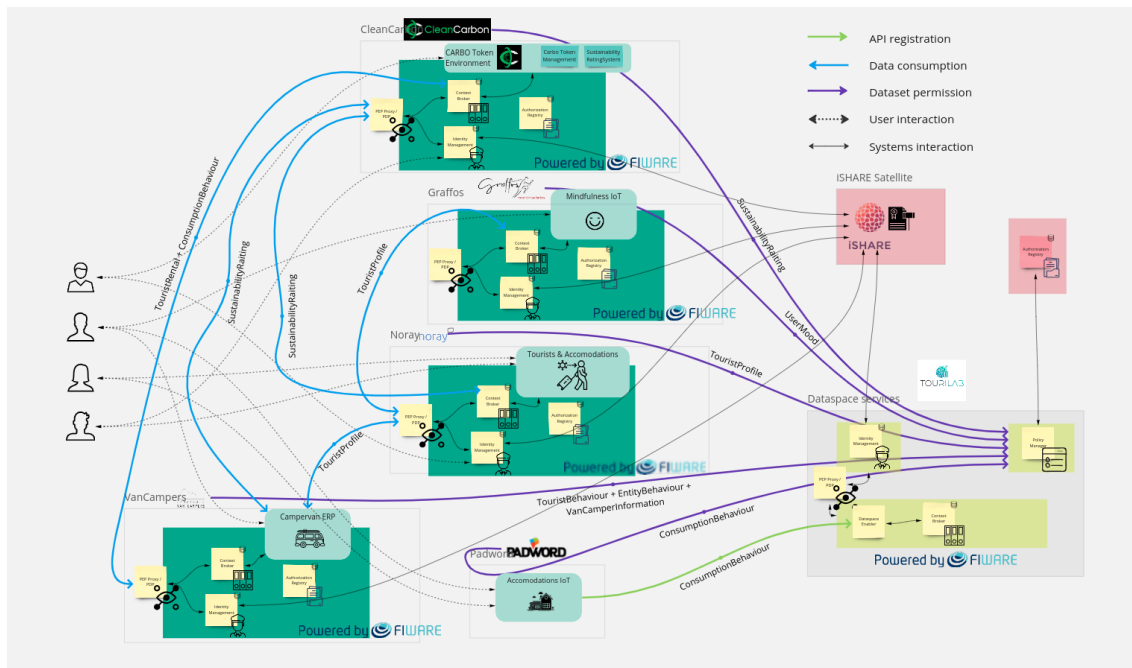
Benefits & Impact

The TOURiLab-SDG experiment is an ambitious initiative aimed at aligning tourist destinations with the United Nations Sustainable Development Goals. Central to its ethos is the robust exchange of data to ensure sustainable practices in tourism, especially concerning carbon footprints. The experiment leverages CleanCarbon's CARBO token and Noray's tourism data to drive actionable green marketing strategies, shunning superficial greenwashing. By creating a smart, green tourist destination, it seeks not only to elevate tourist experiences but also enhance the living conditions of the locals. With technical, economic, and strategic objectives, the project confronts challenges like reducing tourism's substantial carbon footprint, amalgamating diverse data types, and ensuring robust and secure data infrastructures.

1. Number of Users:
   - *Current*: 10,000 registered users on the platform
   - *Expected in the Future*: Given a growth rate of 20% annually due to enhanced features and benefits, 12,000 users next year, 14,400 users the following year, and so on.

2. Number of Customers:
   - *Current*: 7,500 (since not all users might be paying customers)
   - *Potential Growth*: If the platform introduces premium services, or discounts for sustainable practices, this might incentivize 10% of non-customers to convert, resulting in 8,250 customers next year.

3. Number of New Potential Clients:
   - Assuming a marketing campaign and word-of-mouth effect, there might be an addition of 2,000 potential clients in the next year.

4. Investments, Savings, Efficiency Growth:
   - *Investments*: Over the next 3 years: $500,000 in technology, infrastructure, and marketing.
   - *Savings*: By avoiding redundancy and optimizing resources, savings of 15% on operational costs may be achieved each year.
   - *Efficiency Growth*: Expected to increase by 20% over the next 3 years due to streamlined operations, improved data analytics, and better decision-making.

5. Others Relevant Numbers:
   - CARBO token transactions: A surge from 1,000 monthly transactions to 5,000 in three years.
   - Reduction in carbon footprint: An ambitious target of 25% reduction in the next three years, due to heightened sustainable practices.

6. Target Group with Highest Impact: Eco-aware tourists will see the most direct benefits. They're already aligned with the platform's goals, and the rewards for sustainable behavior will directly appeal to them. Moreover, as they often have higher purchasing power, the financial incentives could lead to increased spending.

Importance to Stakeholders:

- Company: The project positions the company as a leader in sustainable tourism, opening avenues for collaborations, partnerships, and increased market share.
- City: Aligns with global sustainable development goals, enhancing its reputation as a forward-thinking, eco-friendly destination. It could also lead to increased tourism revenue without the accompanying environmental degradation.
- Society: Raises awareness about sustainable practices and directly contributes to a healthier environment and improved quality of life for residents.

Increase in Sales/Revenue:

- Leveraging the platform, involved SMEs can target a niche but powerful segment of eco-aware tourists. By offering special deals, rewards, and premium services based on sustainable behaviours, they can attract these higher spending individuals.
- The data-driven insights allow businesses to tailor their services more effectively, leading to better customer satisfaction and repeat business.
- By avoiding greenwashing and focusing on genuine sustainability, businesses can build stronger, trust-based relationships with their customers, enhancing brand loyalty.
- With the added benefits and features, if each SME can attract just 5% more of these high-value customers annually, this would result in a significant revenue boost. Over three years, with compounded growth, this would easily surpass the 30% mark.

Added value through i4Trust

i4Trust, as a cornerstone for data sharing and collaboration, has been instrumental in amplifying the potential of TOURiLab-SDG. Here's a succinct overview of the value it brings to the table:

Trustworthy Data Ecosystem:

i4Trust establishes a secure and transparent environment for data exchange. This ensures that all stakeholders, from travellers to service providers, can trust the integrity and authenticity of the information they access.

Seamless Integration:

With its standardized components like Orion-LD and Keyrock, i4Trust facilitates smooth integration across various platforms and services. This interoperability is crucial for creating a cohesive user experience, as seen in Tania's journey.

Data Sovereignty and Control:

i4Trust champions the rights of data owners. Users have the autonomy to decide who they share their data with and under what conditions, ensuring their privacy is always upheld.

Collaborative Innovation:

By fostering a collaborative dataspace, i4Trust paves the way for businesses to co-create innovative solutions. This collective approach accelerates the development of novel offerings that cater to modern travellers' evolving needs.

Scalability and Future Growth:

i4Trust's framework is designed to be adaptable. As TOURiLab-SDG grows and evolves, i4Trust ensures that new integrations and expansions can be seamlessly incorporated.

Enhanced Decision Making:

With access to a wealth of shared data, businesses can make more informed decisions. Whether it's tailoring services to a traveller's preferences or optimizing operational efficiency, data-driven insights lead to superior outcomes.

Economic Opportunities:

The trusted dataspace created by i4Trust unlocks new revenue streams for businesses. By tapping into shared data, they can diversify their offerings, reaching new customer segments and markets.

Promotion of Sustainable Practices:

i4Trust's emphasis on transparency and collaboration aligns perfectly with TOURiLab-SDG's sustainability goals. By facilitating the sharing of sustainability ratings and practices, it encourages businesses to adopt eco-friendly strategies.

In essence, i4Trust is the backbone that empowers TOURiLab-SDG to realize its vision. It's not just about technology; it's about creating a community where data is the currency of trust, collaboration, and innovation. Through i4Trust, TOURiLab-SDG is poised to redefine the future of sustainable tourism.

Next steps

Expansion of Data Partnerships:

To further enrich the dataspace, we aim to forge new collaborations with diverse stakeholders in the tourism sector. This will provide a more comprehensive data pool, enhancing the quality of services and insights.

Enhanced User Experience:

Based on feedback from early adopters like Tania, we'll refine the user interface and journey. This ensures a more intuitive and seamless experience for travellers and service providers alike.

Incorporation of Personal Data:

With stringent data protection measures in place, we'll begin integrating actual personal data into the system. This will allow for more personalized and tailored services for users.

Sustainability Initiatives:

Building on our commitment to sustainable tourism, we'll launch initiatives to educate and incentivize businesses to adopt eco-friendly practices. This includes workshops, webinars, and certification programs.

Technology Upgrades:

We'll continue to update and enhance the technical infrastructure, ensuring it remains robust, secure, and in line with the latest industry standards.

Community Engagement:

Engaging with the community is vital. We plan to host forums, feedback sessions, and events to gather insights, address concerns, and co-create the future roadmap of TOURiLab-SDG.

Pilot Programs:

To test new features and integrations, we'll roll out pilot programs with select partners. This iterative approach ensures that any enhancements are well-received and effective.

Global Outreach:

While our current focus is on European destinations, we envision expanding TOURiLab-SDG's reach globally, promoting sustainable tourism on a larger scale.

In the coming months, TOURiLab-SDG is set to embark on these exciting ventures. With a clear roadmap and the support of our community and partners, we're confident in making strides towards a more sustainable and innovative tourism landscape.

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Authors & Contributors

- Mannix Manglani Mankani
  Role: Director of MNX Online and Project Lead for TOURiLab-SDG.
  Contribution: Visionary behind the TOURiLab-SDG initiative, providing strategic direction and overseeing the overall execution.
  MNX Online S.L.
  mannix@mnxonline.com
  https://mnxonline.com
  +34644478889
- Jose Manuel Cabello
- Jose Manuel Sola Quesada
- Manuel Suárez
- Andrés Sanfiel.
  CEO B-Graffos International, S.L.
  email: andres@graffos.es.
  Mobile phone: +34 665 009 121.
- Javier Afonso

Categories

User(s):

- Specific City: Fuerteventura, Lanzarote, Gran Canaria, Tenerife, La Palma, La Gomera, El Hierro
- Region: Canary Islands, Spain
- Business: Sustainable Tourism Providers, Data Sharing Platforms, Eco-friendly Hotels, Green Transportation Services, Local Sustainable Businesses, Eco-tour Operators
- Tourists/Travelers: Eco-conscious travelers, Adventure seekers, Cultural explorers, Digital nomads
- Local Authorities: Municipalities promoting sustainable tourism, Regional tourism boards
- Technology Providers: Companies specializing in data sharing, sustainable tech solutions, and smart destination tools

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- Data Privacy
- Sustainability Rating
- Personalized Experience

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