Ubiquitous computing in tourism

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- Augmented reality
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- Other technologies

SOME DATA HERE...
Then and now

51% Percentage of people who travel more today than 10 years ago

Exploring the world is easier now thanks to evolving technology

Generation Y | comparison | Baby Boomers
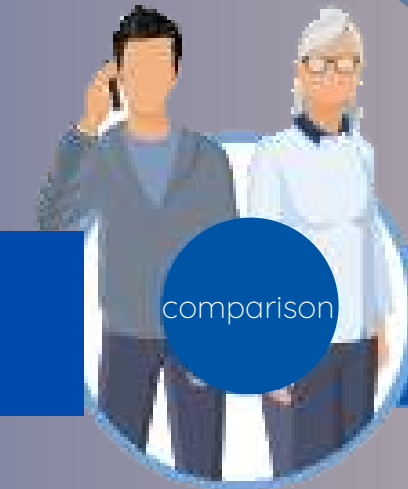
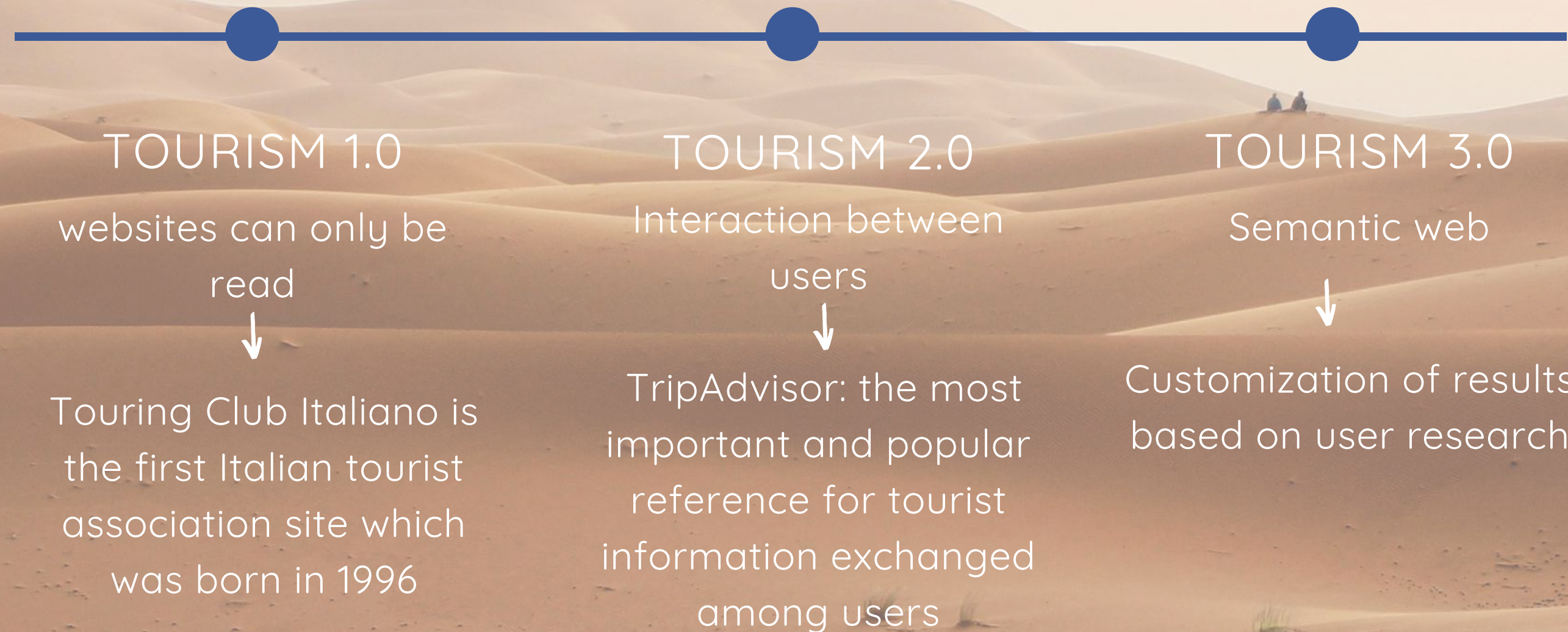| Generation Y		Baby Boomers
9 years	Average age of the first holiday abroad	19 years
54%	Trip abroad within 5 years-old	19%
10	Holidays spent within 12 years-old	5
6	Countries visited within 18 years-old	3

EVOLUTION OF TECHNOLOGIES USED IN TOURISM

TOURISM 1.0
websites can only be read

↓

Touring Club Italiano is the first Italian tourist association site which was born in 1996

TOURISM 2.0
Interaction between users

↓

TripAdvisor: the most important and popular reference for tourist information exchanged among users

TOURISM 3.0
Semantic web

↓

Customization of results based on user research

THE 4 INGREDIENTS OF MODERN TOURISM

UBIQUITY

The possibility of accessing services anywhere, regardless of location

CONVENIENCE

The convenience for the user to access to services at the point of need

LOCALIZATION

The tailoring of service contents to the user location

PERSONALIZATION

The additional customization according to other contextual or personal variables

Not E., Cavada C., Nicol, Venturini A. (2020). Internet of Things and Ubiquitous Computing in the Tourism Domain

OBJECTIVES OF THE TOURISM SECTOR THROUGH THE 4 INGREDIENTS:

Support specific market transaction phases (pre-sales agreement, booking/ticketing and payment)

Improve the quality of the relationship between final customers and providers of tourist products (e.g., by offering information, recommendation, and other functionalities that increase the enjoyment and the perceived quality of products and places)

Represent final services with clear economic value and price (e.g., electronic travel guides, maps).

Source: Not E., Cavada C., Nicol, Venturini A. (2020). Internet of Things and Ubiquitous Computing in the Tourism Domain.

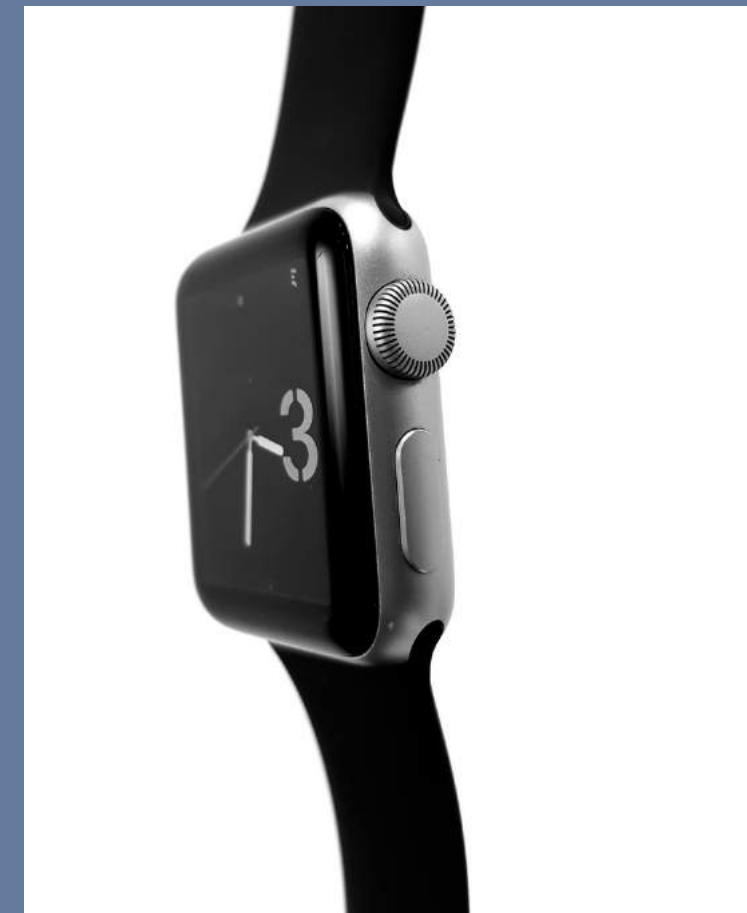# The 4 most popular technologies

QR -CODE

AUGMENTED REALITY

WEARABLE SYSTEM

NFC SYSTEM AND BLUETOOTH

QR-code

QR-CODE
Westin Bayshore Hotel

The **Westin Bayshore Hotel in Vancouver** welcomes guests with a plate of customized cookies.
The hotel guest (Katie) opened her door to her hotel room and there on the table lay three shortbread cookies, one of which with a **QR Code**. When she scanned the code (with her Smartphone), she received a customised message personally welcoming her to the hotel.

QR Codes can be used everywhere.
For example in hotel brochures, access cards, feedback forms, elevator notices. This is a simple way to engage guests. You can store your website URL, social media links, or may be just simple text. As users scan it via their smartphone, it will redirect them to the helpful information.

Augmented reality

Skyline

Skyline is an augmented reality tool that allows you to explore the outdoors. With your smartphone's camera you can identify peaks, places, and other points as well as seeing direction arrows and waypoints too.

Skyline uses your device's camera to **identify landscape features** up to 20 miles away. It knows the location of more than 9 million points, including peaks, towns, lakes, cliffs, and glaciers.

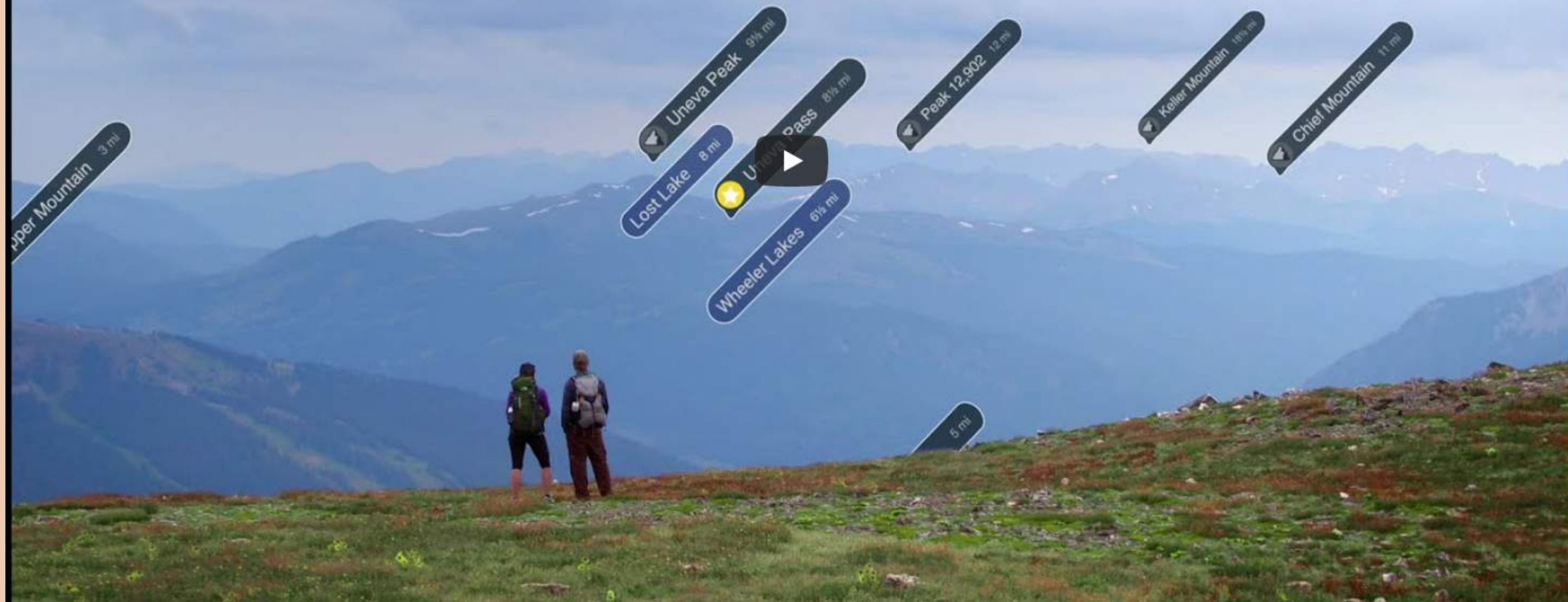Skyline overlays **waypoints** and **navigation arrows** on the real landscape, showing the path.

Source: ViewRanger

Source: Viewranger

https://www.youtube.com/watch?v=JHtXSmVOkqU&feature=youtu.be

AUGMENTED REALITY
Shangoo

Named after Shango, the ancient african god of thunder and weather, "**shangoo**" is the first **Augmented Reality Weather App.**

The App allows users to visualize the weather forecasts and data by means of a unique and innovative Augmented Reality interface. The application uses AR to overlay real-time 3D weather effects associated with real weather forecasts onto the view of the mobile device.

By means of the **geo-location** feature users will access the weather data in the place where they are with a maximum 5 days interval, or can search any location worldwide. Several meteorological effects have been rendered in the application, including clouds, thunders, rain, snow and fog.

Source: Armedia

https://www.youtube.com/watch?time_continue=180&v=io0-S9pU6vM&feature=emb_title

Wearable system

Ambassador

Smart earpiece translator **Ambassador**, created by Waverly Labs, enables accurate and live translations of more than **20 languages** and **42 dialects**.

Inspired by personal experiences to develop solutions that help connect people across language barriers, Waverly Labs began creating a product that combined **wearables** and **translation technology**.

Ambassador enables professionals and travelers of all backgrounds to have **fluid conversations** with others who don't speak the same languages, offering highly accurate, real-time translations.

Source:Ces.tech

Easy-jet Sneakairs

EasyJet has designed "**Sneakairs**", smart shoes which with their integrated technology could help costumers to explore cities more easily, without getting lost.

Soles of the shoes have a panel with **detectors** which emits vibrations to indicate the right direction. Shoes connect to a smartphone's app with **Bluetooth**.
The application uses **GPS** and lead the traveler to the destination.
These are just a prototype for now.

Source: EasyJet

https://www.youtube.com/watch?v=3ghwJ2aJiYQ&ab_channel=easyJet

NFC system and Bluetooth

NFC SYSTEM
Clarion Hotel

The **Clarion Hotel** in Stockholm adopted a new way to open room's doors.

The system has been developed by the Assa Abloy company.

An access code is sent to the customer's mobile phone. Then, they can enter the room simply by **"swiping"** the mobile phone on the electronic door lock without checking in at the reception. It is required a mobile phone model that supports NFC technology.

Source: Focus

Rimowa Electronic Tag

Using this new technology integrated in the bag, travellers will be able to check-in their luggage from everywhere using their smartphone and drop it off at the airport in seconds.

The **RIMOWA app** personalises the **Electronic Tag** and activates it so that it can communicate with **airline apps**.
Flight data is then sent to the selected item of luggage via **Bluetooth** and shown on the display.
The case is now checked in and can be dropped off at the airport within seconds.

Another advantage is that it is possible to follow the bag during the travel reducing the risk to lose it.

Source: Rimowa-Electronic Tag
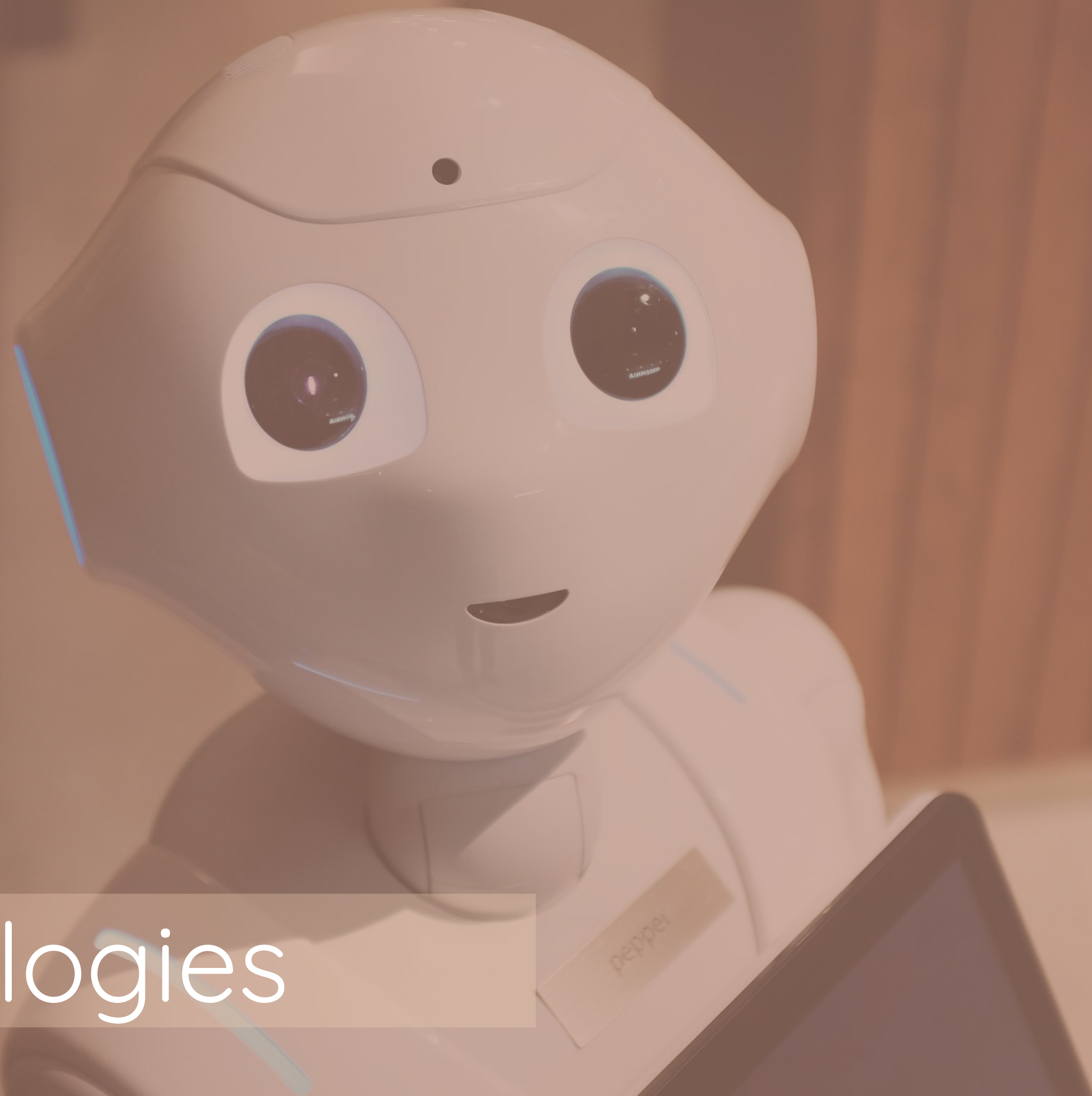
Other technologies

Leo

Leo, a **robot** which moves autonomously, works at Geneva Airport, where it worksweighs baggages, checks-in to passengers and prints them relative bag tags.
Leo scans boarding card and releases a receipt.

The traveller has to put it on the baggage.
Then Leo carries it to the employees who put it on the plane, while the passenger can calmly reach security checks and board.

Source: SITA

Source: Sita

https://www.youtube.com/watch?v=W3WaNHzE9SU&ab_channel=SITA

Bibliography

Cipolla-Ficarra F.V.,Castro Lozano C., Nicol E., Kratky A., Cipolla-Ficarra M.(2010). *Human Computer Interaction,Tourism and Cultural Heritage*. Brescello: Springer.

Not E., Cavada C., Nicol, Venturini A. (2020). *Internet of Things and Ubiquitous Computing in the Tourism Domain*. Handbook of e-Tourism. Springer.

Leal F., Malheiro B., Buguillo J.C. (2018). *Context-aware tourism technologies*. The Knowledge Engineering Review, Vol. 33, 13, 1–26. Cambridge University Press,

Web references

Report E-Dreams
https://www.edreamsodigeo.com/wp-content/uploads/sites/19/2017/07/IT_TravelThroughGenerations-Report_JUL17.pdf

Westin Bayshore Hotel
https://scanova.io/blog/qr-codes-in-tourism/#:~:text=QR%20Codes%20are%20now%20being,them%20to%20the%20helpful%20information

Skyline
https://www.viewranger.com/en-us/premium/skyline

Shangoo
https://www.armedia.it/shangoo/

Ambassador
https://www.ces.tech/Articles/2020/The-Device-That-Helps-You-Understand-Anyone,-Anywh.aspx

Web recerences

EasyJet-Sneakairs
https://www.youtube.com/watch?v=3ghwJ2aJiYQ&ab_channel=easyJet
https://viaggi.corriere.it/eventi/cards/tecnologia-le-novita-piu-utili-originali-viaggiatori/

Clarion Hotel
https://www.focus.it/scienza/scienze/il-primo-hotel-che-usa-gli-smartphone-al-posto-delle-chiavi

Rimowa
https://rimowa-electronictag.com/en-DE/start

Leo
https://www.youtube.com/watch?v=W3WaNHzE9SU&ab_channel=SITA