

CABI TOURISM TEXTS

2nd Edition

Tourism Information Technology

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COMPLIMENTARY TEACHING
MATERIALS

Chapter 6

Mobilities and Information Technology



Chapter 6 Learning Objectives

After studying this chapter you should be able to:

1. apply the mobilities paradigm to the understanding of mobile technologies and travel;
2. explain the key elements of mobile devices using the mobile technologies ecosystem;
3. know what a context-aware tourism system is and how it can facilitate the tourist experience;
4. explain the various mobile functions described in this chapter can be used to enhance travel experiences; and
5. appreciate some of the opportunities and challenges in implementing mobile technologies.

Key Concepts

- ⊙ Mobilities paradigm - convergence, digital elasticity, fluidity, ubiquity, hybridization, saturation creativity
- ⊙ Sensing and signaling technologies
- ⊙ Bluetooth Low Energy (BLE)
- ⊙ Near Field Communication (NFC)
- ⊙ Radio-frequency identification (RFID)
- ⊙ Gamification
- ⊙ Location-based services (LBS)
- ⊙ Ubiquitous and wearable technologies
- ⊙ TILES model

Mobilities Concepts

- ⦿ The **mobilities paradigm** explores the movement of people, ideas and things, as well as the broader social implications of those movements (Sheller, 2011).
- ⦿ Mobile technologies enable the **fluidity** and **liquidity** of experiences by softening the links between activities, space and time (Green, 2002; Uriely, 2005).
- ⦿ Technology creates **occasional, imagined** and **virtual co-presence** where travelers enjoy an experience not just for themselves but also for others (Urry, 2002).
- ⦿ **Digital elasticity** describes how travelers remain electronically linked with everyday life as they explore other places (Pearce, 2011).
- ⦿ The technologies of mobility are characterized by **convergence, saturation, hybridization and ubiquity** (Pellegrino, 2009).
- ⦿ Mobile technologies also empower travelers to **create** new engaging, interactive (Richards & Wilson, 2006).

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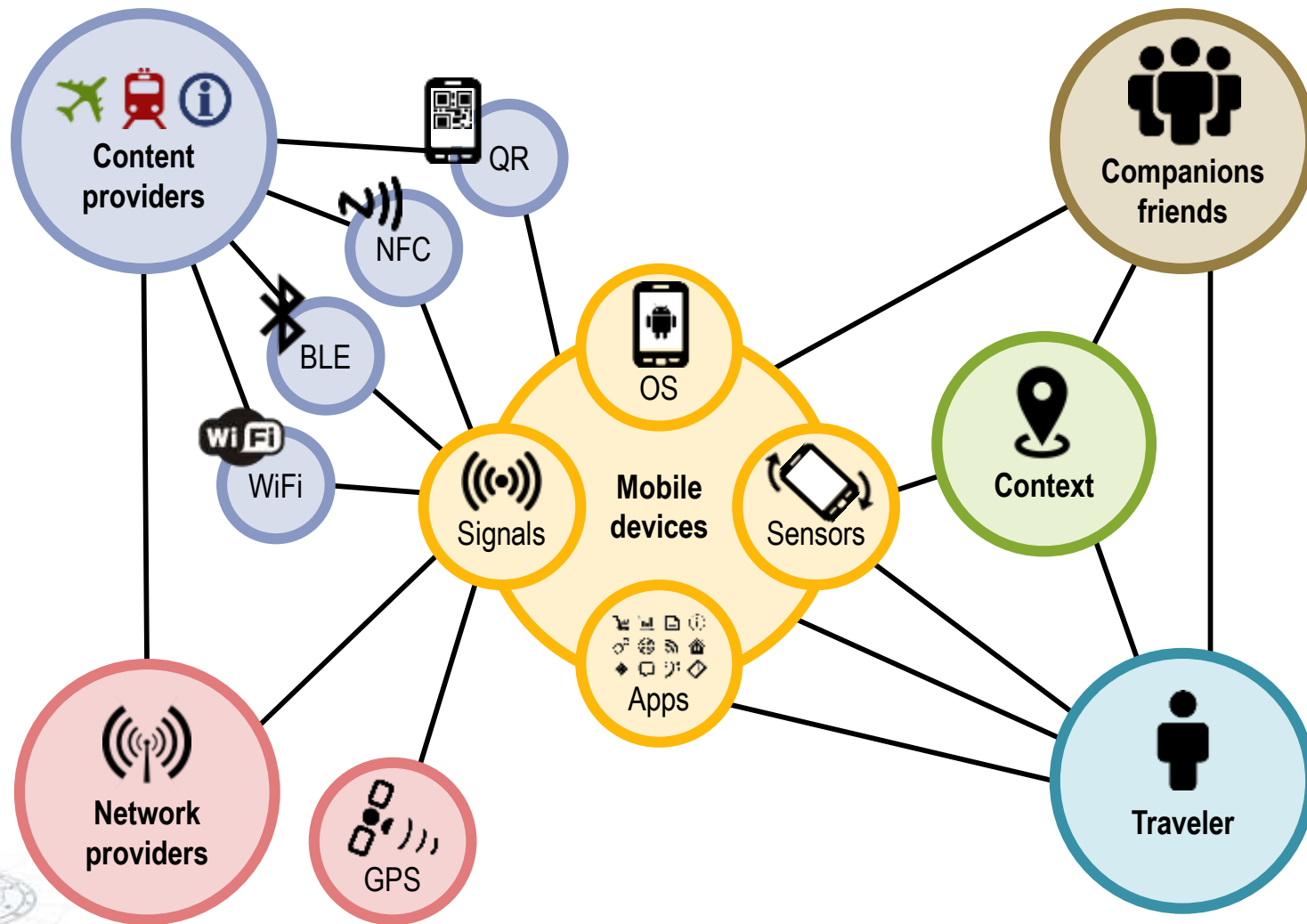
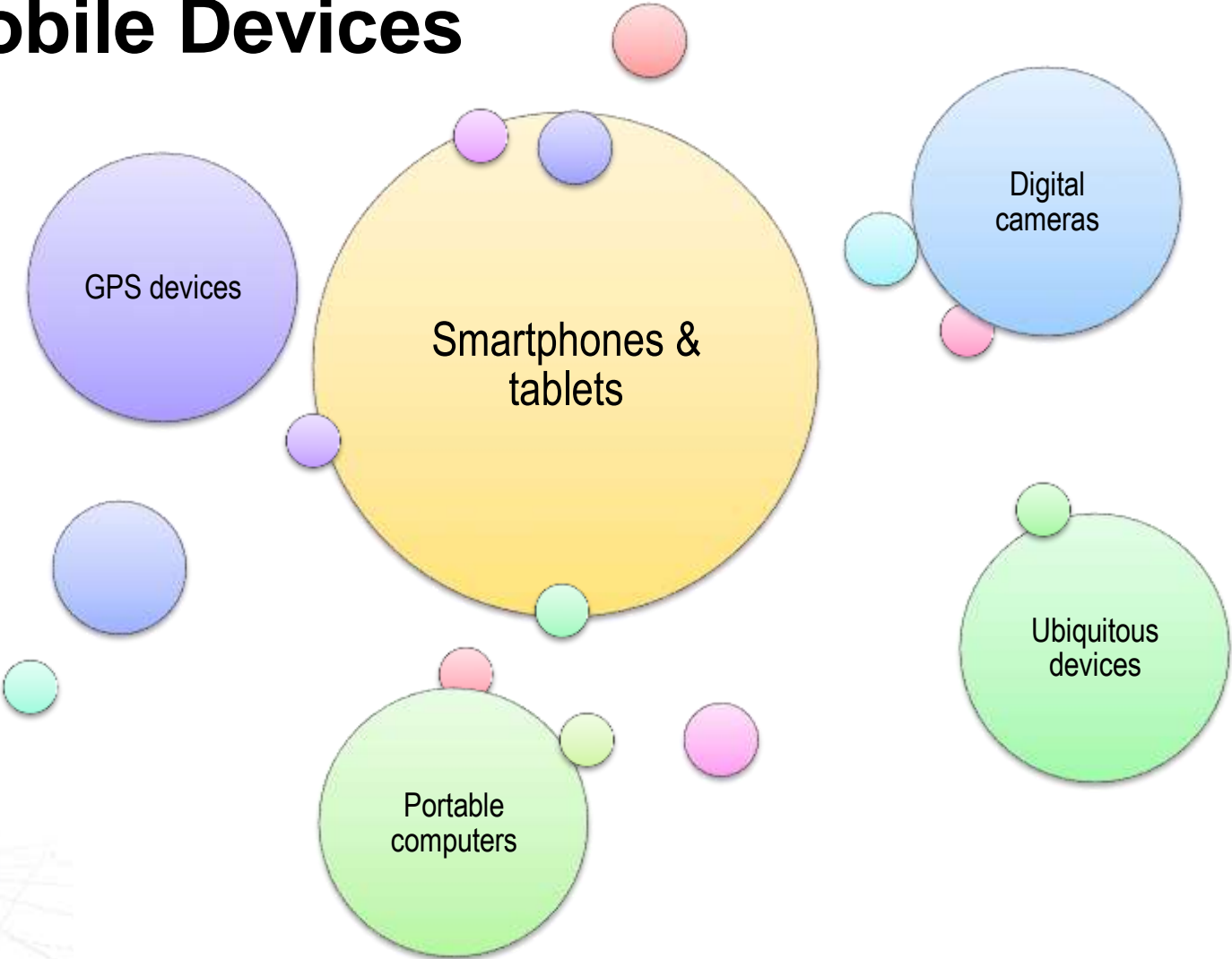


FIGURE 6.1 Mobile technologies ecosystem.

Mobile Devices



Mobile Signals & Sensors

Sensing technologies

- Touchscreens
- Gyroscopes
- Magnetometers
- Accelerometers
- Digital cameras
- Ambient light sensors
- Temperature & humidity
- Pressure sensors
- Microphones

Signaling technologies

- RFID
- NFC
- BLE
- WiFi
- LiFi
- Cellular network
- GPS

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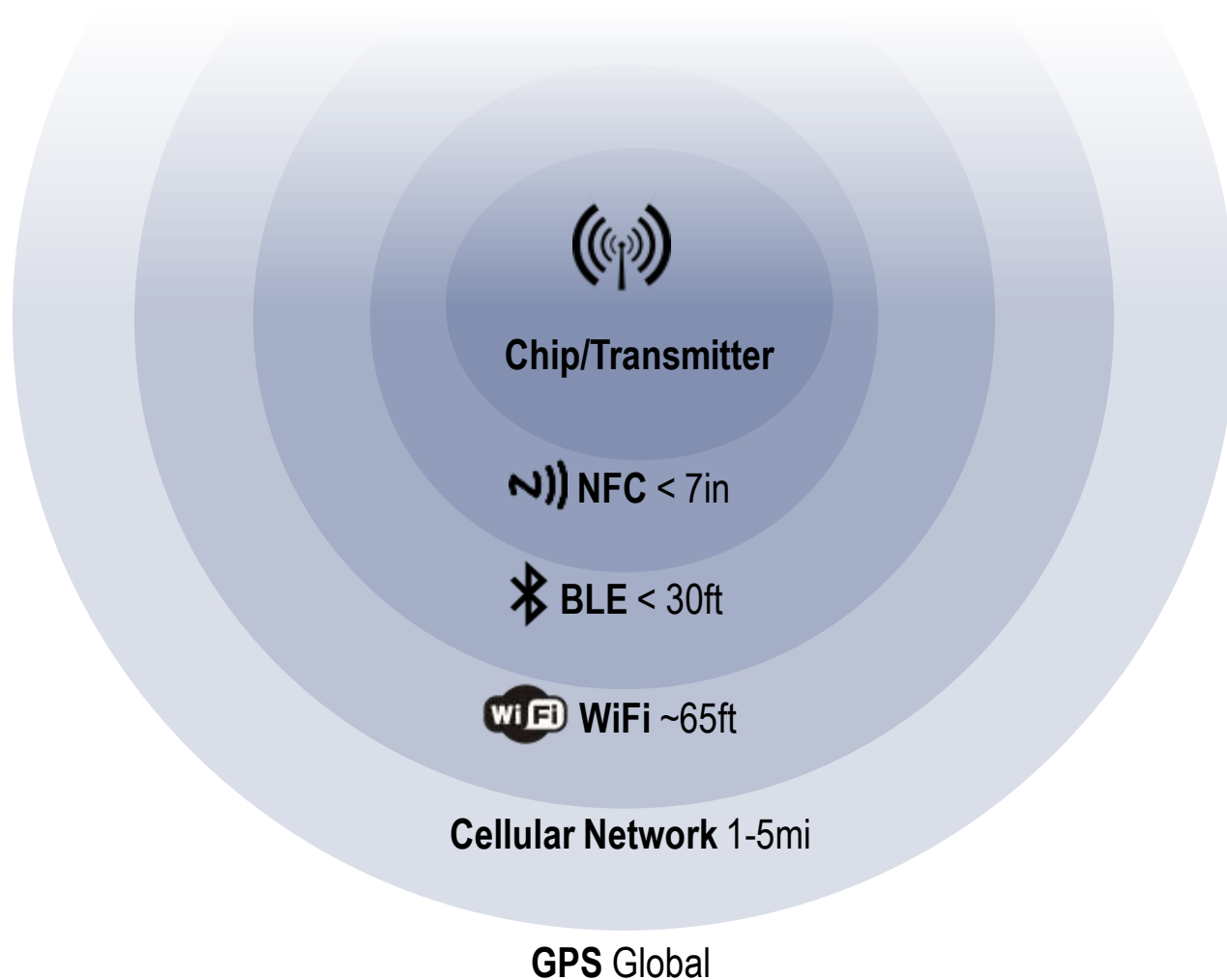


FIGURE 6.2 Typical range of various mobile signaling technologies.

Functions of Mobile Technologies in Travel

- ⊙ Informing
- ⊙ Contextualizing
- ⊙ Personalizing
- ⊙ Socializing
- ⊙ Managing
- ⊙ Translating
- ⊙ Purchasing
- ⊙ Gamifying
- ⊙ Augmenting
- ⊙ Reflecting



Mobile Visitor Information

Type	Description
Functional	Tourists need information to learn, add value to the trip, improve efficiency and reduce uncertainty.
Innovation	Tourists need information to inspire novel, spontaneous and creative experiences.
Hedonic	Tourists need information to be excited, enjoy the destination and experience the local culture and life.
Aesthetic	Tourists need information to imagine destinations and form expectations.
Social	Tourists need information to give advice to others, share their experience and be valuable for their friends.

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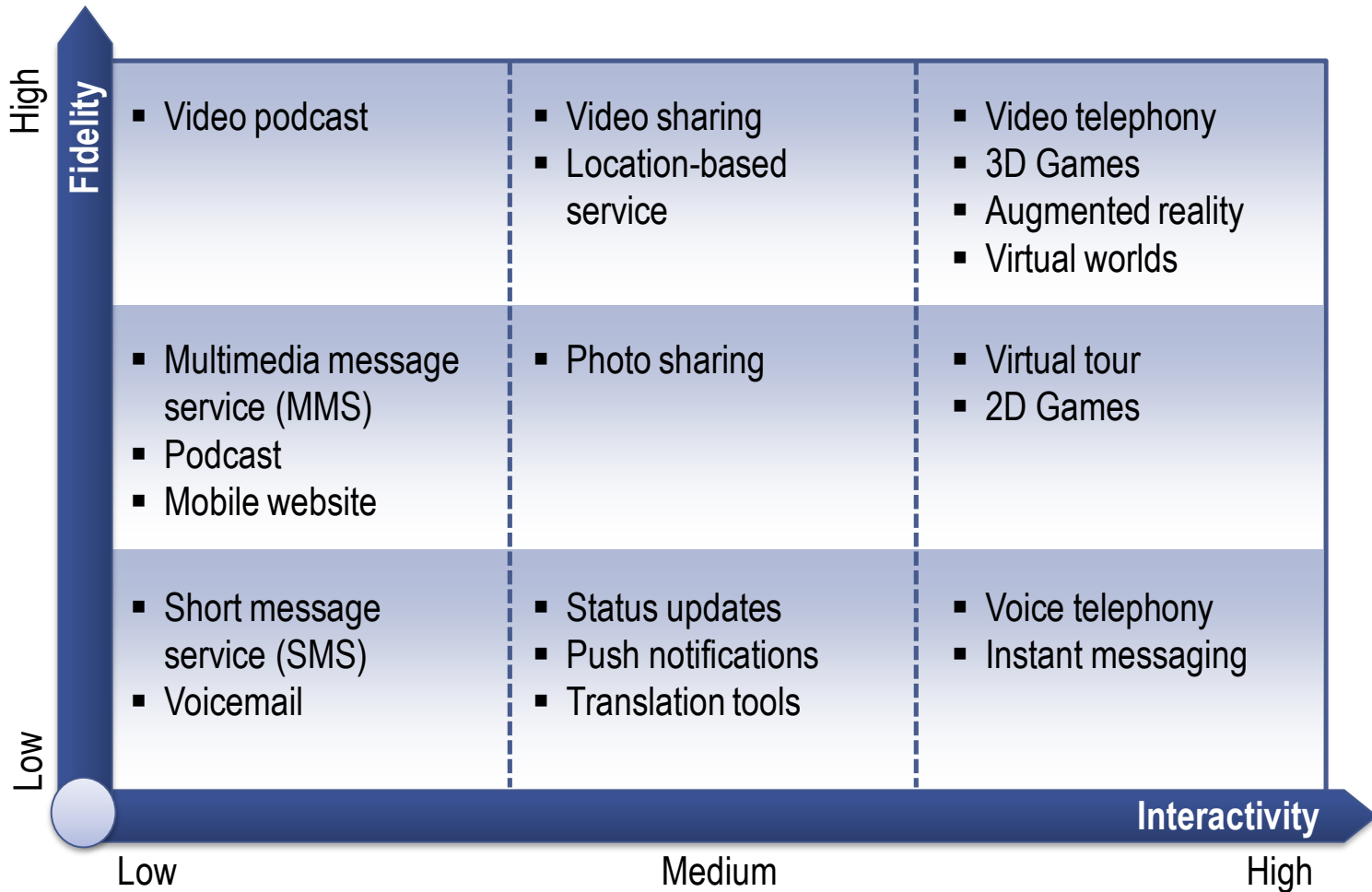


FIGURE 6.3 Typology of mobile-mediated virtual experiences.

(Adapted from Hyun et al., 2009)

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As a mountain swells from magma pressure, its surface rises. Absolute altitude is constantly measured at numerous spots around the island to determine the rise and fall of ground level.

Additional information about this exhibit can be accessed using a QR (Quick Response) code reader app on your camera-enabled smartphone.

- 1) *Download a QR reader app*
- 2) *Take a picture (scan) of this QR code to view the linked information.*



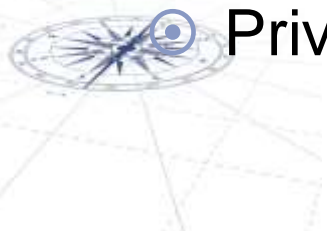
FIGURE 6.4 Example of a QR Code used for Interpretation.

TILES Model of Contextual Data

T	Temporal	content contextualized according to time (e.g. current time and day of the year, current events, seasons, itinerary);
I	Identity	content contextualized based on the user's identity (e.g. interests, demographics, motives, food and activity preferences, activities already completed, language, budget, trip characteristics);
L	Location	content contextualized based on the user's movement and location (e.g. current location, nearby attractions, traveling speed and direction, mode of transport);
E	Environment	content contextualized according to the user's environment (e.g. weather, traffic conditions, congestion and availability, waiting times); and
S	Social	content contextualized according to the user's social setting (travel companions, group interests, nearby friends and family, recommendations, social media activity).

Personalizing Experiences

- ⦿ Individuals provide organizations with personal information in exchange for better services or benefits.
- ⦿ Contextual data can be combined with personal information and used to provide personal recommendations and customize content delivery.
- ⦿ Sources of personal information:
 - details stored on the mobile device (e.g. personal records, apps, photos, email and calendar)
 - information from social media profiles
 - usage data such as search histories and device habits
- ⦿ Privacy issues – use permission based marketing.



Mobile social media applications

	Location sensitive	Location agnostic
Instantaneous	<p>Space-timers</p> <p>Exchange of messages with relevance to one location at one specific point in time (e.g. Facebook Places, Foursquare)</p>	<p>Quick-timers</p> <p>Transfer of traditional social media to mobile devices to increase immediacy (e.g. Tweets, Facebook status updates)</p>
Time delay	<p>Space-locators</p> <p>Exchange of messages with relevance to one location, which are tagged to a certain place and read later by others (e.g. Urbanspoon, TripAdvisor)</p>	<p>Slow-timers</p> <p>Transfer of traditional social media to mobile devices (e.g. YouTube, Wikipedia)</p>

“Four I’s” of mobile social media

Integrate Activities into your users' life to avoid being a nuisance.

Individualize Activities to take account of user preferences & interests.

Involve The user through engaging conversations.

Initiate The creation of user-generated content.



Visitor management

- ⊙ Business intelligence
 - social media activity (feedback, sharing of content, service failures, sentiment analysis)
 - visitor tracking (visitor catchments, routes, dwell times and activity patterns)
- ⊙ Management interventions
 - special offers
 - notifications about crowding and queues
 - traffic updates
 - safety and security alerts



Gamification

- ⦿ The use of game design elements in non-game contexts to improve user experience and user engagement.
- ⦿ Travel applications:
 - earning badges (e.g. Foursquare, TripAdvisor)
 - challenges and quests (e.g. geocaching, collecting clues, competitions)
 - augmented reality games (e.g. Ingress)
- ⦿ Could be used instead of a tour or to disperse visitors across a destination.



Augmented reality

- ⦿ Enhances the surroundings of the user with virtual information that is rendered so that it appears to coexist with the real world.
- ⦿ Apps overlay a mobile device's real world camera view with virtual information.
- ⦿ Travel applications:
 - marketing
 - visitor information
 - translation
 - interpretation
 - gamification



Challenges

- ⦿ Connectivity
- ⦿ Interoperability
- ⦿ Cross-platform compatibility
- ⦿ Analytic systems lack sophistication
- ⦿ Product complexity
- ⦿ Legal, security and privacy issues
- ⦿ Visitor behavior



Discussion Questions

1. In the introduction we suggest that mobile technologies enable the fluidity and liquidity of experiences. Read some of the mobilities literature dealing with technology and write a paragraph to explain what this statement means.
2. In the past a holiday meant being away from home, both physiologically and psychologically. But it seems that mobile devices are making it more difficult to separate our everyday lives from our travel experiences. Do you think this is a problem? What does this suggest about future travel experiences?
3. In previous chapters we have discussed how the Internet has eroded the influence of traditional travel intermediaries. Arguably mobile devices go further by automating many of the functions performed by travel intermediaries by providing a management tool for the entire travel experience. Do you think that mobile devices will mean the end of traditional intermediaries?

Discussion Questions

4. We have identified that mobile devices can use a range of contextual data to customize and personalize travel experiences. But frameworks like the TILES model require access to a lot of data, some of which may raise privacy concerns. How might app designers overcome these challenges?
5. Many younger generations have grown up in a culture where games and rewards incentivize performance. How do you feel about the idea of gamification in travel? Would you participate in a virtual “Amazing Race” powered by your mobile phone if you could earn virtual or real prizes? Select a city you are familiar with and design a mobile app based on the concept of gamifying the travel experience.
6. This book was written in 2014. What advances have taken place in mobile technologies since this time? How can these technologies be used by travel organizations and destinations? What opportunities are created by advances in wearable and ubiquitous technologies?

Useful Websites



EpicMix
www.epicmix.com



Near Field Communication
www.nearfieldcommunication.com



TravelByGPS.com
www.travelbygps.com



6th Sense Transport
www.sixthsensetransport.com



GPS.gov
[/www.gps.gov](http://www.gps.gov)



Ingress
www.ingress.com



Bluetooth
www.bluetooth.com

Case Study Google Glass

- ⦿ Wearable computer with an optical head-mounted display (OHMD).
- ⦿ A new form factor/product class, not a replacement for other devices.
- ⦿ Displays information in a smartphone-like hands-free format.
- ⦿ Can communicate with the Internet using natural language voice commands.
- ⦿ Features include the ability to take photos, record short videos, interact with others on Google+, send emails, get directions, make phone calls and conduct simple searches.
- ⦿ Ties users into the Google ecosystem including third party apps on Google Play.
- ⦿ Applications include interpretation, augmented reality tours and games, marketing and visitor information, translation, and use by customer service staff to access data and customize interactions.