



Location-Based Services

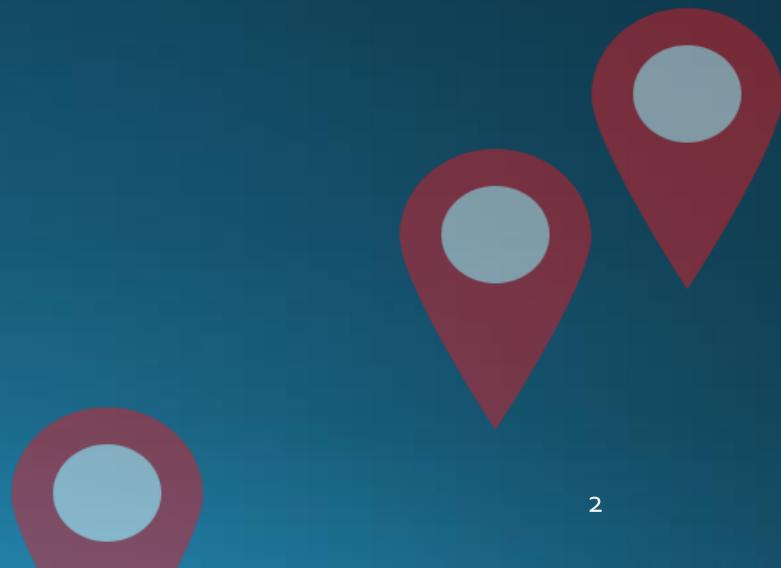
Been there, done that...

Nadya Toncheva

1. Location-Based Services (LBS)



Location-based services (LBS) are a general class of computer program-level services that use location data to control features. As such LBS is an information service and has a number of uses in social networking today as an entertainment service, which is accessible with mobile devices through the mobile network and which uses information on the geographical position of the mobile device. (*Wikipedia*)



Use Cases I



Tourismus: Liefert dem User Informationen über Sehenswürdigkeiten in seiner aktuellen Umgebung

Beförderung & Verkehr: Stellt Fahrpläne zu Verfügung und ortet verkehrsspezifische Dienstleistungen

Navigation & Maps: Navigiert den User zu seinem Zielort und zeigt aktuellen Standpunkt auf Maps an

Gastronomie: Liefert dem User Informationen über Gastronomiebetriebe am aktuellen Standort

Couponing & Einkauf: Aufzeigen von Einkaufsmöglichkeiten und Rabatten in der Umgebung des Users

Social: Ermöglicht das Kennenlernen und Kommunizieren mit Leuten aus der Umgebung des Users

Taxi: Bestellung eines Taxis oder Taxi-ähnlicher Dienste unterstützt durch Standortdatenabfrage

Sport: Sammelt ortsbezogene Leistungsdaten des Users, z.B. zurückgelegte Strecke oder Positionierung

Use Cases II



- Augmented Reality:** Computergestützte Erweiterung der Realität durch Darstellung von Informationen
- Allgemeine Informationen:** Stellt sämtliche Info-Dienstleister im Umkreis auf einer Karte dar
- Carsharing:** Zeigt dem User frei stehende Autos in seiner Umgebung zur kurzfristigen Anmietung an
- Gaming:** Spiele, für die der User Aufgaben an bestimmten Orten absolvieren muss, z.B. Schnitzeljagd
- Health:** Aufzeigen und Navigieren zu gesundheitsspezifischen Orten, z.B. Arztpraxen, inkl. Infos/Kritiken
- Media:** Bereitstellung von Medieninhalten (z.B. Fotos) zu Points of Interest in der Umgebung des Users
- Sonstiges:** Restliche Kategorien, die noch nicht im LBS-Mainstream erfasst wurden, z.B. Personenschutz

Quelle: Location-based Services Monitor 2014, Angebote, Nutzung und lokale Werbemarktpotenzialen ortsbezogener, mobiler Dienste in Deutschland
Goldmedia GmbH Strategy Consulting

The Numbers say it all...



- 927 LBS Anbieter in Deutschland (2014)
- LBS-Umsatz deutscher Anbieter erreicht 2014 rund 97 Mio. Euro
- 1/3 aller LBS Apps sind kostenlos
- LBS-Apps werden im Schnitt 10 Min. am Tag genutzt
- Datenschutzproblematik LBS: Standortabfrage wird von 2/3 der User genutzt aber nur 1/3 fühlt sich dabei „sicher“



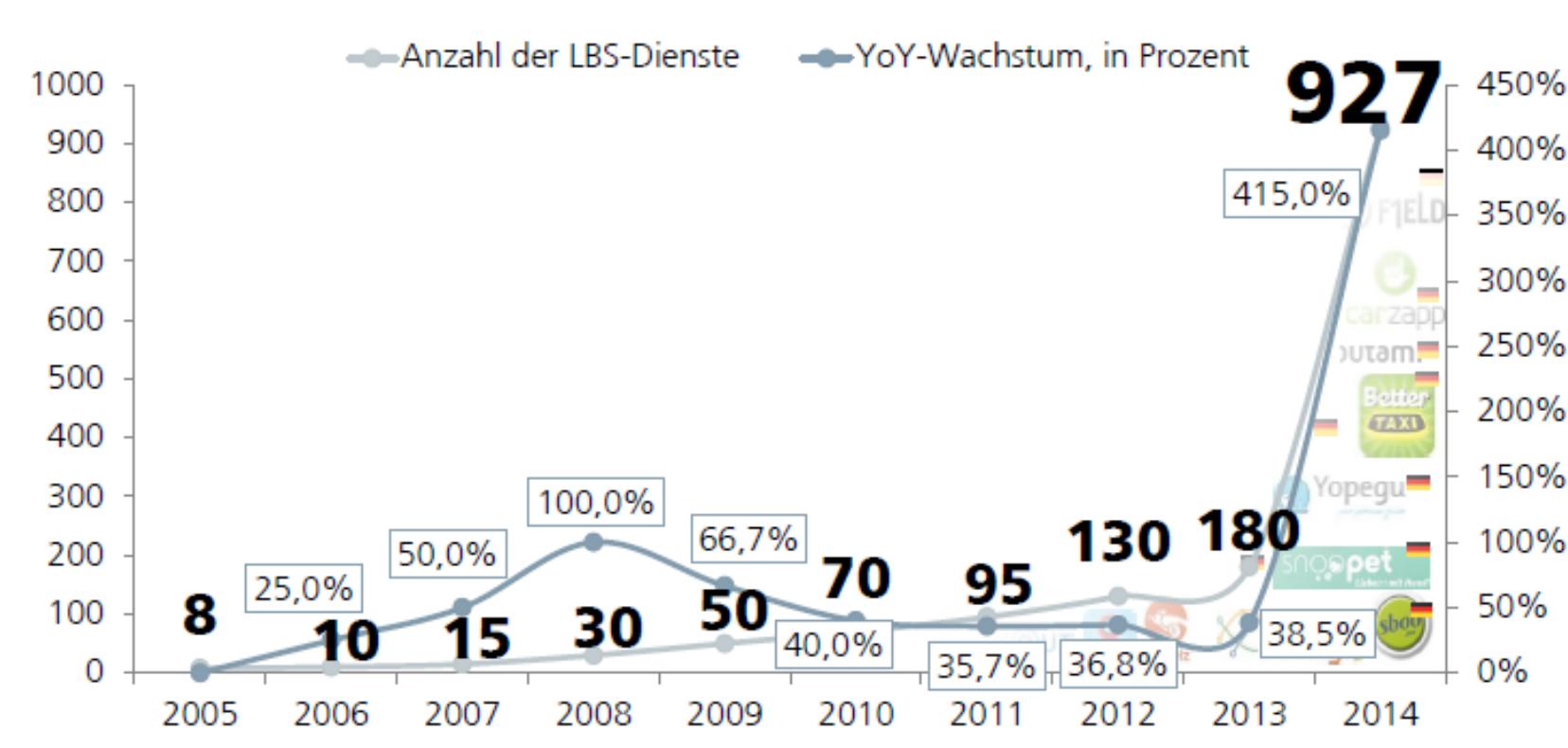
Quelle: Studie "Location-based Services Monitor 2014". Goldmedia

The Numbers say it all...



Explosionsartiges LBS-Wachstum in Deutschland: Von 95 auf 927 Anbieter in nur vier Jahren

Anzahl und Wachstum dt. Location-based Services Anbieter in Dt., von 2005 bis 2014



Quelle: Location-based Services Monitor 2014
Angebote, Nutzung und lokale Werbemarktpotenzialen ortsbezogener, mobiler Dienste in Deutschland

Goldmedia GmbH Strategy Consulting

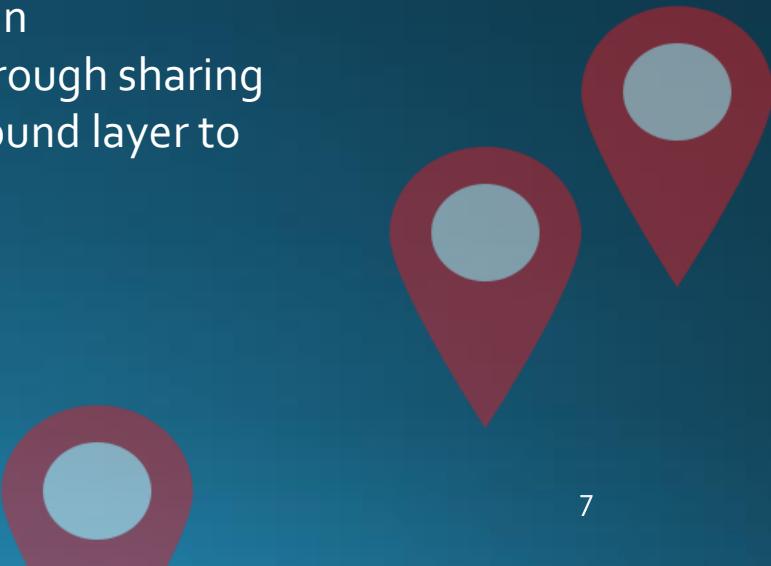


2. HotCity – defining urban dynamics at POI

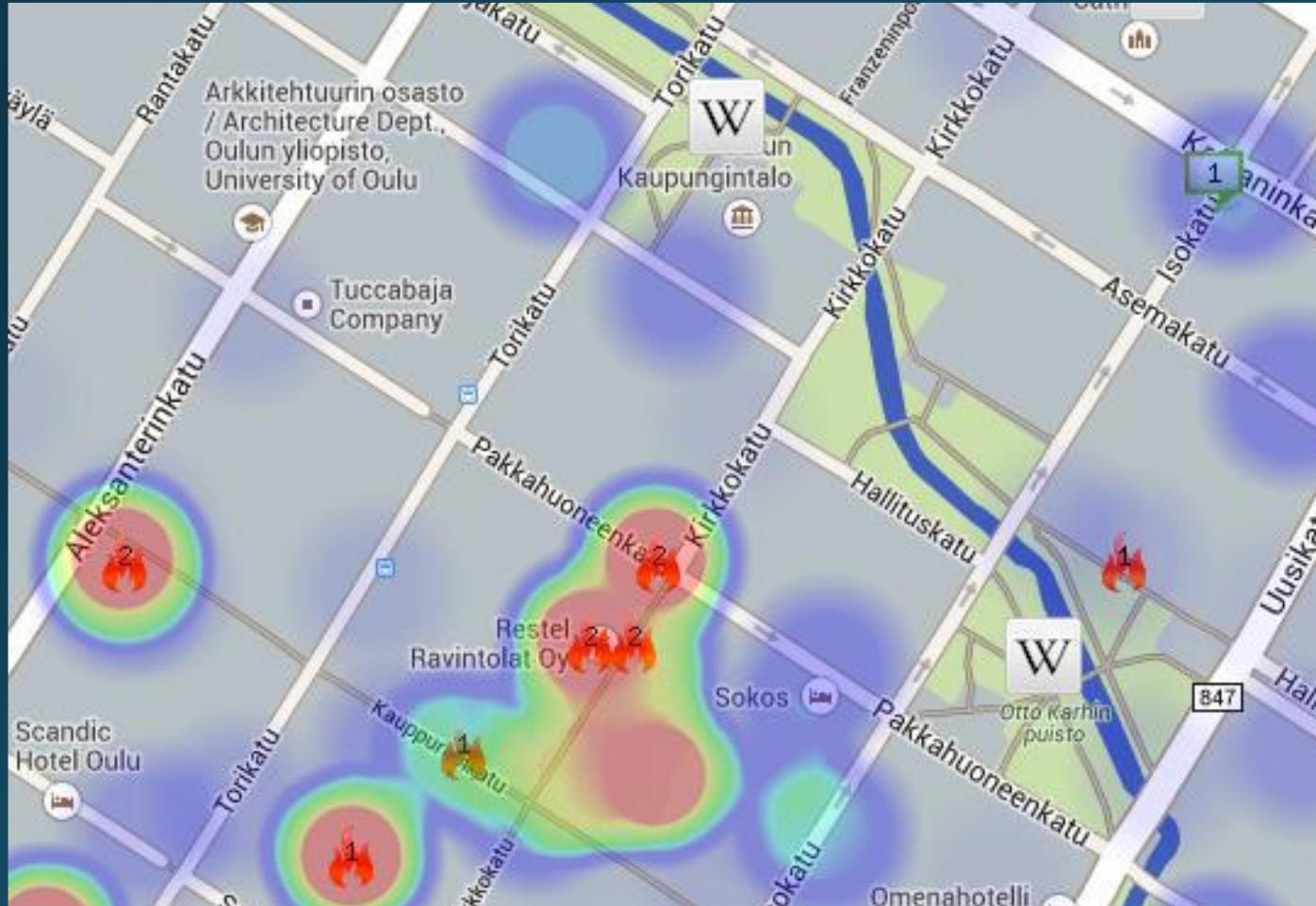


"HotCity: enhancing ubiquitous maps with social context heatmaps." In Proceedings of the 12th International Conference on Mobile and Ubiquitous Multimedia (MUM '13). Andreas Komninos, Jeries Besharat, Denzil Ferreira, and John Garofalakis.

THE IDEA - Collecting and mining the interactions that users make with the urban environment through social networks, can help tourists better plan activities, through sharing the collectively generated social context of a smart, connected city, as a background layer to mapped POI.



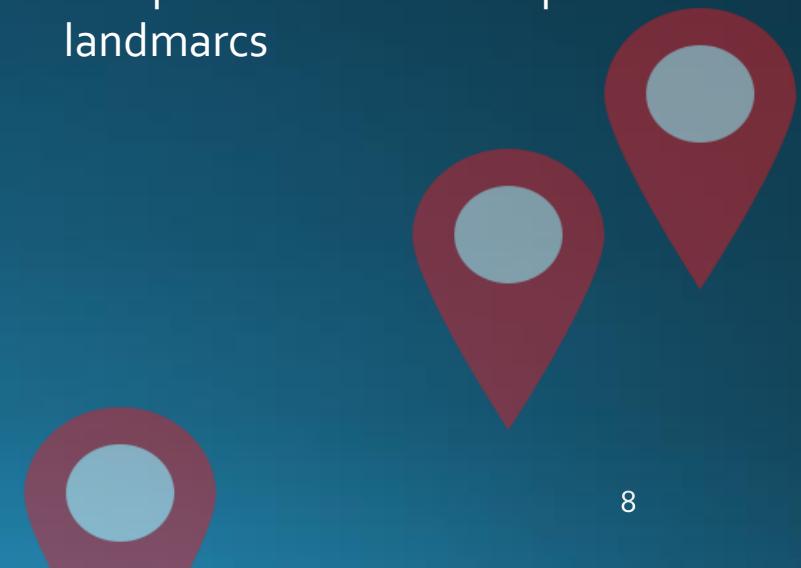
HotCity



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Dataset:

- **Foursquare API** – real time check-ins but also total check-ins for specific locations
- **Facebook API** – Likes and Tags
- **Google Places API** – ratings of a location
- **Wikilocation.org API** – Wikipedia articles for important landmarks



HotCity



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Categories

Select the POI Categories you would like to see on the map



Arts & Entertainment

Education

Food

Housing

Nightlife

Other Places

Outdoors

Shop & Service

Travel & Transport

Home

Categories

People

Hot Areas

People

Where are people checked in right now?



Show all places that currently have more than this many people checked in:

< **1** >
(0= all places)

Update

Home

Categories

People

Hot Areas

Hot Areas

See the active areas of Oulu

Saturday

< >

20:00

< >

Update

Home

Categories

People

Hot Areas

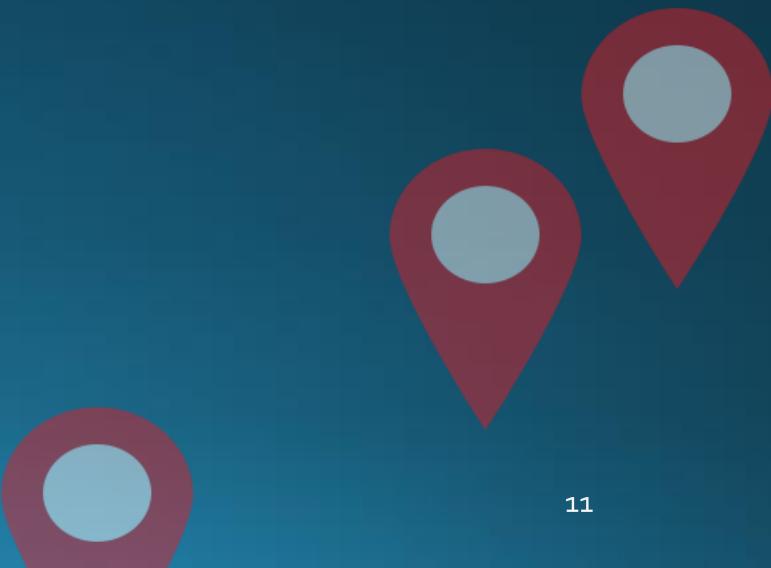
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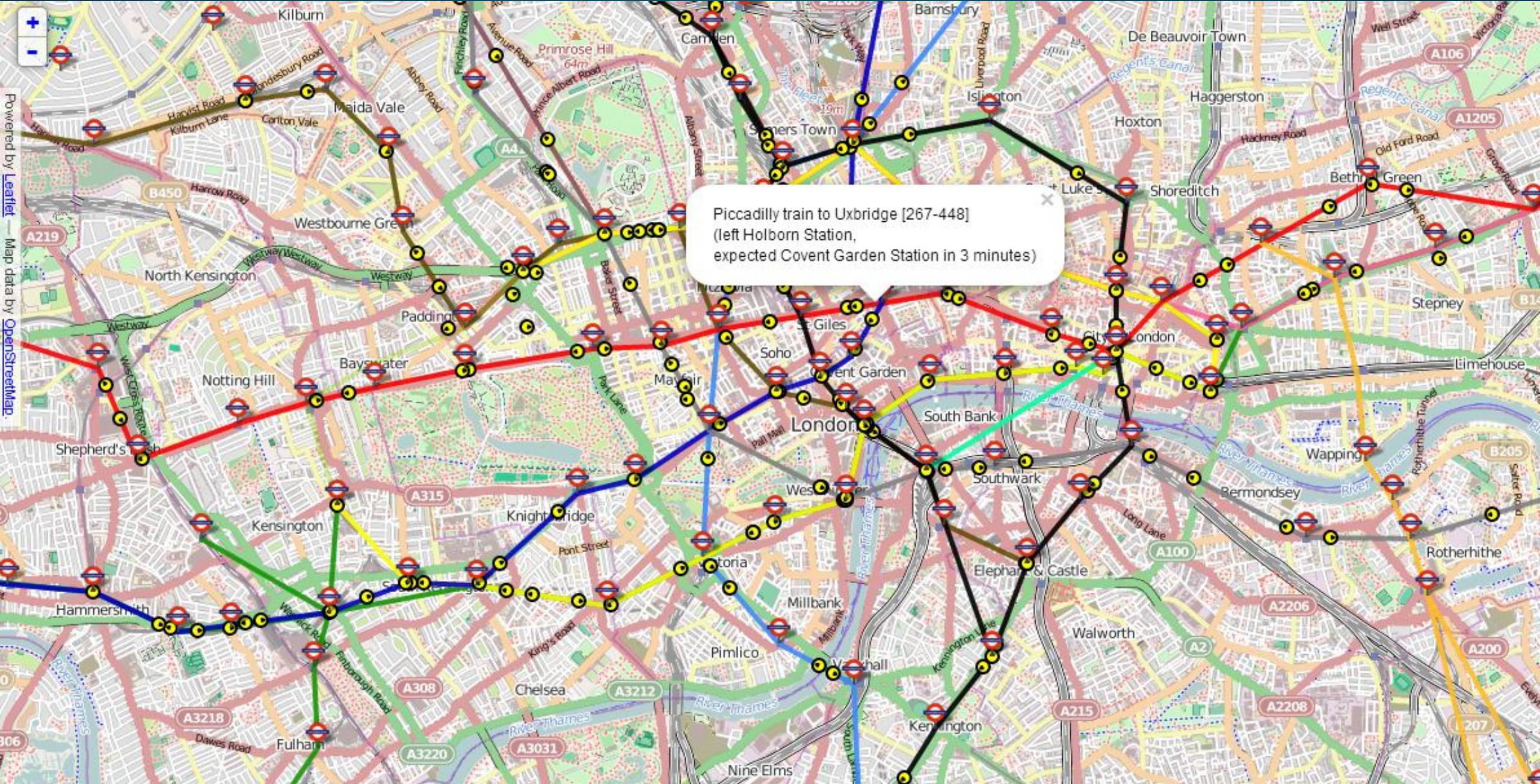
3. LBS and means of transportation



Use Case 1: **Live London Underground Map**

Use Case 2: **FlightRadar24**





Live London Underground map

By Matthew Somerville. Data collected: Thu, 19 Jun 2014 15:32:03 +0100

[!\[\]\(0678d1887db22e3f6b52fe38cd7e7b5b_img.jpg\) Open data users](#)

OPEN DATA USERS

All public TfL data (or 'open data') is released here for developers to use in their own software and services. We encourage software developers to use these feeds to present customer travel information in innovative ways - providing they adhere to the [transport data terms and conditions](#).



Data feeds

A full list of our syndicated feeds, supplied for use in your own applications



Widgets

Stay updated with our services for your website, blog or desktop

Sign in or register for data feeds

[Sign in](#)

OPEN DATA USERS

- Our open data
- Our feeds
- Design & branding
- ▶ Widgets
- ▶ Pattern library - development area



@ Jan Seler

LH113/DLH5YL

Lufthansa

MUC → FRA

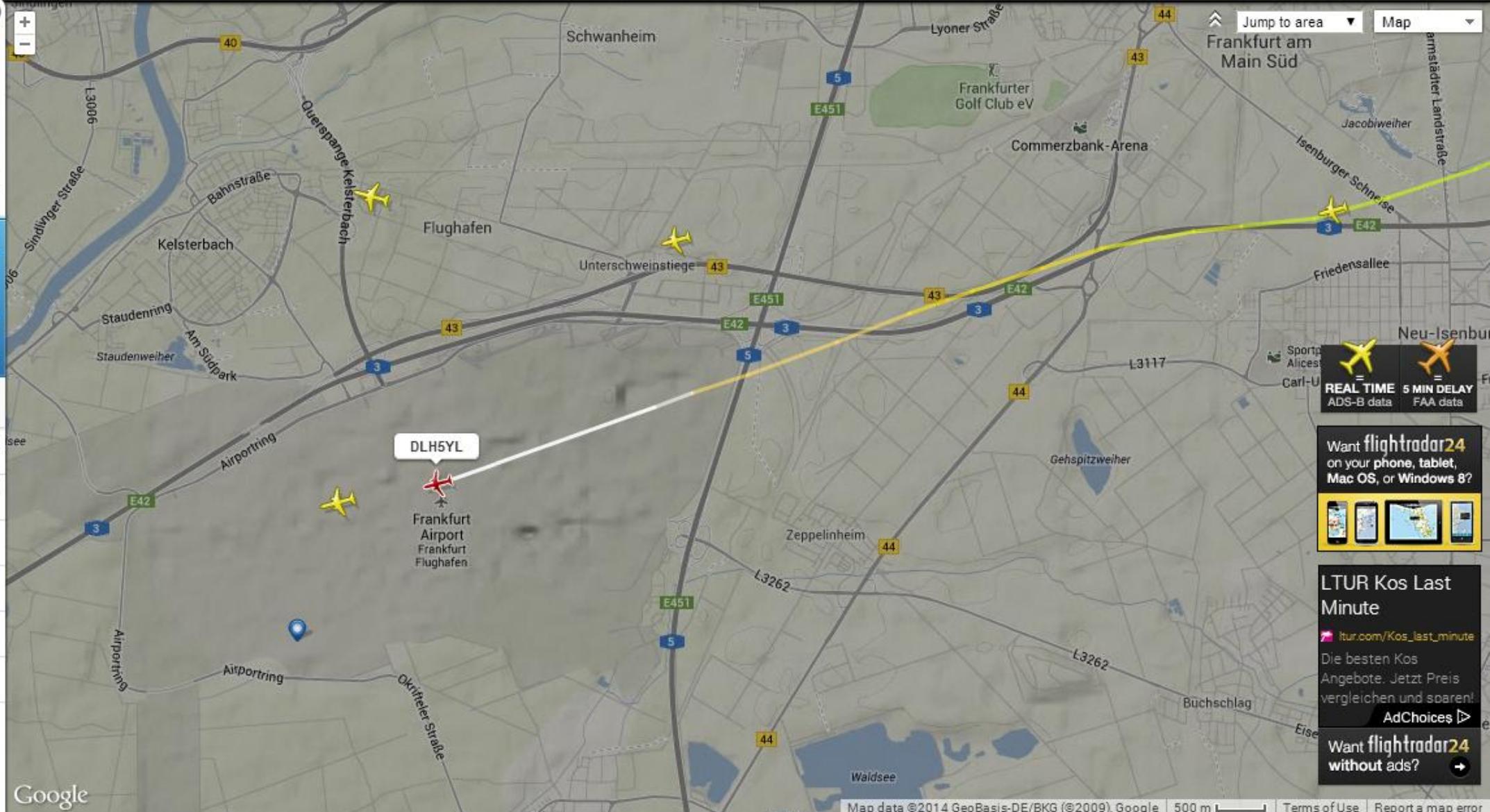
Munich

Frankfurt

STD 4:00 PM CEST STA 5:05 PM CEST

ATD 4:11 PM CEST ETA 4:51 PM CEST

3D

Aircraft
Airbus A319-114 (A319)Registration (3C6590)
D-AILPAltitude
300 ft Vertical Speed
-640 fpmSpeed
123 kt Track
250°Latitude
50.0418 Longitude
8.5726Radar
F-EDDF3 Squawk
1000

Google

Nadya Toncheva

Map data ©2014 GeoBasis-DE/BKG (©2009), Google | 500 m | Terms of Use | Report a map error

14

Dataset:

- **ADS-B**

Automatic dependent surveillance-broadcast is a cooperative surveillance technology for tracking aircraft. The aircraft determines its own position via satellite navigation and periodically broadcasts this via a radio frequency (www.flightradar24.com).

- **FAA data**

Federal Aviation Administration



Quelle: www.flightradar24.com



Map

1500



+



-

Jump to area

Map

Search

Playback

Settings

Filter

Planes

10170

Premium

Like 360k Follow g+1

Latest twitter

Antonov An-225 Mriya is heading for Oslo <http://t.co/FG4U7fSIAg> <http://t.co/3Rl6sqR...>

8 hours ago

Latest Facebook

Antonov An-225 Mriya is heading



BAUE UND MANAGE DEINEN AIRPORT



4. LBS in Retail



- Wi-Fi tracking of smartphones
- Bluetooth Low Energy (iBeacon)

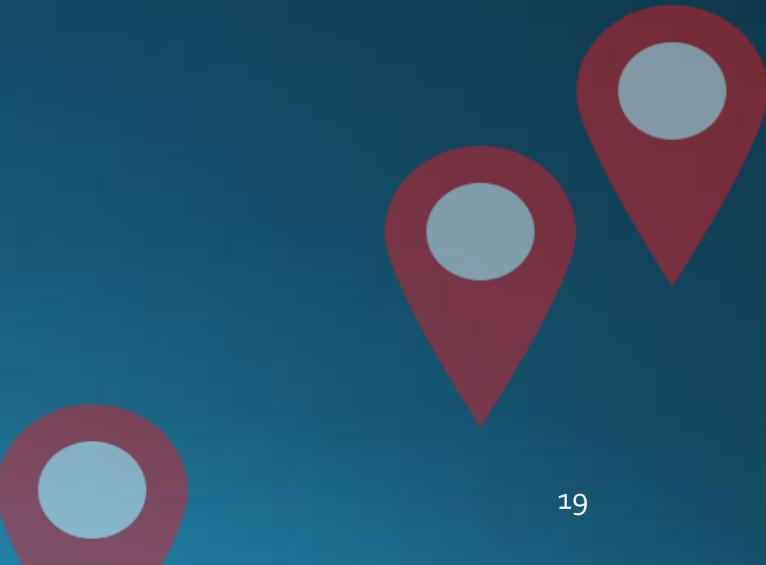
<http://abcnews.go.com/Business/stores-snooping-holiday-shoppers/story?id=21153815>



LBS in Retail

What is the information the retailers are interested in?

- How many people enter the store?
- Demographics of the customers
- How long do they stay in the store?
- In which section of the store they spend more time / in which sections they spend less time
- Customer history, recognizing repeat customers





Danke für die Ausmerksamkeit!

Nadya Toncheva

