Navigine

SOFTWARE PLATFORM FOR PRECISE POSITIONING AND OFFLINE-TO-ONLINE ATTRIBUTION

GROWING MARKET

Location Based Services (LBS)

Global market of Indoor Location Based Services is growing to **$21,3B** by 2020 (CAGR - 40,6%)

Total Indoor Software LBS market size in 2020: **$7,4B**

Total addressable market for EMEA and APAC regions in Retail and Transportation: **$1,9B**

Location Based Advertising (LBA)

Global market of Location Based Advertising is growing to **$35,5B** by 2020 (CAGR - 54,9%)

Total Indoor LBA market size in 2020: **$10,7B**

Total addressable market for EMEA and APAC regions in Retail and Transportation: **$4,3B**

Navigine is focusing on indoor LBS and LBA markets with **$6,2B** addressable market

Research & Markets named Navigine as **TOP-15** at Global Location of Things Market

NAVIGINE AT A GLANCE

Navigine found by PhDs and former top management consultants
- Headquarter in New York
- Offices in Germany and Russia

500+ locations with Navigine installations

30+ mobile and web applications based on Navigine platform

3 key products
- Mobile SDK to integrate indoor navigation, marketing and analytics functions into any app
- Software system for quick deployment of asset and vehicles tracking inside large buildings
- Online-to-offline attribution platform to monetize foot traffic via online and mobile ads

5+ years of R&D in indoor positioning services, international patent

PRODUCT 1: MOBILE PLATFORM
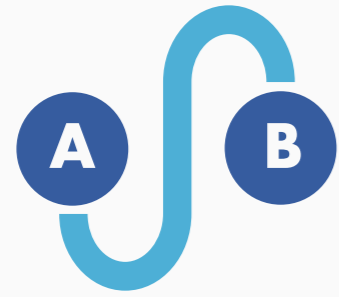
Indoor Navigation

Mobile SDK for IOS/Android that gives real-time turn-by-turn navigation and routing on indoor map
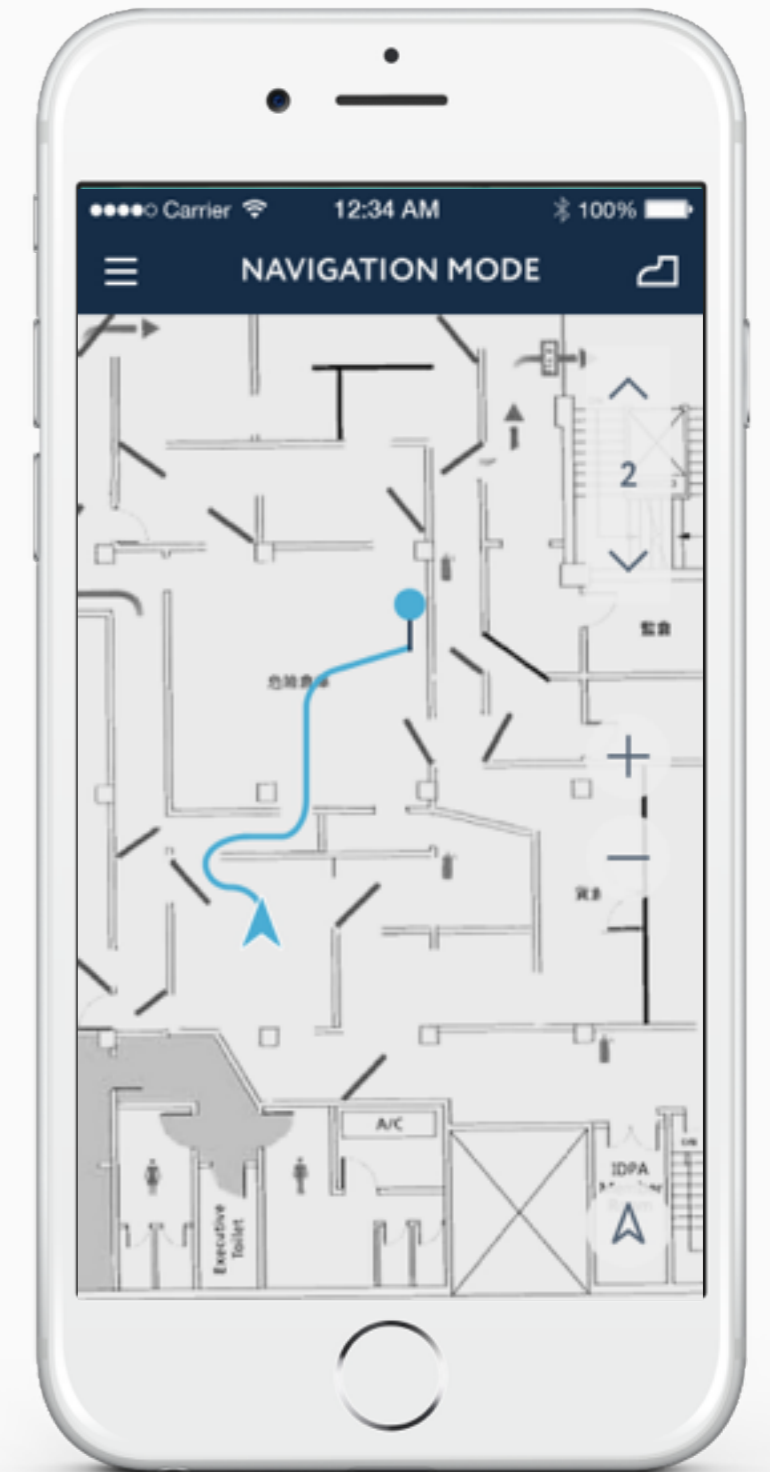
Proximity Marketing

Platform to create and manage location based push notification campaigns in mobile apps

Location Analytics

BI system to analyze mobile app users motions on indoor map via heat maps and multiple statistical reports
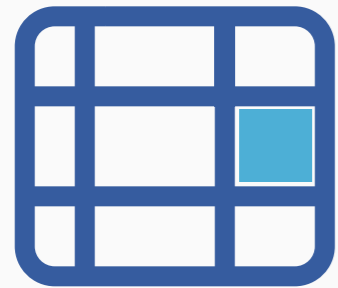
PRODUCT 2: TRACKING PLATFORM

Traffic Monitoring

Web-service/API for monitoring of number and dwell time of tracked objects visits at given point
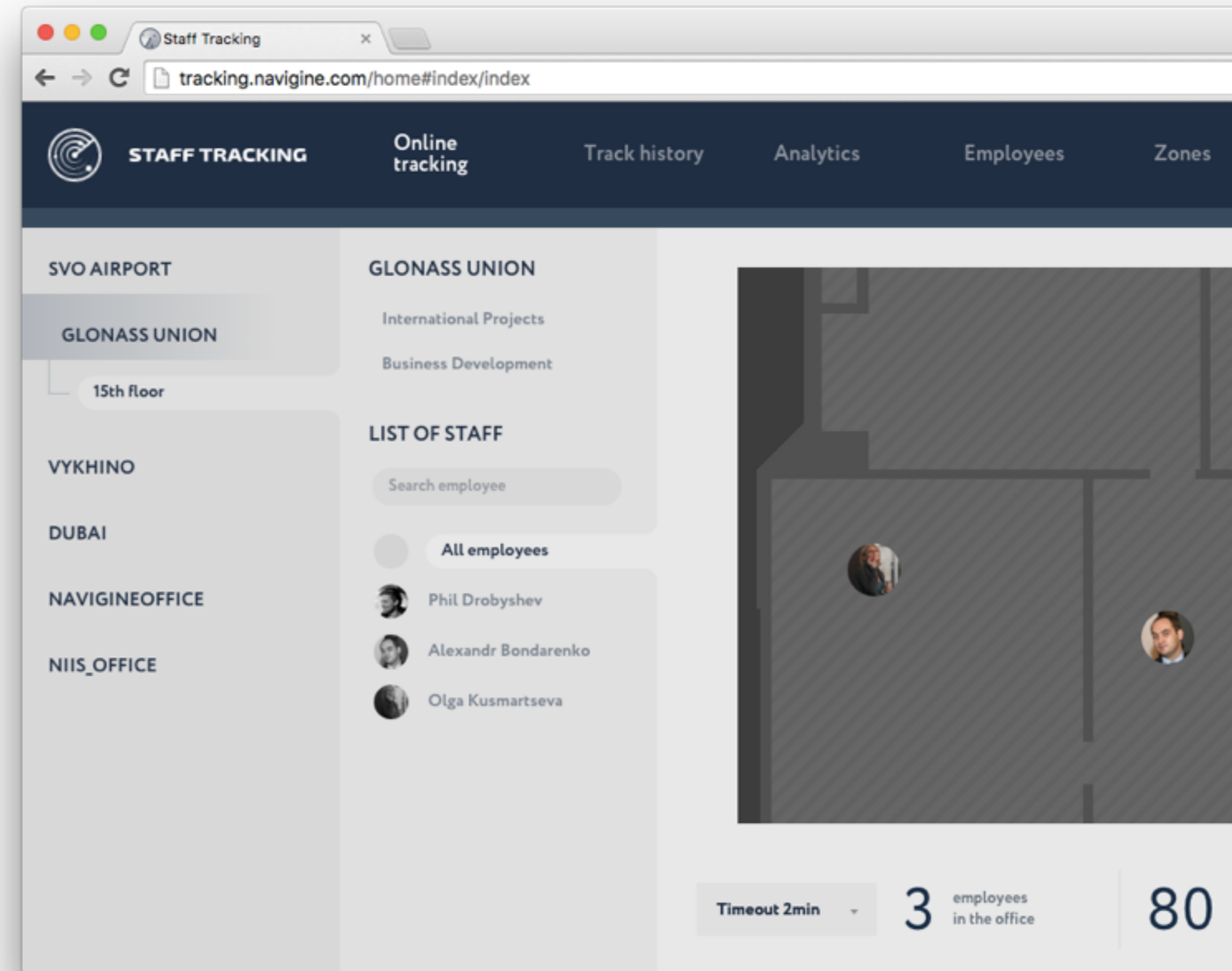
Zone Tracking

Web-service/API for monitoring of current number of tracked objects in each zone of a venue

Motion Tracking

Web-service/API for monitoring of tracked objects motion on indoor map in real-time

PRODUCT 3: ATTRIBUTION PLATFORM

Customer Attribution

Collection of customer segments by their needs according to offline location data

Offline Conversion

Customer conversion calculation from them who saw online ads to them who visit offline stores

O2O Retargeting

Targeting of mobile and online advertising on customer segments collected in offline

Audience List	Audience List ID	Audience List Type	Audience List Cost (USD)	Environment	Potent Impress
Navigine » Shoes	4293123	Navigine	3,0	Mobile GPS	5807
Navigine » Shoes	4293123	Navigine	3,0	IoT Gateway	146814
Navigine » Shoes	4293123	Navigine	3,0	Mobile - iBeacon	7556
Navigine » Cosmetics	395954673	Navigine	1,5	Mobile GPS	
Navigine » Cosmetics	395954673	Navigine	1,5	IoT Gateway	
Navigine » Beer	456526025	Navigine	1,5	Mobile GPS	49
Navigine » Beer	456526025	Navigine	1,5	IoT Gateway	12
Navigine » Beer	456526025	Navigine	1,5	Mobile - iBeacon	
Navigine » Cinema	459263202	Navigine	2,0	Mobile GPS	
Navigine » Cinema	459263202	Navigine	2,0	IoT Gateway	<
Navigine » Cinema	459263202	Navigine	2,0	Mobile - iBeacon	5
Navigine » Flowers	456525977	Third Party	1,0	Mobile GPS	
Navigine » Flowers	456525977	Third Party	1,0	IoT Gateway	2
Navigine » Flowers	456525977	Third Party	1,0	Mobile - iBeacon	6
Navigine » Wine	456526028	Third Party	2,0	Mobile GPS	
Navigine » Wine	456526028	Third Party	2,0	IoT Gateway	
Navigine » Wine	456526028	Third Party	2,0	Mobile - iBeacon	4
Navigine » Car Owner	395954694	Navigine	3,0	Mobile GPS	1
Navigine » Car Owner	394863307	Navigine	3,0	IoT Gateway	<
Navigine » Train commuter	1859046	Navigine	0,5	Mobile GPS	
Navigine » Train commuter	1859046	Navigine	0,5	IoT Gateway	1219
Navigine » Train commuter	1859046	Navigine	0,5	Mobile - iBeacon	34

NAVIGINE SOLUTIONS ECOSYSTEM

MOBILE PLATFORM

TRACKING PLATFORM

ATTRIBUTION PLATFORM

Navigine

RETAIL

TRANSPORTATION

AUTOMOTIVE

LOGISTICS

DIGITAL

SOLUTIONS FOR RETAIL

MOBILE APPLICATION FOR CUSTOMER NAVIGATION	TRAFFIC GENERATION FROM SHOPPING MALLS	OFFLINE CONVERSION FOR MOBILE & ONLINE ADS
MOBILE PROXIMITY MARKETING CAMPAIGNS	SMARTCART INNOVATIVE SHOPPING SOLUTION	O2O RETARGETING OF MOBILE & ONLINE ADS

SOLUTIONS FOR TRANSPORTATION

MOBILE APPLICATION FOR PASSENGER NAVIGATION AND COMMUNICATION	**CORPORATE MOBILE APP FOR STAFF NAVIGATION AND SCHEDULING**	**OFFLINE CONVERSION TO POINTS OF SALES FOR MOBILE & ONLINE ADS**
PASSENGER TRAFFIC REAL-TIME ANALYTICS AND HEAT MAPS	**ASSET AND VEHICLES TRACKING INSIDE DEPOTS AND TUNNELS**	**MONETIZATION OF AUDIENCE OF MOBILE APP FOR PASSENGERS**

SOLUTIONS FOR AUTOMOTIVE

PROXIMITY BASED INTERACTION VIA MOBILE APPLICATION	**REAL-TIME CAR POSITION TRACKING INSIDE CAR REPAIR SERVICE CENTERS**	**OFFLINE CONVERSION TO DEALERSHIPS FOR RADIO, MOBILE & ONLINE ADS**
CORPORATE MOBILE APP FOR STAFF NAVIGATION AND SCHEDULING	**ASSET AND VEHICLES TRACKING FOR MANUFACTURING SITES**	**O2O RETARGETING OF RADIO, MOBILE & ONLINE ADS**

SOLUTIONS FOR LOGISTICS

PROXIMITY BASED INTERACTION VIA MOBILE APPLICATION	**AUGMENTATION OF OUTDOOR TRACKING VIA MOBILE DEVICES**	**OFFLINE CONVERSION TO STORES FOR MOBILE & ONLINE ADS**
CORPORATE MOBILE APP FOR STAFF NAVIGATION AND SCHEDULING	**ASSET AND VEHICLES TRACKING FOR LOGISTIC HUBS AND WAREHOUSES**	**O2O RETARGETING OF MOBILE & ONLINE ADS**

SOLUTIONS FOR DIGITAL

MOBILE SDK FOR PRECISE WAYFINDING	**PROXIMITY MARKETING & LOCATION ANALYTICS**	**SMARTCART INNOVATIVE SHOPPING SOLUTION**
OFFLINE CONVERSION FROM ONLINE ADS	**O2O RETARGETING OF MOBILE & ONLINE ADS**	**SPECIAL PROJECTS WITH LOCATION SOLUTIONS**

SELECTED REFERENCES

RETAIL - MOBILE PLATFORM

Solution: **Smartcart solution for innovative shopping experience with wayfinding**

Parameters:

- 40 supermarkets in Finland are covered with BLE-based indoor navigation (1-3 meter accuracy)
- 30-60 shopping carts per store are equipped with Smartcart tablets providing directions to customers

Features powered by Navigine:

- Indoor positioning for tablets inside stores
- Directions for customers to items from shopping lists
- Location based promo campaigns and in-store offers
- Analytics collection on customers foot traffic

Results

- 85% of customers are happy to use Smartcarts
- Customers who liked Smartcart are the ones who spend most money in-store on average
- On average 25% of adds are seen, 13% considered to ought and 5% bought the product
- 84% of users where going to use Smartcart again

RETAIL - MOBILE PLATFORM

Solution: Mobile application for a second-tier shopping mall

Parameters:

- 400 000 sq ft covered with 200 BLE beacons
- 1 week for SDK integration and complete beacon deployment

Features powered by Navigine:

- Indoor positioning on the shopping mall interactive map, multi-floor navigation
- Location aware content and targeted push notifications with special offers
- Collection of user location analytics and heat maps
- Third party advertising and online targeting based on offline user behaviour

Results

- 4000 downloads during half a year with zero marketing budget
- Daily active users: 200+ (2% of the total traffic)
- 30% of users enable Bluetooth inside the shopping mall
- Proven efficiency of advertising via mobile app with 20% tenants involved
- Better communication with young audience and PR positioning as advanced mall

15

TRANSPORTATION - MOBILE PLATFORM

Solution: **Mobile application for the largest public railway system in Europe with ticket purchase and indoor navigation through train stations**
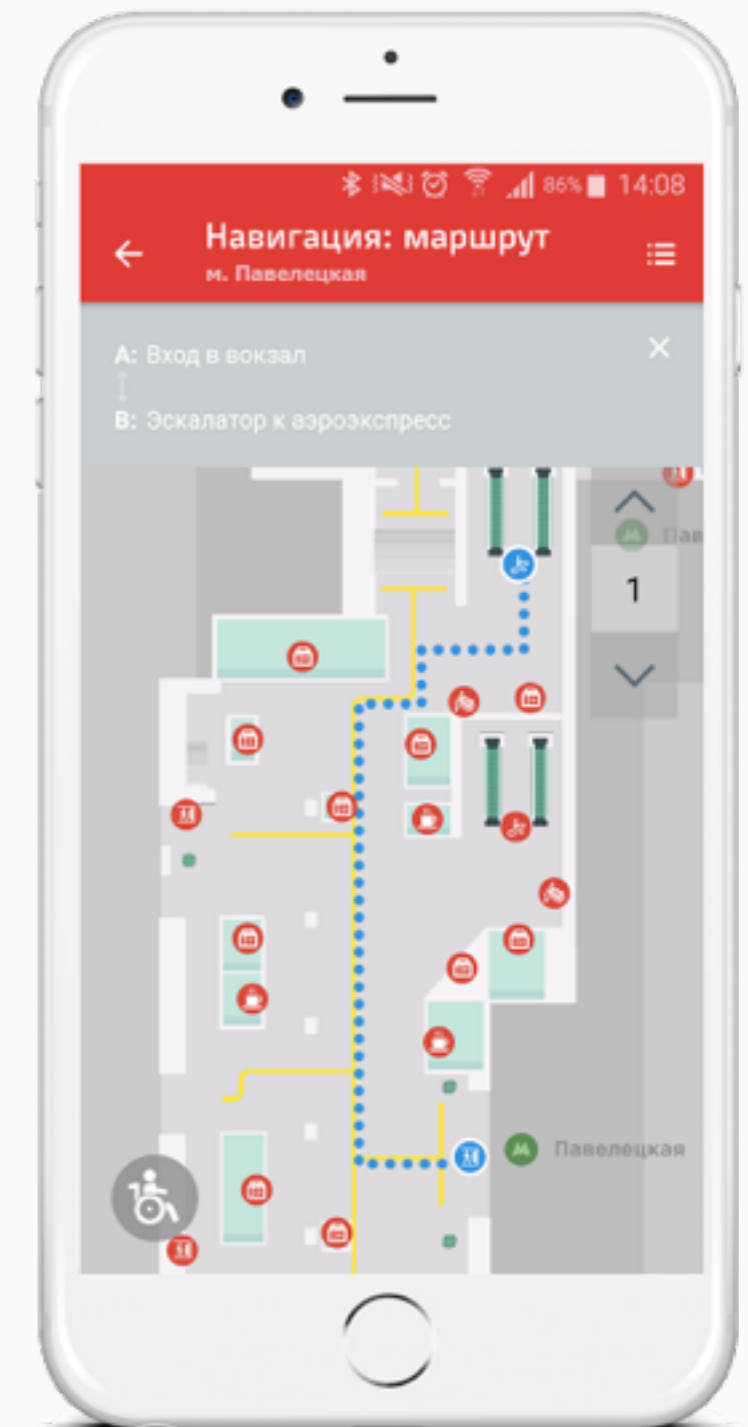
Parameters:

- 5M+ total install base of the mobile app
- 31 stations are covered by indoor navigation - 5K beacons under management

Features powered by Navigine:

- Wayfinding and useful information for commuters such as schedule of trains with tracks location and ticket purchase function
- Real-time and aggregated passenger traffic analytics
- Additional marketing channels and revenue stream from hubs tenants

Results

- Significant improvement of passenger experience especially for international travelers
- Advanced foot traffic statistics to analyze and manage bottlenecks
- Beacon infrastructure monetization via third-party providers

AUTOMOTIVE/LOGISTICS - TRACKING PLATFORM

Solution: **Real-time car position tracking inside car repair service centre for a major premium brand**
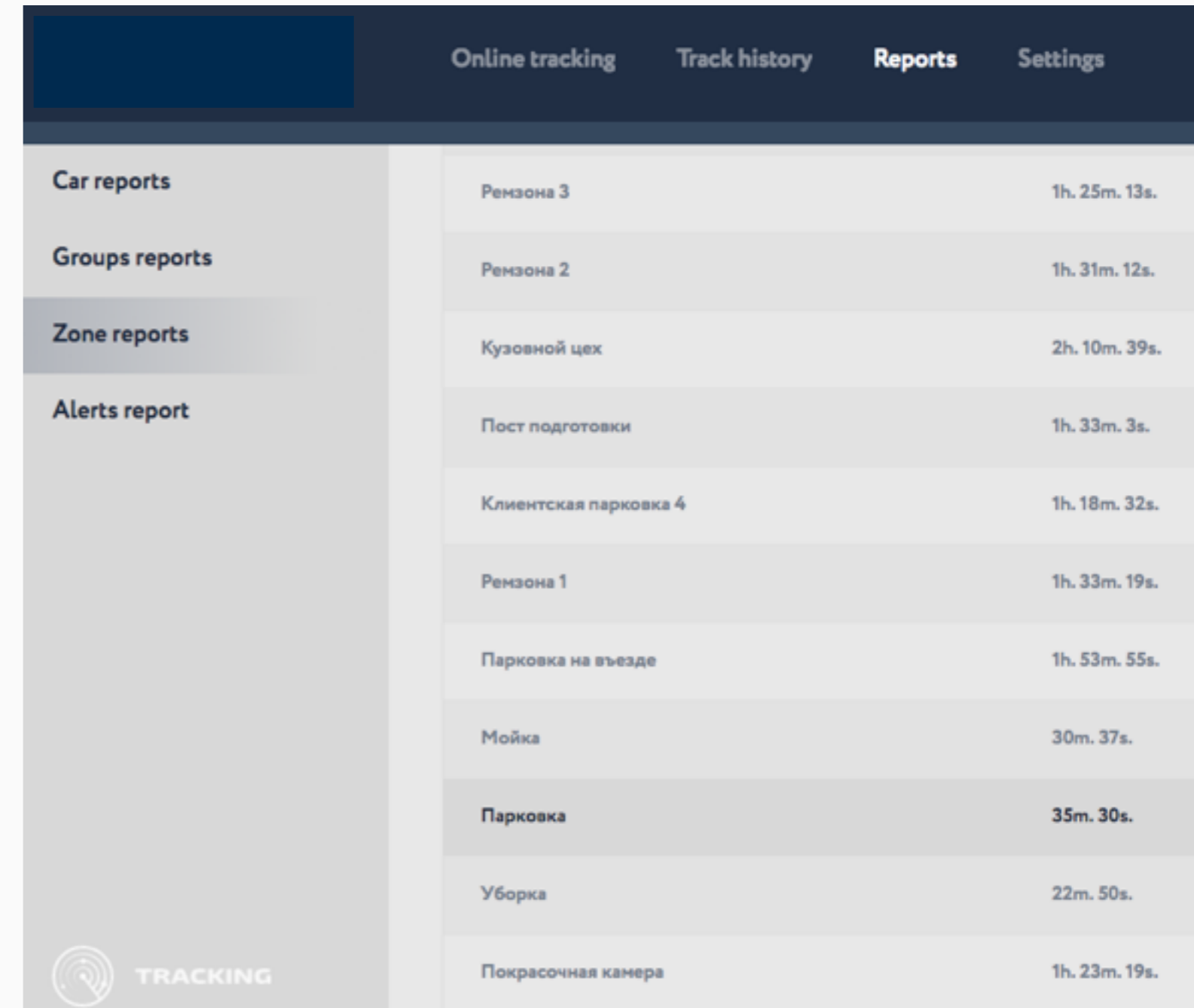
Parameters:

- 5K sq. m. total area with 200 parking slots and 10 working zones
- 33 IoT gateways deployed to track up to 150 branded BLE tags

Features powered by Navigine:

- Real-time car location tracking on a floor plan
- Collection of historical movement for all cars
- Alerts for management on expiring service terms and anomalies
- Location reports by cars, time, zones, events

Results

- Business intelligence tool to notify managers on expiring service terms and to track centre operation performance in real-time
- Reduction of time on standard operations - up to 30%
- Saving due to increased number of orders delivered in time

	Online tracking	Track history	**Reports**	Settings
Car reports	Ремзона 3			1h. 25m. 13s.
Groups reports	Ремзона 2			1h. 31m. 12s.
Zone reports	Кузовной цех			2h. 10m. 39s.
Alerts report	Пост подготовки			1h. 33m. 3s.
	Клиентская парковка 4			1h. 18m. 32s.
	Ремзона 1			1h. 33m. 19s.
	Парковка на въезде			1h. 53m. 55s.
	Мойка			30m. 37s.
	Парковка			**35m. 30s.**
	Уборка			22m. 50s.
TRACKING	Покрасочная камера			1h. 23m. 19s.

DIGITAL - ATTRIBUTION PLATFORM

Solution: **Digital advertising campaign for fashion industry event using O2O attribution**

Parameters:

3 advertising campaigns on Mytarget ad network to attract online users to visit a web-site of fashion industry event:
1. Targeting on users who previously visited a fashion show (collected using offline-to-online attribution)
2. Targeting of women 25-34 years old in 1 km radius from the exhibition centre
3. Targeting of standard Look-a-like audience similar to visits of a fashion show

Results

- Ad campaign using O2O attribution showed 40 times better CTR than other campaigns
- O2O attribution helped increase advertising effectiveness by at least 34X with regard to click price

Advertising campaign	Period	Ad type	Shows	Clicks	CTR	Click price
Advertising using O2O attribution (mobile)	30.09.2017-01.10.2017	Pay for shows	49840	510	1,023	$0,11
Women 25-34 years old - 1 km radius (mobile)	30.09.2017-01.10.2017	Pay for clicks	42240	20	0,047	$4,31
Standard Look-a-like audience (mobile)	29.09.2017-01.10.2018	Pay for clicks	322130	150	0,047	$3,45

APPENDIX
Technical Product Description
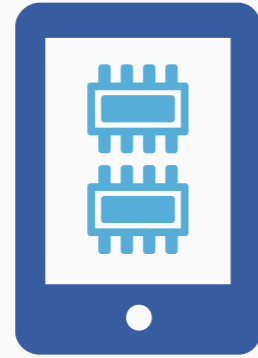
BASIC HARDWARE TECHNOLOGIES

Bluetooth Low Energy (BLE) Apple's iBeacon & Google's Eddystone compatible beacons

Wi-Fi/BLE/Ultra Wide Band gateways based on generic or specialized hardware

Our **software products** use well-known, reliable and affordable technologies

TECHNOLOGY: MOBILE PLATFORM

Build-in sensors
(gyroscopes,
accelerometers,
compass, barometer)

Bluetooth/Wi-Fi
fingerprinting and
magnetic fields

Odometry data
(velocity, steps,
motion model)

Map details

Fast roll out -
up to
50000 m²/
man-day

SLAM algorithm
to improve accuracy
through
crowdsourcing

Up to 1 meter due to proprietary algorithms - at mobile devices

COMPETITIVE ADVANTAGES: MOBILE PLATFORM

Up to 1 Meter Accuracy in Offline Mode
• Rule of thumb: 10 beacons per 1000 sq m are needed to achieve 1-3 m accuracy

Fast Roll Out
• Combination of different mapping modes, simultaneous mapping by several people possible, automated mapping via SLAM and crowdsourcing

Ease of Use

• Convenient backend, SDK and API for developers and system integrators

Adjustment for Mobile Developers Needs

• Navigine provides not only navigation, but also marketing and analytics tools

Support of Existing Infrastructure

• Navigine platform is beacon agnostic and may use already installed hardware

TECHNOLOGY: TRACKING PLATFORM

Equip staff, vehicles and other assets
with Bluetooth LE/Ultra Wide Band (UWB)
tags or bracelets
with action range up to 50 meters

Deploy BLE/UWB gateways
inside building
to track the position
of tags and bracelets in real time

Collect, transmit and display
tags and bracelets position on
the map in web interface

Up to 0.2 meters accuracy - for tags based solution

COMPETITIVE ADVANTAGES: TRACKING PLATFORM

Positioning Accuracy of 0.2 m is possible

• In most cases it is enough to have 3-10 m accuracy (room-level) and use generic gateways
• To get up to 1 m accuracy we use UWB based beacons and gateways
• For the most challenging cases we use BLE based hardware with angle of arrival measurement to achieve up to 0.2 m accuracy

Competitively Priced

• Through the usage of generic BLE hardware or specialised UWB/BLE hardware Navigine provides best in class solution price. It outperforms ZigBee and RFID solutions 5-10 times in terms of TCO

Adjustment for Partners Needs

• Navigine provides several formats of tracking and cumulative heat maps

Ease of Integration

• Already implemented integrations with external IT solutions like IBM Bluemix and SAP HANA

TECHNOLOGY: ATTRIBUTION PLATFORM

CUSTOMER DATA COLLECTION

Navigine Solutions
1. Customer foot traffic and segmentation via IoT gateways
2. Customer analytics via mobile applications and Bluetooth beacons

DATA AGGREGATION AND PROCESSING

1. Cloud based customer analytics as heat maps, flow maps, graphs, etc.
2. Data collection on offline conversion at POS
3. Transfer to online ad platforms and BI systems

MARKETING COMMUNICATION

1. Additional targeting using segmentation by location
2. Online retargeting based on customer location
3. Smart notifications via mobile applications with Navigine SDK

COMPETITIVE ADVANTAGES: ATTRIBUTION PLATFORM

Highly granular data collection accuracy

- GPS based outdoor location data with 3-10 meter accuracy
- Wi-Fi/BLE fingerprints based location data with 1-5 meter accuracy
- Identification of store visits with dwell times
- Aisle-level accuracy or even shelf-level using Mobile SDK and beacons

Precise offline conversion measurement for most types of ads

- Efficiency of online, mobile, radio, TV ads could be traced through offline store/shelf visits

Multiple communication channels in offline touch points

- Through our partner network customers could be reached here and now by mobile push notifications, sms, Wi-Fi authorisation form

Complete marketing campaigns using O2O attribution

- Navigine partner network includes marketing agencies that are able to manage most types ad campaigns via major ad networks like Google Adwords, DoubleClick, OpenX, Mytarget, Yandex

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