Intelligence beyond location
Location intelligence has opened up a whole new world for businesses
Location intelligence provides useful data & insights for better business decisions at any time.
Agenda

1. What is Zeelo?
2. Importance of location data
3. Personalized experiences
4. Data Analysis
5. CMS
6. How to use Zeelo?
7. Technology
8. Value Proposition
9. About Cherrypicks
What is Zeelo?

Zeelo, formerly known as Starbeacon, is a full end-to-end SaaS product, enabling exceptional user experiences in real-time indoor navigation, geofencing marketing, augmented reality (AR), and location data services.
Micro Location
Data is the new trend
Indoor positioning challenge

**Outdoor GPS**
- Fail to use satellite positioning through the GPS
- Receivers struggle with inability to see the satellites and multi-path signals

**Indoor positioning**
- Positioning accuracy is poor
- Transmitter and receiver is needed to improve accuracy
- Heavy installation cost

**Zeelo’s Micro Location**
- Hybrid positioning technology
- Bluetooth and magnetic resources
- None / less beacon installation needed
- Accuracy → 1-3m
- Collaborating with IndoorAtlas
Zeelo at shopping malls

**Micro location** know where you are standing (1-3m) → accurate geofencing (popup / push notifications / AR signages)

**Navigation, Wayfinding**

**Personalized app** look once login based on the data collected and processed and analysed, generating user profile
### Importance of location data

**With micro location we can now get a lot more insights from customers**

<table>
<thead>
<tr>
<th>without location data</th>
<th>with location data</th>
</tr>
</thead>
<tbody>
<tr>
<td>By guess</td>
<td>Can generate <strong>customers user profiles</strong></td>
</tr>
<tr>
<td>By passively getting data from merchants</td>
<td><strong>Further business use</strong>, ie. mall planning (tenant mix for leasing), cross-merchant promotions, personalized promotions to draw traffic</td>
</tr>
<tr>
<td>By observations</td>
<td></td>
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<tr>
<td>By count (if have)</td>
<td>Without <strong>micro-location</strong>, we may not be able to get the wanted accurate data</td>
</tr>
</tbody>
</table>
Importance of location data

Benefits to both

**Merchant**

- **Draw traffic** (navigation & AR signages)
- **Business generation** (AR signages linking to ticketing)
- **Brand enhancement** (AR signages or branded avatar)

**Customers**

- **Enhanced user experiences**
- **More interaction** with mall/merchants
- **Personalized app experience**
  increase loyalty and engagement
<table>
<thead>
<tr>
<th>Differences between Starbeacon and Zeelo</th>
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<tbody>
<tr>
<td><strong>Positioning Tech</strong></td>
</tr>
<tr>
<td>Accuracy</td>
</tr>
<tr>
<td>Blue Dot</td>
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<td>Location Push</td>
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<td>AR</td>
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<td>Location Data</td>
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<td>ConfEx</td>
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<td>Crowd Density</td>
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<td>CMS</td>
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Zeelo solutions

- Indoor location service solution
- Location-based AR solution
- Location-based ConfEx solution
- Data services
- CMS
Personalized Experiences
Welcome to HKIA
Start navigation to the nearest lounge near your boarding gate 60
Personalized experiences

**Indoor location service solution @ HKIA**

Real time turn-by-turn navigation

Powered by ARwiz - GeoAR
Zonal Push Notification

**Indoor location service solution**

Geofence notifications – Right Time At the Right Place

- 15% off upon patronage at lunch & dinner period
- 40% off on a full order
- HK$100 Coupon

*Tea House Theatre Experience*

Today 7:30PM

Time Schedule
Location-based ConfEx solution
Timely Information On The Spot For Direct Engagement
Personalized experiences

**Location-based ConfEx solution**

Recommendation To Trigger Further Exploration
Choose your preferences

Personalized events/news of his interest

Bookmark event/register beforehand

Personalized experiences

Location-based ConfEx solution

Buy Tickets In A Few Clicks
Personalized experiences

**Location-based AR solution @ West Kowloon Cultural District**

AR social wall

Powered by ARwiz - GeoAR
Personalized experiences

Location-based AR solution

AR virtual signages

Vo Trong Nghia Architects

Wind and Water (WnW)nBar, Thu Dau Mot Town, Vietnam, 2006-2008

After studying and working in Japan for ten years, Vo Trong Nghia viewed his return to Vietnam to practice architecture as both an opportunity and a responsibility.

Hans Tan

Spotted Nyonya Vessel with No Cover, Spotted Nyonya Candle Holder

WOHA

Spotted Nyonya Vessel with No Cover, Spotted Nyonya Candle Holder

Vo Trong Aghia Architects

Spotted Nyonya Vessel with No Cover, Spotted Nyonya Candle Holder

Powered by ARwiz - GeoAR
Indoor location service solution
Geofence notifications – Right Time At the Right Place
Personalized experiences

3D Avatars changes with locations

Create your own branded
Indoor navigation

Showcase – Hong Kong Science & Technology Parks

Explore Hong Kong Science and Technology Parks with AR

(powdered by ARwiz)
Indoor navigation

Showcase – Microsoft 5G IoT Makerspace

leading the way to my destination,
Indoor navigation

Showcase – Hong Kong International Airport
Pioneers in providing personalized experiences
Research and development has been started since 2013

City Gallery
(Sonic)
2013

HKIA
(Magnetic field with indoor atlas)
2016

2D navigation
AR navigation
Redefine visitor experience with the world’s first indoor navigation on gaming floors at the industry-leading, world class integrated resorts.

Build the infrastructure to understand customer behaviour.

Commercial focused location intelligence analysis.

Targeted location services and intelligence to deliver strategies on increasing the commercial value of properties.
Indoor navigation in casino

Showcase – Sands Resorts Macao
Indoor navigation

Showcase – 佛光GO
Showcase - Navigate NetDragon Headquarters in Fuzhou with Tianqingzhu
Location-based AR

Showcase – West Kowloon Cultural District

Virtual avatar changes in appearance with locations.
Data Analysis
Data Analysis

Dashboard - Heatmap (Division management review on retails & restaurants)
Management of Different Data Source
Per location data to produce ad-hoc path intelligence analysis
Data Analysis

Heat Map

Date:
2020/2/5 2020/2/19

Time:
(All)

No. of Visit (HeatMap):
1 144

Red Spot(s)
Data Analysis

Heat Map
Data Analysis

Traffic Flow (User Journey)

Hover the mouse over the flows and chart parts to display paths, the Step details and sizes. You can also choose the date to display.

Group 1 (All) ▼
Group 2 (All) ▼
Group 3 (All) ▼
Group 4 (All) ▼
Group 5 (All) ▼

Step 1 (All) ▼
Step 2 (All) ▼
Step 3 (All) ▼
Step 4 (All) ▼
Step 5 (All) ▼

Date: 2019/12/17 ▼-2019/12/30 ▼

6.88%
7.28%
6.83%
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7.27%
6.74%
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7.24%
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Traffic Flow (User Journey)
All-in-one easy Content Management System

Allow to configure map information without App update and monitor real-time status of beacon device.

Able to identify the defective beacons that will be needed to be replaced.
Content Management System

All-in-one easy Content Management System

Tailormade
Geofencing zones & messages

Your App
The last train to Yuen Long will be leaving at 12:30am at Austin Station, start moving now so you won’t miss it.
Dashboard

- Visitor behaviours and segments
- Visitor engagement rate
- Various correlations generated for business forecast and strategy planning
All-in-one easy Content Management System

ConfEx Management

- Create & Update Events
- Status & Scheduling
- Highlighted and Hot Events
- Event Types & Groups
- Keywords
- Call to Action
How to use Zeelo
Infrastructure & Backend Deployment
Integrate GeoAR with Public Maps and GPS

Connect Public Maps, such as Google Maps, into GeoAR system

Our Zeelo backend would allow the District administration to manage its
- Point of Interests (POIs): Tourist Spots, Shops, Malls, Facilities, Transport Hubs and stations etc.
- Descriptions, interactions can be defined for different POIs
- Wayfinding leveraging GPS and complimented by our Zeelo multi-sensor fingerprinting technologies

Benefits
- AR signages highlighting major POIs
- Excellent user experiences to navigate in the district
- AR signages enabling promotions, advertising opportunities and delivering Tourism services
- Location data collected for users, including pathing, correlations among POIs, dwell time etc., for tourism service planning and city planning.
Wayfinding and Fingerprinting for selected Indoor POIs

It is suggested to select the following venues for implementing indoor positioning capability:

- Shopping Mall: Central Embassy (our partner IndoorAtlas already has preliminary fingerprinted map)
- Tourism Spot: Bangkok Art and Culture Centre
- BTS Station: Siam BTS and Chilom BTS (exit detections)

Implementation of indoor positioning capabilities:

- Fingerprinting with our Zeelo multi-sensors fingerprinting technologies
- Planning and implementing iBeacons in areas requiring additional signals to ensure accurate positioning

Benefits:

- Seamless Indoor and Outdoor AR and 2D wayfinding in this spots
- Build up showcases to attract malls and other properties to invest in the indoor positioning capabilities
- AR signages enabling promotions, advertising opportunities and delivering Tourism services
- Location data collected for users indoor areas, including pathing, correlations among POIs, dwell time etc., for tourism service planning and city planning.
With our Zeelo Content Management System, users can create and update descriptions of tourism spots, services information and facility information.

It is suggested that some gamification experiences can be built to attract end users, such as tourists, local shoppers, to create more engaging experiences.

Gamification suggestions

- AR Photos: Users can take photo of scenic spots together with 3D avatars or branded virtual graphics (such as logos or other 3D objects)
- iButterfly like location based coupon collection game.

Social Experiences

- AR Social Wall for users to leave comments and notes of their Instagram posts in specific areas, e.g. Blessing notes post in Thao Maha Phrom Shrine

Benefits

- Users can find locations they are interested but don’t need specific address, e.g. restaurants around me, ATM in the areas.
- Engaging experiences for users to leverage their AR cameras.
- Digital Social Walls to increase viral in digital spaces and create new experiences for visitors
Build up a district wide loyalty program with INSTORE

- INSTORE enables individual merchants to manage their own loyalty program and input their shop information.
- District can leverage malls, trade organizations or local aggregators, to create a district wide loyalty program.
- The shoppers can access all the coupons/concessions provide by merchants and incentive their shopping.
- Merchants can motivate shoppers to go into the store by using INSTORE’s iBeacons to push “Walk-in” Coupons to reward Shoppers first visit or repeat purchase.

Implementation

- Recruit merchants, no matter they are street-side shops, retail chains in malls, or even street hawkers, can join the platform.
- Merchants will receive our operations manual and a box of iBeacons.
- They can just stick the iBeacons inside the store.
- Download our Merchant app and initiate the iBeacon automatically.
- Trainings will be provided to Merchants to self operate the platform and manage their coupons, loyalty.
Step 4 Solution

Build up a district wide loyalty program with INSTORE

User Experiences
- Users can receive different coupons by walking along the whole district
- For every purchase, they will collect stamps/loyalty points by showing their user QR code to the merchant
- Merchant will scan the user QR code of the users and dispatch the points/stamps to the shoppers
- Our system will keep records of the shoppers’ transaction and loyalty points
- Users can redeem coupons and loyalty points for gifts in merchant’s outlets

Benefits
- A self-managed and sustainable loyalty platform for shoppers
- District administration can attract shoppers/tourists by running a district wide reward program
- Build stickiness for users to the District
- On-going revenue opportunities for District and Aggregators
- Collect micro-location data for visitors’ patronage to different shops
- Location based promotion push to visitors for shopping incentives
Technology
A Location Technology That Makes A Smarter Venue

**Real-time and high accuracy positioning.**
1-3 meters accuracy by fusing 5 technologies (Pedestrian dead reckoning, Magnetic field, Bluetooth and Wi-Fi signals).

**Quick to implement & scalable technology.**
Limited no. of beacons required thus low setup and maintenance cost even for large venue (1 beacon every 200 square meters).

**Consistent & reliable performance.**
Able to track movement of user and asset in the venue with flexible installation position, thus has minimal visual impact.

**Seamless transitions.**
Technology fusion supports smooth floor and indoor-outdoor transition; Least interruption to provides best user experience.
Technology

High Precision With Our Fusion Technology

Magnetic field fingerprint
Building materials interfere the earth magnetic field. We could create a magnetic fingerprint by recording location-dependent magnetic field measurement for positioning.

Bluetooth beacon signals
Typical yields around 10m accuracy depending on the infrastructure density. Also central for initial floor detection.

Wi-Fi signals

Pedestrian Dead Reckoning (PDR)
Detect relative movement of the user. The inputs of the PDR algorithms are the mobile phone motion sensors (accelerometer & gyroscope).

Barometric pressure
Assists floor transition detection.

Mobile app or IOT device

User’s position & movement

User’s floor transition
Easy to deploy.

- Stick on with industrial-grade 3M adhesive
- Self-powered
- No wiring involved

Easy to maintain.

- Beacon health monitoring dashboard

Proven communication technology.

- CE and OFCA certified
- Well deployed in large venues (e.g. HKIA, MTR, Sands Macao)
The Simple Process of Indoor Positioning

1. Precise venue info collection using IndoorAtlas fingerprinting tool (from magnetic, WiFi, BLE & barometer)
2. Fingerprint map generation
3. Positioning
4. Location data capture for analytic purpose
Beacon installation

15 meters per Beacon

Easy stick & remove

Battery long lasting

no maintenance Needed (1-2 yrs)

Update of SDK
Value Proposition
Our value proposition

We provide the best services with the best experts. We believe in the best mobile app experiences come from the co-creation of mobile technology expertise with the enlightened industry leaders. The value proposition we offered from Cherrypicks include:

<table>
<thead>
<tr>
<th>The Best User Experience</th>
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<tbody>
<tr>
<td><strong>Understanding of various Industry</strong></td>
</tr>
<tr>
<td>✔ Experienced in various industries</td>
</tr>
<tr>
<td>✔ Project users’ engagements</td>
</tr>
<tr>
<td>✔ Specifically experienced in medical fields</td>
</tr>
<tr>
<td><strong>User driven UI &amp; UX</strong></td>
</tr>
<tr>
<td>✔ Intuitive</td>
</tr>
<tr>
<td>✔ Engaging</td>
</tr>
<tr>
<td>✔ Functional</td>
</tr>
<tr>
<td>✔ Trust, Professional and Secure</td>
</tr>
<tr>
<td><strong>Implementation for Continuous Improvements</strong></td>
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<tr>
<td>✔ Semi-Agile</td>
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<tr>
<td>✔ Future proved</td>
</tr>
<tr>
<td>✔ Fast &amp; stable</td>
</tr>
<tr>
<td>✔ Optimization</td>
</tr>
<tr>
<td>✔ Scalable</td>
</tr>
<tr>
<td>✔ CI/CD enabled</td>
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<tr>
<td><strong>Architected for Privacy, Security &amp; Sustainability</strong></td>
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<tr>
<td>✔ Reliable &amp; Stable</td>
</tr>
<tr>
<td>✔ Proven Projects</td>
</tr>
<tr>
<td>✔ Track Records</td>
</tr>
<tr>
<td>✔ Privacy and Security by Design</td>
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</tbody>
</table>
No.1 Mobile Innovation & Smart City Company

21 Years of Mobile Innovation Experience

10+ World Class Innovation or Pending Patents in Mobile

200+ Professionals

120+ Top Honors in Digital Marketing & Technology