Vision and Scope Document

For

iMega

Version 1.0 approved

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Software Solutions

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Revision History

Name	Date	Reason For Changes	Version
iMega	18 Jan	initial version	1.0

1. Business Requirements

1.1. Background

Shop owners have trouble advertising their products and sales. Also, customers don't have any idea about the sales for each store. Customers might spend hours wandering around trying to find good deals which eventually leads customers to leave without buying anything. This leads to profit lost for the shop owners.

1.2. Business Opportunity

Customers have requested a way to make viewing sales easier and available for everyone. So beacon technology has been brought up to the mall to improve the mall's marketing. This technology will help increase the number of customers, create a competitive environment, increase profits, enhance the overall shopping experience, and provide various benefits for both shoppers and retailers.

1.3. Business Objectives and Success Criteria

BO-1: Drive more people to visit the mall achieve a 20% increase in overall foot traffic within 4 months.
BO-2: Increase sales for shop owners participating in beacon-enabled achieve a 15% growth in sales for stores within 6 months
BO-3: Reduce the number of traditional advertising by 80% in within 5 months

SM-1: The average rating on the customer satisfaction survey increases by 0.5 on
scale of 1 to 5 from 2 within 12 months

SM-2: 85% of shop owners who actively participated in beacon advertising at least two times a week.
SM-3: The shop owners incorporate the new system into their marketing strategy at least four times a week within 4 months following its initial release.

1.4. Business Assumptions and Dependencies

BA-1: Beacon technology will be available 24/7 for all year.

BA-2: Notification will reach any device within the range of the mall.

BA-3: Notifications will be able to be sent to multiple devices including phones for both IOS and windows users also for smartwatches.

DE-1: Notifications will reach devices that have Bluetooth on

Application will be accessible for devices with internet .

DE-2: applications will be available when entering the mall since it will be using the malls internet.

1.5. Business Risks

Risk ID	Risk	Probability	Impact
RI-1	Budget problems arise due to profit that does not cover the cost of resources - the cloud server	0.6	3
RI-2	Breach security as beacons transmit data for various devices, leading to financial setbacks and an erosion of customer confidence	0.3	9
RI-3	The employees not have a completed knowledge for solving a problems into use Beacon Manager	0.3	3
RI-4	The customer doesn't use an Application to receive Beacons or off a Bluetooth	0.5	6

2. Vision of the Solution

2.1. Vision Statement

Inspiring For customer who don't have time look for all the Centre, The iMega Is Application use Beacon technology That send a message or Multimedia location on Beacon Unlike usual shopping, customers will not have to go to all the aisles to see ads and discounts, which will save them time and make shopping easier.

2.2. Major Features

| Feature ID	Feature Name	Feature Description
F-1	Location-based messaging	The application sends targeted messages and multimedia notifications based on the customer's location relative to the beacon. This ensures that customers get relevant information at the right place and time
F-2	Efficient navigation	Customers no longer need to navigate through all the aisles to discover promotions. The app guides them directly to the products, ads and discounts they're interested in, simplifying the shopping process
F-3	Time-saving alerts	Push notifications keep customers informed about time-sensitive discounts, allowing them to make quick, informed decisions without the need for extensive exploration
F-4	Visitor Tracking	Gain insights into the overall flow of visitors within a shopping center to inform strategic decisions about store layout and product placement
F-5	Lighthouse Analytics	Create and share reports on your lighthouse performance to identify areas for improvement
F-6	System Access	Provide system access by downloading an app and connecting to Bluetooth well as iOS, Android, and Windows apps and Compatible with smart watches
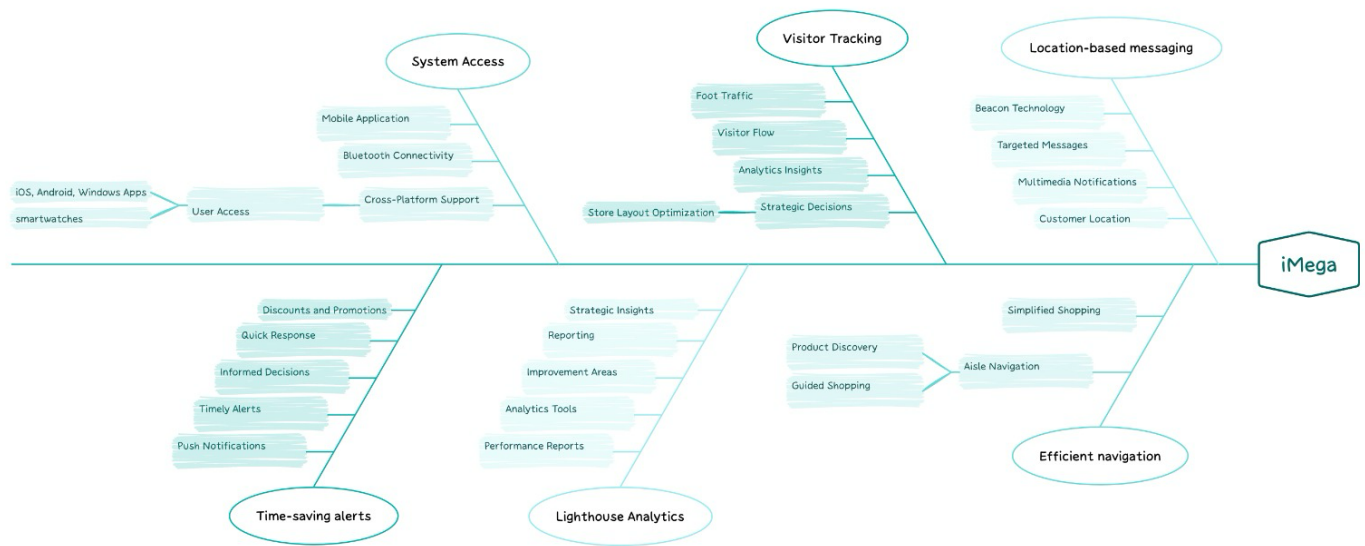
Figure 1. Feature tree for COS

3. Scope and Limitations

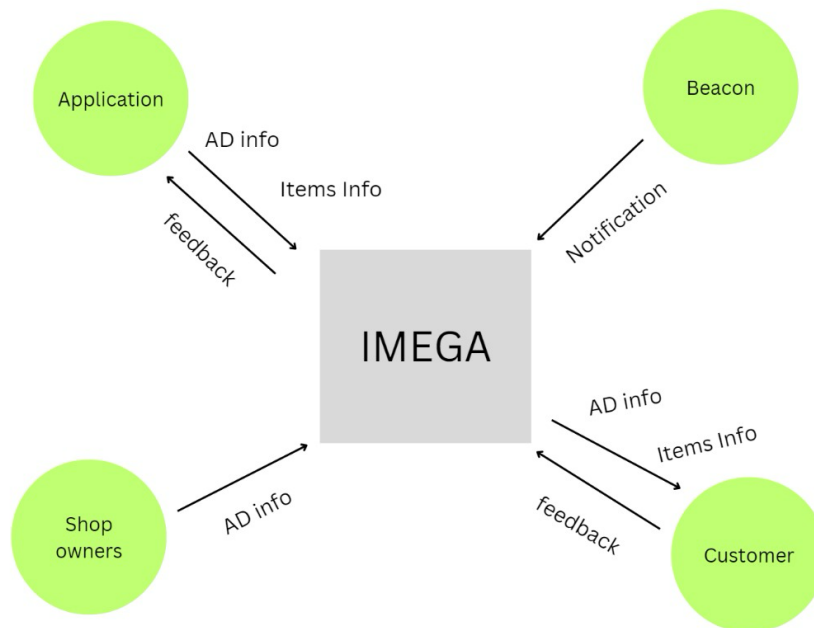Figure 2 presents the scope of the COS at a high level of abstraction.

Figure 2. Context diagram for COS

3.1. Scope of Initial and Subsequent Releases

Features	Relase1	Relase2	Relase3
F1: System access	Android and IOS apps	Windows apps	Smartwatches
F2: Vistors tracking	Not implemented	Fully implemented	
F3: Location based messages	Implemented in a small range	Fully implemented to the expected range	
F4: Time-saving alerts	Notifications include a simple ad	Include sales and discounts	Include push notifications the take you directly to the app
F5: Lighthouse analytics	Not implemented	Fully implemented	
F6: Efficient navigation	Not implemented	Implemented to one aisle	Fully implemented to all aisles

3.2. Limitations and Exclusions

Limitations:

LI-1: Beacons have a limited range. Customers who are outside the effective range of the beacons or are in areas with poor Bluetooth connectivity may not receive notifications.

LI-2: Users must have the shop owner's app installed, and the app must have the necessary permissions for beacons to work.

LI-3: Physical obstructions, such as walls and other obstacles, can interfere with beacon signals, affecting signal strength and reliability.

EX-1: Exclusions Customers without smartphones or those who do not carry them while shopping are excluded from receiving beacon-triggered notifications.

EX-2: Some customers may avoid using beacon-enabled services due to concerns about the security of their personal information.

4. Business Context

4.1. Stakeholder Profiles

Stakeholder	Major value	Attitudes	Major interest	Constraints
Store Managers	Enabling effective and efficient management of pricing specials, optimizing customer engagement through tailored offers, and driving sales	Goal-driven, interested in utilizing technology to improve store performance, and open to learning and utilizing new tools for marketing and sales	Ability to efficiently manage pricing specials, tracking the impact of advertisements, and ensuring their store's visibility within the app	Time constraints, limited technical expertise, budget for marketing campaigns
Visitors Using the App	Access to relevant and personalized information on pricing specials, advertisements, and a seamless shopping experience	Interested in technology that can enhance their shopping experience, concerned about privacy, and expecting smooth interactions with the app	Receiving timely and relevant information, clear and enticing display of specials, maintaining control over their personal data and Secure app experience	Limited battery life on mobile devices,Concerns about data privacy, resistance to intrusive advertising
Beacon Manager	Ensuring the effective setup and management of beacon technology, optimizing beacon performance, System efficiency and technical accuracy	Tech-savvy, detail-oriented, proactive in identifying and resolving potential issues, and ensuring the system's smooth operation	System reliability, performance optimization, and ensuring the system meets the shopping centre's objectives	Limited resources and staff, budget for maintenance
IT Department	Ensuring seamless integration of beacon technology, maintaining system reliability, and providing technical support for beacon-related operations	Tech-savvy, focused on system optimization and reliability, proactive in addressing potential technical challenges	Optimal system performance, streamlined integration with existing IT infrastructure, and ensuring data security and privacy compliance	Limited resources, tight deadlines, competing project demands
Mega Shopping Centre	Enhancing customer shopping experience, increasing customer engagement, improving marketing effectiveness, and gaining insights into customer behavior	Open to technological advancements, eager to improve customer satisfaction and boost sales,cost-conscious,	Optimizing the shopping experience, increasing foot traffic, and driving sales through targeted advertisements	Budget limitations, data privacy regulations, regulatory compliance

4.2. Project Priorities

Dimension	Constraint	Driver	Degree of freedom
Features	>All features scheduled for Release 1 must be fully operational	User acceptance testing: 95% pass rate; all security tests must pass	Flexibility in defining types and content of pricing specials; configurable user segmentation and targeting criteria for offers; adjustable beacon deployment and signal range based on store layout and visitor flow; choice of data visualization and reporting formats for visitor and campaign analytics
Quality		Robust security testing and user acceptance testing	Configurability of user segmentation and targeting criteria for offers; choice of data visualization and reporting formats for visitor and campaign analytics
Schedule	Release 1 by end of Q1 next year; Release 2 by end of Q2; up to 2 weeks overrun acceptable without sponsor review		Adjustable beacon deployment and signal range based on store layout and visitor flow
Cost	Budget overrun up to 15% acceptable without sponsor review		Choice of beacon technology and system infrastructure vendors; potential for training and upskilling existing IT staff to support the system
Staff	Team size: 0.2-time project manager, 0.2-time BA, 3 developers, 1 tester; additional developer and half-time tester available if necessary		Allocation of staff time and resources to different project phases; potential for training and upskilling existing staff

4.3. Operating Environment (Deployment Considerations)

Use BLE beacons compatible with Android and iOS devices and ensure sufficient beacon coverage to cover the entire mall. Evaluate the physical infrastructure to have robust support for BLE beacon deployment, including power and network connectivity. Ensure seamless integration with the mall's POS systems. Develop Brief educational training materials, including short videos **(no more than 5 minutes long**) to familiarize users with the web-based system and mobile application functions to achieve optimal engagement, ensure that the system complies with relevant data privacy regulations, implement measures to protect user data collected through the application, and develop a maintenance plan. To continuously monitor, manage and maintain the lighthouse network and its associated.