



The State of Fun
is born.

SMART SENTOSA








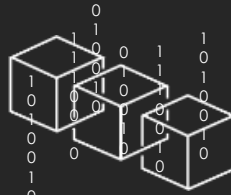

Integrated Operations (iOPs@Sentosa) Innovation Challenge

Industry Briefing – 4th August 2016

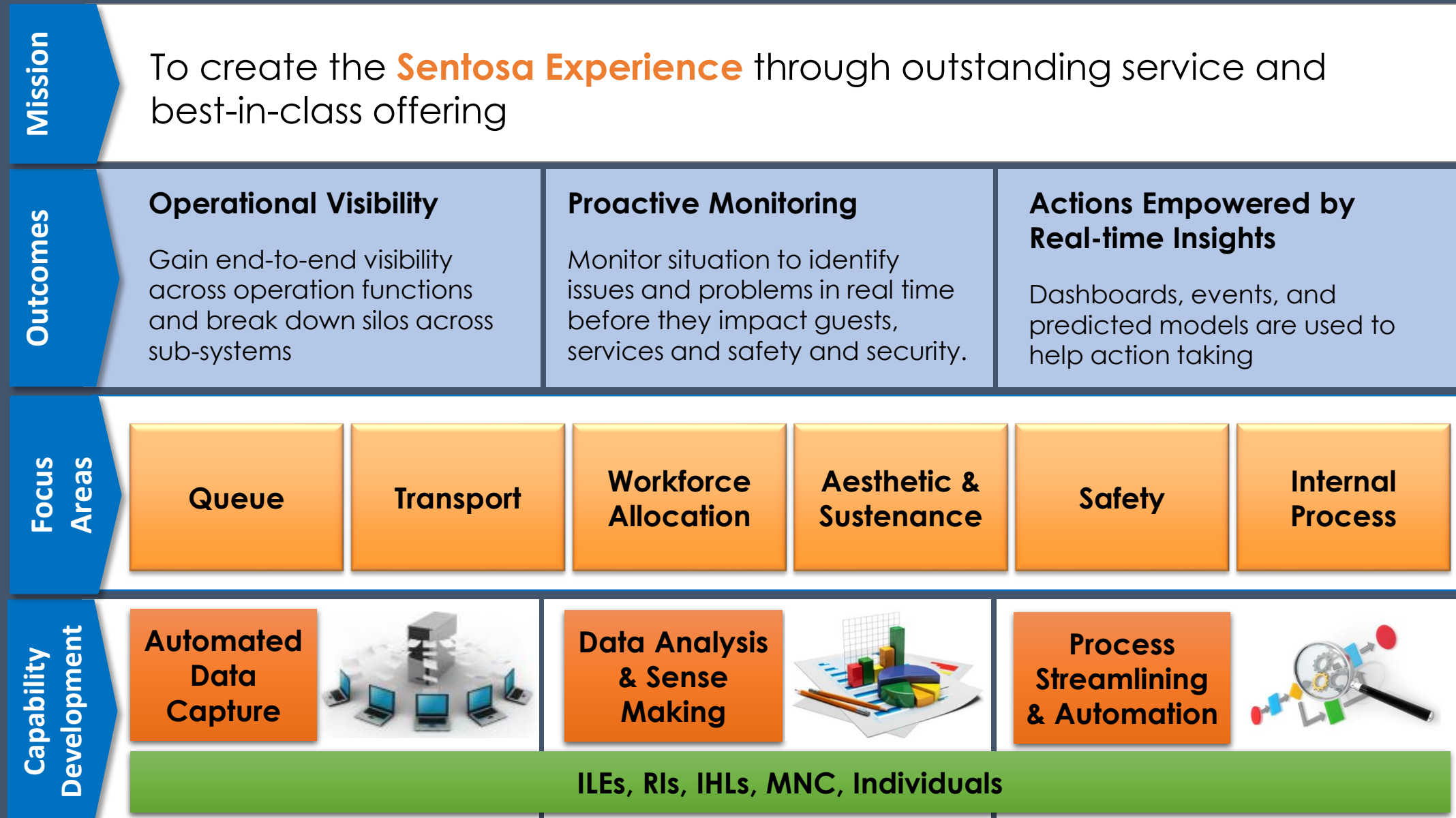
INTEGRATED OPERATIONS (iOPs@SENTOSA) INNOVATION CHALLENGE

- 1 SMART SENTOSA
- 2 RECAP iGX@SENTOSA CHALLENGE ONE
- 3 INNOVATION CHALLENGE – BACKGROUND & FOCUS AREAS
- 4 PROBLEM STATEMENT 1
- 5 PROBLEM STATEMENT 2
- 6 SOLUTION PROPOSALS
- 7 THE BIG PICTURE

Recap: iGX Innovation Challenge 1 Problem Statement

CURRENT SITUATION (CHALLENGE 1)	Sentosa island's current digital touch points fail to connect in ways that fulfill guest requirements, nor serve to maximise guest satisfaction and business outcome.
iGX INNOVATION CHALLENGE 1 PROBLEM STATEMENT	How can we create a seamless, connected and integrated guest experience to generate optimal business outcome?
KEY PAIN POINTS	<p>NAVIGATION  AWARENESS & PERSONALISATION    QUEUING </p>
AWARDED PROPOSALS FOR CHALLENGE 1	<p> FACIAL RECOGNITION  POCKET TOUR TRAILS  WEARABLES  CASHLESS PAYMENT  ANALYTICS  DIGITAL VIRTUAL ASSISTANT</p>

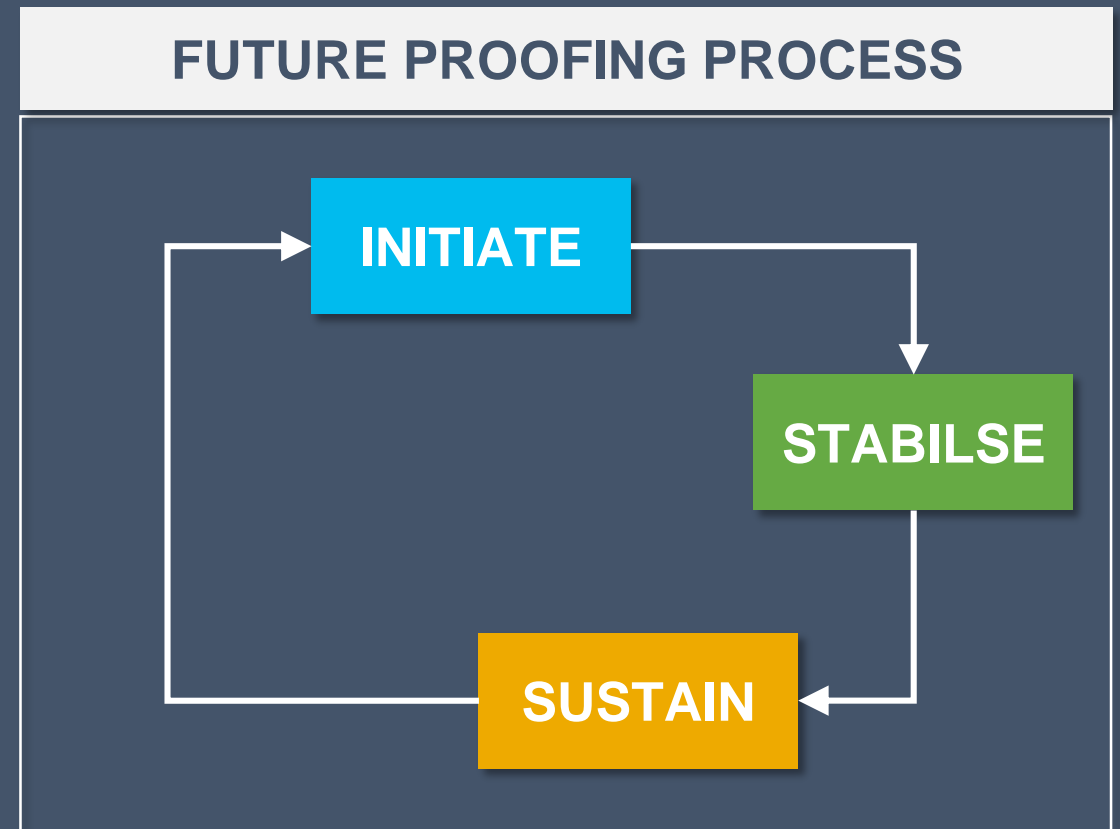
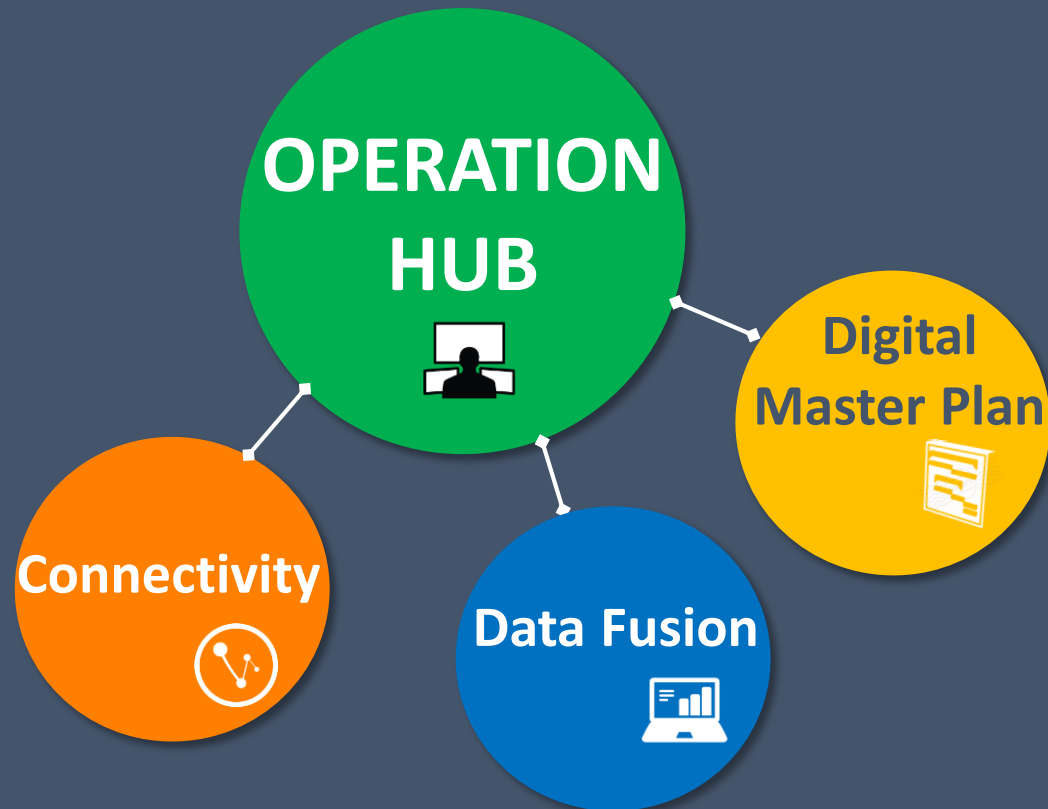
BACKGROUND FOR iOPs@SENTOSA INNOVATION CHALLENGE



Operation Intelligence Framework

All Initiatives will be anchored on 3 Focus Area:

CONNECTIVITY + DATA FUSION + DIGITAL MASTER PLAN



The key success factor is to adhere to the process listed above...

INNOVATION CHALLENGE – Problem Statement 1

CURRENT SITUATION

Manpower intervention is needed to relieve long waiting time and crowded situations. With limited manpower resources, such intervention has to be timely to optimise deployment. Crowd formation is dynamic and current information systems are unable to provide full situational awareness for proactive and faster response to guests' need.

PROBLEM STATEMENT 1

HOW CAN SENTOSA ENABLE...

OPERATIONAL STAFFS TO DELIVER ANTICIPATORY SERVICES TO ENHANCE GUEST EXPERIENCE.

DESIRED OUTCOME

- Automated data capture for timely information
- Data analysis & sense making to help decision making and optimise resource deployment
- Process streamlining/re-engineering for faster response to guests' needs

Problem Statement 1 – Key Pain Point # 1

Lack of Up To Date Information to Support Analysis and Planning

Unable To Capture Tram & Bus Ridership Information

Two earlier considerations made were **not workable**:

- People counting mats: guests can board from either front or back door making count inaccurate
- RFID tags/wearable: no practical use as the rides are free



Difficulty in
Data Capture
for
Analysis...

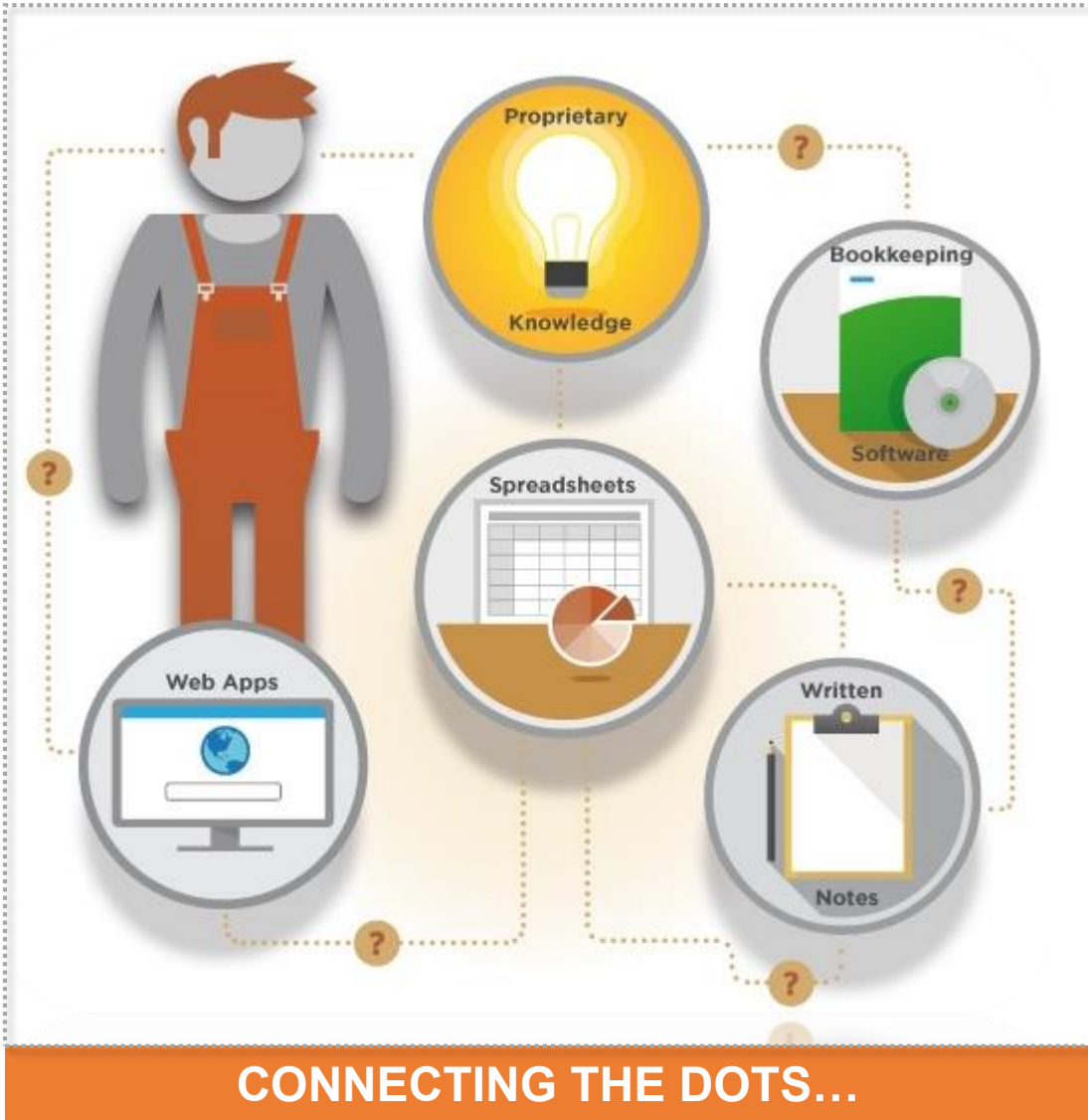


Using Queue Marker As Proxy For Ridership Information

- Duty personnel **manually observes** which **queue** marker the last person in the queue is at **via CCTV**;
- Waiting time is estimated** by the last queue marker's position;
- Data is **manually entered** into an excel file and analysed for average waiting time
- Cycle is repeated every 10 minutes;

Problem Statement 1 – Key Pain Point # 2

Drawing insights across the various systems is a challenge



- ❑ Handling of **multiple sub-systems**:
- ❑ Information exists in siloes
- ❑ System can be digital or manual
- ❑ Synthesizing information from these systems can provide better situational awareness and improve operational capability

Pain Points:

- ❑ Multiple sub-system does not provide a full situation awareness picture
- ❑ Scaling the sub-systems puts a strain on operational work



Divisional Director , Information Technology

Sentosa Development Corporation

Eu Kwang Chin

INNOVATION CHALLENGE – Problem Statement 2

CURRENT SITUATION

Guests do not have timely information to move around easily while on the island. Hence they face situations such as getting stuck in queues, losing their way or spending more time to find their way within the island.

PROBLEM STATEMENT 2

HOW CAN SENTOSA ENABLE...

GUESTS TO MAKE TIMELY INFORMED DECISION TO OPTIMISE THEIR PLAY TIME FOR AN INTEGRATED GUEST EXPERIENCE?

DESIRED OUTCOME

- Enable location based services with real-time crowd situation at various locations, and recommendations to enable them to move around on the island easily
- Enable Guests to plan and embark on preferred routes dynamically with updated information
- Reduce queue at high traffic areas including attractions

Problem Statement 2 - Key Pain Point

Guests Lack Information for Decision Making



“**Transportation is a key issue**, the feeder service is not great. It's always packed **and we don't know what time the bus is arriving**. It would be good to have real time updates so we don't end up **waiting for a long time.**” – *Frequent visitor*

“ We found it **easier to walk** from USS back to **our hotel**. Even though it was hot, it took us 1/2 hour **compared to taking the bus which would've taken us at least 45 mins**. There needs to be more done to ensure there's improved movement between locations.”
- *Tourist Family*

Unaware of the different transport modes, lack of real time & updated information to plan their preferred transport route and move around easily

GUEST'S POINT OF VIEW

1. No real time information on waiting and arrival time for different transport modes
2. No real time information on capacity and seats availability on transport modes
3. Unaware of different transport modes, lack information to plan and access transport options
4. Lack of updated information and recommendation on best option to get to destination on the-island easily

iOPs@SENTOSA INNOVATION SOLUTION PROPOSALS

ON-ISLAND EXPERIENCE

TRANSPORT, QUEUE & MOBILITY MANAGEMENT

Requirements for Operations (Problem Statement 1)

- Automate the collection of data on transport fleets, facilities, transport queue status and other possible data to facilitate its management
- Bring together different data sources for machine sense making with self-learning capabilities to generate insights for planning & pre-emptive response by operations team

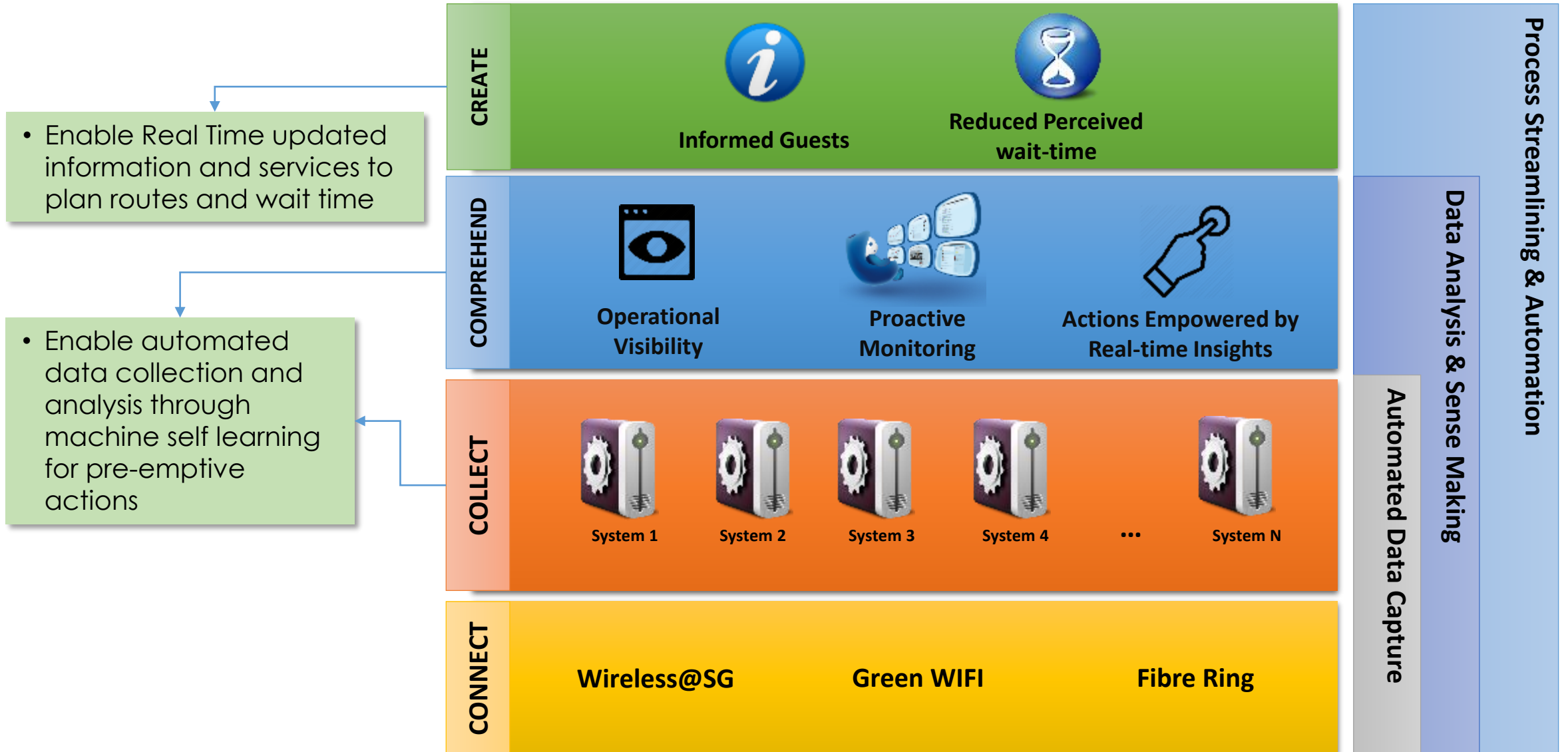
Requirements for Guests (Problem Statement 2)

- Personalize, refine and provide timely recommendations for transport, directions & planning of activities based on guest profile, needs and environmental situation
- Empower guests to make their own choices with updated information (e.g. crowd and congestion conditions, etc.) so that they have the flexibility to make changes on-the-go, and to divert them from congested areas
- Able to anticipate and suggest activities to help guests reduce their perceived wait time

**INDUSTRY TO PROPOSE SOLUTION
FOR GUESTS AND/OR FOR
OPERATIONS**

BIG PICTURE – Draw insights across the various systems

Enable Anticipatory Services by OPs and Front End Services & Info For A Seamless Guest Experience



What We Are NOT Looking For In Proposals



- Commercial off-the-shelf solution
- Point solutions useful only for a single outcome
- Consultancy services
- Increasing resources (e.g. buses, trams and manpower)
- Platform that manages digital display system
- Geo-location map solutions

INTEGRATED OPERATIONS (iOPs@SENTOSA) INNOVATION CHALLENGE PROCESS

1

CHALLENGE PROCESS

2

INNOVATION CHALLENGE PROPOSAL

3

EVALUATION CRITERIA & SHORT-LISTING

4

EXPECTATION OF THE SOLUTION PROTOTYPE

5

MILESTONES TIMELINE

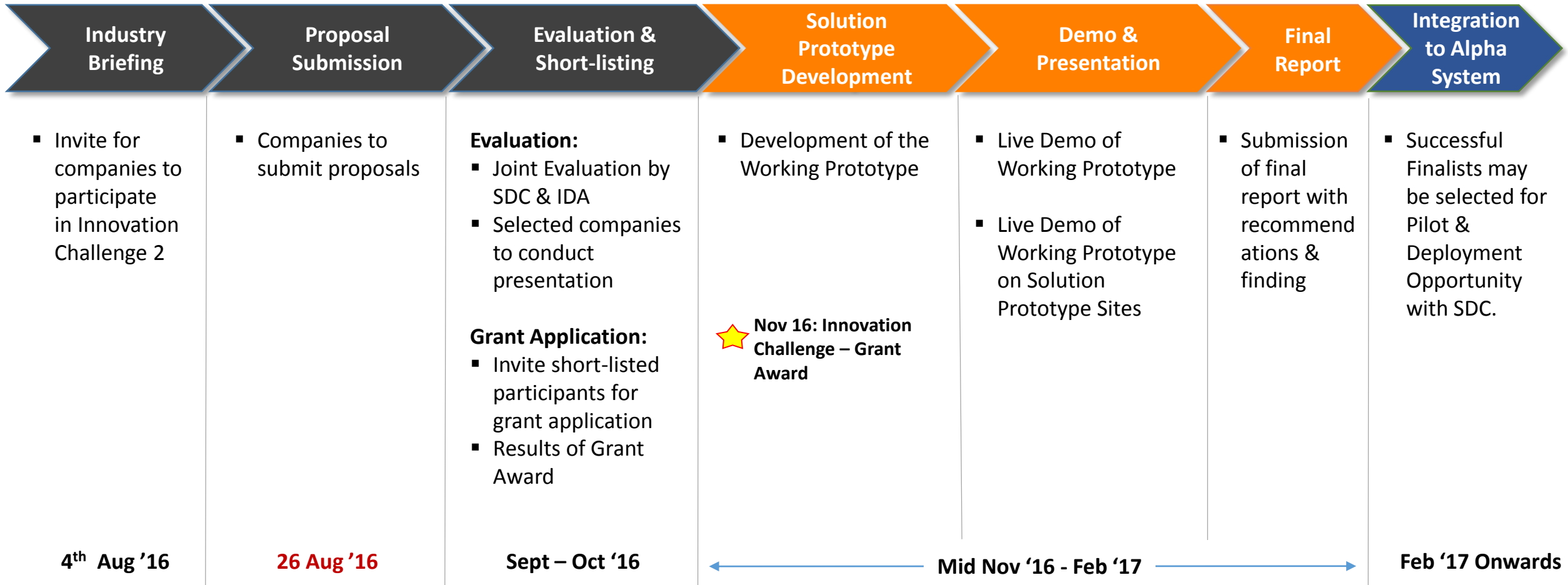
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INNOVATION CHALLENGE WEBSITE

7

PARTNERSHIP FACILITATION

iOPs@SENTOSA INNOVATION CHALLENGE PROCESS



INNOVATION CHALLENGE PROPOSAL

The Proposal should include the key areas below:



- ✓ **Plans** for the proposed solutions, the **Solution Prototype plan** which include setup, schedule, constraints, risk and assumptions.
- ✓ **Describe** the technology use to address the Problem Statement
- ✓ Technology **Capability**, **Usability** and **Interoperability**.
- ✓ **Required effort** for design, build and implementation
- ✓ **Deliverables**
- ✓ **Benefits**, e.g. to SDC (cost savings, Cost Benefit Analysis or ROI to illustrate the benefits)

For more details, please refer to the Proposal Template found in the **Innovation Challenge Document**.



Evaluation Criteria for Proposal

The Evaluation Criteria are:

- **Experience & Capability**
- **Solution Assessment**
- **Technical & Business Viability**
- **Interoperability & Scalability for future deployment**

Evaluation will be a joint effort of both SDC & IDA.

Short-listing & Award



Short-listing for Grant Application

- ✓ Only the shortlisted participants will be informed and invited to submit grant application for co-funding by IDA
- ✓ Final grant award and amount based on proposal and IDA's approval
- ✓ Grant Award may be given to more than 1 winner to participate in Solution prototype

Expectation of the Solution Prototype

The awarded participants will develop the Working Prototype meeting the key expectations below...

- **How It Works...**
 - Demonstrate a **Working Solution Prototype**
 - Demonstrate **how** the Solution Prototype **addresses the Problem Statement**
 - Demonstrate its' **usability and interoperability**
- **How it Works at the Solution Prototype Sites...**
 - Demonstrate the Solution Prototype **with Live Data on Solution Prototype Sites**
 - Demonstrate **how** the Solution Prototype **addresses the Problem Statement**
 - Demonstrate and **address Usability and Interoperability concerns**



INNOVATION CHALLENGE MILESTONES TIMELINE

MILESTONES	DATE
Publication of challenge document on IDA website	05 Aug 2016
Submission of Proposal	26 Aug 2016, 12:00 PM
Evaluation by IDA & SDC	Sept– Oct 2016
Notification of Short-listed Participants to invite for Grant Application	End Oct 2016
Grant Award	Nov 2016
Solution Prototyping Development & Demo	Mid Nov 2017 – Feb 2017
Presentation and Submission of report	Feb 2017

INNOVATION CHALLENGE WEBSITE

www.idatechchallenge.sg

Access the Official Website to...

- ✓ Download the Challenge document
- ✓ Structure of the Application
- ✓ Proposal Cover Letter
- ✓ Proposal Template
- ✓ Declaration by Applicant
- ✓ Sentosa Info Pack
- ✓ Seeking Partnership registration

Note: The Official Website will be available on 5-Aug-2016.

Partnership Facilitation



Companies looking for partnerships can send email to ENT_SNI@ida.gov.sg

- **Industry contact details** will be published at the website for the **interested parties** to liaise with each other for partnership arrangement.
- Take note that only the **Lead company will have to submit the Proposal.**

Deadline to indicate interest is 11 Aug 16, 1700hr

QUESTIONS?