HOTEL INNOVATION CHALLENGE 2019

Launch Event

1st April 2019

SG Passion Made Possible

Singapore TOURISM BOARD

SINGAPORE HOTEL ASSOCIATION

Agenda

1. Opening Address by Ong Huey Hong, Director, Hotel Sector Manpower

2. Address by Ms Margaret Heng, Executive Director, Singapore Hotel Association

3. Sharing on Hotel Industry

4. Introduction to Hotel Industry Problem Statements

5. Explanation of Challenge Process

6. Q&A

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**Director
Hotel Sector Manpower**
Ms Ong Huey Hong

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Agenda

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Executive Director
Singapore Hotel Association
Ms Margaret Heng

Agenda

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Sharing on Hotel Industry

1. **Hotel Landscape in Singapore**
2. **Adoption of Technology in Singapore Hotels Today**
3. **Tech Resources Available for Hotels**
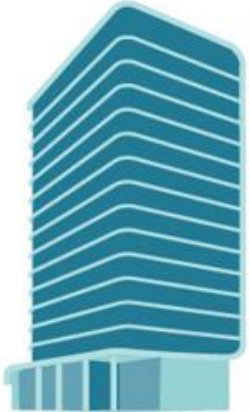
ABOUT SINGAPORE'S HOTEL INDUSTRY

410
Hotels
(as at 31 Dec 2018)

31
New Hotels in Yr2018

Medium Hotels
(up to 300 rooms)
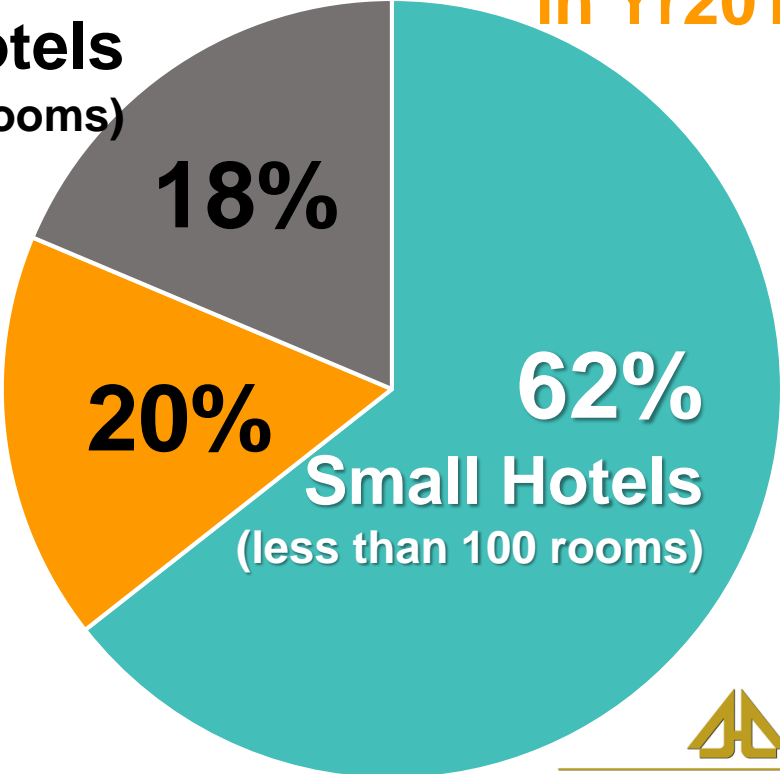
66,994
Rooms
(as at 31 Dec 2018)

Large Hotels
(more than 300 rooms)

18%

20%

62%
Small Hotels
(less than 100 rooms)

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ADOPTION OF TECHNOLOGY BY HOTELS

Front of House Robots that can take over simple service tasks such as items delivery to guests

Back of House Robots that can take over repetitive manual work such as linen delivery

Radio Frequency Identification to conduct automated linen/ uniform/ asset inventory count

Self Check in Kiosks for guests to self-help and not have to wait in line

Interactive digital solutions to enhance and deliver seamless hotel experiences.

Data Analytics and measurement to increase hotel revenue and productivity

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TECH RESOURCES AVAILABLE FOR HOTELS

Smart Hotel Guide

Smart Hotel Technology Guide 2018

- A reference of the next-generation system capabilities and solutions and case studies for a Smart Hotel[1] .

Hotel Technology Directory

- First of its kind government-private sector collaboration to make available technology vendors listing to Singapore hotel business.

- Flexibility in updating information of company and solution offered, ensuring hotels are kept abreast of latest information.

- **More than 110 solutions** in areas of IOT, robotics, software, check-in kiosk, etc have been listed.

Visit https://hoteltechnologyguide.stb.gov.sg to list your solution now.

Vendors listed are not endorsed by SHA or STB.

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Hotel Industry Problem Statements

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Problem Statement 1 (Housekeeping)

How might we enable housekeepers to <u>reduce the effort required and speed up the process of</u> making a bed?

Problem Statement 1 (Housekeeping)

How might we enable housekeepers to speed up the room cleaning process by <u>reducing the effort required and speed up the process of</u> making a bed?

Current Situation	Bed making takes too much time. E.g. Housekeepers spend an average of 25 minutes cleaning a room, of which 7 - 10 minutes are spent making the bed.
Main causes of problem	• Housekeeper needs to walk around the bed multiple times to tuck in and tighten flat sheet • There can be multiple pillows to change pillow linen (up to 8 pillows per room in luxury hotels) • Task of fitting duvet cover can be challenging for 1 person to complete • The bed making process requires heavy lifting of mattresses
Current Solutions	• Devices that slips under the mattress to help loosen and tighten bedsheets with the press of a button • Assistive bed making tools that makes it easier and faster to change the bedsheet, duvet, and pillowcases, while maintaining low costs and minimal impact on existing infrastructure
Features of Ideal Solution	• Reduce need to keep walking around the bed to tuck in the flat sheet, and effort required to make bed • Enable hotel to maintain guest experience associated with use of the bed • Possible solution can explore, but not limited to, the use of Robotics and Material Science

Problem Statement 2 (Housekeeping)

How might we <u>autonomously</u> vacuum the <u>hotel room flooring </u> without frequent changing of battery and dust bag?

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Problem Statement 2 (Housekeeping)

How might we <u>autonomously</u> vacuum the <u>hotel room flooring</u> without frequent changing of battery and dust bag?

Current Situation	Floor in the hotel rooms is vacuumed by housekeepers manually
Main causes of problem	• Floor is cleaned by housekeepers manually, and is time consuming • Housekeepers have to go to various levels to clean the floor, further increasing time required
Current Solutions	• Current autonomous or manual-operated vacuum cleaner in the market is small enough to be used in a hotel room but has low battery life, low storage capacity
Features of Ideal Solution	• Able to be programmed to carry out cleaning functions autonomously, including opening of room doors and navigating across levels • Able to integrate with other systems eg. e-housekeeping • Compact and able to work in a hotel environment, with long battery life and storage capacity • Possible solution can explore, but not limited to, the use of Robotics

Problem Statement 3 (Housekeeping)

How might we enable housekeepers to <u>speed up</u>, <u>reduce the effort</u> required and <u>increase the quality</u> of cleaning <u>concave surfaces</u> such as bath tubs, sinks, and toilet bowls?

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Problem Statement 3 (Housekeeping)

How might we enable housekeepers to <u>speed up</u>, <u>reduce the effort</u> required and <u>increase the quality</u> of cleaning <u>concave surfaces</u> such as bath tubs, sinks, and toilet bowls?

Current Situation	Cleaning of the concave surfaces in hotel rooms is done manually by housekeepers. This includes bath tubs, sinks and toilet bowls
Main causes of problem	• This is a labour intensive, and time consuming activity • Cleaning of concave surfaces requires much effort, and can be potentially dangerous eg. Bathtubs as a slipping hazard • These cleaning chores have to be done frequently, and manually by housekeepers
Current Solutions	• Cleaning is done manually
Features of Ideal Solution	• Able to reduce the effort required, and speed up the process of clean concave surfaces • Possible solution can explore, but not limited to, the use of Robotics and Material Science

Problem Statement 4 (F&B)

How might we <u>automate</u> the <u>setting up and keeping of chairs</u> after banquets?

Problem Statement 4 (F&B)
How might we <u>automate</u> the <u>setting up and keeping of chairs</u> after banquets?

Current Situation	During banquets, a large number of dining chairs have to be set up pre event, and kept post event
Main causes of problem	• The dining chairs are set up and kept by banquet staff manually. This is a labour intensive, and time consuming activity • For every table, there multiple chairs that needs to be managed. Each of these chairs are to be individually placed during set up, stacked and kept away post event
Current Solutions	• There are solutions that focuses on the delivery of tables. • There are no solutions that enables set up and removal of chairs
Features of Ideal Solution	• Able to set up chairs in different banquet settings • Able to remove, stack and place chairs in a storage area after the event • Able to work with various kinds of dining chairs, differing in shape, size, weight and material • Possible solution can explore, but not limited to, the use of Robotics and Material Science

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Problem Statement 5 (F&B)

How might we utilize <u>robotics</u> to <u>reduce the time and labor</u> required for <u>bussing</u> in the context of F&B in hotels?

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How might we utilize <u>robotics</u> to <u>reduce the time and labor</u> required for <u>bussing</u> in the context of F&B in hotels?

Current Situation	Bussing is done manually by F&B staff
Main causes of problem	• F&B staff have to move from tables to back of house to clear the soiled dishes and tableware. This requires significant time and effort, especially for larger F&B establishments with large number of tables
Current Solutions	• Currently, bulky automated robots are utilized in F&B establishments, where robots rove around designated routes acting as collection points for soiled dishes.
Features of Ideal Solution	• Able to automate and minimise manual labour • Able to reduce time required for bussing duties • Solution should have reasonable physical capacity, yet able to work in a restaurant setting i.e manoeuvre tight areas, safe to work in areas with high human traffic • Added bonus, should the solution be able to pick up dishes and tableware autonomously • Possible solution can explore, but not limited to, the use of Robotics

Problem Statement 6 (F&B)

How might we <u>automate</u> the process of <u>setting up of tableware</u> for banquets and also in a restaurant setting?

Problem Statement 6 (F&B)

How might we <u>automate</u> the process of <u>setting up of tableware</u> for banquets and also in a restaurant setting?

Current Situation	Tableware is arranged manually by F&B/Banquet staff
Main causes of problem	• There are various tableware that is to be set up on each table for banquets and restaurants • For Banquet and restaurants with a large number of tables, the setting up of tableware requires significant time, effort and manpower
Current Solutions	• There are no current solutions
Features of Ideal Solution	• Able to automate the process of setting up of tableware • Able to handle various tableware with different shape, size and material • Able to be programmed to execute different kind of set ups eg. Western , Chinese etc • Possible solution can explore, but not limited to, the use of Robotics

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Problem Statement 7-a (Data)

How might we enable hotels to have a <u>holistic view of guests information</u> by collecting information, extracting information from individual systems and provide a collective representation of consolidated information of guests?

Problem Statement 7-a (Data)

How might we enable hotels to have a <u>holistic view of guests information</u> by collecting information, extracting information from individual systems and provide a collective representation of consolidated information of guests?

Current Situation	Hotels collects guests information through different means, and stores guests information in different systems. They are unable to see a consolidated view of all guests information, and each department ends up having incomplete information of each guest
Main causes of problem	• Within a single hotel, guests information are collected and stored in various systems • Information cannot be extracted, consolidated and attributed to a single guest
Current Solutions	There are current solutions that are able to extract information from different systems, but solution does not attribute and showcase information down to an individual level
Features of Ideal Solution	• Able to collect and consolidate information, and show a single dashboard with a holistic view of each guest • Able to extract information from various system, and with an in built algorithm to attribute information to a single person accurately • The resulting information should enable hoteliers to either improve guest experience, or increase revenue

Problem Statement 7-b (Data)

How might we enable hotels to better <u>measure customer satisfaction</u> through <u>timely feedback prompts</u> to hotel guests?

Problem Statement 7-b (Data)

How might we enable hotels to better <u>measure customer satisfaction</u> through <u>timely feedback prompts</u> to hotel guests?

Current Situation	Hotels predominantly collect feedback and data through means such feedback forms and Ipads/kiosks situated at various areas of the hotel
Main causes of problem	• Traditional methods of collecting data is passive, and does not provide hotels with sufficient insights • Feedbacks are typically collected at the end of the guest's stay, and does not allow hotels an opportunity to carry out service recovery
Current Solutions	• Current solution is in the form of a card key with in built buttons, where guests can press on the buttons to provide feedback
Features of Ideal Solution	• Able to actively push feedback prompts to guests in a non-intrusive manner • Able to provide insights on the guest experience journey, collecting information that can be attributed to an individual • Able to provide hotels with feedback while guests are still in the hotel, allowing potential service recovery • Able to detect and assess mood of guests, allowing hotels to react accordingly • Possible solution can explore, but not limited to, the use of optical sensors, software, AI

Problem Statement 7-c (Data)

How might we enable hotels to better <u>utilize individual preference data</u> (both guests and potential guests), achieving <u>revenue optimization</u> through upselling?

Problem Statement 7-c (Data)

How might we enable hotels to better <u>utilize and analyse individual preference data</u> (both guests and potential guests), achieving <u>revenue optimization</u> through upselling?

Current Situation	Guest preference data is not fully utilised for revenue optimisation
Main causes of problem	• Guest data is collected and stored by hotels, through various systems • However, much data goes unnoticed and not tapped on to potentially increase revenue
Current Solutions	• Current solution is able to push proximity activated mobile notifications to guests who are logged into the hotel WIFI network
Features of Ideal Solution	• Able to extract and leverage on consolidated guest data available in current systems, and carry out upselling • Able to perform data analysis on spending habits of different guest profiles • Through machine learning, able to increase the conversion rate of attempts to upsell • Possible solution can explore, but not limited to, the use of AI, data analytics and web crawling technologies

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Problem Statement 8 (Data)

How might we enable hotels to <u>optimize labor allocation</u> dynamically (across different functions) and schedule workforce based on dynamic hotel demand?

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How might we enable hotels to optimize labor allocation dynamically (across different functions) and schedule workforce based on dynamic hotel demand?

Current Situation	Some hotels plan their rosters manually, whereas other hotels utilise automated time and attendance system with a rostering feature
Main causes of problem	• Rostering in the system is largely static, with a fixed number of personnel allocated for each function regardless of demand • When hotel demand fluctuates, manual revision of the roster is required • Rostering for part time workers requires much effort • Rostering solutions do not encompass all functions within the hotel
Current Solutions	• Solutions are also typically confined within silo functions
Features of Ideal Solution	• Able to integrate with current systems in hotels, extracting data required to predict demand • Able to carry out dynamic rostering based on predicted demand across different functions • Able to roster based on skills that the employee has, and not just based on functions • Able to incorporate AI and machine learning, where solution will take into account employee requests and roster more accurately overtime • Solution can have an embedded payroll feature, where budget for salary allocated to each department can be taken into account

Problem Statement 9 (Data)

How might we enable hotels to <u>measure the productivity</u> of <u>hotel staff, eg. Kitchen staff,</u> via data collection and analytics technology?

Problem Statement 9 (Data)

How might we enable hotels to <u>measure the productivity</u> of <u>hotel staff, eg.</u> <u>Kitchen staff,</u> via data collection and analytics technology?

Current Situation	Productivity of hotel staff in various functions are inadequately measured
Main causes of problem	• Productivity is inadequately/not measured in various functions in hotels • Hotels are not able to track and potentially find areas where productivity can be improved
Current Solutions	• There are no current solutions
Features of Ideal Solution	• Able to measure productivity of different functions within the hotel • Using Kitchen as an example, quantifiable data that can be collected may include weight of ingredients/products prepared, number of portions, associated with different timing of the day etc. • Able to analyse collected data and allow visualisation of productivity in different ways within the kitchen • Possible solution can explore, but not limited to, the use of sensors, Data analytics and AI

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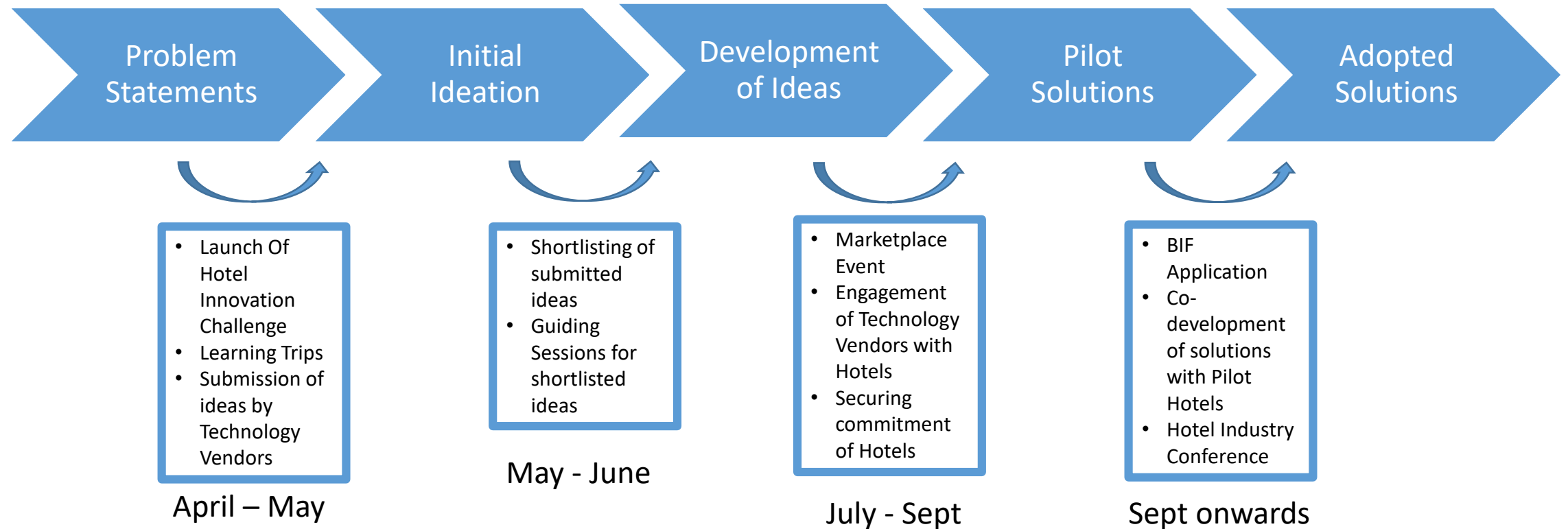5. **Explanation of Challenge Process**

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Objectives

- Catalyse development of new solutions to address the perennial pain points faced by the hotel industry

- Develop solutions to drive productivity outcomes and/ or deliver enhanced experiences

- Develop and scale ideas into commercial-ready solutions

Innovation Challenge Framework

Problem Statements	Initial Ideation	Development of Ideas	Pilot Solutions	Adopted Solutions
• Launch Of Hotel Innovation Challenge • Learning Trips • Submission of ideas by Technology Vendors	• Shortlisting of submitted ideas • Guiding Sessions for shortlisted ideas	• Marketplace Event • Engagement of Technology Vendors with Hotels • Securing commitment of Hotels		• BIF Application • Co-development of solutions with Pilot Hotels • Hotel Industry Conference
April – May	May - June	July - Sept		Sept onwards

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Innovation Challenge Process

- **Submission of Preliminary Proposals (1 April – 10 May 2019)**

- **Learning Trips (8 – 12 April 2019)**
  - ➢ Participants will be brought on guided trips to hotel sites, including back of house, This will allow participants to get deeper insights to the problems that hotels are facing

- **Announcement of Shortlist (20 – 23 May 2019)**
  - ➢ Shortlisted candidates will be notified between 20 – 23rd May

- **1-1 Guiding Sessions (27st May – 10 June)**
  - ➢ Shortlisted Participants will be invited for 1-1 guiding sessions, which will be attended by an STB representative, and a hotel representative

- **Marketplace (19 July 2019)**
  - ➢ Shortlisted Participants can share their proposals with hotel stakeholders and network with potential Pilot Partners
  - ➢ This session is by-invite only, and only Participants with shortlisted proposals can qualify

- **Submission of proposal for STB's Business Improvement Fund (13 September 2019)**
  - ➢ Shortlisted Participants to submit with 1 secured pilot hotel for STB's funding.

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Innovation Challenge Proposal

WHAT YOU SHOULD INCLUDE

- Specify the **problem statement**
- Describe the **solution,** including **how it solves the issue, expected outcomes,** and **unique selling points compared to current solutions** (if any)
- Describe the **technology used**
- Describe **development plans**
- Introduce the **company background** and **track record,** including **experience with technology to be used**

To submit a Proposal, please complete the **Preliminary Proposal Submission Template**, which can be found on the Challenge website

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We Are <u>NOT</u> Looking For

✖ Replication of off-the-shelf solutions

✖ Consultancy services

✖ Increasing resources (e.g. manpower, time, etc.)

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Evaluation Criteria

1. **Strength of Proposal**
   - ❑ Ability to address the problem statement comprehensively and with expected outcomes e.g. improved productivity, increased competitiveness, etc. Considerations would include:
     - Feasibility of developing proposed solution
     - Impact of adoption of proposed solution
     - Degree of scalability in industry
   - ❑ Innovativeness of solution and/ or differentiation from existing offerings (e.g. first in the industry)

2. **Company Assessment**
   - ❑ Experience & Skill-sets
   - ❑ Track record
   - ❑ Past projects

Grant Support

- STB will co-fund up to 70% of the qualifying costs for prototype development

- Funding will be disbursed on a reimbursement bases, subject to key milestones and receipt of 3rd party audited documents

- Participant must be an entity registered in Singapore to qualify for funding

- Shortlisted companies must <u>secure 1 hotel</u> to pilot the solution

Solution Development

- Development and implementation period can commence after approval from STB.

- Successful solutions will be showcased at relevant industry platforms, where appropriate.

- STB may augment Successful Participants' effort to scale up the adoption of successful solution proposals to the rest of the hotel industry.

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NEXT STEPS (IMMEDIATE)

1. **Learning Trips**
   - Register interest at the end of the session
   - Details on the trip will be sent to your email

2. **Preliminary Proposal Submission Deadline**
   - Submit the soft copy of the completed Annex A: Proposal Submission Template via email, by **Friday, 10 May 2019, 2359hrs SGT**

3. **For more information**
   - Challenge website – https://www.stb.gov.sg/content/stb/en/trade-events-and-resources/tourism-innovation-challenge.html
   - Email - STB_Hotels@stb.gov.sg

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FAQ

Submission of Proposals

1. **May STB introduce me to a hotel I can work with prior to submission, so that my proposal can be more customised and relevant?**

   - All Participants will be provided adequate resources to have a good grasps of the problems that hotels are facing. Apart from this presentation deck that will be made available on our challenge website, the learning trips organised by STB will allow participants to have a clear understanding of the problems
   - Therefore, we highly encourage interested companies to register for the learning trips

2. **How many proposals may I submit?**

   - Each Participant may submit one (1) proposal per problem statement as the lead applicant (whether as an organisation or as a consortium). This is encouraged to ensure that resources are best optimised towards developing a solution well
   - Participants may submit proposals for more than one (1) problem statement

FAQ

3. **May I submit proposals on prototypes which I had previously piloted in another hotel?**

   - No. As we are looking for innovative solutions, proposals replicating a prototype without a certain degree of customisation and/ or replicating off-the-shelf solutions, will not be accepted. The customisation is required to ensure a holistic address of the hotels' industry needs. Should this be found as a replicate, the proposal will not be shortlisted.
   - STB will however, accept proposed solutions used in other industries (such as in hospitals, banks etc.) which have been adapted and/ or customised to the needs of hotels.

4. **Do I need to provide quantitative estimated outcome in my preliminary proposal? How will STB assess the outcome and impact?**
   - There is no need to provide exact quantifiable outcomes in the preliminary proposal. Estimated outcomes provided can be qualitative eg. reduction in manpower required/improved productivity etc. STB will assess the outcome and impact based on how it is intended to resolve the problem, taking into accounts aspects such as strength of proposal and feasibility.

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FAQ

Grant Submission

4. **Most of my development team are freelance staff. Will their costs qualify as part of the grant?**

   - Costs to hire freelance staff qualify as professional services, and can be submitted as a qualifying cost
   - However, do note that these should be costs payable to a third-party company (not an individual) that is not a subsidiary, parent or associate of the Participant(s).

Prototyping Stage

5. **Can STB share what datasets will be made available during the developmental phase? And what type of data do hotels have now?**

   - STB will not be providing any hotel data.
   - All Participants may work off the basis that hotels will be able to provide POS and CRM data. This should be validated with the Committed Pilot Partner.

Quotes from Past Participants

"The STB Innovation Challenge provided us with **validated problem statements from the industry**, and gave us a **platform to get connected to hotels** who are open-minded and pro-digital policy, such as the Pan Pacific Hotel Group (PPHG). Post pilot, we are now working with them for regional deployment starting with the hotels in Singapore first."

-Ted Chen, EverComm Singapore-

Quotes from Past Participants

"Participating in the STB Hotel Innovation Challenge broadened our horizons, **opened up new verticals** and allowed us to **innovate in meaningful ways that we would otherwise not have thought of**. It was a journey that we would gladly repeat again!"

-Laurence Lee, Drop Positioning Systems-

Quotes from Past Participants

"The solution that Vouch developed under the Hotel Innovation Challenge allowed us to **gain a foothold in the hospitality sector**, and culminated in the project being awarded Hyatt International's 'CEO's Award for Innovation' in 2018. The **publicity generated gave us the opportunity to demonstrate to more hotels benefits** of a digital concierge could bring them, which also helped us to **expand into the Indonesian market** through a project with Treasure Bay Bintan."

-Limonium Sua, Vouch-

Quotes from Past Participants

In Hotel Innovation Challenge 2017, RFCOM Technologies have developed and deployed an innovative Luggage Management System. The Challenge enabled RFCOM to **quickly enter the hotel market and open a great opportunity to further grow our company's business in the hotel and inventory segment.**

The STB **co-funding scheme relieved the high development cost and was instrumental to the success** of the project.

-WeiMin Tang, RFCOM Technologies-

Thank You

Organiser:

In partnership with:

Admin Matters

- LEARNING TRIPS - Please proceed to the registration table next to the stage to register and indicate the one you would like to attend.

- If you have any further questions, please approach me or any of the STB staff. Alternatively, you may email your queries to STB_Hotels@stb.gov.sg

- To access challenge resources and for more information, please visit https://www.stb.gov.sg/content/stb/en/trade-events-and-resources/tourism-innovation-challenge.html

Scan Here to Access Challenge Site