MPC
PERBADANAN PRODUKTIVITI MALAYSIA

TOURISM PRODUCTIVITY NEXUS

A guide for tourism accommodation to assess their digital readiness and opportunities to go digital

TOURISM ACCOMMODATION DIGITAL ROADMAP

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Tourism Accomodation Digital Roadmap

PRODUCTIVITY
WAY UP Malaysia
...your productivity improvement site

FOREWORD

"
Malaysia Productivity Corporation (MPC) through Tourism Productivity Nexus (TPN) is committed to boosting the tourism industry to its positive productivity growth, and cementing its place as among the main contributors to Malaysia's economy. I urge the industry players to leverage this roadmap to increase productivity.
"

Dato' Abdul Latif Haji Abu Seman
Director General
Malaysia Productivity Corporation

Rohizam Md Yusoff
Champion
Tourism Productivity Nexus

"
The industry is entering a new era, characterised by smart tourism, sustainability, and Industry 4.0. Technology and digitalisation are the essences of tourism in the new era towards establishing the tourism society 5.0. The subsequent aim is to build a strong tourism nation, where every unit and individual in Malaysia contributes to the tourism economy and enjoys its benefits. This roadmap serves a good guide.
"

FOREWORD

Shaifubahrim Saleh
Chairman
Working Group – Digitalisation
Tourism Productivity Nexus

"
Tourist Accommodation Digital Roadmap is a comprehensive reference for hoteliers, tourist accommodation owners, and operators to embark on the digitalisation journey. First, you need to know where you are before digitalising your business.
"

"
Digital tourism is the future of tourism and hospitality. It will not only revolutionise the way we organise, manage, and develop the industry, but also fundamentally reinvent the travel experience. Through the Malaysia Digital initiative, MDEC is committed to reinforce the tourism industry by facilitating its digital transformation, as well as to revitalise and future-proof it through the DE Rantau programme, which is set to solidify Malaysia as the digital nomad hub of ASEAN.
"

Mahadhir Aziz
Chief Executive Officer
Malaysia Digital Economy (MDEC)

Dato' Wei Chuan Beng
Champion
Digital Productivity Nexus

"
Digital Leadership in tourism sector will drive innovation and sustainability that leads to new breakthrough in the service, experience, efficiency, revenue and growth.
"

"
For the tourism industry in the post-pandemic era, business is no longer as usual. To adapt to a new normal, digitalisation is the key for the industry to prosper, remain relevant, and be resilient.
"

Fabian Bigar
Chief Executive Officer
MyDIGITAL Corporation

TOURISM INDUSTRY IN MALAYSIA

The tourism industry plays an important part in strengthening Malaysia's status as a tourism hub regionally that is a magnet for capital, business and talent, and has seen steady growing contributions to the country's total GDP, hovering above RM80 billion. In 2019, the sub-sector made it to be the third biggest contributor after manufacturing, with tourist receipts peaking at RM86.14 billion from a total of 26.1 million tourist arrivals.

In 2020, however, when the COVID-19 pandemic emerged, the tourism sub-sector was severely impacted. The border closure and the implementation of Movement Control Order (MCO) since 18th March 2020 to curb further outbreaks of COVID-19 in the country has restricted the movement of travellers. Total number of tourist arrivals had seen a sharp 83.4% decrease comparing to the same period of time in 2019, and another 96.9 decrease in 2020.

Graph 1: Malaysia's Tourist Arrivals 2017 - 2021
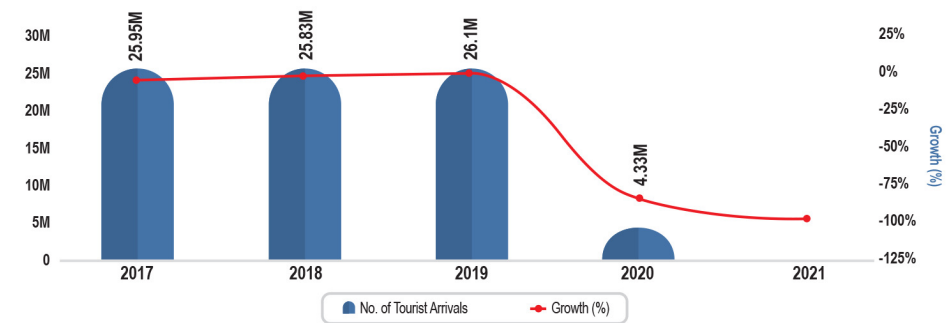
Source: MyTourismData, Tourism Malaysia

Graph 2: Malaysia's Tourist Receipts 2017 - 2021
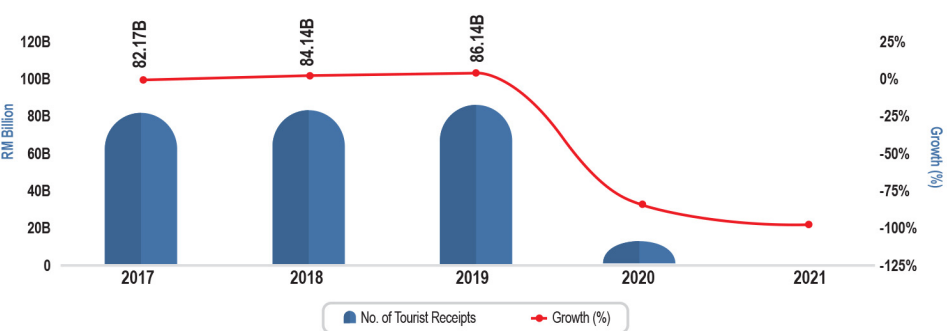
Source: MyTourismData, Tourism Malaysia

Table 1: Total Number of Tourist Arrivals and Receipts 2017 - 2021

	2017	2018	2019	2020	2021	2019/2020	2020/2021
Arrivals	25,948,459	25,832,354	26,100,784	4,332,722	134,728	-83.4	-96.9
Receipts ('000)	82,165,000	84,135,200	86,143,500	12,688,200	238,730	-85.3	-98.1

Source: MyTourismData, Tourism Malaysia

Among the international tourists arriving at Malaysian shores, Singapore had been consistently topping the chart, up till 2021 when Thailand overtook the top spot.

Table 2: Top 5 Tourist Arrivals by Country 2017 - 2021

Country	2017	2018	2019	2020	2021	2019/2020	2020/2021
Singapore	12,441,713	10,615,986	10,163,882	1,545,255	16,308	-84.8	-98.9
Indonesia	2,796,570	3,277,689	3,623,277	711,723	11,025	-80.4	-98.5
China	2,281,666	2,944,133	3,114,257	405,149	7,701	-87	-98.1
Thailand	1,836,522	1,914,692	1,884,306	394,413	59,607	-79.1	-84.9
India	552,739	600,311	735,309	155,883	3,916	-78.8	-97.5
Others	6,039,249	6,479,543	6,579,753	1,120,299	36,171	-83	-96.8

Source: MyTourismData, Tourism Malaysia

Shopping registered the highest share of total expenditure made by tourists in 2020, followed by accommodation, food and beverage, local transportation, and organised tour.

Table 3: Top 5 expenditure components made by tourists 2019 - 2020

EXPENDITURE COMPONENTS					GROWTH
Items	2019		2020		2019 / 2020
	(%)	RM (Mil.)	(%)	RM (Mil.)	(%)
Shopping	33.4	28,101.2	35.4	4,488.9	2.0
Accommodation	25.7	21,622.7	23.4	2,964.7	-2.3
Food & Beverage	13.4	11,274.1	14.6	1,852.7	1.2
Local Transportation	6.1	5,132.2	7.3	920.5	1.2
Organised Tour	4.4	3,701.9	4.7	602.4	0.3

Source: Strategic Planning Division, Tourism Malaysia (Based on Departing Visitors Survey)

Zooming into Accommodation, Malaysia recorded a total of 35,405,021 hotel guests, of these 13.3% were international guests (4,701,027) while 86.7% were domestic guests (30,703,994). Paid accommodation supply showed decline in 2020 (Hotels -0.8% and Rooms -2.2%), when compared to 2019; while the average occupancy rate of hotels dropped by -27.9%.

Table 4: Number of Paid Accommodation Supply for 2017 - 2021

PAID ACCOMMODATION SUPPLY	2017	2018	2019	2020	2021	Growth % 2019/2020	Growth % 2020/2021
Hotels	4,512	4,750	5,382	5,339	5,170	-0.8	-3.2
Rooms	292,293	308,207	340,547	332,817	323,491	-2.2	-2.8

Source: Tourism Malaysia, Tourism Selangor, Sabah Tourism Board, Melaka State, PGT, Sarawak Tourism Board & MOTAC

Table 5: Average Occupancy Rates of Hotels for 2017 - 2021

AVERAGE OCCUPANCY RATES	2017 (%)	2018 (%)	2019 (%)	2020 (%)	2021 (%)	CHANGE % 2019/2020	CHANGE % 2020/2021
Hotels	60.6	60.8	58.8	30.9	28.2	-27.9	-2.7

Source: Strategic Planning Division, Tourism Malaysia (based on Hotel Survey)

Increasingly Competitive Tourism Landscape

Pushing the need to differentiate the Malaysia Experience

Slowing Workforce Growth

Leading to the need to pursue productivity driven growth through digital transformation

Changing Customer Expectations

Driving the need to adopt different innovative formats of customer engagement

INDUSTRY TRANSFORMATION PLAN

#SayangiMalaysia campaign is the key strategy in TPN Industry Transformation Plan. It is an all-inclusive campaign to revive Malaysia's tourism industry towards modernisation, sustainability, and resilience. The campaign encapsulates Malaysia's aspiration for the industry as stipulated in Malaysia Productivity Blueprint (MPB), the Twelfth Malaysia Plan (12MP), and the National Tourism Policy (NTP).
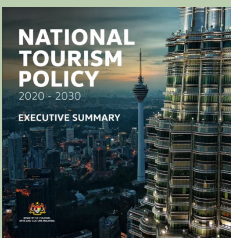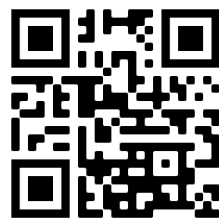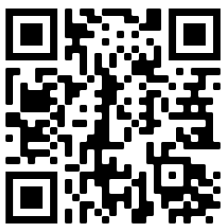
Digitalisation is among the fundamental essences in #SayangiMalaysia, the key to reenergise, revive, and rebuild the industry. Integrating digital solutions enables a seamless end-to-end tourist journey, inculcating memorable experience and love for Malaysia. Digitalisation brings the industry to a greater height, leaping ahead to the advanced state with intelligent business operation.

TOURISM ACCOMMODATION

DIGITAL ROADMAP

Tourism Accommodation Digital Roadmap serves as a guidance to hoteliers in embarking the digital transformation journey to remain productive and competitive in the market.

BASIC

GETTING READY FOR THE DIGITAL ECONOMY

Fundamental standalone solutions that are business as usual

INTERMEDIATE

GROWING IN THE DIGITAL ECONOMY

Intermediate solutions requiring integration with internal systems to maximise potential

Front Office **Housekeeping** **F&B** **Engineering**

Security **Sales & Marketing** **HR** **Finance**

BUSINESS DIGITAL ENABLERS

Digital Infrastructure **Cybersecurity** **Cloud Data Lake**

DEPARTMENT: FRONT OFFICE
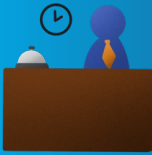
SOLUTIONS	BASIC GETTING READY FOR THE DIGITAL ECONOMY	INTERMEDIATE GROWING IN THE DIGITAL ECONOMY
Cloud-Based Property Management System	✔	✔
Luggage Tagging	✔	✔
Chatbot		✔
Self Check-In/Out		✔
Robotic Process Automation (RPA)		✔
Crowd Management		✔
Data Analytics for Guest Personalisation		✔
Video Analytics for Enhanced Guest Experience		✔

DEPARTMENT: HOUSEKEEPING

SOLUTIONS	BASIC — GETTING READY FOR THE DIGITAL ECONOMY	INTERMEDIATE — GROWING IN THE DIGITAL ECONOMY
e-Housekeeping		✔
RFID Uniform and Linen Management		✔
Privacy and Make Up Room Signalling		✔
Power Assisted Delivery	✔	✔
Housekeeping Delivery Robots		✔
Public Area Floor Cleaning Robots	✔	✔
Data Analytics for Resource Optimisation		✔
Integrated Smart Room		✔
e-Compendium		✔

DEPARTMENT: F&B

SOLUTIONS	BASIC GETTING READY FOR THE DIGITAL ECONOMY	INTERMEDIATE GROWING IN THE DIGITAL ECONOMY
Breakfast Tracking		✔
Online Reservation and Ordering	✔	✔
Mobile-Ordering for Crew	✔	✔
Table Queue Management		✔
Power Assisted Delivery	✔	✔
Data Analytics for Resource Optimisation		✔
Food Management		✔
Crowd Management		✔
F&B Delivery Robots		✔

DEPARTMENT: ENGINEERING

SOLUTIONS	BASIC GETTING READY FOR THE DIGITAL ECONOMY	INTERMEDIATE GROWING IN THE DIGITAL ECONOMY
Building Management	✔	✔
Data Analytics for Energy Optimisation		✔
IoT-based Maintenance for HVACs and Hotel Assets		✔

DEPARTMENT: SECURITY

SOLUTIONS	BASIC GETTING READY FOR THE DIGITAL ECONOMY	INTERMEDIATE GROWING IN THE DIGITAL ECONOMY
Smart CCTV Security	✔	✔
CCTV Security Analytics		✔
Visitor Management		✔

DEPARTMENT: SALES & MARKETING

SOLUTIONS	BASIC GETTING READY FOR THE DIGITAL ECONOMY	INTERMEDIATE GROWING IN THE DIGITAL ECONOMY
Revenue Management System (RMS)		✓
Reputation Management / Social Listening Tool	✓	✓
Global Distribution System (GDS)		✓
Events Layout Automation		✓
MICE Sales and Event Management		✓
MICE Group Reservations Management	✓	✓
Augmented Reality / Virtual Reality (AR/VR) for Visualisation		✓

DEPARTMENT: HUMAN RESOURCES

SOLUTIONS	BASIC GETTING READY FOR THE DIGITAL ECONOMY	INTERMEDIATE GROWING IN THE DIGITAL ECONOMY
Employee Communication	✔	✔
Time and Attendance Tracking		✔
e-Learning		✔
Foreign Worker Accommodation Management	✔	✔
Labour Scheduling		✔
Candidate Management	✔	✔

DEPARTMENT: FINANCE

SOLUTIONS	BASIC GETTING READY FOR THE DIGITAL ECONOMY	INTERMEDIATE GROWING IN THE DIGITAL ECONOMY
RFID Asset Tracking		✔
Cloud-Based Accounting Management		✔
POS Integrated to back office	✔	✔
Cashless Payment Channels	✔	✔

DEPARTMENT: ACROSS

SOLUTIONS	BASIC GETTING READY FOR THE DIGITAL ECONOMY	INTERMEDIATE GROWING IN THE DIGITAL ECONOMY
Data Analytics for Financial Forecasting and Budgeting		✓
Customer Relationship Management (CRM)		✓
IoT-enabled Inventory Management	✓	✓

DIGITAL
SKILLS
NEEDED

The digital transformation of any business lies with its talents, who would be required to be suitably savvy with the digital way of doing business and operating a company. Depending on competency and availability, businesses may need to source for new digitally savvy talents and train existing employees on various digital tools relevant to the business.

BASIC

APPLICABLE TO ALL USERS

General Digital Literacy and Awareness

Digital Savvy, Innovative and Adaptable to Digital Tools

INTERMEDIATE

APPLICABLE TO KEY USERS

Higher Proficiency of Digital Skill and Available Technology

Adopt, Advocate, Roll Out and Train Digitalisation Approach

EXAMPLE OF ROLES

Concierge / Receptionist
Front Desk Operators
Floor Supervisors
Operation Supervisors

Human Resource Manager
Finance Manager
Operation Manager
Hotel Manager

DIGITAL COURSES

Undergraduate Programmes
Post-Graduate Programmes

Undergraduate Programmes
Post-Graduate Programmes
Professional Training Programmes

Both public and private higher education institutions in Malaysia had long incorporated digital and technology base courses in their curriculum, opening to undergraduate and postgraduate programs. While most courses are aiming at building and training digital literacy, some specific courses applicable to tourism industry are available as well.

Meanwhile, there are also professional training providers offering plenty of upskilling and re-skilling programs, while also provide corporate trainings for specific digital needs.

● Undergraduate   ● Postgraduate   ● Professional Training

Digital Marketing and Management

Data Science and Business Analytics

Information and System Security

Business Intelligence and Analytics

Multimedia Technology with AR/VR

Information Technology with Internet of Things

Digital Business Productivity

Information Management and Cybersecurity

GET STARTED TODAY

DIGITAL SOLUTION DIRECTORY

The Digital Solution Directory, while providing a fresh experience for the target audience, is also aligning well with the "Go B.I.G. with Digital" initiative the Digital Productivity Nexus (DPN) embarked on, with full support from MPC.

Companies, SMEs, Entrepreneurs and Start-Ups would always need to look for technology solution providers for their business needs towards technology and productivity improvement.

This Directory should help speeding up business recovery and accelerate technology adoption among the industry players especially under the selected sectors which are Professional Services, Retail and F&B, and Tourism sectors.
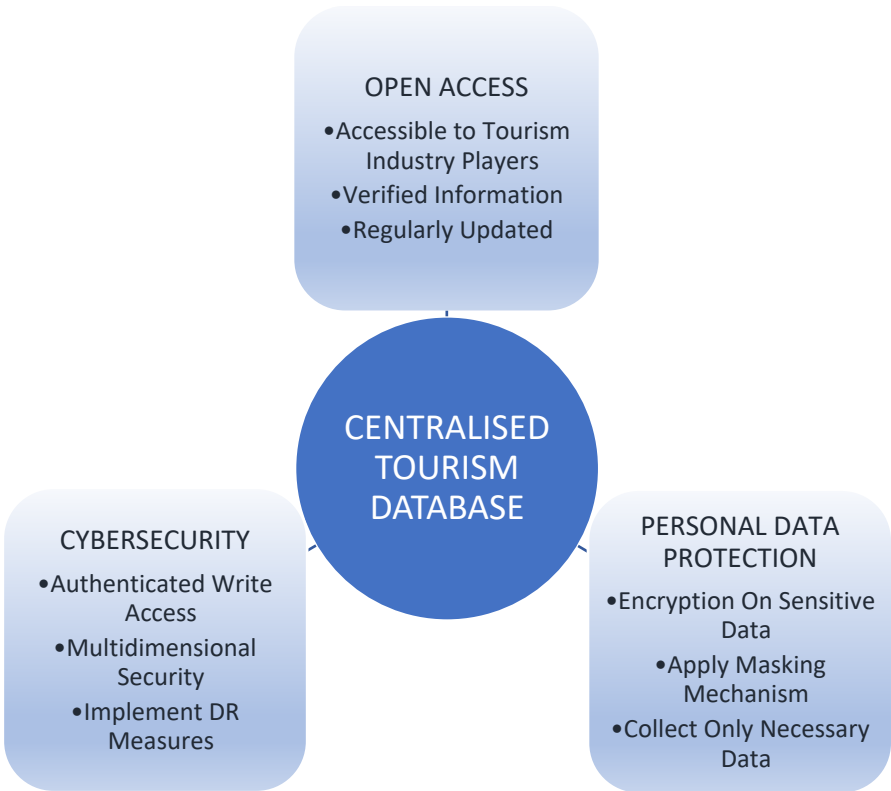
WAY FORWARD

While this document paints the Digital Roadmap of both the Basic and Intermediate Digitalisation Level for the hoteliers, there is in fact a considerable Advanced Digitalisation Level. However, a greater degree of integration among the industry players and the governance aspects needs to be in place to start with.

Taking references from our neighbouring countries, one significant example of such integration can be observed in Singapore, with their implementation of the One Singapore Experience. In a nutshell, the government initiative implemented a centralized technology resource to achieve an end-to-end integrated operation, which then enables smoother customer experience.

The digitalization level of tourism industry players in Malaysia still varies widely, therefore there's still a considerable journey for the majority to catch up to the Advanced Digitalisation level. A good starting point that can be considered in the meantime, which could possibly help to accelerate the digitalization journey, would be a Centralised Tourism Database.

OPEN ACCESS
- Accessible to Tourism Industry Players
- Verified Information
- Regularly Updated

CENTRALISED TOURISM DATABASE

CYBERSECURITY
- Authenticated Write Access
- Multidimensional Security
- Implement DR Measures

PERSONAL DATA PROTECTION
- Encryption On Sensitive Data
- Apply Masking Mechanism
- Collect Only Necessary Data

FOR MORE INFORMATION

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https://youtube.com/MalaysiaProductivityCorporation

APPENDICES

DEPARTMENT: FRONT OFFICE

CLOUD-BASED PROPERTY MANAGEMENT SYSTEM (PMS)

DESCRIPTION	The solution enables a hotel or group of hotels to manage front-office capabilities, such as booking reservations, guest check-in/check-out, room assignment, room rates, and billing. It integrates with other onsite services that impact the guest's overall experience, including Payment Gateway Solution/ Digital Payment, Food and beverage operations, Housekeeping, etc.
BENEFITS	• Lower investment costs • Helps achieve productivity • Forms basis of a consolidated loyalty programme, across hotels and its F&B outlets • Enhances guest experience, as guest data is seamlessly collected and analysed across touch points in the hotels

	BASIC	INTERMEDIATE
POSSIBLE SYSTEM(S) INTEGRATION	• Can be used as a standalone system	• CRM • Central Reservations System (CRS) • Other hotel solutions

LUGGAGE TAGGING

DESCRIPTION	The solution simplifies luggage storage and retrieval via LIVE location updates.
BENEFITS	• Reduce average time for luggage retrieval by 50% - 60% • Lessens bellmen frustration to locate luggage via small tags • Allows employees to have more control during busy situations

	BASIC	INTERMEDIATE
POSSIBLE SYSTEM(S) INTEGRATION	• Can be used as a standalone system	• PMS • E-Ticketing / Housekeeping

DEPARTMENT: FRONT OFFICE

CHATBOT

DESCRIPTION	The solution helps hotels manage enquiries / requests with accuracy and consistency
BENEFITS	• Reduce enquiries at Front Office by average of 40% • Saves an average of 60% man-hours spent on related activities • Generates sales leads for banquet and event spaces • Allows customisation to suit each hotel's unique needs

POSSIBLE SYSTEM(S) INTEGRATION	BASIC	INTERMEDIATE
	• N/A	• PMS • Hotel Digital Platforms • Point of Sale (POS) System • In-room voice assistant • e-Ticketing / Housekeeping • Hotel Map & Positioning Solution • Meeting Room Management

SELF CHECK-IN/OUT

DESCRIPTION	The solution allows for guest self check-in/out without need for interaction with a service representative
BENEFITS	• Reduce queues • Added convenience for guests • Front Office employees have more time to engage with guests on value-added services • Increases revenue by encouraging guests to spend on other hotel services

POSSIBLE SYSTEM(S) INTEGRATION	BASIC	INTERMEDIATE
	• N/A	• CRM • PMS • Payment Gateway • Door locks • Hotel Digital Platforms

DEPARTMENT: FRONT OFFICE

ROBOTIC PROCESS AUTOMATION (RPA)

DESCRIPTION	Soft "robot" to automate manual processes and inputs.	
BENEFITS	• Streamlines or eliminates manual processes to increase efficiency • Reduce human errors • Higher volumes can be processed in shorter time frame • Overcomes integration with legacy data systems without need for IT system	
POSSIBLE SYSTEM(S) INTEGRATION	**BASIC**	**INTERMEDIATE**
	• N/A	• PMS • CRM • Contract Management System (CMS) • CRS • Finance System • Business Intelligence (BI) Solutions

CROWD MANAGEMENT

DESCRIPTION	Leverages video analytics to understand human traffic flow and crowding.	
BENEFITS	• Improves coordination between Front and Back Office for more efficient operations • Reduces queue wait time, improves consumer experience and added convenience for guests	
POSSIBLE SYSTEM(S) INTEGRATION	**BASIC**	**INTERMEDIATE**
	• N/A	• e-Ticketing / Housekeeping • Hotel Digital Platforms

DEPARTMENT: FRONT OFFICE

DATA ANALYTICS FOR GUEST PERSONALISATION

DESCRIPTION	Provides guest with personalised recommendations that are based on market trends and past guest interactions.
BENEFITS	• Provides insights for new business opportunities • Maximises sales and distribution strategy • Better understanding of guests profiles

POSSIBLE SYSTEM(S) INTEGRATION	BASIC	INTERMEDIATE
	• N/A	• PMS • CRM • CRS • Revenue Management System (RMS) • Chatbot • In-room Voice Assistant / Butler

VIDEO ANALYTICS FOR ENHANCED GUEST EXPERIENCE

DESCRIPTION	Intelligent video analytics solution recognises guests and sentiments to understand customer behaviour and preferences, and staff service levels.
BENEFITS	• Optimises guest experience by analysing demographics, heat maps and guest preferences through sensors / video feeds • Enhances service levels and customer experience

POSSIBLE SYSTEM(S) INTEGRATION	BASIC	INTERMEDIATE
	• N/A	• PMS • CRM • Chatbot • Room Control System • Security Systems

DEPARTMENT: HOUSEKEEPING

E-HOUSEKEEPING

DESCRIPTION	e-Housekeeping enables seamless scheduling of room cleaning, housekeeper assignments, room status updates, mini bar consumption, defects tracking, etc.
BENEFITS	• Real-time update of room status and cleaning assignment • Increases efficiency and housekeeper work satisfaction • Improves communication and coordination between housekeepers team leaders and between departments • Reduces errors and lapses, to minimise customer dissatisfaction

POSSIBLE SYSTEM(S) INTEGRATION	BASIC	INTERMEDIATE
	• N/A	• Chatbot • Voice Butler / Assistant • Integrated Smart Room Solution • e-Engineering System

RFID UNIFORM AND LINEN MANAGEMENT

DESCRIPTION	Solution leverages RFID to automatically count and track linen and uniform inventory.
BENEFITS	• Improves operational efficiency with real-time automated data collection, thereby reducing manpower needed for manual counting and sorting • Allows easy tracking and retrieval of inventory

POSSIBLE SYSTEM(S) INTEGRATION	BASIC	INTERMEDIATE
	• N/A	• Staff Time & Attendance / ID System

DEPARTMENT: HOUSEKEEPING

PRIVACY AND MAKE UP ROOM SIGNALLING

DESCRIPTION	Privacy and Make Up Room solution uses in-room motion sensors to detect if guest has left the room and alerts housekeeping staff to clean room. Integrated with real-time tracking of in-room Privacy and Make Up Room indicator.
BENEFITS	• Enhances guest satisfaction • Deploys housekeeping staff efficiently by minimising trips to occupied rooms

POSSIBLE SYSTEM(S) INTEGRATION	BASIC	INTERMEDIATE
	• N/A	• e-Ticketing / Housekeeping • Hotel Digital Platforms

POWER ASSISTED DELIVERY

DESCRIPTION	Power assisted delivery system aids staff in moving heavy loads safely and efficiently.
BENEFITS	• Helps staff to move heavy loads of up to 300 kg safely and effortlessly • Minimal training required for staff to use system • Increases productivity

POSSIBLE SYSTEM(S) INTEGRATION	BASIC	INTERMEDIATE
	• Can be used as a standalone system	• Can be used as a standalone system

DEPARTMENT: HOUSEKEEPING

HOUSEKEEPING DELIVERY ROBOTS

DESCRIPTION	Autonomous front of house robots to aid with delivery of guest requested items to guest rooms; and, Heart-of-House robots to deliver linen and collect waste.	
BENEFITS	• Reduce labour requirements	
POSSIBLE SYSTEM(S) INTEGRATION	BASIC	INTERMEDIATE
	• N/A	• Lifts • e-Housekeeping / Ticketing • Voice Butler / Assistant • Integrated Smart Room Solution • Smart Dispensers / Vending Machines

PUBLIC AREA FLOOR CLEANING ROBOTS

DESCRIPTION	Robots to automate floor cleaning tasks.	
BENEFITS	• Reduces manpower and operating costs • Increases efficiency • Ensures consistency in cleaning standards	
POSSIBLE SYSTEM(S) INTEGRATION	BASIC	INTERMEDIATE
	• Can be used as a standalone system	• Lifts • e-Housekeeping / Ticketing

DEPARTMENT: HOUSEKEEPING

DATA ANALYTICS FOR RESOURCE OPTIMISATION

DESCRIPTION	Analyses guest feedback, preferences and resource usage to provide actionable plans to improve productivity and deliver better guest experiences.	
BENEFITS	• Enhances guest experience • Improves brand reputation • Optimises resources • Improves productivity	
POSSIBLE SYSTEM(S) INTEGRATION	BASIC	INTERMEDIATE
	• N/A	• PMS • CRM • CRS • Chatbot • In-room Voice Assistant / Butler

INTEGRATED SMART ROOM

DESCRIPTION	Solution to enhance room with tech capabilities such as paperless check-in/out, messaging, in-room control capabilities, etc.	
BENEFITS	• Provides guests with enhanced in-room experience • Streamlines housekeeping/ service operations	
POSSIBLE SYSTEM(S) INTEGRATION	BASIC	INTERMEDIATE
	• N/A	• Aircon / Lighting • Online door locks • PMS • Hotel Digital Platform • Voice Butler / Assistant • Digital Concierge / Chatbot • e-Housekeeping / Ticketing

DEPARTMENT: HOUSEKEEPING

E-COMPENDUM

DESCRIPTION	The e-Compendium replaces traditional printed materials in guestrooms to provide guests with up-to-date hotel, events and promotion information. May incorporate functions of an integrated smart room solution.
BENEFITS	• Reduces manual efforts and cost involved to update hardcopy compendium and hotel information

	BASIC	INTERMEDIATE
POSSIBLE SYSTEM(S) INTEGRATION	• N/A	• PMS • CRM • Voice Butler / Voice Assistant • Digital Concierge / Chatbot • e-Housekeeping / Ticketing • Hotel Digital Platform

DEPARTMENT: F&B

BREAKFAST TRACKING

DESCRIPTION	Solution enables outlet to retrieve guest's entitlement and consumption status by tapping key card on reader. It will reconcile charges automatically at the end of each breakfast service.
BENEFITS	• Improves efficiency of breakfast queue • Improves productivity of F&B staff as end of day reconciliation is no longer necessary • Real-time analytics on consumption

	BASIC	INTERMEDIATE
POSSIBLE SYSTEM(S) INTEGRATION	• N/A	• Mobile App • POS • Door Locks

DEPARTMENT: F&B

ONLINE RESERVATION AND ORDERING

DESCRIPTION	Solution allows guests to self book and order food for dine-in or take-out directly via various platforms. Reservations and orders are directly updated to the POS and table management system of the restaurant.
BENEFITS	• Streamlines order taking and payment processes • Optimises manpower • Eliminates ordering errors

POSSIBLE SYSTEM(S) INTEGRATION	BASIC	INTERMEDIATE
	• Hotel Digital Platform • POS • Payment Gateway	• Digital Concierge / Chatbot • Voice Butler / Assistant • Table Management System • Hotel Digital Platform

MOBILE-ORDERING FOR CREW

DESCRIPTION	Solution allows employees to take orders and complete payment at the table.
BENEFITS	• Streamlines order taking and payment processes for crew to reduce waiting time • Optimises manpower by reducing trips to POS and / or kitchen • Eliminates ordering errors

POSSIBLE SYSTEM(S) INTEGRATION	BASIC	INTERMEDIATE
	• POS • Payment Gateway	• PMS

DEPARTMENT: F&B

TABLE QUEUE MANAGEMENT

DESCRIPTION	Electronic management of table bookings and occupancy.
BENEFITS	• Simplifies management of tables • Streamlines service operations and reduces business costs

POSSIBLE SYSTEM(S) INTEGRATION	BASIC	INTERMEDIATE
	• N/A	• Online reservation and ordering system • POS • CRM

POWER ASSISTED DELIVERY

DESCRIPTION	Power assisted delivery system aids staff in moving heavy loads safely and efficiently.
BENEFITS	• Helps staff to move heavy loads of up to 300 kg safely and effortlessly • Minimal training required for staff to use system • Increases productivity

POSSIBLE SYSTEM(S) INTEGRATION	BASIC	INTERMEDIATE
	• Can be used as a standalone system	• Can be used as a standalone system

DEPARTMENT: F&B

DATA ANALYTICS FOR RESOURCE OPTIMISATION

DESCRIPTION	Analyses market trends, seasonal demands, and guest preferences to provide an actionable plan to improve productivity and generate new revenue.	
BENEFITS	• Enhances guest experience • Streamlines supply chain and operations to respond quickly to seasonal changes	
POSSIBLE SYSTEM(S) INTEGRATION	BASIC	INTERMEDIATE
	• N/A	• CRM • CRS • Inventory Management • Procurement

FOOD MANAGEMENT

DESCRIPTION	Leverages AI to monitor food availability along buffet lines to trigger replenishment. Analyses food consumption patterns after each meal service.	
BENEFITS	• Enhances guest experience by ensuring timely supply of food along buffet line • Improves productivity by reducing manual checking • Optimises production of food and minimises wastage	
POSSIBLE SYSTEM(S) INTEGRATION	BASIC	INTERMEDIATE
	• N/A	• Inventory Management System • Procurement System • Food Waste Management System

DEPARTMENT: F&B

CROWD MANAGEMENT

DESCRIPTION	Leverages video analytics to understand queue patterns at outlets, especially during peak hours.
BENEFITS	• Allows actionable insights e.g. redirect guests in queue to another outlet • More efficient staff deployment to optimise operations

POSSIBLE SYSTEM(S) INTEGRATION	BASIC	INTERMEDIATE
	• N/A	• Lifts • Hotel Digital Platform

F&B DELIVERY ROBOTS

DESCRIPTION	Robots that deliver F&B to guests
BENEFITS	• Augments tight manpower and reduces operating costs • Increases efficiency in performances • Ensures consistency in quality of service

POSSIBLE SYSTEM(S) INTEGRATION	BASIC	INTERMEDIATE
	• N/A	• Lifts • POS / Ordering System • e-Housekeeping / Ticketing

DEPARTMENT: ENGINEERING

BUILDING MANAGEMENT

DESCRIPTION	Solution allows centralised control and monitoring of building's mechanical and electrical equipment such as ventilation, lighting, power systems, fire safety system, etc.
BENEFITS	• Optimises energy usage to reduce operational costs and extends equipment lifespan • Provides real-time status of equipment • Reduces frequency of manual checks on equipment to improve productivity

POSSIBLE SYSTEM(S) INTEGRATION	BASIC	INTERMEDIATE
	• Can be used as a standalone system	• Integrated Smart Room Solution • IoT Maintenance Systems

DATA ANALYTICS FOR ENERGY OPTIMISATION

DESCRIPTION	Analysis of hotel equipment e.g. Heating, Ventilation, and air-conditioning (HVAC) systems, to reduce energy consumption.
BENEFITS	• Optimises energy usage to reduce operational costs and extends equipment lifespan • Enables visibility of energy usage via a dashboard • Unlock insights to reduce energy consumption

POSSIBLE SYSTEM(S) INTEGRATION	BASIC	INTERMEDIATE
	• N/A	• Building Management System • Integrated Smart Room System

DEPARTMENT: ENGINEERING

IOT-BASED MAINTENANCE FOR HVACS AND HOTEL ASSETS

DESCRIPTION	Enhanced tracking and management of HVAC systems and hotel assets with IoT	
BENEFITS	• Optimises resources management • Enables preventive maintenance	
POSSIBLE SYSTEM(S) INTEGRATION	BASIC	INTERMEDIATE
	• N/A	• e-Housekeeping / Ticketing • Building Management System

DEPARTMENT: SECURITY

SMART CCTV SECURITY

DESCRIPTION	CCTV surveillance with smart sensors and cloud sync for remote management and monitoring	
BENEFITS	• Reduces need for physical monitoring and investigations • Anticipate potential security issues	
POSSIBLE SYSTEM(S) INTEGRATION	BASIC	INTERMEDIATE
	• Can be used as a standalone system	• PMS

DEPARTMENT: SECURITY

	CCTV SECURITY ANALYTICS	
DESCRIPTION	Smart CCTV monitoring using video content analysis.	
BENEFITS	• Provides insights on areas of attention • Anticipate potential security issues	
POSSIBLE SYSTEM(S) INTEGRATION	BASIC	INTERMEDIATE
	• N/A	• PMS

	VISITOR MANAGEMENT	
DESCRIPTION	Digital registration and tracking of visitors (e.g. suppliers, contractors, etc.) within the hotel premises.	
BENEFITS	• Enhances security protection • Streamlines tracking of visitors • Facilitates search and retrieval of information	
POSSIBLE SYSTEM(S) INTEGRATION	BASIC	INTERMEDIATE
	• N/A	• Heart-of-House Door access • Positioning / Tracking System

DEPARTMENT: SALES & MARKETING

REVENUE MANAGEMENT SYSTEM (RMS)

DESCRIPTION	Analyses reservations data and demand trends, to help hotels optimise pricing and maximise profit.	
BENEFITS	• Improves productivity • Gain insights to market trends to increases competitiveness • Maximises revenue	
POSSIBLE SYSTEM(S) INTEGRATION	BASIC	INTERMEDIATE
	• N/A	• PMS • CRS • POS • CRM • GDS • Official Website

REPUTATION MANAGEMENT / SOCIAL LISTENING TOOL

DESCRIPTION	Tracks and monitors overall sentiment and satisfaction across multiple social media platforms. Enables hotel to provide timely responses to manage its reputation across multiple social channels.	
BENEFITS	• Builds brand trust and social reputation • Gain understanding of customer needs • Improves customer service from feedback received • Improves efficiency to understand reviews across multiple social media channels	
POSSIBLE SYSTEM(S) INTEGRATION	BASIC	INTERMEDIATE
	• Can be used as a standalone system	• CRM • Digital Concierge

DEPARTMENT: SALES & MARKETING

GLOBAL DISTRIBUTION SYSTEM (GDS)

DESCRIPTION	The solution links services, rates and bookings across travel industry service providers, mainly airlines, hotels, car rental companies, and travel agencies, to enable transactions among service providers.
BENEFITS	• Enables bundled packages that include a hotel stay, air travel and other destination promotions to be offered to travellers • Allows hotel to update product information in real-time such as adjusting price or offering special promotions across multiple channels • Widens reach to potential users

POSSIBLE SYSTEM(S) INTEGRATION	BASIC	INTERMEDIATE
	• N/A	• PMS • CRM • CRS • Yield Management System

EVENTS LAYOUT AUTOMATION

DESCRIPTION	Enable accurate and collaborative digital diagramming of suitable layouts for venue area and capacity.
BENEFITS	• Better visibility to unlock insights to drive sales • Improves productivity • Enables effective collaborative planning with clients

POSSIBLE SYSTEM(S) INTEGRATION	BASIC	INTERMEDIATE
	• N/A	• Sales CRM • AR / VR Systems

DEPARTMENT: SALES & MARKETING

MICE SALES AND EVENT MANAGEMENT

DESCRIPTION	Empower sales and catering teams to seamlessly contract new businesses, efficiently manage blocking of guest rooms and communicate details of event across departments.
BENEFITS	• Enables effective engagement with clients • Enables operational transparency and efficient workflows across relevant departments • Increases productivity with automated tasks and workflow • Provides insights from data analytics

POSSIBLE SYSTEM(S) INTEGRATION	BASIC	INTERMEDIATE
	• N/A	• PMS • Sales CRM • AR / VR Systems

MICE GROUP RESERVATIONS MANAGEMENT

DESCRIPTION	Enables customisation of partners' event booking microsites that connects the hotel directly with event delegates. It allows automated and efficient workflow for contracting, upselling, rooming, and tracking reservation rate.
BENEFITS	• Increases productivity from automated workflows and managing reservations • Increases upsell from extended stays and room-types • Provides detailed data analytics for insights • Improves booking experience for event delegates • Allows hotel to connect with guest directly

POSSIBLE SYSTEM(S) INTEGRATION	BASIC	INTERMEDIATE
	• Can be used as a standalone system	• PMS • Sales & Catering System

DEPARTMENT: SALES & MARKETING

AUGMENTED REALITY / VIRTUAL REALITY (AR/ VR) FOR VISUALISATION

DESCRIPTION	Provides potential guests with a realistic and interactive view of the property through an augmented or virtual environment.	
BENEFITS	• Increases buyer confidence and triggers faster purchases • Increases productivity from elimination of lengthy site inspections • Facilitates easier cross-selling opportunities to overseas clients	
POSSIBLE SYSTEM(S) INTEGRATION	BASIC	INTERMEDIATE
	• N/A	• Hotel Digital Platforms

DEPARTMENT: HUMAN RESOURCES

EMPLOYEE COMMUNICATION

DESCRIPTION	Real-time unified communication for workforce. Allows secure one-to-one and group messaging, content management, engagement analytics, employee surveys and more.	
BENEFITS	• Empowers employee connection • Improves productivity via efficient information sharing • Allows faster responses • Provides valuable insights instantly	
POSSIBLE SYSTEM(S) INTEGRATION	BASIC	INTERMEDIATE
	• Can be used as a standalone system	• Human Resource Management Systems • Crisis Management System

DEPARTMENT: HUMAN RESOURCES

TIME AND ATTENDANCE TRACKING

DESCRIPTION	Allows hotel to digitally track clock-in and clock-out of employees via biometrics, such as facial recognition, fingerprint, etc., to facilitate work schedules, payroll, and productivity management.
BENEFITS	• Reduces errors in compensation and manpower tracking • Streamlines scheduling processes • Facilitates easy search and retrieval

POSSIBLE SYSTEM(S) INTEGRATION	BASIC	INTERMEDIATE
	• N/A	• Human Resources Management Systems • Payroll Systems

E-LEARNING

DESCRIPTION	Online learning platform where employees can conveniently login to access training courses via a computer/smart device anytime and anywhere.
BENEFITS	• Training accessible 24/7 • Customisable training content • Increases productivity for Learning & Development department by reducing time spent on administration of staff training • Saves costs by reducing need for classroom training

POSSIBLE SYSTEM(S) INTEGRATION	BASIC	INTERMEDIATE
	• N/A	• Human Resource Management Systems

DEPARTMENT: HUMAN RESOURCES

FOREIGN WORKER ACCOMMODATION MANAGEMENT

DESCRIPTION	Virtually manage foreign worker's (FW) accommodation to ensure compliance with housing regulations by Ministry of Manpower. It allows workers to take and share photos of prevailing accommodation conditions with employers directly.
BENEFITS	• Increases productivity of HR department by reducing need for frequent physical spot checks

POSSIBLE SYSTEM(S) INTEGRATION	BASIC	INTERMEDIATE
	• Can be used as a standalone system	• Human Resource Management Systems

LABOUR SCHEDULING

DESCRIPTION	Automate forecasting of labour and management of shift scheduling and enable real-time updates of roster.
BENEFITS	• Optimises workforce to increase overall productivity • Minimises operational disruptions by reducing conflicts in work scheduling • Reduces error in manpower planning • Empowers employees to manage schedule at hand • Increases productivity for managers

POSSIBLE SYSTEM(S) INTEGRATION	BASIC	INTERMEDIATE
	• N/A	• Human Resource Management Systems • Payroll Systems

DEPARTMENT: HUMAN RESOURCES

CANDIDATE MANAGEMENT

DESCRIPTION	Tools to enable video interviews, digital pre-screening assessment as well as resume and interview management. AI assistance in identifying talent and mapping behavorial assessments of candidates.	
BENEFITS	• Streamlines and increases effectiveness of hiring processes • Enables data analytics for insights on hiring	
POSSIBLE SYSTEM(S) INTEGRATION	BASIC	INTERMEDIATE
	• Can be used as a standalone system	• Human Resource Management Systems

DEPARTMENT: FINANCE

RFID ASSET TRACKING

DESCRIPTION	Electronically track assets for accounting and reporting. Attach RFID tags to hotel assets to track and retrieve electronically-stored data through handheld devices.	
BENEFITS	• Improves operational efficiency with real-time data collection • Increases productivity, e.g. Laundry operations by eliminating counting of items • Allows easy tracking of item lifespan	
POSSIBLE SYSTEM(S) INTEGRATION	BASIC	INTERMEDIATE
	• N/A	• Can be used as a standalone system

DEPARTMENT: FINANCE

CLOUD-BASED ACCOUNTING MANAGEMENT

DESCRIPTION	Manages accounting and simplifies financial operations across the organisation.
BENEFITS	• Automates core calculations and administrative procedures of finances • Enables real-time reporting and visibility

POSSIBLE SYSTEM(S) INTEGRATION	BASIC	INTERMEDIATE
	• N/A	• Procurement Systems • Payroll Systems • Accounts Payable Systems

POS INTEGRATED TO BACK OFFICE

DESCRIPTION	Front desk Point-Of-Sales terminal with integration built to back office accounting or enterprise system.
BENEFITS	• Improves operational efficiency with real-time data collection • Minimise the need for redundant data entries, which improves data integrity

POSSIBLE SYSTEM(S) INTEGRATION	BASIC	INTERMEDIATE
	• Compatible front and back office systems	• Fully integrated with real time data synchronisation

DEPARTMENT: FINANCE

CASHLESS PAYMENT CHANNELS

DESCRIPTION	Offering cashless alternative of payment mode, utilising mainstream credit card and e-wallet channels.
BENEFITS	• Minimise reliance of cash on both customer and merchant • Built-in error prevention mechanism to minimise human error

POSSIBLE SYSTEM(S) INTEGRATION	BASIC	INTERMEDIATE
	• Payment terminals	• Fully integrated payment gateways to back office systems and online systems

DEPARTMENT: ACROSS SEVERAL

DATA ANALYTICS FOR FINANCIAL FORECASTING & BUDGETING

DESCRIPTION	Analyses room reservation data and demand trends, to help hotels accurately forecast and budget financials, as well as automatically submit daily financial reports.
BENEFITS	• Improves productivity • Gain insights to financial trends • Increases effectiveness of using financial information for planning & strategic decision making

POSSIBLE SYSTEM(S) INTEGRATION	BASIC	INTERMEDIATE
	• N/A	• PMS • RMS • Labour Scheduling System

DEPARTMENT: ACROSS SEVERAL

CUSTOMER RELATIONSHIP MANAGEMENT (CRM) SOLUTION

DESCRIPTION	CRM manages customers' data and helps to analyse their profiles, needs and preferences.
BENEFITS	• Deepens understanding of customers' demographics and preferences through data analytics to enhance relationships • Develops better customer retention strategies • Improves customer engagement for selling and cross-selling opportunities

POSSIBLE SYSTEM(S) INTEGRATION	BASIC	INTERMEDIATE
	• Can be used as a standalone system	• MICE Sales and Event Management System • Reputation Management / Social Listening • Global Distribution Management System • Data Analytics and BI Solutions • e-Compendium • Self Check-in / out solutions • Video analytics for guest recognition and sentiments

IOT-ENABLED INVENTORY MANAGEMENT

DESCRIPTION	Solution enables real-time tracking of inventory status and automates ordering process as required.
BENEFITS	• Increases productivity from automated stock-taking and ordering processes • Manages inventory effectively to minimise losses

POSSIBLE SYSTEM(S) INTEGRATION	BASIC	INTERMEDIATE
	• N/A	• Procurement System

Working Group - Digitalisation

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PERSATUAN HOTEL MALAYSIA

maho
MALAYSIAN ASSOCIATION OF HOTEL OWNERS

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Digital TravelTechnology
Association of Malaysia

mybha
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