POWERED BY
SINGAPORE TOURISM BOARD

Future-proof with Digital Assistants

Digital Assistants are advanced Artificial Intelligence (AI) software designed to simulate conversation with the people who use them. The tasks that they can perform vary in

complexity by what they are trained to do.

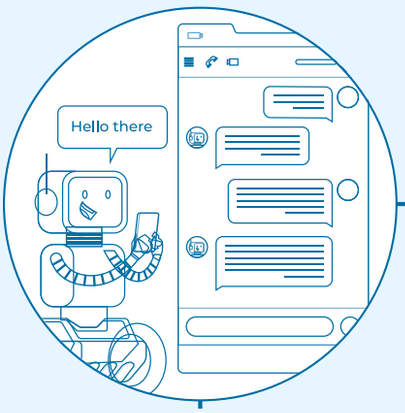
Did you know?

By 2030, analysts predict that there will be at least 20 million digital assistants in use, and this number is likely to rise. These digital workers can learn immensely with the right training, lower costs, automate tasks, and increase the scalability of businesses as their cognitive abilities improve.

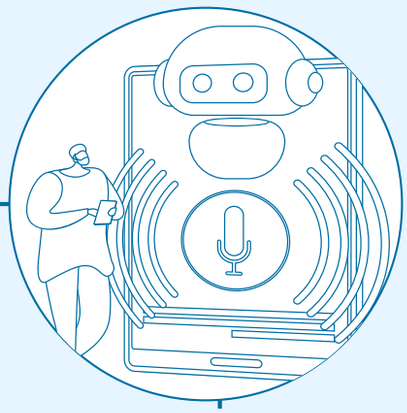
Types of Digital Assistants

There are **2 common types** of Digital Assistants:

Chatbots



Voicebots



Chatbots

The most common type of digital assistant is the chatbot. It interacts with human users in *natural language* to inform them or help them fulfil a task, most often through text.

Rule-based (RB) Bots

- Answer questions based on pre-specific rules
- Easy to create and maintain
- Inefficient at answering questions they are not trained for

AI Bots

- Rely on machine learning and **Natural Language Processing** (NLP)
- Become smarter over time, and with scale
- More complex to create and maintain

— Examples of Chatbots —

AskJamie, Bus Uncle, DBS Digibot, Duolingo, M.A.R.V.I.E

Voicebots

A voicebot enables end-users to interact with a device or a service simply by speaking. Powered by AI and NLP, these digital assistants structure audio responses to the questions posed to them.

Voicebots

- Allows hand-free experience

- Creation is resource-intensive
- Extensive training and data required

— Examples of Voicebots —

Google Assistant, Apple's Siri, Samsung's Bixby, Amazon Alexa, Microsoft's Cortana

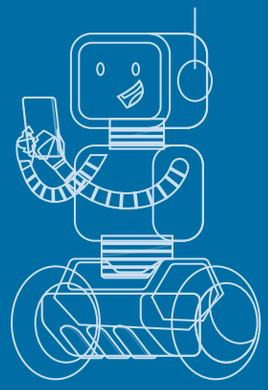
Here are the similarities and differences in Digital Assistant types at a glance:

Features	Chatbots		Voicebots
	RB Bots	AI Bots	
Program Type	Rule-based	AI & NLP	AI & NLP
Input	Text	Text	Voice
Response	Text	Text	Voice & Text
Development & Maintenance	Simple	Complex	Complex

Benefits of Digital Assistants

Why are Digital Assistants useful?

With the ability to automate tasks, Digital Assistants reduce the need for human intervention and can aid business scalability.

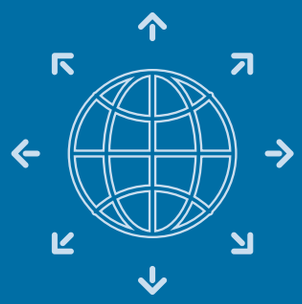


1. Availability

Anytime

Serve customers around the clock

Anywhere



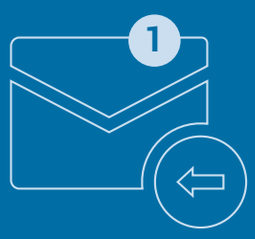
Serve customers where they are

At Any Point

Serve customers throughout their journey

2. Speed and Consistency

Instant



Immediately respond to customer needs

Consistent

Give accurate responses regardless of scale

Objective

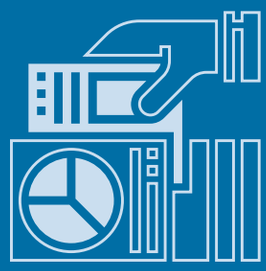
Responses unaffected by human error or emotion

3. A Deeper Understanding of Customers

Records Available

Access and analyse aggregated data

Actionable Data



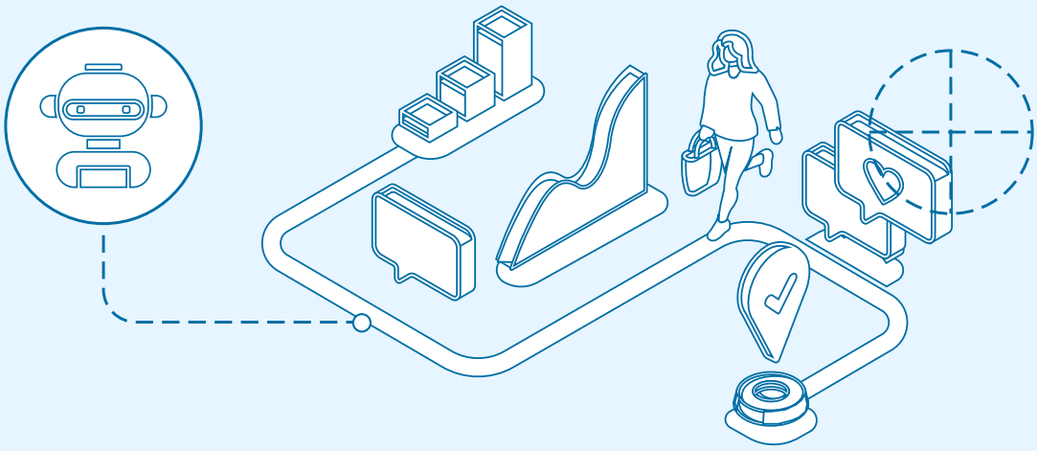
Make refinements to address pain points

Considerations for Digital Assistants

Digital Assistants can be powerful and versatile. To fully realise their potential, businesses must pay attention to a few key considerations.

— Strategic Implementation —

A purposeful user journey will help identify how your Digital Assistant can deliver the greatest value, and complement existing business operations.



Keeping this in mind will increase customer satisfaction and resource efficiency.

— Security and Privacy —

With the ability to record data from interactions with customers, there are potential security threats - impersonation, data tampering, and data theft.

Security

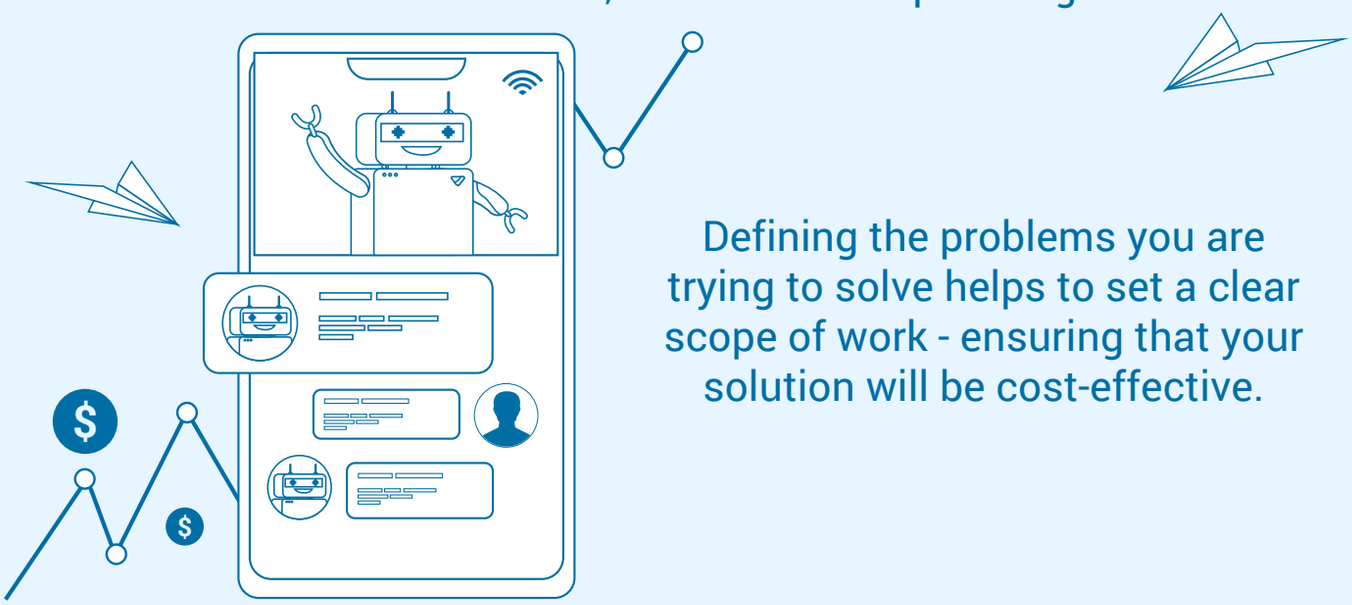
Bolster security by ensuring that backend processes are updated and reviewed regularly, and comply with security standards

Privacy

Mitigate privacy issues through data minimisation and be transparent about what data is collected and seek consent from users

— Cost and Effectiveness —

The cost of a digital assistant varies with its complexity – the smarter it is, the heavier the price tag.



Defining the problems you are trying to solve helps to set a clear scope of work - ensuring that your solution will be cost-effective.

— Resource Requirements —

Digital Assistants need various resources to be efficient. Three important resources to consider are:

Sufficient time to learn and improve

Continuous training

Relevant and clean datasets

Ensuring that these resources are readily available will help maximise the potential of your Digital Assistant.

Real World Applications

A Pan Pacific Singapore x Vouch Mika, The Digital Concierge

Photo, Pan Pacific Singapore, 2021.

Mika, the digital concierge, is an AI-powered digital assistant created to automate basic guest needs like housekeeping item requests and serving as a compendium to answer common questions.

Digital Assistant type:
Chatbot

Functions:
Information / Guest Services

As health monitoring became a priority in the current COVID-19 operating environment, a new "Temperature Declaration" feature was integrated, allowing Mika to interact with guests to record their temperatures and report how they are feeling. The team can then provide guests who are feeling unwell with more personal attention and care. This has reduced staff workload, optimising manpower in trying times.

/ Health Monitoring

B Copthorne King's Hotel (Millennium Hotels and Resorts) x WooHoo® Voice AI Speaker

Photo, Copthorne King's Hotel (Millennium Hotels and Resorts), 2021.

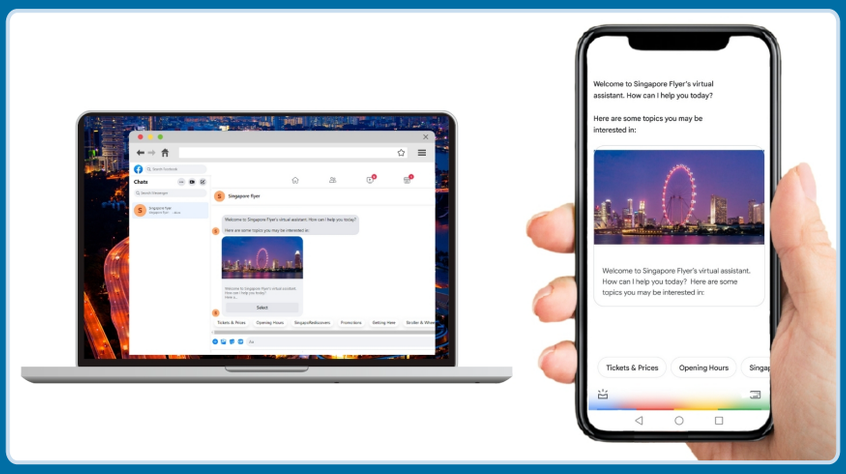
Featuring a voice AI-enabled digital compendium, the speaker offers a contactless solution to better meet guests' needs such as making phone calls to reception, placing in-room dining orders, facilitating control over in-room facilities, as well as showcasing destination offerings.

Integrated with Copthorne King's IoT ecosystem, the WooHoo® Voice AI Speaker also enables the hotel to gather actionable data in real-time to improve operational efficiency and resource management. It also helps to create more personalised guest experiences.

Digital Assistant type:
Voicebot

Functions:
Information / Guest Services / Amenity Control / Retail

C Singapore Flyer x Delight Labs



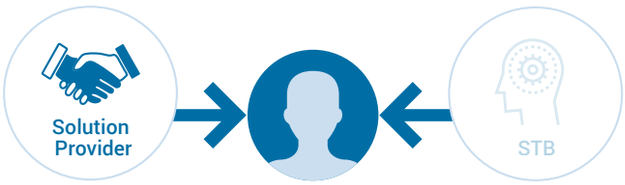
Photo, Singapore Flyer, 2021.

As Singapore Flyer rethinks its customer support solutions during the COVID-19 pandemic, they have partnered Delight Labs to build a wide, omnichannel, automation of customer support. Singapore Flyer chatbots will soon be available on its branded website, platforms like Facebook and WeChat and voice assistant platforms like Google Assistant and Alexa.

Guests may access support services throughout their journey: research attractions, tickets, pricing, and make special requests; learn about on-site amenities and protocols; access post-journey services and information to plan their next trip. With this, Singapore Flyer can provide around-the-clock, time zone-agnostic customer service, reduce staffing and training costs, expand multi-language support for guests, and improve guest access and convenience.

Digital Assistant type:
Voicebot, Chatbot

Functions:
Information / Wayfinding / Planning



Finding the right fit

With how powerful and varied Digital Assistants and their functions can be, there are important considerations as you take the next step and engage a tech solution provider.

Here are some key areas to discuss with your future tech partner.

Does the solution provider's digital assistant have built-in NLP?

Can the digital assistant be integrated into the existing backend?

Does the tech solution provider have a clear goal of what the digital

Can the platform support the key languages you require?

Can the digital assistant being developed be used on multiple platforms?

Is it easy to invoke APIs or connect to different backends from dialogue flow?

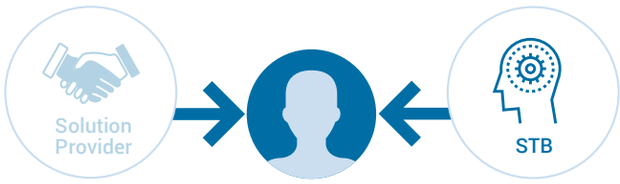
What kind of programming knowledge does the team require?

Do they provide platform test support at each step of the development cycle?

assistant is to achieve and how it can help you?

Do you have a clear reason to deploy a digital assistant?

What business challenges or opportunities would you like to solve/capture?



Future-proof your business

As we move forward, the power and ubiquity of Digital Assistants will serve to improve tourism businesses in Singapore. Given the versatility of Digital Assistants and the expansive range of possible applications, strategic implementation will help you optimise how you engage with your customers.

STB seeks to enable new ideas that marry the power of technology with the tourism sector. Partner Tcube on your digital transformation journey.

Tech College & Data College

Learn how you can make technology and data work for your business through structured modules.

Community Events

Attend Tcube's community events to learn and gain insight into how companies have used technologies to their advantage.

Singapore Tourism Accelerator

Join future cohorts by sharing your problem statements with us!

Technology can increase service availability, improve service quality, and enhance customer experiences. How may we leverage technology to shape the future of tourism businesses?

For more digital initiatives and resources, join the Tcube community now

https://go.gov.sg/tcube

https://go.gov.sg/tcubecommunity

©2021 Singapore Tourism Board. All rights reserved. No part of this publication may be reproduced, distributed, stored in a retrieval system, or transmitted in any form or by any means without the prior written permission of STB or as otherwise permitted herein. STB makes no representation or warranty, express or implied, as to the accuracy or completeness of any information contained in this publication. STB, its members, officers, employees and any other persons acting under its direction, shall not be liable for any loss, injury or damage, whether direct or indirect, arising out of or in connection with the use of information in this publication.