Oracle Intelligent Bots

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Cloud Platform
Mobile

*With Oracle Intelligent Bots, an integrated feature of Oracle Mobile Cloud, Enterprise, you can develop **Intelligent Bots** that can create a more natural conversational user interface, through text or speech, to your enterprise systems.*

BENEFITS

- Create **Intelligent Bots** that respond to how users want to converse, not by having them learn keywords or phrases.
- Surface Intelligent Chatbots in popular **messaging apps** like Facebook Messenger, Slack, WeChat and Kik, plus many more.
- Embed Intelligent Bots inside popular **voice assistants** like Amazon Alexa and Apple Siri
- Rapidly deliver engaging conversational experiences backed by enterprise data

Over **4.1 billion** users around the world are on instant messaging and chat apps *at any moment in time*. People want and expect the instant reaction that only messaging apps can provide, and they're rushing to these platforms in droves, at an adoption rate far greater than even social networks saw in their heyday. Organisations need a platform to enable them to harness the power of instant messaging and engage intelligently and contextually with customers and employees.

The Rise of Instant Messaging

The last few years have seen a massive growth in the mobile usage of instant messaging and chat applications such as Facebook Messenger, WeChat, SnapChat, Kick, Skype and Slack, particularly with *Millennials* and *Digital Natives*. In addition, there has been an explosion in virtual private assistants (VPAs) with Amazon Dot / Echo, Google Home and Apple HomePod and with voice recognition such as Apple's Siri, Microsoft Cortana and Google Voice becoming common place in people's cars and homes.

What makes these channels the default choice is the expected instant response if the other person is online, or the push notification that triggers the person on the other side to respond immediately. Instant messaging users who use these channels to converse with their friends and family also want to use the same channels, with the same familiar user experience, to instantly communicate with the enterprise. These channels are doing to apps what browsers did to client server applications; these channels are rapidly becoming the next browser.
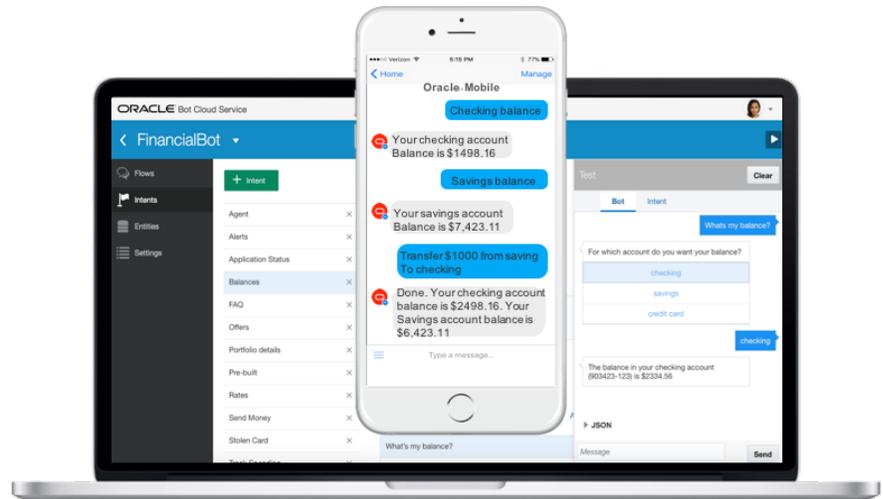
Chatbots

A Chatbot or Bot is a computer program designed to simulate a conversation with human users, especially over the Internet. End users can easily discover and connect to Chatbots through many of the popular messaging apps, without the need to individually download and install them from an App store. This gives Bots a distinct advantage over device-resident Mobile Apps in many circumstances. With a Bot, your service can be instantly available through a messaging app the user already has installed on their mobile device.

An Intelligent Bot, powered by Artificial Intelligence (AI) dramatically improves the conversational experience, allowing a far more natural conversation between the Bot and the end user. Instead of the end user having to learn a fixed set of keywords that the bot will respond to, an Intelligent Bot is able to understand the user's intention

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however it is expressed and respond accordingly. Intelligent Bots will ensure your users keep engaging and coming back to your service.

Oracle Intelligent Bots

With Oracle Intelligent Bots, an integrated feature of Oracle Mobile Cloud, Enterprise, you can develop Intelligent Bots that can create a more natural conversational user interface, through text or speech, to your enterprise systems. By using Artificial Intelligence (AI) and Natural Language Processing (NLP) powered by Neural Networks and Machine Learning, Oracle Intelligent Bots can more easily detect what the user is trying to achieve (their intent) and respond appropriately with information or results of transactions from API connections to any of your back-end enterprise applications and information sources. The platform makes it simple and easy to build and train Intelligent Bots without the need for specialist AI skills. Your bots can then be exposed through many Chat and Voice channels, a custom mobile app or even your web site.

Natural Language Processing backed By Artificial Intelligence

Oracle Intelligent Bots allows you to focus on building your Bot with a declarative interface to set up intents, entities and dialog flow without having to worry about the algorithms to process and understand the natural language and classify these inputs. It employs a series of technologies based on Neural Networks that use language and linguistic modelling to increase the accuracy of processing natural language from the end user. This leaves the Bot developer to focus on setting up the Bot instead of fine tuning these algorithms.

Oracle Intelligent Bots provides multiple Natural Language Understanding (NLU) training models to predict user-intent from incoming Bot requests and accurately execute the required dialog flow.

• For use cases where the volume of data is low, the Trainer HT model derives a combination of generative rule templates from NLP-based linguistics to help you get started very quickly with a small set of data (corpus) for the model to train on. The user-intent prediction using the model is highly accurate for incoming

requests that are similar to the utterances provided in the Bot's corpus.

- For use-cases that have large volume data sets and require better generalization of intent prediction (i.e. higher accuracy of intent classification with regard to incoming queries not in the corpus data), and when you have built a high quality initial data set tuned on Trainer HT for conversation flows, the Bot platform provides a more advanced Machine-Learning based model for user intent prediction. The second model (Trainer TM) utilizes a combination of algorithms that learn unsupervised from large amounts of unlabelled text (e.g. WSJ, NYT, Wikipedia, Reuters etc.) to then produce context sensitive mappings or vectors for user-intent prediction based on the corpus of data provided by the end-user in a Bot (e.g. "river bank" and "JPM Chase bank" to differ vectors based on context of sentence in corpus).

With these dual approaches, you can get started quickly and then build on the initial corpus with a powerful Machine-Learning model to predict use-intent more accurately as your data-sets grow.

Conversation and Context

The AI powered intent detection is combined with a sophisticated state machine that maintains the context of the conversation and allows you to define the appropriate conversational flows and sub-flows, and how to properly respond to the end user. Oracle Intelligent Bots provides an easy way to construct a context aware conversational dialog - a conversation with the end user. End users by human nature can potentially branch off into different states and context in the course of a conversations. For example, if a user wanted to transfer funds from Account A to a friend. They can start by asking the Bot – *"Pay Tom for dinner"*. The Bot responds with – *"from which account"*. They pick their Checking Account but then realize they are not sure how much money they have in the account. They switch context to ask for the current balance and further ask what transactions there have been recently - in other words change the state from transferring money to someone to checking balance and transactions. At some point, they decide to return to Paying Tom. The Oracle Intelligent Bot platform makes it very easy to model this with built in state management so the developer does not have code and maintain the solution.

Abstracting channel interfaces

There are numerous chat and voice channels with different integration interfaces and developers end up spending a lot of time and effort to understand these interfaces and what is supported and not supported in FB Messenger, WeChat, Skype, Line, Telegram etc., Virtual Private Assistants (VPA) like Alexa, Google Home, Apple HomePod etc., Voice interfaces like Siri, Cortana etc. Developers face similar challenges when developing Chat interface extensions to existing mobile apps and web pages for users to engage with customer service via BOT. There are disparities in functionality, in the way these channels handle queuing, routing, rate limits, fall-backs, retries, uptime, errors and exceptions to name a few. Oracle Intelligent Bots helps developers by abstracting this integration and provide this out of the box for developers to integrate their Bot into these channels. This not only reduces the speed at which they can deploy but also their total cost of ownership as this world is changing very fast.

Enterprise integration

The value of the Bot is to surface up data intelligently to the end users. Custom components allow developers to create modules that can be invoked during the dialog flow to fetch information or perform transactions through your APIs to your backend systems. Your Bot can be programmed to carry out any task that your available APIs allow it to perform. APIs built for your mobile apps and your Bots can be shared across all application types, maximizing reuse and productivity. Oracle Intelligent Bots provides a ready-made SDK to enable you to deploy these components directly onto the Mobile Core of Oracle Mobile Cloud, Enterprise using your developers existing JavaScript skills.
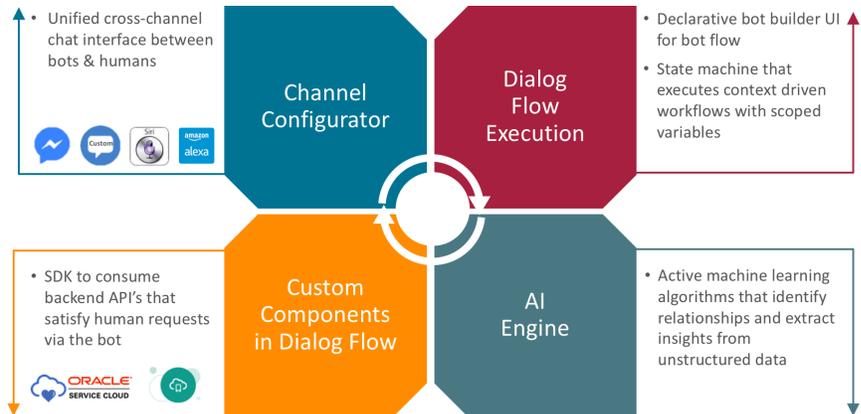
Actionable Insights

As an integrated feature of Oracle Mobile Cloud, Enterprise, Oracle Intelligent Bots benefits from the rich analytics and actionable insights provided by the platform. It provides a central dashboard from which you can gain insights into Multi-Channel user adoption across mobile, bots & web. For the first time you will be able to answer questions like – 'Which channel is being used the most', 'What use cases are more popular as interactions in Mobile v/s Bots', 'Do end users use multi channels and if so are there specific characteristics like time or preference when they use channels'. These channels provide the insights needed to personalize the engagement with the end user

- **Bot operational insights:** The ability to know in real time how the Bot is performing, where are the challenges and being able to path the conversation to train the model in real time.
- **Bot to human:** The ability to recognize when a Bot is unable to respond appropriately to an end user and route the conversation to a human agent seamlessly as well for a human agent to hand off to a Bot.
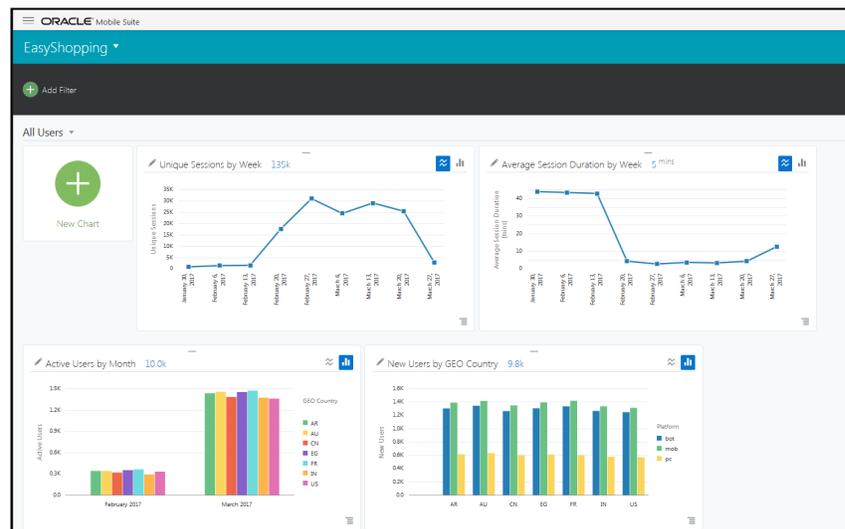
One integrated solution

Oracle Intelligent Bots has everything that customers need to build a chatbot with channel integration, dialog flow, AI engine, integration and an easy to use Bot builder UI that brings this all together. Oracle Intelligent Bots provides you with a solution that is predictable in terms of cost, ease of use, level of effort and with a rapid time to market. But above all, it provides you with a solution that can enable you to deliver the next generation of customer engagement.

- Unified cross-channel chat interface between bots & humans

Channel Configurator

Dialog Flow Execution

- Declarative bot builder UI for bot flow
- State machine that executes context driven workflows with scoped variables

- SDK to consume backend API's that satisfy human requests via the bot

Custom Components in Dialog Flow

AI Engine

- Active machine learning algorithms that identify relationships and extract insights from unstructured data

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For more information about Oracle Mobile Cloud, visit cloud.oracle.com/mobile or call +1.800.ORACLE1 to speak to an Oracle representative.

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