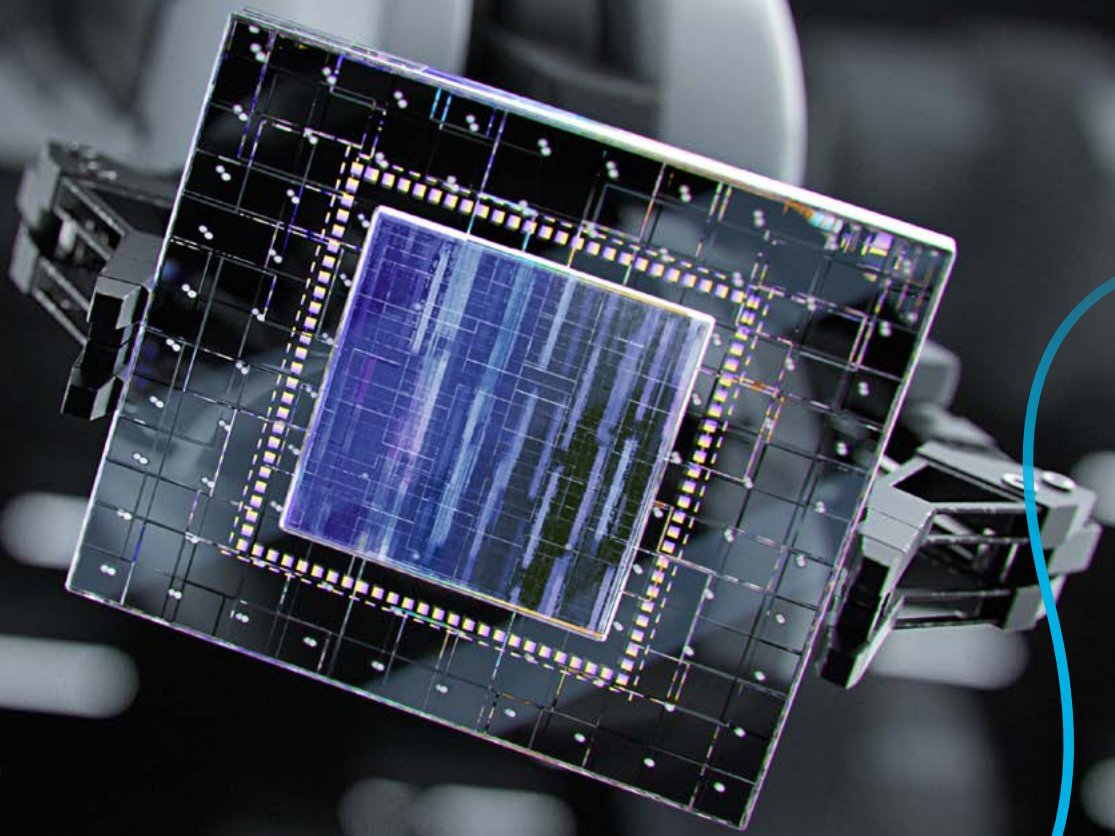




CHATBOT IMPLEMENTATION APPROACH FOR AM PROJECTS

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1. Introduction:

A chatbot is automated software that interacts with a human agent by an online chat conversation via text or text-to-speech. It is designed to simulate the way a human would behave as a conversational partner.

This white paper details the implementation process followed for the OIDA chatbot (from Capgemini's Oracle Solution Center) for one of our major AM project clients using Oracle EBS.

For chatbot implementation in Oracle EBS, the two aspects below must be considered:

- Technical architecture: Based on the system environment, we need to analyze and decide on which bot framework to go with from the options available.
- Intelligence and knowledge building: Based on business processes and enterprise idioms, we need to categorize and build an appropriate knowledge base for the bot.

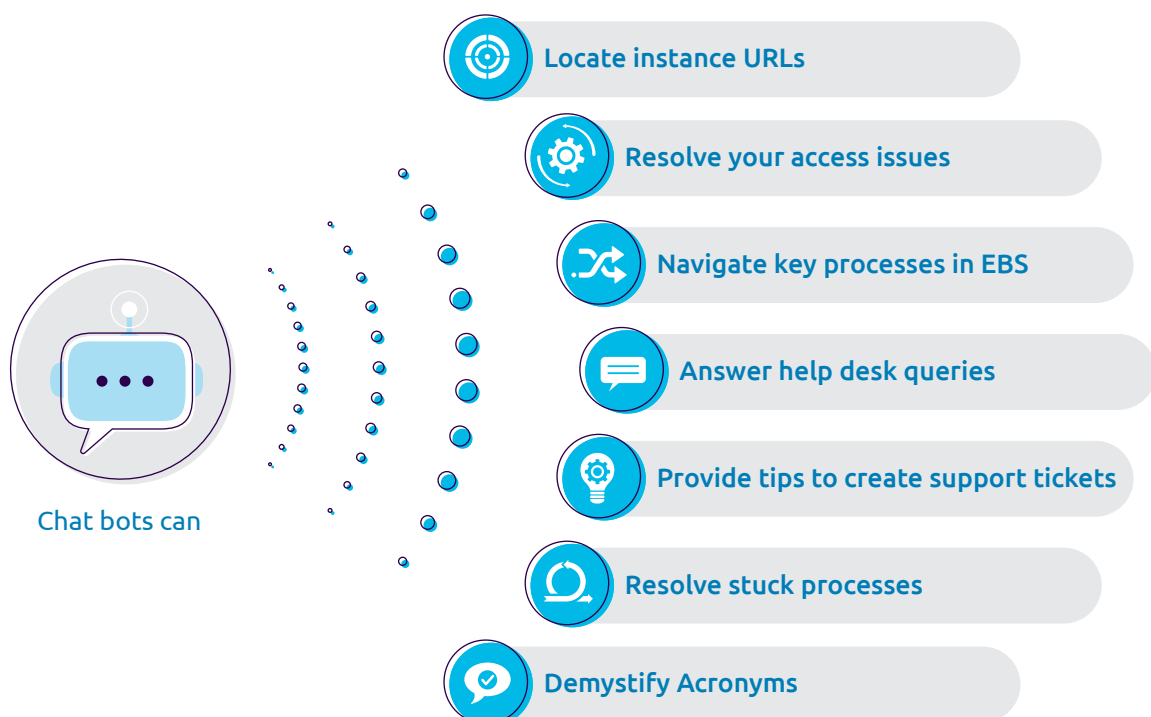
Both aspects are explained in detail in this document.

2. Chatbot applicability in Oracle ERP:

With innovation at the helm of the customer's needs, chatbots are the next big thing for AM projects. Chatbot implementation in support engagements boosts client confidence in execution efficiency of the support engagement.

Generally, in AM projects, there are repeated issues that can be resolved using a chatbot without human interaction, thereby increasing business efficiency.

A few features of a chatbots are summarized below:



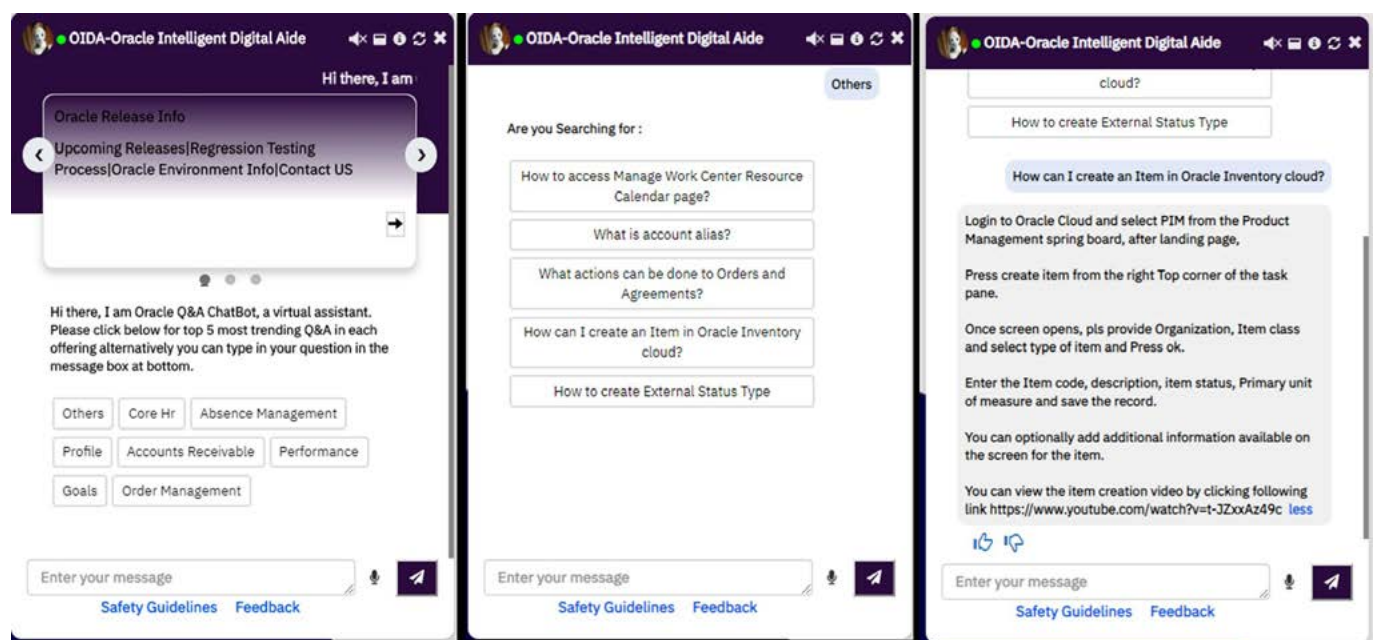
3. Chatbot technical framework options for Oracle ERP:

Framework	Description	Advantages	Disadvantages
Oracle Digital Assistant Chatbot	This is the Oracle proprietary bot, specially designed for cloud but it can also be used with EBS using connectors	● Faster and readily available ● Built-in connectors with communication channels such as Facebook, Skype for Business, etc. ● Very little to almost no development effort needed ● Oracle cloud seeded flows available	● Complex pricing Subscription based ● Development required to integrate with Oracle EBS
Microsoft BOT framework	This is the Microsoft proprietary bot based on Azure, specially designed for cloud environment.	● Built-in connectors with communication channels such as Facebook, Skype for Business, etc. ● Faster and readily available	● Complex pricing ● Subscription based ● Development required to integrate with Oracle EBS ● Oracle flows needs to be created from scratch
Prosodie	This is Capgemini's proprietary bot.	● Complex flows can be built for support automation. ● Ask Adam at Capgemini is implemented using Prosodie. ● Capgemini IP	● Development efforts needed for integrating with Oracle EBS. ● High cost of implementation ● Oracle flows need to be created from scratch
Open-source chatbot with RASA framework (OIDA)	This is a readily available, open-source bot framework. It is developed using the RASA framework in Python.	● No licensing fee for open-source framework. ● Other supported versions are available with license We can tailor it based on business requirements ● OIDA by Capgemini's Solution Center comes with basic Oracle flows	● Development efforts required

4. Features/requirements of the RASA framework chatbot:

Of all the frameworks listed above, we implemented Capgemini's Oracle Solution Center's OIDA (Oracle Intelligent Digital AIDE) chatbot, which is based on the RASA framework.

Appearance:



Hardware requirements:



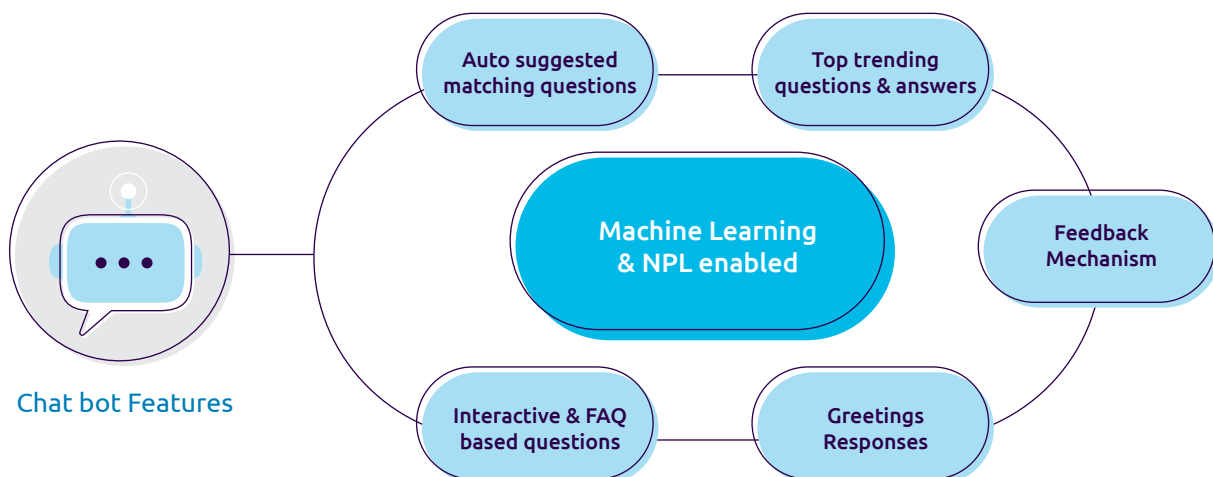
	Hardware	Minimum	Recommended
Operating System	Windows	7+	Server 2102
Storage	Free Space	100 GB	256 GB
Memory	System RAM	8GB	8GB

Software requirements:



	Software	Version	Type
Language	Python	3.7	Open Source
ML	RASA	1.22	Open Source
ML	NLTK	3.4.0	Text sample
Database	PGSQL	10.4.0	Open Source
Build	Visual C++ Build Tool	2017	Community Version
Server	Apache	V3.2.2	Open Source

Features:

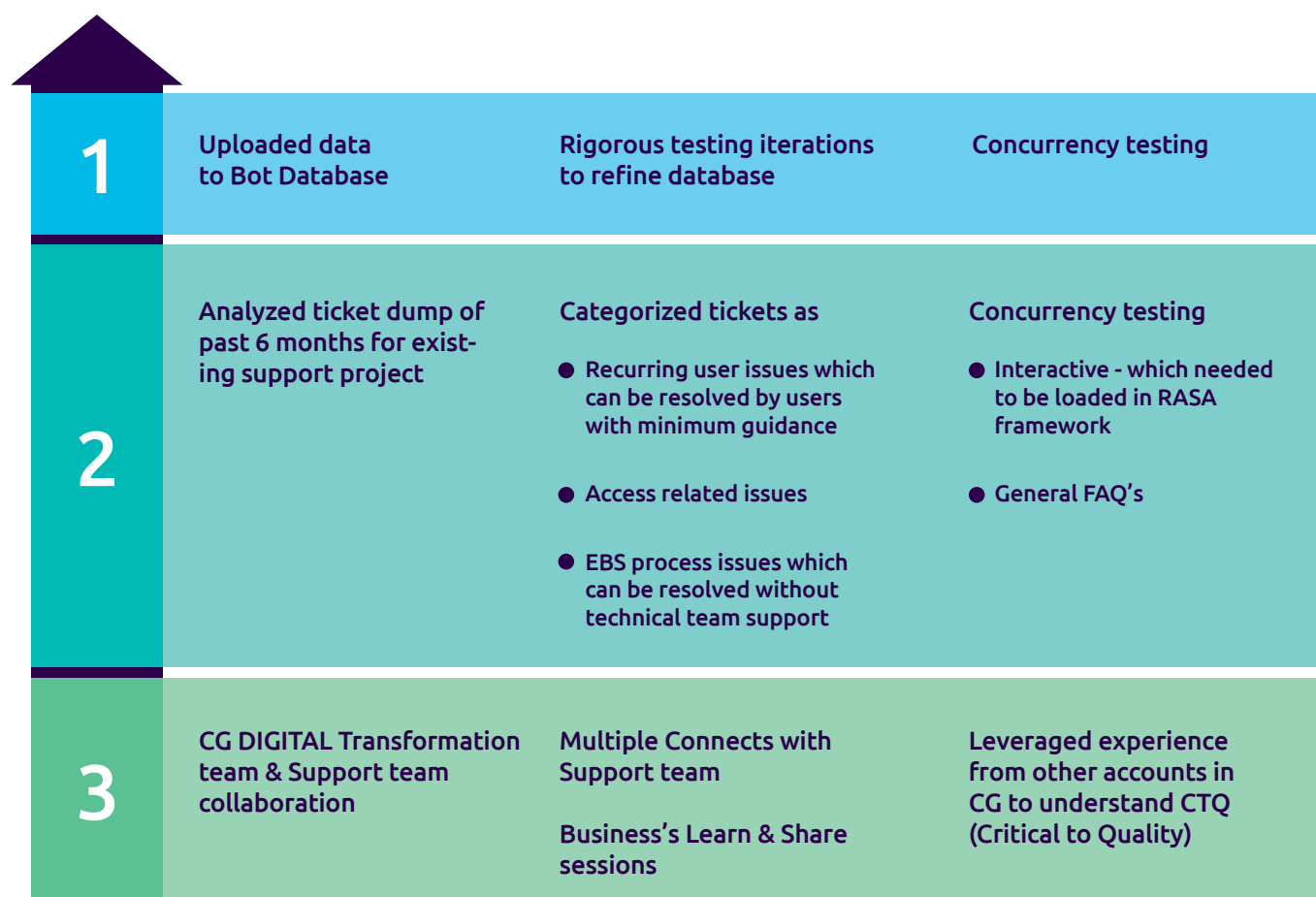


- Auto-suggested matching questions using machine language
- Top trending questions and answers for each offering
- Scalability to enhance knowledge base
- Greetings responses via Small Talks: the bot will respond to general small talk, e.g. Hi, Hello
- NLP-enabled for larger volume of data
- Feedback mechanism (up/down vote) and alternate suggestion when down voted
- Feedback of overall experience
- Quick links for general information
- Chatbot admin to manage the chatbot data.

5. Building knowledge base:

This section outlines the most critical part of the chatbot success story – creating intelligence and relevant content for an enterprise.

The picture below represents a summary of activities involved in creating content/intelligence for a chatbot, which will be explained ahead.



Bottom layer – Team connects (refer to section 3 in the picture above)

- Collaborate with Capgemini's Oracle Solution Center to leverage our existing OIDA framework.
- Understand current pain areas through multiple connects with the existing support team and customer's business learn & share sessions to detect probable issues that can be targeted.
- Approach Capgemini's accounts that implemented the chatbot for their learnings to avoid similar pitfalls.

Middle layer – Collecting and categorizing the bot's knowledge base (refer to section 2 in the picture above)

- Analysis of past ticket dumps for respective support projects to understand and target issues that can be resolved with the bot
- Categorize and classify these issues, as explained in section 6 below.

Top layer – Build and test the knowledge base (refer to section 1 in the picture above)

- Load-categorized data in the bot's database as per your defined module and sub-module structure
- Test it with the help of the existing support team and fix issues, if any

- Perform load testing with several team members testing simultaneously

- Do one round of alpha test with business users involved.

The critical aspect of this knowledge is when business validates it. Most implementation fails as IT takes lead on it. Hence, it is better to go with alpha release, which will be used and validated by business users.

6. Modelling enterprise knowledge:

For AM projects that support multiple businesses of a client on a shared platform, we recommend doing a phased implementation of the business models on the chatbot wherein smallest business would be targeted first to go live with the chatbot.

Similarly, if the project supports a single business, it is recommended to opt for a phased business function-wise implementation wherein simpler business functions are modelled for the chatbot first.

The benefit of the above approach is that it drives implementation using Agile principles wherein feedback is received frequently and errors are caught early in the game. This enables us to fail fast, recover quickly, and succeed by learning from our mistakes. It also enables the business to be closer to the chatbot and build it as per actual requirements.

Chatbots enables you to structure knowledge based on each business which would further be classified into Oracle Business Functional areas and within each functional area, we can categorize as below:

a) Application navigation:

Every business models their enterprise operations into Oracle responsibilities/roles via customizations which makes them a lot different from the standard Oracle offering. Navigating to these business functions is generally well known to a small group of users but not across the enterprise. Hence, many tickets are raised in the system to access a business function by other users.

Chatbots can help in such situations by providing appropriate navigation, thereby saving time and effort and improving the overall usability of the application.

b) Business process issues using conversational flows:

There are a few business process issues that needs user training and can be resolved by the users themselves with minimal guidance. If they are provided the correct direction, user can fix that issue themselves.

For this, we leverage the conversational AI interactive feature of the chatbot. For such issues, a conversational bot would interact with the user, providing some questions and a set of options for the user to choose from. This helps the bot identify the real issue faced by the user based on user inputs and provide accurate resolution steps.

This mimics the flow that the support team and the user would normally have and it helps users to fix the problem themselves, saving lot of time and increasing efficiency.

c) Enterprise abbreviations:

Each business has its own unique acronyms used within their different business functions. For a new user joining the organization, it is very painful to understand all these abbreviations.

A chatbot can be single source to unravel all the acronyms used within the enterprise easily and effortlessly. This could be a good value add to the user community of the enterprise.

d) FAQs:

Each business maintains its own list of FAQs for trivial issues they face daily. Such a list can be loaded into the chatbot to help them quickly get answers to their questions.

f) Document repository:

Every business maintains documents that outlines processes followed within the organization. A chatbot can act as a knowledge repository wherein links to these documents can be stored and easily accessed by users when needed.

e) Access issues:

This is major pain point of any business support function wherein users must create tickets to adhere to business norms to get access. However, these tickets are generally created without proper details, which results in delays in the execution of such tickets.

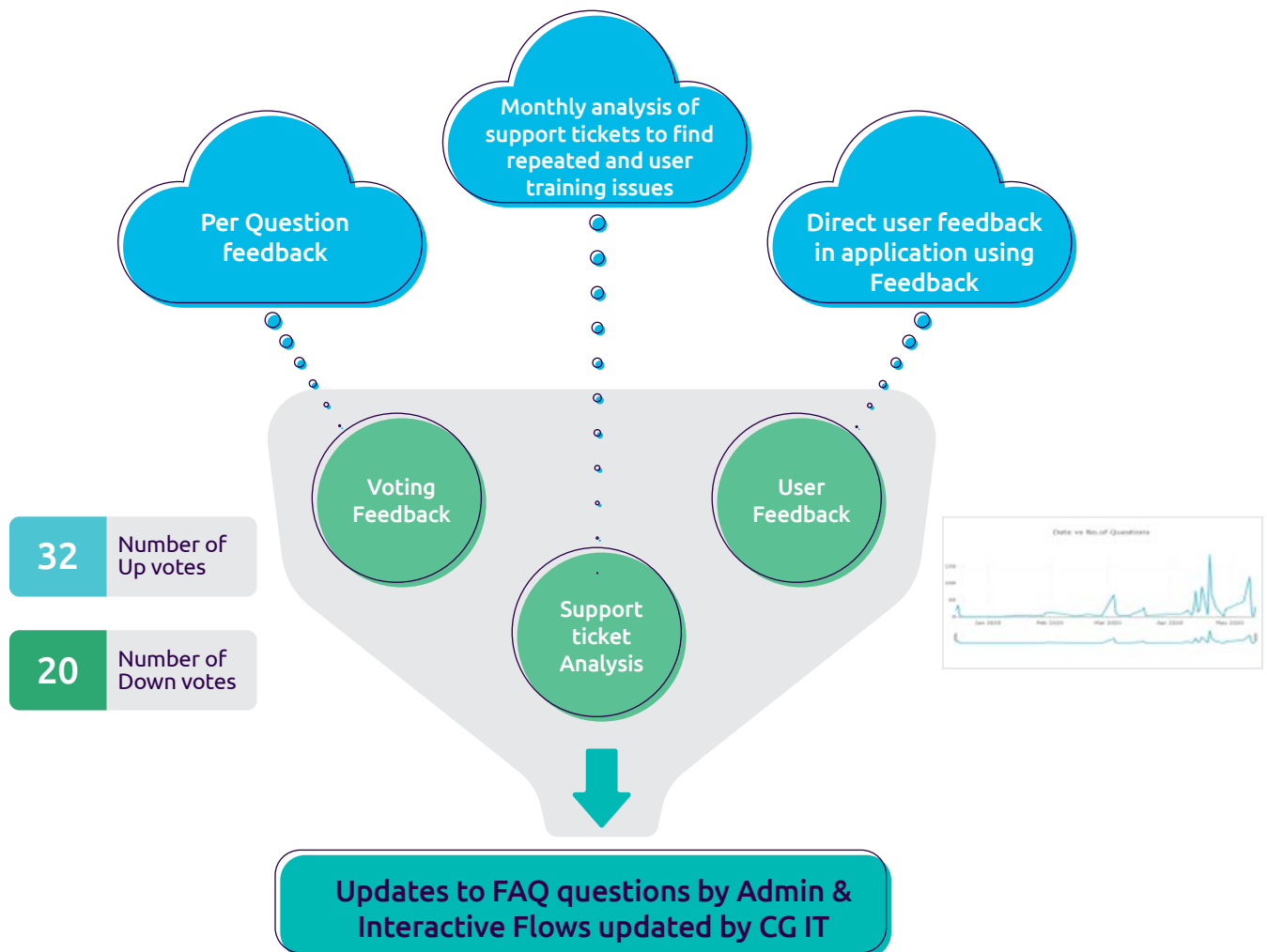
A chatbot can help users create tickets using a template that captures all required details for access to be granted and provides appropriate links/navigation to raise access request. This helps the support team grant access faster.

Capgemini Manufacturing Advantage solutions are built around core activities such as Order Management, Manufacturing and Shipping. These out-of-the-box solutions enable enterprises in the rapid implementation of Oracle offerings and scale up their operations. Our Chatbot solution is centred around the success of these solutions and works as an enabler for early adoption and faster rollout. With the help of a pre-defined FAQ document and an interactive guide, our Chatbot will ensure end users are able to take full advantage of Manufacturing Advantage solutions to its full potential.

7. Chatbot continual improvements:

Chatbots need to be periodically improved based on new knowledge articles and ongoing user feedback. This would ensure that the chatbot stays up to date and relevant to the needs of the enterprise throughout its lifetime.

Continuous Improvements - Feedback



8. Conclusion:

The chatbot is an effective tool for Oracle EBS support modernization. It helps reduce ticket volumes and improve support efficiency and overall usability of the application. It reinforces client confidence in the tools and techniques deployed by the Capgemini support team.

It also acts as a value add and a differentiator in the service provided by Capgemini and can help us win multi-year support engagements. By following the steps outlined in this document, chatbots can be quickly and successfully implemented for any Oracle EBS support project.

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