**PHASE 5**

**CHATBOT DEPLOYMENT PROJECT**

**UNDER**

**CHATBOT DEPLOYMENT WITH IBM CLOUD WATSON ASSISTANT**

**OBJECTIVE:**

Chat bots are computer programs that simulate human conversation. They can be deployed for various purposes, including but not limited to:

1. **Generating leads**: Chat bots can be used to collect information from potential customers and generate leads for businesses.
2. **Closing sales**: Chat bots can help businesses close sales by providing customers with product information, answering questions, and facilitating transactions.
3. **Reducing customer service tickets**: Chat bots can handle simple customer service requests, such as password resets or order tracking, freeing up human agents to handle more complex issues.
4. **Automating repetitive HR employee workflows**: Chat bots can automate repetitive HR tasks such as on boarding new employees or answering frequently asked questions.
5. **Growing brand awareness**: Chat bots can be used to promote a brand and increase its visibility.
6. **Growing product awareness**: Chat bots can be used to promote specific products and increase their visibility.
7. **Sign-posting and lead qualifying**: Chat bots can direct customers to the right department or agent based on their needs, qualifying leads in the process.
8. **Engaging social media audience**: Chat bots can be used to engage with social media followers by answering questions or providing information.
9. **Boosting operational efficiency and bringing cost savings to businesses**: Chat bots can automate tasks that would otherwise require human intervention, reducing costs and increasing efficiency.
10. **Offering convenience and added services to internal employees and external customers**: Chat bots can provide employees with quick access to information or services, such as IT support or HR assistance.
11. **Resolving many types of customer queries and issues while reducing the need for human interaction**: Chat bots can handle a wide range of customer queries and issues, reducing the need for human intervention.
12. **Eliminating long wait times for phone-based customer support**, or even longer wait times for email, chat and web-based support, because they are available immediately to any number of users at once.

The objective of a chat bot deployment project depends on the specific needs of the business or organization deploying it.

**DESIGN THINKING PROCESS:**

Designing a chat bot involves several stages that follow the **design thinking process**. [The five stages of design thinking are: Empathize, Define, Ideate, Prototype, and Test1](https://www.invisionapp.com/inside-design/design-thinking-chatbots/). Here are the steps involved in designing a chat bot deployment project:

1. **Defining the purpose and goals**: Identify the purpose of the chat bot and its goals. Determine what the chat bot should do and how it should interact with users.
2. **Identifying the target audience**: Determine who will use the chat bot and what their needs are.
3. **Choosing a platform or framework**: Choose a platform or framework that suits your needs and budget.
4. **Determining its capabilities**: Determine what capabilities your chat bot should have, such as natural language processing (NLP) and artificial intelligence (AI).
5. **Designing the conversation flow**: Design the conversation flow of your chat bot to ensure that it is intuitive and easy to use.
6. **Developing its personality**: Develop a personality for your chat bot that aligns with your brand’s voice and tone.
7. **Implementing NLP and AI**: Implement NLP and AI to make your chat bot smarter and more responsive.
8. **Testing and refining**: Test your chat bot to ensure that it works as intended. Refine it based on user feedback.
9. **Deploying and monitoring**: Deploy your chat bot to your chosen platform or framework. Monitor its performance to ensure that it is meeting its goals.
10. **Continuously improving based on feedback**: Continuously improve your chat bot based on user feedback to ensure that it remains relevant and useful.

**DEVELOPMENT PHASES:**

[The stages of a chat bot project can be summarized as follows](https://www.bing.com/aclk?ld=e8-jUrglJhPiTBV4t82bh7tjVUCUx6krbM4BgDHPnhMwhPmlGFptYKt4SfOoKZJzpR85hHFhq4-9dUPjWIqic5WS4jZJm2Dyj2ZdOI6A6ndKccMAhhuUTT2wWVHeIzw6hULde5drYqHBBKmaXv_0vp-bXYI1MoAJqPQuMAyjUA-BBTqAmH&u=&rlid=20bdc3fe2ef51fd88a83a6c15ec8df69):

1. **Requirement and Analysis**: In this phase, the stakeholders’ requirements are gathered and analysed to understand the business process that needs to be streamlined with the new chat bot.
2. **Design**: The design phase involves creating a chat bot flow that is specific to the use case and aligns with the business goals.
3. **Development**: During this phase, the chat bot is being developed, and code is being written based on the designs and requirements.
4. **Testing**: The chat bot is tested to ensure that it meets the requirements and specifications.
5. **Deployment**: Once the chat bot is designed, built, and tested, it must be deployed through a hosted environment.
6. **Maintenance**: The chat bot must be maintained regularly to ensure that it continues to meet the business goals and requirements.

**CONVERSION FLOW:**

A **chat bot deployment project** typically involves the following steps:

1. **Designing the conversational flow**: This step involves creating a flowchart or decision tree diagram that represents the actions and steps that follow a logical and sequential order. [These flowcharts determine the bot’s messages and the overall conversation with the visitor that will take place in real time](https://www.bing.com/aclk?ld=e8OmCvvNMVYkW3gzDHvxZNJjVUCUxRUiTgqi7K0_-47Pv8pUGcmad0S-VX5pY4jb8nrJdTiUNJaZmD_sjBtaaarPSC2Cv6Khs4KipBJ8P4p_pLTPvowmv6eaLV5AnMoDUBllMDePq-xSeI0fIFHWGdzJGV69HEOFCGfb5CG18YQp49JTUT&u=&rlid=c22cd14d64c81a6c61afb472140ac5f5).
2. **Building the chat bot**: Once you have designed the conversational flow, you can use bot-building software to create your chat bot. [You can start with pen and paper and draw your flowchart before you use bot-building software](https://www.bing.com/aclk?ld=e8OmCvvNMVYkW3gzDHvxZNJjVUCUxRUiTgqi7K0_-47Pv8pUGcmad0S-VX5pY4jb8nrJdTiUNJaZmD_sjBtaaarPSC2Cv6Khs4KipBJ8P4p_pLTPvowmv6eaLV5AnMoDUBllMDePq-xSeI0fIFHWGdzJGV69HEOFCGfb5CG18YQp49JTUT&u=&rlid=c22cd14d64c81a6c61afb472140ac5f5).
3. **Testing the chat bot**: After building your chat bot, it’s important to test it thoroughly to ensure that it works as expected. [You can use various testing tools to test your chat bot](https://www.bing.com/aclk?ld=e8OmCvvNMVYkW3gzDHvxZNJjVUCUxRUiTgqi7K0_-47Pv8pUGcmad0S-VX5pY4jb8nrJdTiUNJaZmD_sjBtaaarPSC2Cv6Khs4KipBJ8P4p_pLTPvowmv6eaLV5AnMoDUBllMDePq-xSeI0fIFHWGdzJGV69HEOFCGfb5CG18YQp49JTUT&u=&rlid=c22cd14d64c81a6c61afb472140ac5f5)[1](https://www.tidio.com/blog/chatbot-flowchart/).
4. [**Deploying the chat bot**: Once you have tested your chat bot, you can deploy it on various platforms such as websites, Facebook, etc](https://hub.packtpub.com/creating-and-deploying-a-chatbot-using-dialogflow-tutorial/).

**TECHNICAL IMPLEMENTATION:**

IBM Watson Assistant is a powerful tool that can be used to build chat bots. It is a question-and-answer system that provides a dialog interaction between the conversation system and users. To get started with building a chat bot using IBM Watson Assistant, you can follow the steps below:

1. **Scope**: Gather requirements for the conversation and how customers support the use case today. Define personas, create an empathy map, and build a system context diagram. Then, extract the potential list of intents.
2. **Design**: Create an instance of Watson Assistant and use its builder tool to define the intents and the entities. An entity represents a class of object or data type that is relevant to a user’s purpose. At the end of the design phase, you start the dialog flow and unit-test it.
3. **Integrate**: Develop the web app or micro service that interacts with Watson Assistant. You implement the business logic to handle the conversation context, and add other components to complement the business requirements.

[IBM Cloud Architecture Centre has an excellent tutorial on building an IT support chat bot using IBM Watson Assistant 1](https://www.ibm.com/cloud/architecture/tutorials/watson_conversation_support/). The tutorial covers all three phases of building a chat bot project by using Watson Assistant: scope, design, and integrate.

[If you are interested in implementing voice over web chat using IBM Watson Assistant, you can check out this tutorial 2](https://developer.ibm.com/tutorials/implement-voice-over-webchat-using-watson-assistant). It explains how to connect Watson Assistant with Wikipedia for question/answer responses by using voice to communicate questions and responses.

**EXAMPLE:**

 some examples of user queries for chat bot deployment:

1. **Product/Service Features**: A user asks the chat bot about product/service features. [Customer journey touchpoint: Consideration Objective: Answer a client that analyses specific characteristics of your product Chat bot message: FAQ reply](https://www.bing.com/aclk?ld=e8dESjOBXhAzbwfJzolmgNuzVUCUxV7oBOoc9SHRm9UTLWcxRSLhKLc5rp9cCqPr9Qzb-HRFgOHMvsuZMwIx6clrnLmPfYhBgDjb0zkaSzQXJJfVoWPcaLsscOKscKJ9WPmcA-txbNHl-ElOPXpGrNyIP5pAjELO97O-xQSKHGUpBlJprn&u=&rlid=ea09681a49661817441b0d253b7d86f5)[1](https://www.tidio.com/blog/chatbot-scripts/).
2. **Order Status**: A user asks the chat bot about the status of their order. [Customer journey touchpoint: Post-purchase Objective: Provide a quick and easy way for customers to check their order status Chat bot message: Order status update](https://www.bing.com/aclk?ld=e8dESjOBXhAzbwfJzolmgNuzVUCUxV7oBOoc9SHRm9UTLWcxRSLhKLc5rp9cCqPr9Qzb-HRFgOHMvsuZMwIx6clrnLmPfYhBgDjb0zkaSzQXJJfVoWPcaLsscOKscKJ9WPmcA-txbNHl-ElOPXpGrNyIP5pAjELO97O-xQSKHGUpBlJprn&u=&rlid=ea09681a49661817441b0d253b7d86f5)[1](https://www.tidio.com/blog/chatbot-scripts/).
3. **Pricing**: A user asks the chat bot about pricing information. [Customer journey touchpoint: Consideration Objective: Provide pricing information to potential customers Chat bot message: Pricing information](https://www.bing.com/aclk?ld=e8dESjOBXhAzbwfJzolmgNuzVUCUxV7oBOoc9SHRm9UTLWcxRSLhKLc5rp9cCqPr9Qzb-HRFgOHMvsuZMwIx6clrnLmPfYhBgDjb0zkaSzQXJJfVoWPcaLsscOKscKJ9WPmcA-txbNHl-ElOPXpGrNyIP5pAjELO97O-xQSKHGUpBlJprn&u=&rlid=ea09681a49661817441b0d253b7d86f5)[1](https://www.tidio.com/blog/chatbot-scripts/).
4. **Technical Support**: A user asks the chat bot for technical support. [Customer journey touchpoint: Post-purchase Objective: Provide quick and easy technical support to customers Chat bot message: Technical support](https://www.bing.com/aclk?ld=e8dESjOBXhAzbwfJzolmgNuzVUCUxV7oBOoc9SHRm9UTLWcxRSLhKLc5rp9cCqPr9Qzb-HRFgOHMvsuZMwIx6clrnLmPfYhBgDjb0zkaSzQXJJfVoWPcaLsscOKscKJ9WPmcA-txbNHl-ElOPXpGrNyIP5pAjELO97O-xQSKHGUpBlJprn&u=&rlid=ea09681a49661817441b0d253b7d86f5)[1](https://www.tidio.com/blog/chatbot-scripts/).
5. **FAQs**: A user asks the chat bot frequently asked questions. [Customer journey touchpoint: Pre-purchase Objective: Provide quick and easy answers to common questions Chat bot message: FAQ reply](https://www.bing.com/aclk?ld=e8dESjOBXhAzbwfJzolmgNuzVUCUxV7oBOoc9SHRm9UTLWcxRSLhKLc5rp9cCqPr9Qzb-HRFgOHMvsuZMwIx6clrnLmPfYhBgDjb0zkaSzQXJJfVoWPcaLsscOKscKJ9WPmcA-txbNHl-ElOPXpGrNyIP5pAjELO97O-xQSKHGUpBlJprn&u=&rlid=ea09681a49661817441b0d253b7d86f5).

**RESPONSES:**

**User Query: EXAMPLE FOR USER QUIERIES FOR CHATBOT DEPLOYMENT**

**Chat bot Response:**

**1. \*\*Product/Service Features\*\*: A user asks the chat bot about product/service features. Customer journey touchpoint: Consideration Objective: Answer a client that analyses specific characteristics of your product Chat bot message: FAQ reply [^1^][1].**

**2. \*\*Order Status\*\*: A user asks the chat bot about the status of their order. Customer journey touchpoint: Post-purchase Objective: Provide a quick and easy way for customers to check their order status Chat bot message: Order status update [^1^][1].**

**3. \*\*Pricing\*\*: A user asks the chat bot about pricing information. Customer journey touchpoint: Consideration Objective: Provide pricing information to potential customers Chat bot message: Pricing information [^1^][1].**

**4. \*\*Technical Support\*\*: A user asks the chat bot for technical support. Customer journey touchpoint: Post-purchase Objective: Provide quick and easy technical support to customers Chat bot message: Technical support [^1^][1].**

**5.\*\*FAQs\*\*: A user asks the chat bot frequently asked questions. Customer journey touchpoint: Pre-purchase Objective: Provide quick and easy answers to common questions Chat bot message: FAQ reply [^1^][1].**

**CONCLUSION:**

* [CDW has an article on chat bot deployment that you might find useful](https://www.bing.com/aclk?ld=e8CWvAPRYvFehg45tS4tYVjTVUCUx85jSxuvknzAr8OEfP4qA_psY4OP3LpJ5VAYm5aI8f9_hyS4_3KNUZkAtPBpUUb9fdA2ZY1o-c81IWE0VueXSBJuK0LItsHX5rAxIPUs8Cy1aJ-9BeHa1gmrSF7l2kFjx2kZHzWl9-nSuBh9DalahR&u=&rlid=351378e900751cf7a2161dd67396aa8a).
* [A complete guide to chat bot development from tools to best practices](https://www.einfochips.com/blog/a-complete-guide-to-chatbot-development-from-tools-to-best-practices/).
* [Deloitte US has a report on chat bots that you might find interesting](https://www2.deloitte.com/content/dam/Deloitte/in/Documents/technology-media-telecommunications/in-tmt-chatboats-noexp.pdf).
* [Bot Core has a blog post on 10 key chat bot implementation considerations](https://botcore.ai/blog/10-key-chatbot-implementation-considerations-you-should-be-aware-of/).

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