TOPIC: CHATBOT DEPLOYMENT WITH IBM CLOUD WATSON ASSISTANT

INTRODUCTION:

At the most basic level, a chatbot is a computer program that simulates and processes human conversation (either written or spoken), allowing humans to interact with digital devices as if they were communicating with a real person. Chatbots can be as simple as rudimentary programs that answer a simple query with a single-line response, or as sophisticated as digital assistants that learn and evolve to deliver increasing levels of personalization as they gather and process information.

TYPES OF CHATBOTS:

**Task-oriented (declarative) chatbots**: They are single-purpose programs that focus on performing one function. Using rules, NLP, and very little ML, they generate automated but conversational responses to user inquiries. Interactions with these chatbots are highly specific and structured and are most applicable to support and service functions—think robust, interactive FAQs. Task-oriented chatbots can handle common questions, such as queries about hours of business or simple transactions that don’t involve a variety of variables. Though they do use NLP so end users can experience them in a conversational way, their capabilities are fairly basic. These are currently the most commonly used chatbots.

**Data-driven and predictive (conversational) chatbots**: They are often referred to as virtual assistants or digital assistants, and they are much more sophisticated, interactive, and personalized than task-oriented chatbots. These chatbots are contextually aware and leverage natural-language understanding (NLU), NLP, and ML to learn as they go. They apply predictive intelligence and analytics to enable personalization based on user profiles and past user behavior. Digital assistants can learn a user’s preferences over time, provide recommendations, and even anticipate needs. In addition to monitoring data and intent, they can initiate conversations. Apple’s Siri and Amazon’s Alexa are examples of consumer-oriented, data-driven, predictive chatbots.

Advanced digital assistants are also able to connect several single-purpose chatbots under one umbrella, pull disparate information from each of them, and then combine this information to perform a task while still maintaining context—so the chatbot doesn’t become “confused.”

OBJECTIVES:

* **BUSINESS**

Chatbots boost operational efficiency and bring cost savings to businesses while offering convenience and added services to internal employees and external customers. They allow companies to easily resolve many types of customer queries and issues while reducing the need for human interaction.

With chatbots, a business can scale, personalize, and be proactive all at the same time—which is an important differentiator. For example, when relying solely on human power, a business can serve a limited number of people at one time. To be cost-effective, human-powered businesses are forced to focus on standardized models and are limited in their proactive and personalized outreach capabilities.

* **CUSTOMERS**

By contrast, chatbots allow businesses to engage with an unlimited number of customers in a personal way and can be scaled up or down according to demand and business needs. By using chatbots, a business can provide humanlike, personalized, proactive service to millions of people at the same time.

MERITS:

1. 24/7 Availability: Chatbots can operate round the clock, providing users with assistance and information at any time, enhancing customer service and user satisfaction.

2. Cost Efficiency: Chatbots can handle a large volume of inquiries simultaneously, reducing the need for human customer support agents and potentially lowering operational costs.

3. Scalability: Chatbots hosted in the cloud can easily scale to handle increased traffic and demand without significant infrastructure investment.

4. Consistency: Chatbots provide consistent responses, ensuring that users receive accurate information and follow predefined business rules.

5. Quick Responses: Chatbots can provide instant responses to user queries, improving response times and reducing user frustration.

6. Multi-Platform Accessibility: Chatbots can be integrated into various platforms, including websites, messaging apps, and voice assistants, making them accessible to users on their preferred channels.

7. Data Collection: Chatbots can gather user data and preferences, which can be used for personalized marketing, product recommendations, and improving user experiences.

8. Efficient Routing: Chatbots can efficiently route inquiries to the appropriate department or human agent, reducing response times and improving issue resolution.

9. Reduced Human Error: Chatbots can eliminate or minimize human errors in tasks like data entry, calculations, and repetitive processes.

10. Language Support: Chatbots can communicate in multiple languages, broadening their reach to a global audience.

11. Increased Productivity: By automating routine tasks, chatbots free up human employees to focus on more complex and value-added activities.

12. Customer Engagement: Chatbots can engage users through interactive and dynamic conversations, enhancing user engagement and brand loyalty.

13. Analytics and Insights: Chatbots can generate valuable analytics and insights into user behaviour and preferences, helping organizations make data-driven decisions.

14. Scalable Customer Support: Chatbots can handle a high volume of customer support requests simultaneously, ensuring that customers receive assistance promptly.

15. Availability During Peak Times: Chatbots can handle spikes in user traffic during promotions, sales events, or critical periods, preventing service disruptions.

16. Conservation of Resources: Chatbots can assist with information retrieval and basic troubleshooting, reducing the workload on human support agents.

17. Improved User Onboarding: Chatbots can guide users through onboarding processes, making it easier for them to start using a service or product.

18. Enhanced Self-Service Options: Chatbots empower users to find answers and solutions independently, reducing the need for direct human support.

19. Competitive Advantage: Organizations that implement chatbots effectively can gain a competitive edge by providing superior customer service and user experiences.

20. Adaptability: Chatbots can be trained and updated to adapt to changing user needs and business requirements.

DEMERITS:

1. Limited Understanding: Chatbots may struggle to understand complex or nuanced user queries, especially those that require human-level comprehension, empathy, or creativity.

2. Lack of Context: Chatbots often lack contextual awareness, which can lead to misunderstandings when users provide incomplete or ambiguous information.

3. Inability to Handle Unpredictable Scenarios: Chatbots may struggle when faced with unexpected or unscripted user interactions, resulting in frustration for users.

4. Dependency on Data Quality: The effectiveness of chatbots depends on the quality and accuracy of the data used to train and feed them. Inaccurate or biased data can lead to incorrect responses.

5. Privacy Concerns: Chatbots collect user data, raising privacy concerns if not handled properly. Users may be uncomfortable sharing sensitive information with a bot.

6. Initial Setup and Development Costs: Developing and deploying a chatbot can incur initial setup and development costs, which may be a barrier for some organizations.

7. Maintenance Complexity: Chatbots require ongoing maintenance, including updates to accommodate changing user needs and improving performance, which can be resource-intensive.

8. Over-Reliance on Automation: Organizations that rely too heavily on chatbots may risk depersonalizing customer interactions, leading to reduced customer satisfaction.

9. Loss of Human Touch: For some users, especially in sensitive or emotional situations, the absence of human interaction can be a drawback.

10. Language Limitations: Chatbots may struggle with languages or dialects with limited training data, making them less effective in certain regions.

11. Security Vulnerabilities: Chatbots, like any software, can be vulnerable to security breaches, potentially exposing user data or systems to cyber threats.

12. Limited Problem-Solving Abilities: Chatbots are typically designed to follow predefined scripts and may not be capable of complex problem-solving or decision-making.

13. User Resistance: Some users may resist interacting with chatbots due to a preference for human assistance.

14. Integration Challenges: Integrating chatbots into existing systems or workflows can be complex, requiring technical expertise and potential disruptions.

15. Maintenance Costs: Ongoing maintenance, updates, and improvements can add to the total cost of ownership of a chatbot.

16. User Frustration: Users may become frustrated if they perceive that the chatbot cannot adequately address their needs or if they are repeatedly transferred to human agents.

17. Training and Data Bias: Bias in training data can result in chatbots providing unfair or discriminatory responses.

18. Loss of Jobs: In some cases, chatbot deployment can lead to concerns about job displacement, particularly in customer service roles.

19. Initial Learning Curve: Users may need time to adapt to using chatbots, leading to initial confusion or resistance.

20. Unpredictable User Behaviour: Users can be unpredictable, making it challenging for chatbots to anticipate and respond to all user actions effectively.

APPLICATIONS:

01.ChatGPT

Deploying a chatbot with IBM Cloud Watson Assistant can be valuable in various applications across industries. Here are some common use cases:

02.Customer Support: Use a chatbot to provide instant responses to customer inquiries, troubleshoot common issues, and escalate to human agents when necessary. This reduces response times and improves customer satisfaction.

03.E-commerce: Enhance the shopping experience by guiding customers through product selection, answering product-related questions, and facilitating the checkout process.

04.Healthcare: Assist patients with appointment scheduling, provide medication reminders, offer health advice, and answer frequently asked questions.

05.Finance: Help users check account balances, track expenses, and provide financial advice. Chatbots can also assist with basic banking transactions.

06.Travel and Hospitality: Assist travelers with booking flights, hotels, and car rentals. Provide travel recommendations, weather updates, and local information.

07.Human Resources: Streamline HR processes by handling employee inquiries about benefits, policies, and leave requests.

08.Education: Support students with course enrolment answer academic queries, and offer study resources.

09.IT Support: Provide IT helpdesk support by guiding users through troubleshooting steps for common technical issues.

10.Sales and Lead Generation: Qualify leads, engage with website visitors, and gather information for sales teams to follow up.

11.Language Translation: Offer real-time language translation services for international customers.

12.Social Media Engagement: Automate responses to social media messages, comments, and direct messages, improving brand engagement and customer service.

13.Internal Knowledge Base: Assist employees in finding internal company information, documents, and resources.

CONCLUSION:

To sum everything up, I thoroughly enjoyed testing the IBM Watson chatbot out. In my opinion, this tool (in its free version) will be enough for anybody making their very first steps with chatbots, as well as those looking to make slightly more advanced moves. Given t the tool offers a free trial and even a free plan, I guess it won’t hurt you much if you decide to give it a go even if you end up not liking it.