

FP18 - WhatsApp Integrated Shopping Experience

Team

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3.Department: SCOPE

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Work-let expected duration – 6 months

Problem Statement

To build a SmartBot integrated with WhatsApp, to enable Samsung customers to buy products online through WhatsApp chat interface.

- Integrate shopping experience end to end with WhatsApp Messenger using WhatsApp Business API
- Payment options such as Samsung Pay, WhatsApp Pay, Credit/Debit card should be available
- Secure integration of SmartBot with Samsung e-store for easy selection of products on e-store
- Multilingual bot – with English, Hindi as current Language options and scope for future expansion
- Human escalation pathway- Agent handoff and Phone number/ Email/ Web Support/ in-store visit prompts
- Low code dynamic platform to easily integrate future WhatsApp upgrades
- Develop a scalable solution with possible future implementations on Facebook Messenger, Telegram and other applications

References:

- <https://responder.id/blog/how-to-get-whatsapp-api>
- <https://www.techtarget.com/searcher-privateai/definition/natural-language-understanding-NLU>
- <https://developer.nvidia.com/blog/?r=1&tags=&categories=conversational-ai>

Expectations

- Integrate Samsung e-store with WhatsApp
 - Procure permissions and use WhatsApp Business API for integration.
 - Utilise APIs for e-store– WhatsApp integrations
 - Channel interaction from WhatsApp to e-store shopping catalogue and back to WhatsApp for transaction completion
- Multilingual User friendly shopping experience
 - Present interactive user interface to customer, prompt Samsung e-store catalogue and navigate to e-store website
 - Fetch items added in cart and process for checkout
 - Get additional user information such as Name, Address, Payment information
 - Based on selected payment method complete transaction, confirm order and generate invoice
 - Divert to human interaction options as an escalation pathway
- Integration with payment apps
 - Get Payment information of the user
 - Enable secure payment of Cart amount and apply any offers/discounts/ cashbacks

Training/ Pre-requisites

- Good knowledge of Natural Language Understanding
- Good hands on in Chabot development, API Integrations, UI development
- Designing Chat services, utilising AI engines, integrating applications, permission for using WhatsApp Business API

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Members

Kick Off < 1st Month >

- Understanding NLU concepts and AI engines
- Understand API integrations, Secure Payment app integrations
- Do hands on by applying e-store integration with WhatsApp Business API and explore different Payment option integration

Milestone 1 < 2nd Month >

- Develop user friendly and interactive user interface
- Utilize WhatsApp Business API for E2E integration with WhatsApp Messenger
- Explore implementation of multilingual capability for the bot

Milestone 2 < 4th Month >

- Design interface for Payment information inputs from the user
- Securely integrate with Samsung e-store for interaction to and from WhatsApp messenger
- Integrate Samsung Pay, WhatsApp Pay and other Payment methods
- Enable Agent handoff as an escalation pathway

Milestone 6th Month >

- Publish final User Interface for Customer interaction with the Bot
- Allow customer to choose Payment gateway and process payments securely
- Save Customer details and publish on customer revisit for a faster journey
- Generate Invoice with billing details

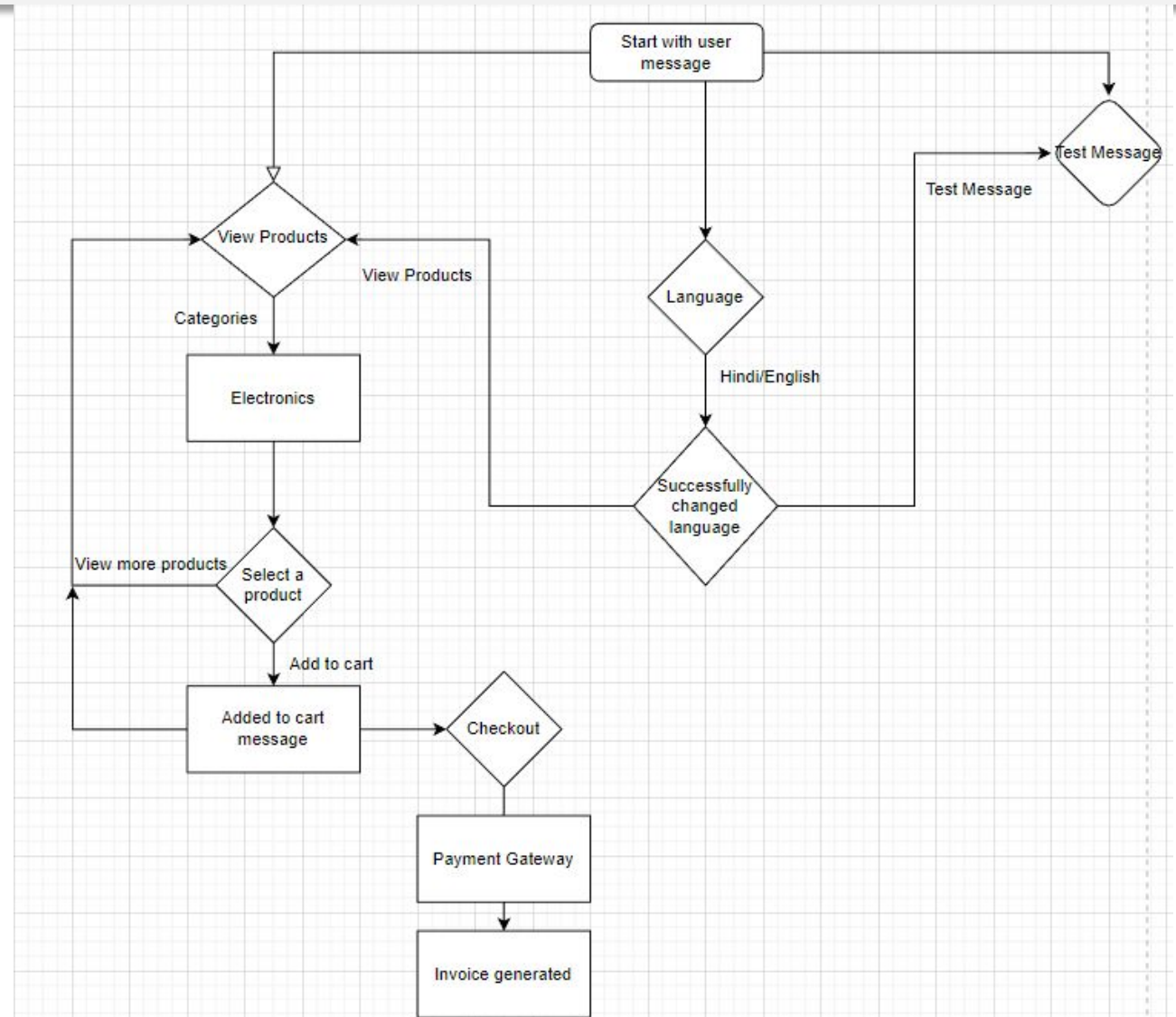
Proposed Approach / Solution

- Concept Diagram :

(Clear detailed schematic / block diagram / flow chart depicting the proposed concept / solution)

Technologies Used:

- **Meta** - Used the Meta Developer API's, and configured the Webhooks using Meta inorder to send and receive messages over a test Whatsapp account.
- **Node.js** - Used Javascript (Node.js) as the primary programming language inorder to receive the messages and send back the required responses.
- **Ngrok** - Used ngrok inorder to deploy a realtime server and facilitate communication between the webhook and the test business account.
- **Whatsapp** - Finally, the usage of Whatsapp to finally give the user the front-end to communicate and work.



Experimental Results / Simulations / Observations

- Results :

(provide numerical data / bar charts / plots / images / videos / tabulated results etc. Use full slide or multiple slides up to max 3 slides to demonstrate the results)

KPI's Achieved this month:

- **Multi-Lingual Functionality** - Added the translation code to make the bot (currently supporting Hindi and English) switch between the languages.
- **Payment Gateways** added to facilitate transactions (Razorpay).

Solution for Razorpay Payment Integration:

- We have used razorpay Node.Js kit to integrate it with whatsapp meta api to generate options for the users to do payment.
- We have used nodejs to deploy callback urls and webhooks codes on local server.

Solution for Multilingual Bot

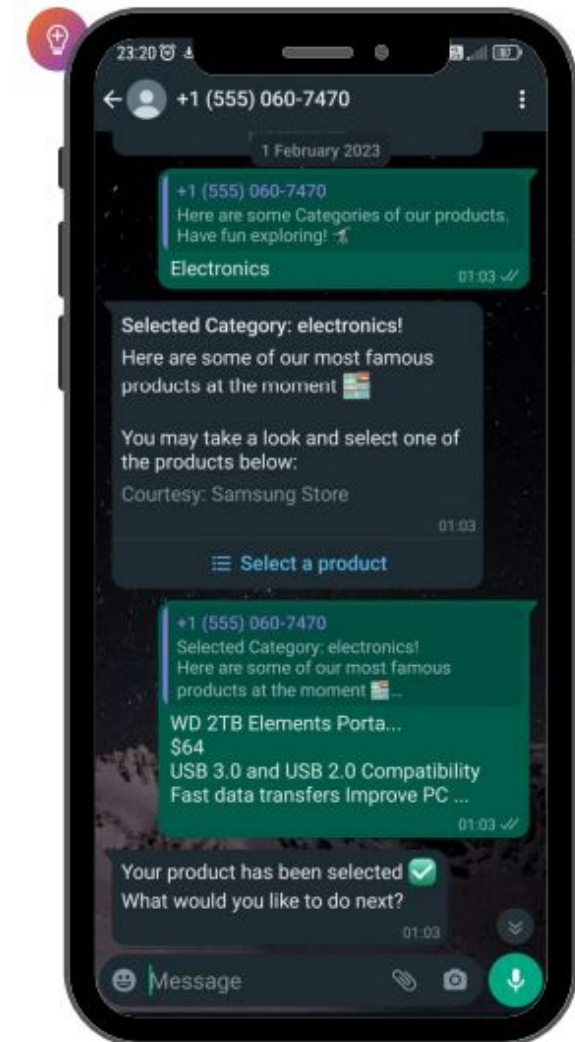
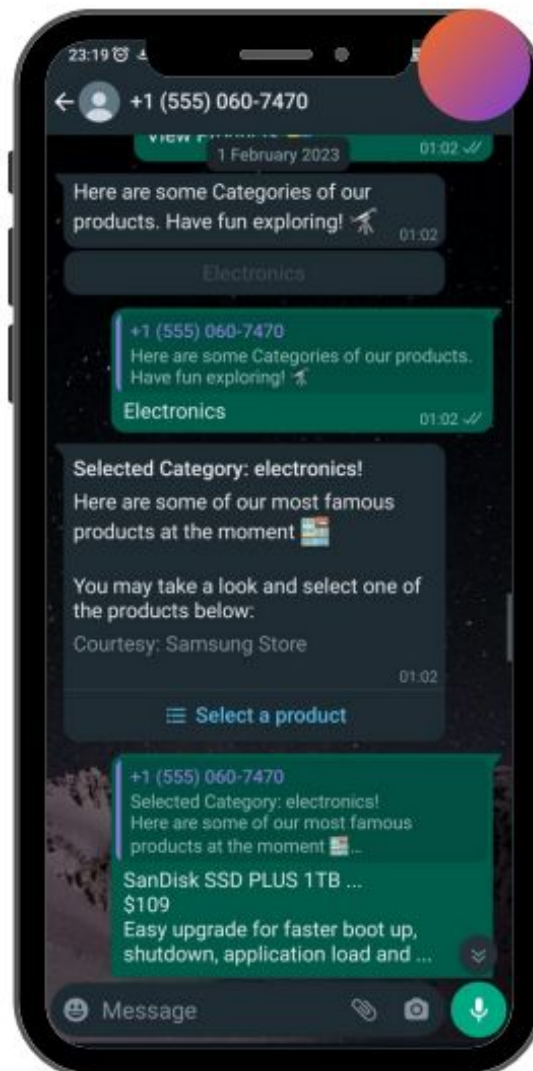
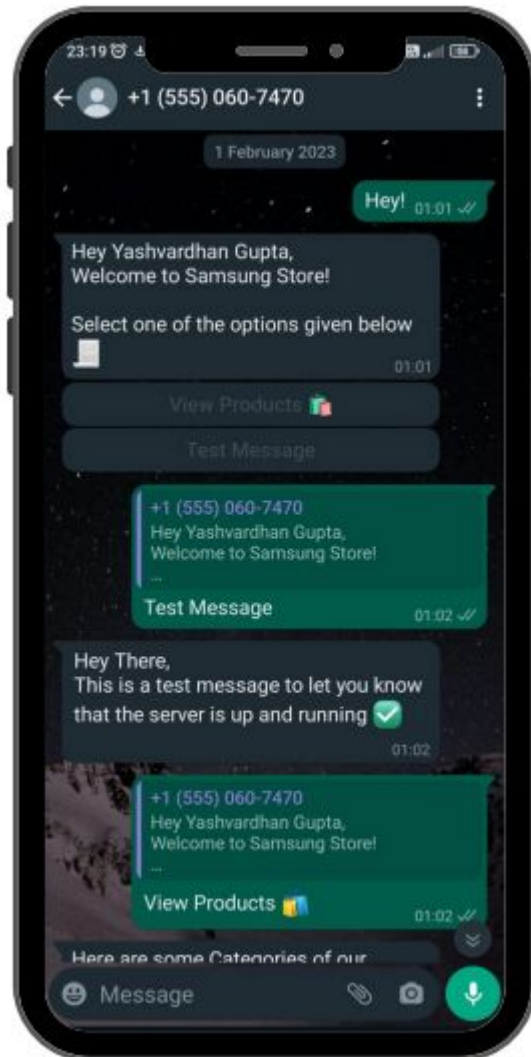
- We have used translate nodejs package which is backed up by Google.
- There are many engines supported by this api but Google is used for this bot.

Experimental Results / Simulations / Observations

- Results :**

(provide numerical data / bar charts / plots / images / videos / tabulated results etc. Use full slide or multiple slides up to max 3 slides to demonstrate the results)

Functionality Till Now:

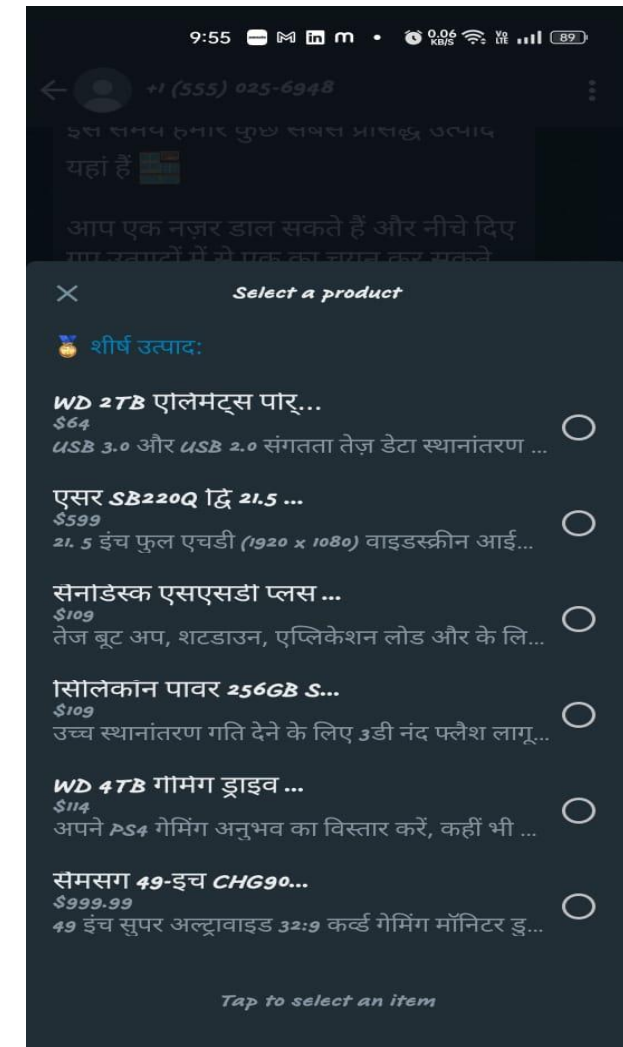


Experimental Results / Simulations / Observations

- Results :**

(provide numerical data / bar charts / plots / images / videos / tabulated results etc. Use full slide or multiple slides up to max 3 slides to demonstrate the results)

Multi-Lingual Functionality

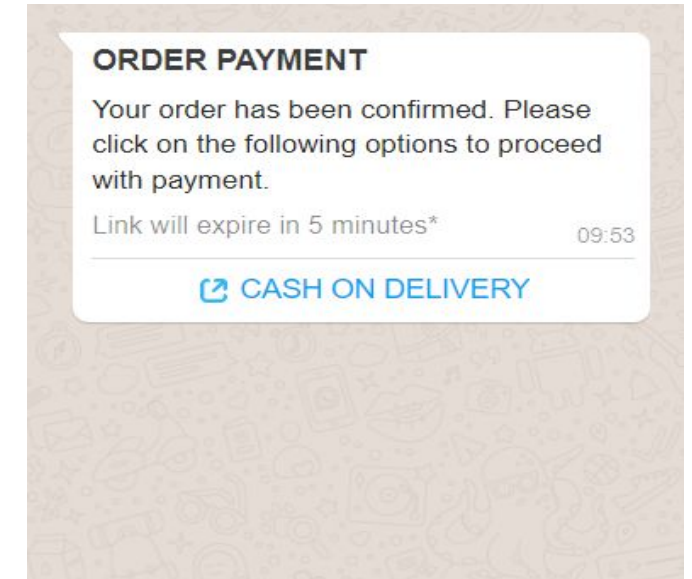
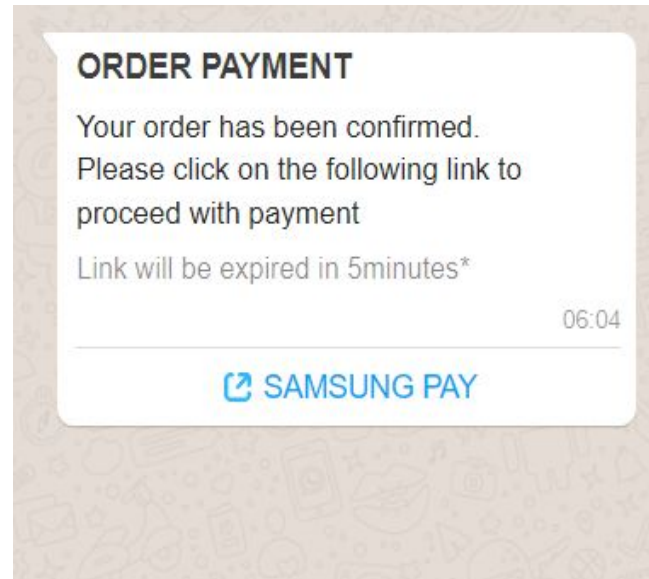
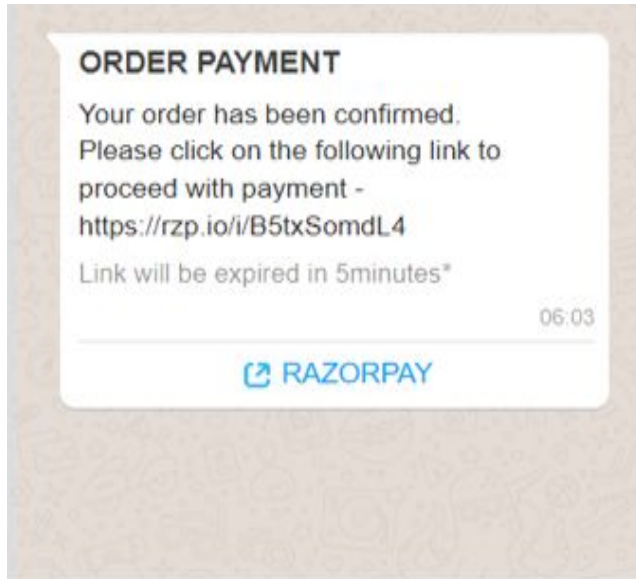


Experimental Results / Simulations / Observations

- Results** :

(provide numerical data / bar charts / plots / images / videos / tabulated results etc. Use full slide or multiple slides up to max 3 slides to demonstrate the results)

Payment Gateway



Experimental Results / Simulations / Observations

- Major Observations / Conclusions & Challenges :
(provide details about your findings, experimental opinion – Use separate slide if necessary)

After achieving the KPI's this month, we are only **left with the following KPI's:**

- Fetch products through the Samsung Store API.
- Human Escalation Pathway.

Challenges Faced:

- Integrating Samsung Pay API.

Challenges Anticipated:

- Samsung account authentication
- Multiple cart sessions

Further Plan to Complete Project

- **Final Probable Deliverables :**

(Discuss in the form of bullets, what are the next steps to complete the solution, any road blocks / bottlenecks, any support needed from SRIB)

- Integrate Samsung e-store with WhatsApp
- Procure permissions and use WhatsApp Business API for integration.
- Utilise APIs for e-store – WhatsApp integrations
- Channel interaction from WhatsApp to e-store shopping catalogue and back to WhatsApp for transaction completion
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Further Plan to Complete Project

- **Completion Plan:**

(High level plan to complete the project in next 8 weeks after review, in format below)

Week 1 to 2	<ul style="list-style-type: none">• Samsung Pay API's Fetching• Human Pathway Escalation
Week 2 to 4	<ul style="list-style-type: none">• Customer Details Storing and Account Authentication• Multiple Cart Sessions
Week 5 to 6	<ul style="list-style-type: none">• Live Server Deployment
Week 7 to 8	-

- **Challenges Anticipated:**

- Samsung account authentication
- Multiple cart sessions

- **Git Upload details:**

https://github.ecodesamsung.com/SRIB-PRISM/VITC_FP18VITC_WhatsApp_integrated_Shopping_experience

Thank you