An AI Customer-Service Chatbot Prototype for Alpha Books

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***Abstract*—This undergraduate thesis designs and tests a customer-service chatbot for Alpha Books on Facebook Messenger. A Make workflow receives messages, looks up information in Google Sheets, calls Gemini for response generation, and escalates selected requests to staff by logging and email notification. The report describes 16 connected modules and measures 244 interactions during its trial, reporting an average end-to-end response time of 14.38 seconds. Across eight revisions of a fixed 30-question test, marked correct answers rose from 14 to 25, or 83.3% in the final run. The manuscript separately reports that 85% of workflow executions succeeded; execution success is not equivalent to answer correctness. The tests are small, in-sample, and author-reported, with no independent customer-satisfaction or sales evaluation. This summary documents the system architecture and measured prototype behavior without claiming a proven commercial effect.**

***Index Terms*—customer-service chatbot, Facebook Messenger, Gemini, Make, workflow evaluation**

I. Introduction

Book retailers receive repetitive questions about titles, price, availability, and ordering links. The thesis investigates whether a Messenger chatbot can answer routine inquiries while transferring harder cases to human customer-service staff. It focuses on practical workflow design and an initial technical assessment at Alpha Books. The research question is whether the prototype can operate across message receipt, data lookup, generated response, and escalation, and how well it performs on the author's limited tests [1]. Earlier ICTU undergraduate theses on related topics provide context [5], [6], [7], [8], [9], [10], [11]. These works were selected for this English summary and are not attributed to the source thesis bibliography. Published background sources on the methods and domain of this project provide context for the English summary [2], [3], [4].

II. Methods

The student connected Messenger to a Make scenario with Google Sheets and the Gemini API. The workflow has a response path for common queries and an escalation path that replies to the customer, records the request in a sheet, and emails staff. The source reports timing across 244 interactions and eight consecutive test runs using the same 30 questions; prompt instructions were revised after each run. A Make execution-history chart is used for workflow status. Reuse of the same questions during tuning means the final test is not independent validation, and no transaction-level outcome data are supplied [1].

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III. Results

The report states that the 16-module workflow produced complete responses in an average of 14.38 seconds across 244 interactions. It gives 79 responses below five seconds, 41 at five to ten seconds, 43 at ten to fifteen seconds, and 15 above forty seconds. On the repeated 30-question set, correct answers improved from 14 in the first run to 25 in the eighth. The Make execution history is summarized as 85% success, 14% error, and 1% warning across the same 244 interactions. These workflow-status percentages cannot be substituted for answer-accuracy percentages. Screenshots illustrate both automatic replies and staff escalation [1].

IV. Discussion

The prototype demonstrates an integrated path from customer message to answer or staff alert. Its fixed-set test is useful for development but overstates generalization if interpreted as out-of-sample accuracy, because the prompt was tuned against the same questions. Likewise a successful Make execution may still deliver an incorrect or unhelpful answer. The 244 interactions provide timing data for the trial, not a guarantee at larger scale. The thesis identifies limited coverage of complex requests and a single-channel deployment. Future evaluation should use unseen questions, independently marked answer quality, staff resolution time, and customer outcomes. Earlier ICTU chatbot and customer-management projects provide related technical context [1].

V. Conclusion

The thesis produced a Messenger chatbot prototype for Alpha Books and reported technical timing, workflow-status, and repeated-question test results. The results support feasibility of the integrated workflow within the trial; independent answer-quality and business-impact evaluation remains necessary [1].

References

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