SOLUTION PROPOSAL

B2B Sales Generative AI Assistant Prototype

EE656 Embedded AI Project Group 1

Thomas Pluck
Bryan E. McCarthy
Sanjana M. Lokesh
Kamal S. Veeranki

Department of Electronic Engineering
Maynooth University
Maynooth, Ireland

Abstract

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DECLARATION

Use of Generative AI

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CONTENTS

I. Glossary of Terms and Acronyms

AI   Artificial Intelligence - Technology capable of performing tasks that typically require human intelligence, being utilized to transform B2B sales processes.

B2B   Business-to-Business - Commercial transactions between businesses, characterized by complex sales processes, slower decision-making cycles, and relationship-focused interactions.

B2C   Business-to-Consumer - Commercial transactions between businesses and end consumers, generally simpler than B2B processes.

FAB   Feature-Advantage-Benefit - A sales methodology that communicates a product's technical characteristics, the improvements these features bring, and the personal or emotional gains from using the product.

LLM   Large Language Model - A sophisticated class of AI designed to understand, generate, and manipulate human language, serving as a core component in the proposed system.

RAG   Retrieval-Augmented Generation - A framework that enhances LLMs by integrating external knowledge sources during the generation process, used in the proposed system to index conversations by customer, topic, and outcome.

GPT-4   Generative Pre-trained Transformer 4 - An advanced large language model developed by OpenAI, mentioned as one of the flexible LLM options in the proposed system architecture.

Claude   An advanced large language model developed by Anthropic, mentioned as one of the flexible LLM options in the proposed system architecture.

Llama   A family of large language models developed by Meta, mentioned as one of the flexible LLM options in the proposed system architecture.

API   Application Programming Interface - A set of protocols that allows different software applications to communicate with each other, referenced in the context of AssemblyAI's Transcript API for audio transcription.

II. Technical Background

A. B2B Sales

Business-to-business (B2B) sales processes are significantly more complex compared to business-to-consumer (B2C) contexts, characterized by slower decision-making cycles and intricate information exchanges [1]. The information requirements in B2B sales are resource-intensive, with substantial reliance on the capabilities and expertise of the sales force [2]. Unlike B2C transactions, B2B sales primarily revolve around establishing robust, long-term relationships optimally achieved through trust development [1].

In B2B contexts, buying firms require comprehensive engagement from selling entities, necessitating thorough information exchange that goes beyond mere product specifications [3]. Traditional face-to-face meetings between sellers and buyers involve both objective information and nonverbal cues, which play a critical role in establishing mutual understanding, agreement levels, and trust in the salesperson [1], [4]. These interactions facilitate the sharing of both rational and emotional information, establishing a common ground that infuses the exchanged information with value and significance for both parties [1].

The sales argument is a meticulously crafted document highlighting product-specific selling points to better address customer needs and concerns [5]. It serves as a guide to structuring communication that influences the customer's decision-making process, containing various arguments designed to provide the sales force with precise knowledge of the product's features and qualities [6]. Effective sales argumentation cannot be improvised; it requires thorough preparation and adaptation to meet the needs and expectations of each customer rather than using standardized pitches [7].

Among various sales techniques, the Feature-Advantage-Benefit (FAB) method is one of the most effective and practical approaches for sales argument creation and preparation [6]. This method clearly communicates a product's features (technical characteristics), advantages (improvements the feature brings), and benefits (personal or emotional gains from using the product) to potential buyers, linking them to consumer needs [7]. For instance, in presenting a smartphone, a salesperson would describe the high-resolution screen as a feature, improved visual clarity as its advantage, and ease of use with eye protection as the resulting benefit. This structured approach enhances the persuasiveness of the sales argument by focusing on how the product satisfies specific customer needs rather than merely describing its technical specifications [6].

The integration of advanced technologies like artificial intelligence (AI) has begun transforming traditional B2B sales processes. AI technologies have been redefining sales practices, changing all sales funnel steps from making initial contact with prospects to managing negotiations [8]. Generative AI, in particular, promises to disrupt B2B customer experience, productivity, and growth by enabling hyper-personalized content and offerings based on individual profiles, customer behavior, and purchase history [9]. However, there remain challenges in aligning AI solutions with corporate strategies, with ongoing debates about their actual value in business applications [3]. Research indicates strategic challenges associated with AI, such as its limitation in recognizing business interdependencies and resistance to managerial control [10]. Despite these challenges, the potential of AI to enhance B2B sales processes through automation, personalization, and data-driven insights presents significant opportunities for competitive advantage in increasingly complex sales environments.

III. Methodology

A. Generative AI-Enhanced Conversational Intelligence for B2B Sales

Modern B2B sales processes face significant challenges due to their complexity and information-intensive nature [1], [2]. Sales representatives must engage in extensive information exchange to build trust and establish relationships with clients, while attempting to identify key signals and patterns across numerous conversations [4]. This subsection proposes a technical solution leveraging generative artificial intelligence to enhance B2B sales effectiveness through conversational intelligence.

Our proposed system architecture implements a three-layer approach to sales conversation analysis and enhancement. The foundation consists of an audio transcription pipeline utilizing AssemblyAI's Transcript API to convert recorded sales conversations into high-quality text with speaker diarization. This addresses the fundamental challenge identified by [6], who note that sales argument creation is "a challenging task that requires considerable effort, time, and skills" by automating the capture and processing of sales conversations.

The second layer implements a Retrieval-Augmented Generation (RAG) system that indexes conversations by customer, topic, and outcome. As explained by [11], RAG frameworks "enhance the capabilities of Large Language Models by integrating external knowledge sources during the generation process," which in our case allows for contextual analysis of conversations enhanced by historical interaction data. The RAG system is designed to mitigate what [10] identifies as AI's "myopic nature," which limits contextual awareness beyond assigned tasks, by providing comprehensive conversation history and relationship context.

The third layer consists of a flexible Large Language Model (LLM) architecture allowing seamless interchange between models (e.g., GPT-4, Claude, Llama) based on specific analysis requirements and client preferences. This design follows [12]'s framework for aligning generative AI applications with specific tasks based on accuracy requirements and complexity levels.

The system offers three primary analytical functions designed specifically for B2B sales contexts. First, the opportunity assessment capability identifies buying signals, objection patterns, and decision criteria mentioned across conversations. This addresses [9]'s finding that commercial leaders see significant potential in AI for lead identification and personalized outreach. Second, the relationship intelligence function analyzes conversational patterns to map stakeholder

relationships, sentiment changes, and trust indicators. This capability is particularly valuable in B2B contexts where, as [3] explains, "trust in the salesperson" is critical for establishing mutual understanding and agreement. Third, the process optimization component evaluates adherence to established sales methodologies, extracts competitive intelligence, and analyzes time allocation across topics. This function responds to [13]'s observation that B2B sales leaders see the greatest potential in AI for improving efficiency and boosting top-line growth.

The delivery of insights is designed to integrate seamlessly with existing sales workflows, providing pre-meeting briefings, post-call analysis, visual deal health dashboards, and personalized coaching recommendations. This approach addresses what [14] identifies as a key obstacle to AI adoption: the lack of organizational readiness and cultural resistance to AI-influenced decision-making.

For implementation, we recommend following [15]'s hybrid approach that combines top-down strategic guidance with bottom-up experimentation. This allows sales teams to independently explore and develop AI applications that address their specific needs while maintaining alignment with organizational objectives.

Expected outcomes include reduced sales cycle length, increased deal size, improved win rates, and faster onboarding of new sales representatives. These benefits address the challenges identified by [16], who notes that in B2B environments, customer inquiries often involve "highly technical, domain-specific issues" that require extensive knowledge resources.

Our proposed solution transforms traditional B2B sales conversations from ephemeral interactions into strategic, analyzable assets that continuously enhance sales performance. By integrating generative AI with RAG capabilities, the system mitigates the inaccuracy concerns highlighted by [17] as one of the most prominent risks associated with generative AI implementations.

IV. PROJECT MANAGEMENT

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