BizChat: Scaffolding AI-Powered Business Planning for Small Business Owners Across Digital Skill Levels

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Figure 1: BIZCHAT is a LLM-powered web-app that enables small business owners across digital skill levels to draft business plans from their website or chats, iterate via click-to-apply changes or a rich-text editor, and get feedback from experts—see Section 2 for details.

Abstract

Generative AI can help small business owners automate tasks, increase efficiency, and improve their bottom line. However, despite the seemingly intuitive design of systems like ChatGPT, significant barriers remain for those less comfortable with technology. To address these disparities, prior work highlights accessory skills beyond prompt engineering—users must master to successfully adopt generative AI including keyboard shortcuts, editing skills, file conversions, and browser literacy. Building on a design workshop series and 15 interviews with small businesses, we introduce BIZCHAT, a large language model (LLM)-powered web application that helps business owners across digital skills levels write their

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business plan—an essential but often neglected document. To do so, BIZCHAT's interface embodies three design considerations inspired by learning sciences: ensuring accessibility to users with less digital skills while maintaining extensibility to power users ("lowfloor-high-ceiling"), providing in situ micro-learning to support entrepreneurial education ("just-in-time learning"), and framing interaction around business activities ("contextualized technology introduction"). We conclude with plans for a future BIZCHAT deployment.

CCS Concepts

 \bullet Human-centered computing \rightarrow Human computer interaction (HCI).

Keywords

Small Business, Entrepreneurship, Business Planning, Generative AI

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1 Introduction

Small business owners are uniquely positioned to reap the benefits of automating tedious back-office tasks with generative AI, given time and resource constraints. For instance, large language models (LLMs) can help small business owners to improve their bottom line by automating existing workflows, soliciting and implementing feedback, and unlocking more time for long-term planning [19].

Despite the simplicity that generative AI platforms tout [18], integrating generative AI tools into small business workflows is far from straightforward. For instance, prior work highlights the "laundry list" of operational skills beyond prompt engineering, such as browser literacy, password management, cloud storage know-how, and keyboard shortcuts [11], which entrepreneurs must master in order to effectively integrate generative AI into their business. Additionally, to turn AI-generated outputs into actionable or polished results, entrepreneurs must effectively organize input data, such as converting file types or tailoring content, and refine their outputs to align with their specific business needs [11]. However, current general-purpose AI systems, like ChatGPT or Gemini, presume these tacit knowledge and skill sets among users, creating barriers to adoption and leading to disparities in use between users with and without technical backgrounds [3, 6]. Further, small business owners who are overly reliant on generative AI-asking for support on tasks that generative AI is not well suited to accomplish-experience exacerbated performance gaps, ultimately magnifying a "rich gets richer" dynamic in AI adoption [19].

To adopt generative AI, small business owners rely on their social support to create a network of trustworthy information, repurposing single-user ChatGPT accounts to observe how others formulate prompts and thereby reducing costs [23]. But this only addresses part of the problem; the systems themselves need improved interfaces and interaction patterns to make this novel technology accessible for users who have diverse levels of technical skills [29].

In this paper, we extend prior work to investigate how to support entrepreneurs with diverse levels of digital skills to use generative AI systems for their business [11]. In particular, we build on a fourpart workshop series on using generative AI for small businesses with a local entrepreneurial hub dedicated to racial equity in technology in Pittsburgh, Pennsylvania [11]. Through these communitydriven workshops and 15 interviews with entrepreneurs, the prior work details the importance of scaffolding actionable use, which pushes beyond hype and provides entrepreneurs with tangible value. Based on this formative work, we built BIZCHAT¹: an LLMpowered web application that supports product and service-based entrepreneurs to write business plans—a foundational business document outlining a business's goals and strategies for growth [26]. Where Microsoft 365 for Business—and similar commercially available tools—require deep expertise to formulate "good prompts" [15] to complete amorphous business tasks, BIZCHAT supports entrepreneurs from a range of business and technical backgrounds through scaffolding learning and prompting specifically for business planning. Rather than burdening the user with technological fluency, BIZCHAT centers the entrepreneur's existing knowledge of their business to drive the interaction.

To inform the interface design, BIZCHAT adheres to three core design considerations drawing from empirical findings from our workshop series and learning science principles: (1) low-floor-highceilings [20] to support users with limited digital skills or prior technical knowledge, while offering advanced features for more experienced users; (2) just-in-time learning [8, 24] to facilitate both business and digital skill building for time-constrained entrepreneurs [1]; and (3) contextualizing generative AI within the users' existing knowledge and goals (i.e., their business), rather than highlighting the novel technology [2, 4]. In a future user study and expert evaluation, we aim to explore how BIZCHATCAN facilitate access to generative AI technology for entrepreneurs with diverse digital skills, and examine its subsequent impact on their business operations.

2 **BIZCHAT's Three Design Considerations**

In this section, we describe the three design considerations—inspired from learning sciences [7, 8, 17, 22]—which guided BIZCHAT's interface design and features.

(1) Low Floors, High Ceilings. BIZCHAT's first design consideration is to build "low-floors and high-ceilings"-a pedagogical term which refers to designing interventions that are accessible to beginners while providing opportunities for advanced learners to engage in deeper exploration [20]. In this context, we argue that a low-floor-high-ceiling design for generative AI systems means creating a system accessible to users with limited digital skills or no prior knowledge of generative AI, while remaining extensible so that entrepreneurs already familiar with tools like ChatGPT will find advanced and useful features. Prior work revealed that since entrepreneurs have diverse technical and business backgrounds, systems cannot assume knowledge of accessory skills to successfully leverage generative AI tools [11]. As small business owners have diverse levels of typing and writing proficiency-from twofinger typing to touch typing-we scaffold the editing process so that Voice-to-Text (1c) is available in every step: describing the business, dictating edits, and chatting with BIZCHAT. For users comfortable with typing, BIZCHAT's Rich-text Editor (1d) enables more control through direct manipulation of their business plan. As prompting remains a barrier for non-expert users of LLMs [30], BIZCHAT creates two Prompt Suggestions (1a) for every conversation turn-one prompt focusing on the current topic (exploitation [21]); the other focusing on a new topic (exploration [21]). When BIZCHAT provides suggestions, the user can one-click Apply (1b) suggestions from the chat to the business plan in the rich-text editor. Simultaneously, for more advanced users, BIZCHAT enables in-line text generation (1e), where users can specify criteria to generate text and view exemplars. Further, the Rich-text Editor (1d) allows users without word-processing skills to specify text styles and Export (1f) to a standard template, without the additional barriers of complex document formatting.

¹BIZCHAT can be freely used at: https://bizchat-io.vercel.app

(2) Just-in-Time Learning. BIZCHAT's second design consideration is just-in-time learning [8, 24]-in situ micro-learning opportunities that supports entrepreneurial education. This is especially important because many self-taught entrepreneurs do not have formal business training, nor the time for extended lesson plans [1]-particularly when the value of general-purpose AI is not immediately clear, as participants revealed in our workshop series [11]. With BIZCHAT, our goal is to help entrepreneurs develop skills in three key areas: understanding what constitutes an effective business plan, building reflection and help-seeking skills, and learning to effectively use generative AI. To do so, BIZCHAT's onboarding flow includes an Informational Video reviewing key motivations for business plan creation and detailing their key components. BIZCHAT then scaffolds users to iterate on each section of their business plan, suggesting relevant Examples (1e) from U.S. Small Business Administration². In addition, BIZCHAT provides users relevant suggested questions as tool-tips in the editor for the Business Plan Assistant (1e). Last, to build help-seeking skills and facilitate self-reflection, BIZCHAT's Prepare to Pitch (1g) provides users a list of questions to ask an expert tailored to their business plan and goal which are a helpful preparatory step when approaching business coaches for critical feedback.

(3) Contextualized Introduction to Technology. Generalpurpose generative AI tools demand significant sensemaking [5, 25], slowing adoption as users struggle to identify practical use cases [16, 27]. Further, our formative work revealed how entrepreneurs express anxiety about falling behind or "missing out" on new technological trends, which compounds hesitation to engage with unfamiliar tools [11]. To mitigate such anxieties, introducing technology in the context of users' existing knowledge and goals-rather than focusing on the novel technology-can be a helpful strategy [2, 4]. Therefore, BIZCHAT's third design consideration is to contextualize users' interactions with generative AI within their area of expertisetheir business [7]. For instance, at each conversation turn, the Business Plan Assistant (1b) suggests changes to the business plan in accordance with the user's Business Plan Goals, which are explicitly set during onboarding. Further, unlike AI systems that present outputs as a completed document, BIZCHAT positions business plans as an evolving document used as a mechanism for planning and growth. To this end, BIZCHAT seeks to facilitate deeper engagement with a broader community of support (e.g., expert business coaches, an essential part of an entrepreneurial ecosystem [9]). BIZCHAT offers users to Connect with an Expert (1g) and aims to decrease reputational risks by providing entrepreneurs a list of Questions to Ask an Expert (1g) about their business plan. In doing so, BIZCHAT acknowledges that, even with the latest technology, social support among minority entrepreneurs is essential [10, 12-14].

3 BIZCHAT User Scenario

To illustrate how BIZCHAT can be used to draft, iterate, and get feedback on a business plan, let us follow José: an aspiring entrepreneur with a coffee roasting venture. Like many small business owners, José's business success is attributed to his resilience and creativity; he is primarily self-taught and lacks formal training in business or

technology. José wants to expand his business by applying for a local funding opportunity and needs a business plan to be eligible; he finds BIZCHAT linked on the application's resource page. BIZCHAT analyzes José's website and generates a draft of his business plan while he watches an informational video about the different sections that constitute an effective business plan. Within BIZCHAT's main interface (Figure 1), he reads his generated draft and notices an error in the Executive Summary section. Because he finds his typing slow, he uses voice-to-text to edit the plan within the richtext editor. BIZCHAT then recommends improvements to the Market Analysis section. To verify the changes suggested, José compares an example from SBA.gov² with his Market Analysis section. With José's newfound understanding of what constitutes an effective Market Analysis, he applies the changes. BIZCHAT then nudges José to seek out expert feedback to continue to iterate on his draft, and provides him with a list of questions to begin the conversation. Now, José is ready to submit his business plan, and therefore exports it to a standard template for the city grant application.

4 BIZCHAT Implementation

BIZCHAT is a React application built on Next.js, using Firebase to manage data and secure authentication. To maintain interactive latencies while achieving well-structured and high-quality business plan generation, each business plan section (e.g., Executive Summary) is generated by asynchronous requests to gpt-4-turbo and then concatenated to create one streamlined business plan. We use GPT-3.5-turbo to extract relevant information from web pages and chats during onboarding, which is then used as context to generate the user's first draft business plan. We use GPT-3.5-turbo for chat, prompt suggestions, and website summaries; GPT-4o-mini for suggestions; gpt-4-turbo for business plans; and Whisper-1 for transcription. Business plan generation prompts are few-shot [28] using examples from SBA.gov².

5 Conclusion and Future Work

Informed by our workshop series, we built BIZCHAT to support small business owners in developing business plans. BIZCHAT's three design considerations—low floors-high ceilings; just-in-time learning; contextualized introduction of technology—strive to lower barriers to AI adoption for entrepreneurs with diverse digital skills. Moving forward, to evaluate BIZCHAT's design, we plan to conduct an in-person workshop series with small business owners to gather qualitative data on usage, followed by a longitudinal deployment study to study key themes in aggregate, and expert evaluation of resulting business plans. In doing so, we attend to a persistent question within the HCI community amid rapid AI advancements: how can we support users with diverse digital skills to meaningfully engage and shape emerging technologies?

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²https://www.sba.gov/business-guide/plan-your-business/write-your-businessplan

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