WHITE PAPER

BEYOND CHATGPT: WHEN GENERATIVE AI MEETS THE ENTERPRISE.

Overcome 5 Key Issues with New Technology Architectures

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HOW GENERATIVE AI WILL TRANSFORM THE CUSTOMER EXPERIENCE

The launch of ChatGPT, a generative artificial intelligence (AI) chatbot, by OpenAI in late November 2022, took many by surprise. While 50 to 60 percent of organizations have been working with AI,[1] progress has been slow and steady to date. Tools, such as traditional chatbots, use "narrow AI," to focus on specific tasks, such as triaging customer requests. To learn new tasks, these solutions have to be continually retrained, increasing costs.

> ## $4M
> Approximate cost for the initial training of a large-language model (LLM) AI such as ChatGPT, which has 175 billion parameters. [2]

So, what makes generative AI different?

ChatGPT and other generative AI tools can learn, understand, and create. In addition, they are getting smarter as users around the world enter queries and train them every day.[3] ChatGPT is the fastest-growing consumer application in history, with more than 100 million users signing up for an account in the two months after the chatbot as launched.[4] It's not a stretch to say that the next 10 years will usher in an era of incredible business transformation, as enterprise teams gain more experience with generative AI and use it to address a wider number of industry challenges.

Media coverage of ChatGPT has focused extensively on how the technology will automate processes at pace, augmenting and replacing human talent. For some workers, the technology engenders fear and loathing: either of losing a job or needing to learn new skills to keep pace as their roles transform.

However, the bigger story is really about how generative AI will transform the customer experience. ChatGPT and similar tools can be leveraged to support numerous use cases, across business functions such as marketing and sales, supply chain, customer support, product development, and more. By increasing employee productivity, enabling proactive outreach and problem solving, and addressing common friction points, generative AI solutions can help teams rapidly evolve the customer experience. To achieve this vision, however, enterprise teams will need to overcome five different obstacles and deploy two different architectures: one for human-augmented interactions and one for fully automated interactions.
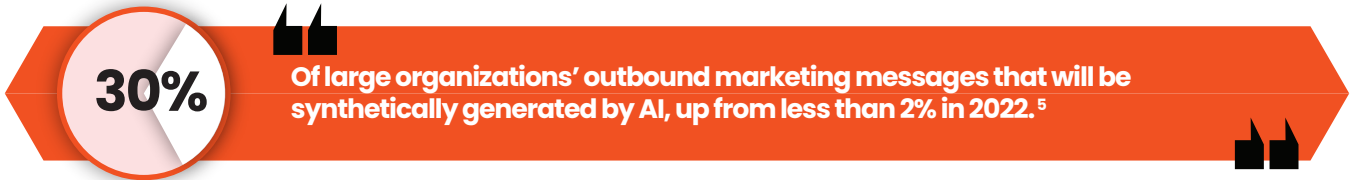
USE CASES FOR GENERATIVE AI

Generative AI tools span chatbots, intelligent search tools, messaging applications, virtual assistants, and more. These tools can be built by enterprises, purchased as software as a service (SaaS) solutions, or developed by partners. Many enterprises will likely elect to work with partners, who can provide specialized data science and engineering expertise, as well as offer critical capabilities, such as pre-built data models, algorithms, and scalable architectures, to speed time to value.

1 — Michael Chui, Bryce Hall, Helen Mayhew, Alex Singla, and Alex Sukharevsky, The state of AI in 2022 – and a half decade in review, report, McKinsey, December 6, 2022, https://www.mckinsey.com/capabilities/quantumblack/our-insights/the-state-of-ai-in-2022-and-a-half-decade-in-review

2 — Jonathan Vanian and Kif Leswing, "ChatGPT and generative AI are booming, but the costs can be extraordinary," article, CNBC, March 13, 2023, https://www.cnbc.com/2023/03/13/chatgpt-and-generative-ai-are-booming-but-at-a-very-expensive-price.html

3 — Generative AI still requires guidance, in the form of initial and ongoing training on large-language models. However, it is still a major step forward in the quest to create artificial general intelligence (AGI), "strong AI," which will be able to learn, understand, and act independently.

4 — Krystal Hu, "ChatGPT sets record for fastest-growing user base - analyst note," article, Reuters, February 2, 2023, https://www.reuters.com/technology/chatgpt-sets-record-fastest-growing-user-base-analyst-note-2023-02-01/

As the chart below indicates, generative AI tools can be used across industries, business functions, roles, and routine tasks. Enterprise teams will likely identify high-value use cases and then take a persona-based approach to automating processes. For example, quality teams that use ChatGPT will benefit from being able to identify defects in products in near-real-time, using insights to address production problems and prevent substandard goods from being shipped to customers. Supply chain teams will appreciate the opportunity to use generative AI to identify early warning signs of issues, such as changes in customer demand, so that they can take appropriate actions. And marketing teams can leverage these tools to dramatically improve email campaign effectiveness by auto-generating copy and imagery, A/B testing options, and deploying the highest-performing versions.

30% Of large organizations' outbound marketing messages that will be synthetically generated by AI, up from less than 2% in 2022. [5]

How Generative AI Will Transform

	Dialogue generation	Code generation	Text generation	Image generation	Image Interpretation	Slide content generation
Procurement			RFP Creation **(A)**			
Sales	Assist in customer sales **(R)**			Assist in Customer sales **(A)**		
Customer Support	Resolve customer queries **(All)**		Generate themes from customer Feedback		Qualify customer images forreturns processing **(C)**	
IT/ Engineering		Support Coding/ Debuging **(A)**	Generate synthetic data for training **(A)**	Create business presentation **(A)**		Creation of business presentation **(A)**
Marketing			Targeted e-mail campaigns **(RC)**	Targeted e-mail campaigns **(RC)**	Copare Promotional Images **(A)**	
Product development			Product Gamification **(C)**	Product Gamification **(C)**	Identify defects in products **(C)**	
Risk & Legal	Answer questions from complex documents **(A)**		Legal opinion generation **(A)**			
Supply chain			Disruptuon flagging **(A)**			

■ B2C/B2B Enterprise Architecture – with human Intervention

■ B2C Enterprise Architecture – with no human Intervention

R - Retail
A – All industries
C – CPG

5   Jackie Wiles, "Beyond ChatGPT: The Future of Generative AI for Enterprises," article, Gartner, January 26, 2023, https://www.gartner.com/en/articles/beyond-chatgpt-the-future-of-generative-ai-for-enterprises#

5 CHALLENGES TO SOLVE TO GET CHATGPT READY FOR PRIMETIME

ChatGPT has the potential to transform your customer experience if you can solve five critical challenges: enabling personalization, removing hallucination, applying business rules, ensuring compliance, and improving security.

Enterprises can implement two different foundational architectures that use ChatGPT to enable some or all of the generative AI-enabled use cases presented above. These architectures can be customized to solve enterprise teams' unique challenges and realize rapid value for customers.

So, what are some of the roadblocks or risks to implementing generative AI – and how can they be mitigated?

ChatGPT

1

ChatGPT doesn't personalize messages

Current generative AI tools can't personalize messages, yet personalization is key to driving product and service sales, increasing per-purchase spending, gaining repeat sales, and enhancing customer loyalty. Companies that are growth leaders gain 40 percent more revenue from personalization than less nimble peers.[6]

To date, two-thirds (63 percent) of marketers have struggled to master personalization, due to an inability to scale AI and machine learning (ML) to achieve customer acquisition and retention goals. In fact, just 17 percent are using AI/ML across their marketing function.[7] So, a tool that could combine personalization and AI would be a magic bullet for marketing. Marketers need enterprise-class generative AI technology to be able to personalize names, imagery, offers, product recommendations based on recent purchases, and cart abandonment messages.

2

ChatGPT hallucinates content

Generative AI solutions use prompts and leverage past learning to create content. This means that they fill in the gaps with content learned from statistical patterns, often "hallucinating" information that isn't true. For a corporate strategy deck or request for proposal, this might mean creating goals or tactics that aren't desired or offering services that aren't in scope. And for marketing content, it might mean describing product ingredients or discounts that don't exist. To leverage generative AI and scale it across customer segments and use cases, enterprises need to be able to identify and remove this erroneous content before it reaches users and approvers or is distributed to customers.

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6 The value of getting personalization right—or wrong—is multiplying," article, McKinsey, November 12, 2021, https://www.mckinsey.com/capabilities/growth-market-ing-and-sales/our-insights/the-value-of-getting-personalization-right-or-wrong-is-multiplying

7 "Gartner Says 63% of Digital Marketing Leaders Still Struggle with Personalization, Yet Only 17% Use AI and Machine Learning Across the Function," press release, Gartner, April 14, 2021, https://www.gartner.com/en/newsroom/press-releases/-gartner-says-63--of-digital-marketing-leaders-still-struggle-wi

15%–20%

> Of content generated by ChatGPT is hallucinated. New "truth-checker" solutions are seeking to get error rates down to 5%. [8]

3

Generative AI can't apply business rules

Business rules streamline customer interactions. For example, customers who interact with contact centers often ask the same questions: how to access their accounts, what they owe, and how to troubleshoot common technical questions. Narrow AI chatbots have excelled at detecting these similarities and serving up approved answers.

Generative AI can't detect these commonalities and will create original responses to answer each question, creating customer confusion and introducing errors into interactions. An enterprise-grade technology architecture that combines a generative AI tool with the company's predefined business policies would help standardize these responses, providing consistent responses across customers.

4

Generative AI isn't able to ensure compliance

Customer-facing content typically goes through legal reviews, to ensure that imagery, text, offers, and promises comply with a company's legal, regulatory, and customer policies. For example, attorneys will scrub content that promises 100% performance guarantees, offers refunds without limitations, mentions customers that aren't referenceable, and more. This process protects companies from customer mishaps, regulatory censure and fines, and other types of business harm.

Generative AI can't create compliant content, as it doesn't understand these nuances. As a result, technology that leverages generative AI must embed legal guardrails to identify and remove non-compliant content before it is distributed or used publicly.

5

Ungoverned use of ChatGPT is creating security risks

ChatGPT use is a fascinating case study in what happens when individuals aren't checked by security policies. Already a security vendor has blocked 4.2 percent of employee requests to input confidential information, client data, source code, or regulated information into ChatGPT. One executive even cut and pasted a 2023 corporate strategy document into ChatGPT and asked it to produce a presentation.[9] Leaders know that all of this information gets synthesized by the widely available platform, opening the door to multiple risks, including data exposure and loss of intellectytual property.

Enterprise data and IT teams can mitigate these issues by segmenting information: sending sensitive content to domain chatbots, which are guarded by security controls and systems, and routing general inquiries to ChatGPT.

8   Alex Woodie, "Hallucinations, plagiarism, and ChatGPT," article, AI News, March 15, 2023, https://www.artificialintelligence-news.com/2023/03/15/hallucinations-plagiarism-and-chatgpt/

9   Robert Lemos, "Employees Are Feeding Sensitive Biz Data to ChatGPT, Raising Security Fears," Dark Reading, March 7, 2023, https://www.darkreading.com/risk/employees-feeding-sensitive-business-data-chatgpt-raising-security-fears

EVALUATING NEW ARCHITECTURES FOR GENERATIVE AI

The use cases described in this paper include human-augmented B2C and B2B operations and fully automated B2C operations. To enable both types of use cases, enterprises will need two different architectures.

Both architectures leverage open-source generative AI tools like ChatGPT and proprietary Tredence innovations that guide processes from prompt input; to data synthesis; to content creation, cleaning, personalization, and governance. Let's take a closer look.

# USING CHATGPT TO STREAMLINE HUMAN-AUGMENTED B2C/B2C INTERACTIONS

As depicted in the diagram below, a marketing professional enters a prompt into an enterprise interface, using a predesigned questionnaire to guide content development, such as for an email campaign.

The employee enters key information, including the email directions, desired audience, product name, marketing claims and product characteristics, and any usage directions.
The architecture then leverages customer personas to enrich instructions with information that will appeal to this segment, providing these data models are available. The enhanced question is then sent via an external API to ChatGPT or any similar generative AI tool.

After the content is received, it is cleaned, formatted, and reviewed. A hallucinator remover strips away incorrect content. Clients typically run marketing campaigns and have a good understanding of what works for their companies and their client base. This understanding can be leveraged in the form of a model that learns content that both works well and also does not work well for the designated persona. This content is then included in the email as content personalization.

Next, a curator applies business rules and legal guardrails to ensure that the content will meet enterprise and regulatory standards. The marketing professional would then review and approve the resulting email before sending it to the customer base.

Tredence ChatGPT Powered B2C/B2B Enterprise Architecture – with Human Intervention
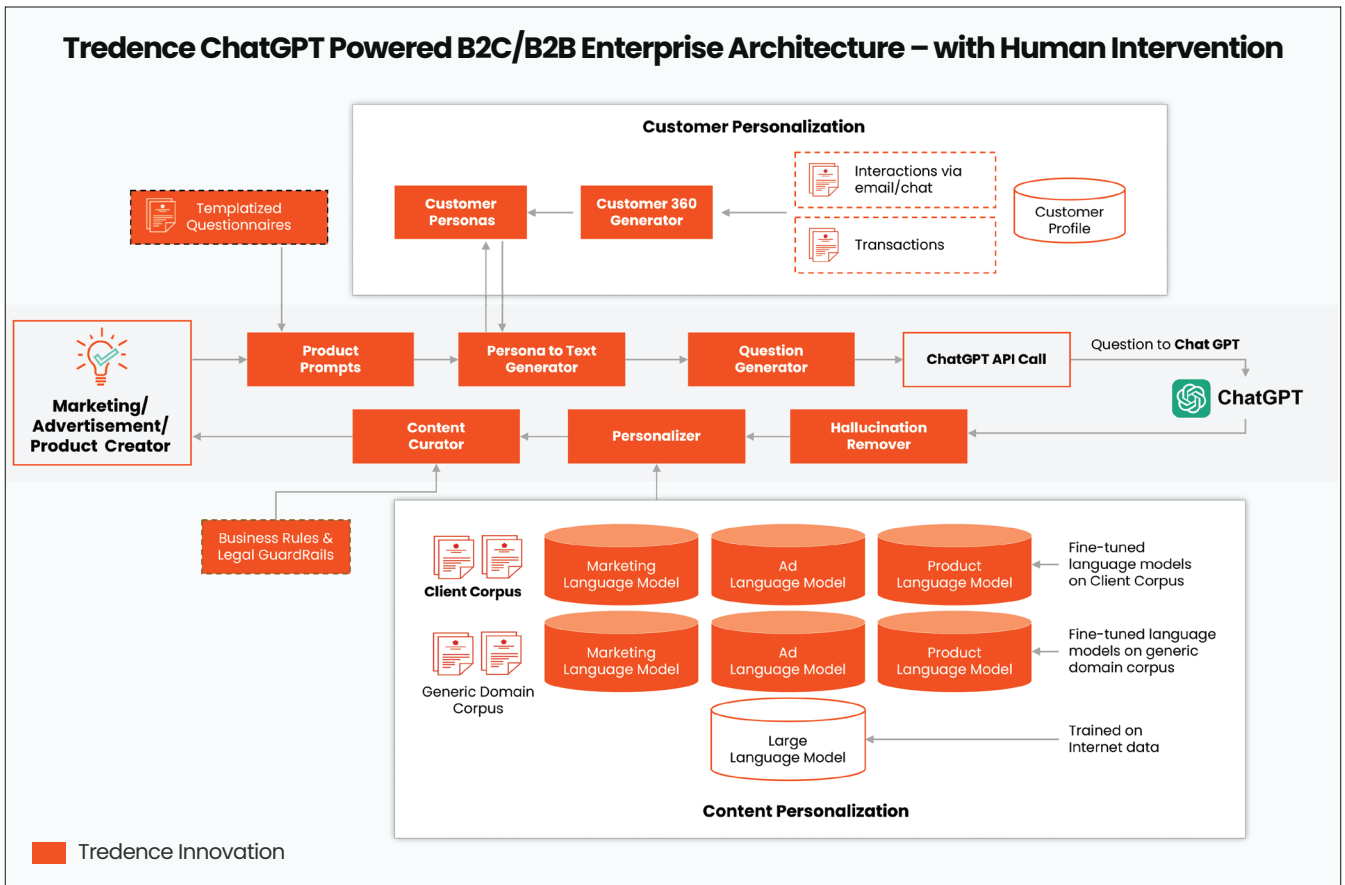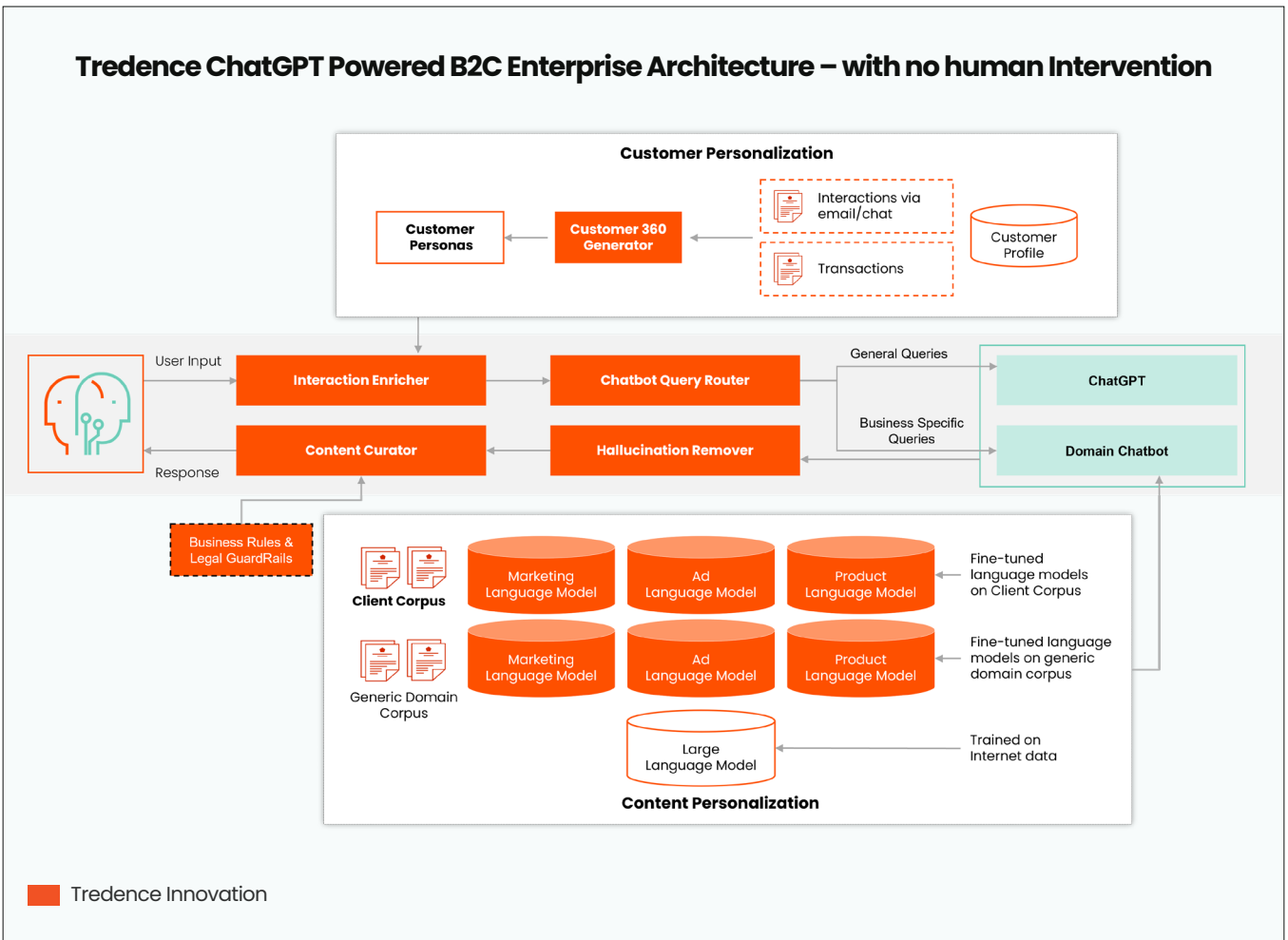
USING CHATGPT TO AUTOMATE B2C INTERACTIONS

So, what about interactions that can be fully automated? There are some important differences in how this fit-for-purpose technology architecture processes requests.

After a user enters a question, it is enriched with customer persona data, as before. However, the updated query is then routed one of two ways: to a domain chatbot that can personalize responses for business-specific content or via an external API to ChatGPT for routine questions. The domain chatbot personalizes content, while ChatGPT does not.

The resulting content is then scrubbed for errors and compared against business rules and guardrails before being automatically distributed to customers.

Tredence ChatGPT Powered B2C Enterprise Architecture – with no human Intervention

Customer Personalization

Customer Personas | Customer 360 Generator | Interactions via email/chat | Transactions | Customer Profile

User Input → Interaction Enricher → Chatbot Query Router → General Queries → ChatGPT
Response ← Content Curator ← Hallucination Remover ← Business Specific Queries → Domain Chatbot

Business Rules & Legal GuardRails

Client Corpus | Marketing Language Model | Ad Language Model | Product Language Model → Fine-tuned language models on Client Corpus

Generic Domain Corpus | Marketing Language Model | Ad Language Model | Product Language Model → Fine-tuned language models on generic domain corpus

Large Language Model → Trained on Internet data

Content Personalization

Tredence Innovation

WORK WITH TREDENCE TO OPERATIONALIZE CHATGPT AND REAP NEW BUSINESS VALUE

ChatGPT has the potential to transform your customer experience if you can solve five critical challenges: enabling personalization, removing hallucination, applying business rules, ensuring compliance, and improving security.

Use these foundational architectures to streamline both human-augmented and fully automated interactions, increasing team productivity, enhancing the customer experience, decreasing service interaction costs, and driving new product sales.

So, why choose Tredence as your partner?

Tredence has a proven history of deploying enterprise-wide data and customer data platforms to provide customers with greater visibility, new capabilities, and the ability to use predictive intelligence to optimize all aspects of their business. Our services and accelerators enable customers to achieve their goals with data, personalization, and analytics more rapidly, increasing ROI.

In addition, we have extensive expertise gained from successfully deploying and tuning LLMs to solve complex problems for our clients and have already implemented solutions using Azure Open AI for conversational AI solutions.

Want to know more about us?
Please visit: www.tredence.com

About Tredence Inc.

Tredence is a global data science solutions provider focused on solving the last mile problem in AI. The 'last mile' is the gap between insight creation and value realization. Tredence is a Great Place to Work-Certified and as a 'Leader' in the Forrester Wave: Customer Analytics Services. Tredence is 2000 + employees strong with offices in San Jose, FosterCity, Chicago, London, Toronto, and Bangalore, with the largest companies in retail, CPG, hi-tech, telecom, healthcare, travel, and industrials as clients.

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