Transforming Retail & Consumer Brands: Generative AI Cases and Potential

Executive Report

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Note from the founders

Dear Readers,

We are thrilled to launch our latest report, "Transforming with Generative AI: Retail & Consumer Brands Cases and Potential". This report provides insights into the latest advancements and enterprise adoption of Generative AI. It covers a wide spectrum of subjects, including generative AI landscape, innovative use cases, impactful case studies, and the transformative potential of Generative AI in retail and consumer brands.

In this report, we delve into over 50 distinct generative use cases tailored towards retail and consumer brands landscape. Additionally, we showcase more than 20 real-world case studies that exemplify the tangible benefits and possibilities that Generative AI brings to the forefront.

As technology continues to evolve, we recognize the importance of staying informed. Our report not only serves as a valuable source of information but also as a platform for sharing knowledge and fostering meaningful discussions. We welcome your feedback and comments as we continue to track and report on the latest developments in this exciting field.

Sincerely,

Senthil Nathan R
Co-founder & CEO

Tejas Gowda
Co-founder & Chief Data Scientist

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Executive Summary

In the first half of 2023, the field of Generative AI has experienced remarkable growth and integration. An impressive 11 major Large Language Models (LLMs) have **been unveiled, averaging two significant language models every month**. Industry giants such as Microsoft, Google, Amazon, and Nvidia have introduced advanced generative AI solutions tailored for enterprises. Additionally, leading consulting firms like BCG, Bain, and McKinsey have forged partnerships with OpenAI, enabling them to offer generative AI solutions to their clients.

A McKinsey report highlights the potential of generative AI to contribute an astounding $13.5 trillion in additional economic activity by 2030, equivalent to 14 percent of global GDP. Among the sectors, **retail and consumer goods are poised to reap substantial benefits, with a potential value capture of $2.9 trillion**. Esteemed brands including Walmart, Coca-Cola, Unilever, Nike, Adidas, and Tesco have already embraced Generative AI, focusing on **key areas such as Personalization, Content Creation, Innovation, and Optimization.**

Despite its promising prospects, a Microsoft survey revealed that **merely 16 percent of retail and consumer goods executives possess a well-defined generative AI strategy**. Notable obstacles to adoption encompass talent scarcity, data quality concerns, ethical considerations, and regulatory ambiguities.

To tap into the potential of generative AI and overcome obstacles, retail and consumer brands should **invest in Generative AI capabilities, cultivate collaborations, and explore versatile applications**. By nurturing talent and experimenting with use cases, they can foster innovation and enhance results, guiding them towards a future of exciting opportunities.

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Generative AI Glossary

Generative AI: Artificial intelligence models and algorithms designed to generate new content, such as images, texts, videos, or other data, that resembles human created content. It uses patterns and structures to generate output that resembles human creativity, often producing novel and diverse results.

Foundation Models: Large-scale neural network models designed to serve as the basis or core for various AI applications. They are pre-trained on massive datasets to learn language and other relevant patterns, making it easier to fine-tune them for specific tasks like language translation, sentiment analysis, or question answering.

Large Language Models (LLs): A subset of foundation models that are specifically designed to handle natural language processing tasks. They are massive neural network architectures capable of understanding and generating human language with impressive fluency and context-awareness.

Diffusion Models: Diffusion models are a class of models that simulate the process of generating complex data, like images or videos, by progressively adding details and elements. These models build up content in a step-by-step manner, allowing for more control and flexibility in the creative process, resulting in intricate and realistic outputs.

Generative adversarial networks (GANs): A type of generative AI model that consists of two neural networks that compete against each other. One network, the generator, is responsible for generating new data. The other network, the discriminator, is responsible for distinguishing between real data and generated data. GANs are a powerful tool for generating realistic images, text, and other creative content.

Transformers: Transformers is an AI architecture specifically designed for natural language processing and language generations tasks. They use patterns and relationships between words to handle tasks like translation, conversation, and summarization.

Tokens: A token, in the context of large language model, is the smallest indivisible unit of text. It can represent a single character, a word, or even a sub word, depending on the tokenization strategy used. .

Prompt Engineering: Prompt engineering involves crafting precise and effective instructions or queries for AI models. It's a process where the wording and structure of prompts are carefully designed to achieve desired outcomes from the model, optimizing its performance for specific tasks and improving the quality of generated responses.

Prompt Template: A set of instructions that are used to generate text or images from a generative AI model. Prompt templates can be used to specify the content, style, and tone of the output

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Generative AI Glossary Contd.

Zero Shot Learning: Zero-shot learning is a machine learning approach where a model can perform tasks it hasn't been explicitly trained on. By leveraging its understanding of related tasks and concepts, the model can generalize and make predictions in new scenarios, showcasing its ability to learn and adapt with minimal or no specific training data for the task at hand

Few Shot Learning: Few-shot learning involves training the large language model on a small number of examples (shots) of a new task. This enables the model to generalize and perform adequately on the task with limited training data.

LLM Finetuning: Fine-tuning is the process of refining a pre-trained language model for specific tasks or domains using additional task-specific data. By exposing the LLM to relevant examples and adjusting its parameters, fine-tuning tailors the model's language generation to produce more accurate and contextually appropriate outputs for targeted applications.

Chain of Thought Reasoning: This is a prompting technique that improves the reasoning capability of LLMs. It consists of providing the model with a sequence of prompts that guide the model's thinking process.

GPT-3: GPT-3 is a large language model (LLM) developed by OpenAI. It is a powerful tool for generating text, translating languages, writing different kinds of creative content, and answering your questions in an informative way.

DALL-E: DALL-E is a generative AI model developed by OpenAI. It can be used to create realistic images from text descriptions. For example, you could ask DALL-E to create an image of a cat wearing a hat, and it would generate a realistic image of a cat wearing a hat.

Hallucinations: When generative model produces outputs that are unrealistic or not present in the training data. It is a type of error where the model generates content that goes beyond what it has learned.

Vector Databases: Databases that store and handle vector representations of data, usually produced by various AI models. These vectors encode semantic information about the data and are used for efficient similarity searches, recommendation systems, and other data analysis tasks.

Multimodal AI: A type of AI that can process and understand information from different modalities, such as text, images, and audio. Multimodal AI is essential for generative AI, as it allows models to generate data that is consistent across different modalities.

BLEU Score: This is a metric that is used to measure the quality of text that is generated by a generative AI model. BLEU score is calculated by comparing the generated text to a reference text.

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Generative AI Use cases for Retail & Consumer Brands

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Generative AI Real world Case Studies

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About Tenzai

Tenzai is a Purpose-Driven AI company founded by data science leaders with the vision to empower organizations to realize the true potential of AI. By focusing on the true purpose, we go beyond the hype and democratize AI through solutions that are accessible, scalable and responsible.

Our unique approach to solution and services empowers fortune 1000 organizations to solve complex business challenges across key verticals -Retail, Consumer Product Goods, Financial Services and Healthcare through AI and Data Science.

Aside from delivering game-changing solutions to organizations, we collaborate with global universities and research institutions to bring to life new products and concepts in exponential technologies. Recently, we have been recognized as one of the 'Top 10 Big Data Analytics companies to watch out for globally'.

To know more about Tenzai and our Purpose-Driven AI differentiator, please visit www.tenz.ai

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