

ChatGPT: Generative AI for Retail

Gary Hawkins

March 21, 2023

Retail Mindsteps (def): Key developments that have caused dramatic and irreversible changes to paradigms and world views in the fast moving consumer goods retail industry.

Retail Mindsteps INNOVATION BRIEF



Gary Hawkins has lived his career ahead of the curve, putting him in the right place at the right time to lead the fast moving consumer goods retail industry into the future during a time of exponential technology growth using never-before-available capabilities to innovate the future of shopping.

His expansive industry view and early insight into disruptive technology makes him a sought-after keynote speaker at conferences in the U.S. and around the world. Hawkins is the author of *Building the Customer Specific Retail Enterprise*; *Customer Intelligence*; *Retail in the Age of I*, and *Bionic Retail*, along with the *Retail Mindsteps Innovation Briefs* and *White Papers*. Hawkins lives in Colorado with his wife Heather, and Remington, their Bernese Mountain Dog..

Hawkins can be reached at gary@garyhawkins.info.

ChatGPT: Generative AI for Retail3

The idea of artificial intelligence dates back over 2,000 years according to [Adrienne Mayor](#), a classics scholar at Stanford University, who has brought together her knowledge of Greek mythology with cutting edge technology to suggest some unusual insights.

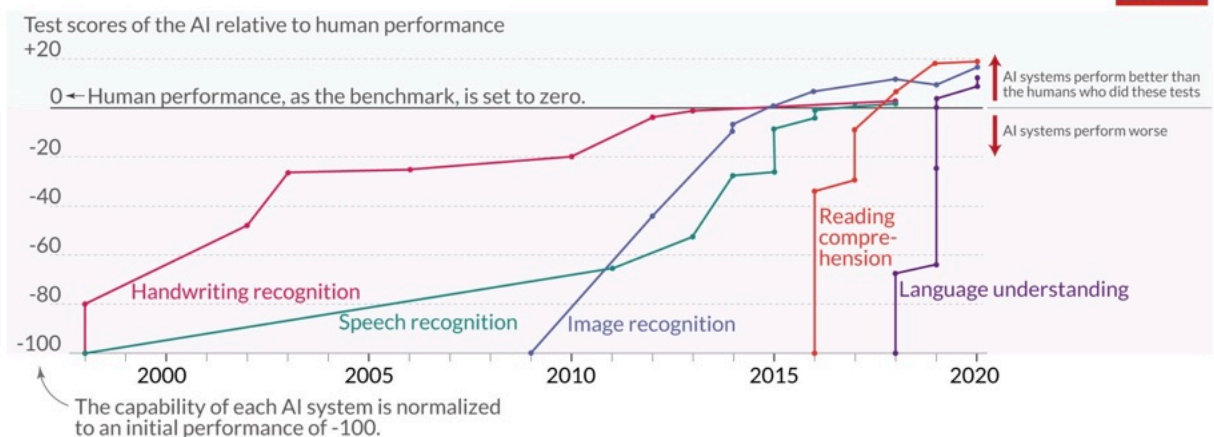
She found that one of the earliest mentions of artificial intelligence actually dates back to ancient times. The story of Talos, first mentioned around 700 B.C., is one of the first. "The myth describes Talos as a giant bronze man built by Hephaestus, the Greek god of invention and blacksmithing. Talos was commissioned by Zeus, the king of Greek gods, to protect the island of Crete from invaders. He marched around the island three times every day and hurled boulders at approaching enemy ships."

Mayor goes on: "The myth of Pandora, first described in Hesiod's Theogony, is another example of a mythical artificial being. Mayor said Hesiod's original described Pandora as an artificial, evil woman built by Hephaestus and sent to Earth on the orders of Zeus to punish humans for discovering fire."

In addition to creating Talos and Pandora, mythical Hephaestus made other self-moving objects, including a set of automated servants, who looked like women but were made of gold, Mayor said. According to Homer's recounting of the myth, Hephaestus gave these artificial women the gods' knowledge. Mayor argues that they could be considered an ancient mythical version of artificial intelligence.

Fast forward a few thousand years and AI systems are outperforming human beings in a growing number of areas like language understanding, reading comprehension, and image recognition.

Language and image recognition capabilities of AI systems have improved rapidly Our World in Data



Data source: Kiela et al. (2021) – Dynabench: Rethinking Benchmarking in NLP
OurWorldinData.org – Research and data to make progress against the world's largest problems.

Licensed under CC-BY by the author Max Roser

A prime example of this advancement is ChatGPT, which has been all over the news the past few months. While many people have (often unknowingly) interacted with AI driven systems like Siri and Alexa, the millions of people interacting with ChatGPT have driven awareness of the power of AI to a whole new level. Over one million people signed up to use ChatGPT in just five days.

The awareness and capability of ChatGPT and other generative AI solutions is driving other companies to adopt similar capabilities. Microsoft, an investor in OpenAI, the creator of ChatGPT, has integrated ChatGPT into its Bing search engine. Google is integrating its generative AI into its search engine, as is Duck Duck Go.

The retail industry has taken notice as companies like Instacart integrate ChatGPT into the search functions on their websites and online stores, enabling the shopper to ask more extensive queries and quickly get back contextual answers, not just a list of search responses. Other retailers are in pursuit.

Chat GPT is what is called a generative artificial intelligence. And to understand what that means, I went to the source, ChatGPT itself:

Hawkins: What is generative artificial intelligence?

ChatGPT: Generative artificial intelligence (AI) refers to a type of AI system that can generate original and novel outputs, such as images, videos, text, or even music, without being explicitly programmed to do so. These systems use deep learning algorithms and large datasets to learn the patterns and structure of the input data and then generate new content that is similar to the input data.

Generative AI has numerous applications, including generating realistic images for gaming and movie industries, creating personalized content for social media and e-commerce, and generating new drug molecules in the pharmaceutical industry.

Using ChatGPT to make search better is just the beginning. As ChatGPT's response indicates, there are numerous applications for this technology across industries. Software developers are using ChatGPT to write code while others are using it to write marketing content like press releases. ChatGPT even has potential in healthcare, helping summarize research and even in drug discovery, where ChatGPT is being used to do computation chemistry to develop new drug compounds.

Developing a generative AI model requires significant resources, both in technical talent and the ability to 'train' the model using expansive data sets. OpenAI used an estimated 45 terabytes of data to train ChatGPT.

Companies looking to use AI have the option of using an out-of-the-box generative AI solution like ChatGPT, or can fine tune an artificial intelligence system to accomplish specific tasks. One such generative technology is already at work in retail.

Traditional marketing personalization systems in retail use an offer pool, typically dozens to a few hundred offers that have been built by the marketing and merchandising departments. The personalization solution then often uses a Bayesian recommendation system based on calculated redemption probability to target some number of the promotions in the offer pool to each shopper.

Birdzi though takes a more expansive - and generative - approach, having trained its AI model on the 40,000 or so SKUs in the retailer's stores along with the purchasing data from hundreds of thousands of shoppers. Based on a strategic understanding of each shopper's individual complex profile, the Birdzi system generates a custom promotion including a shopper-specific discount, to provide personalized savings to each customer. Think of it as generating a customized, personalized front page ad for each shopper that is designed to grow each shopper's basket size, shopping frequency, retention over time, and engagement.

Having used ChatGPT in a number of sessions what has most struck me is how the interaction with the AI is almost conversational, almost like having a dialogue with a fellow human being via text. You ask a question, ChatGPT responds, you ask another question, and so on. It is very unlike search as we have known it. The first time I used ChatGPT I was blown away by the interaction - it was like there was an intelligent being on the other side that I was interacting with.

Bring this idea back around to retail. Whether realized or not, retailers are having ongoing conversations with their customers and the language being spoken is purchase behavior. You as a retailer provide a response - often the weekly ad - to the shopper's query of 'what do I need or want to buy'. And the shopper's response is his or her product purchases. More often than not the query and response are disconnected, each occurs without much, if any, benefit of the other's input or response... until generative AI.

In our Birdzi example, the system is effectively responding to the shopper's query with highly relevant responses - savings on products each individual shopper wants to buy. A key element that makes this approach so powerful is using the retailer's entire product catalog, not a limited number of vendor funded offers. It would be like ChatGPT being trained on only a gigabyte of data rather than on the 45 terabytes that OpenAI used.

Here's what should worry the vast majority of retailers: Imagine companies like Amazon, Walmart, and Kroger having the resources to develop ChatGPT-like capabilities across a multitude of processes.

Think about what a category manager does - making decisions about what products to carry, which to deselect, how to price the products, and how to promote. Imagine asking ChatGPT - or a similar AI - to make those decisions. Better, faster, more effective decisions while reducing resource costs.

Or the pharmacy using generative AI to provide each person information on interactions between their prescription medications and food purchases. Or dietitians using this kind of capability to generate customized meal plans for the shopper based on dietary needs, allergies, budgets, and more.

Generative AI is eye-opening and transformative, especially as a large number of people begin to use these kinds of capabilities. Every CEO, regardless of company size, should experience ChatGPT (go to openai.com and set up an account).

As I've written about before, AI technology is game-changing and ChatGPT is helping a growing number of retail executives understand just how powerful such technology can be.

As retailers increasingly deploy AI powered capabilities - especially capabilities that are tuned to the specific retailer's business - first-movers are in position to create growing performance gains vs their slower moving competitors... and slow movers will have an increasingly tough time catching up.

What's worrisome: AI is just getting started changing our world. And many executives do not yet understand just how fundamentally technology is changing the retail industry..