Tech Trends Merging the Physical and the Digital

CapTech

As technology finds new footholds in our everyday lives, consumers expect to interact seamlessly with brands in both physical and digital spaces.

To meet these expectations, industry leaders are uncovering novel opportunities to merge the physical and digital to make experiences smoother, faster, and more meaningful.

According to the IDC Spending Guide, global annual spending on digital transformation will hit $3.4 trillion by 2026. With so much capital cued up for technological investment, knowing precisely where to point it is key to maximizing its value.

It's not always easy to determine which trends have staying power, and which are built on hype alone. Trends worth investing in should be built on solid architectural principals, demonstrate growth, drive change, and shift paradigms. In studying the technological landscape and polling leaders across multiple industry verticals, we've identified three trends that fit the bill.

The Focused Use of Generative AI
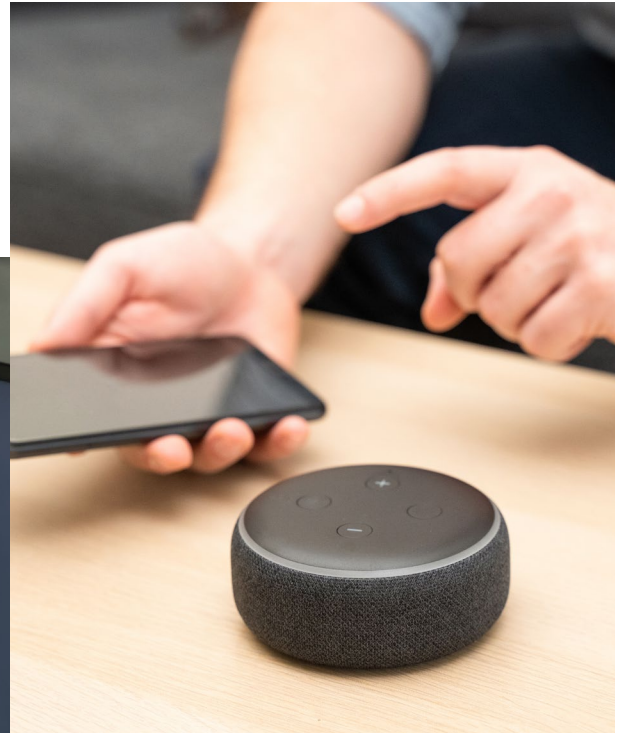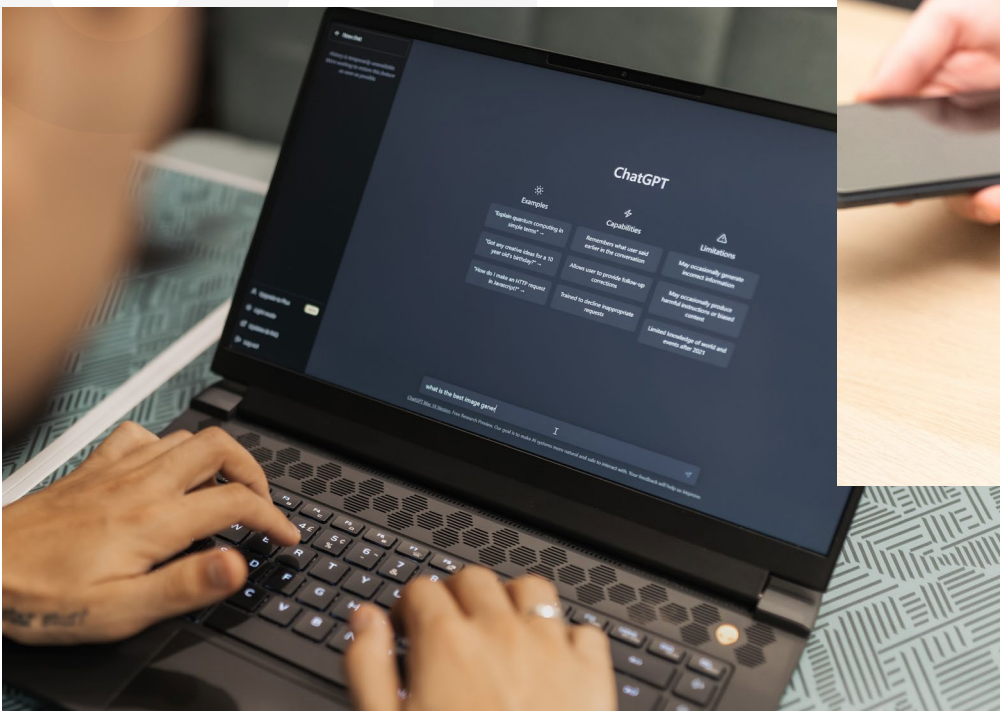
Satisfying the Turing Test, Generative AI models aren't simply merging the physical and digital, they're enabling customers to have authentic human-like interactions with robots.

Generative AI is trained on massive sets of data to produce new content such as images, text, videos, and sounds that can fool even the most tech-savvy into thinking they were molded by human hands. Companies across the globe are quickly recognizing Generative AI's lucrative potential and are beginning to incorporate it into their business strategies. But rather than tapping the technology for every possible use case that comes across their desk, leaders are focusing on implementing AI in areas where it can make the biggest impact.

Our Take

As a tool — albeit a mighty one — in a company's toolbox, Generative AI truly excels when used to augment the creative process or streamline workflows. From its brainstorming and summarizing capabilities to anomaly detection and causality determination, Generative AI can help creators break through creative blocks, radically reduce the number of steps in innumerable business processes, and better predict fraud and data breaches.

As a sole creative force, however, the overuse of Generative AI can dampen creativity and flood the market with increasingly indistinguishable writing, art, and design. Programs like ChatGPT or Stable Diffusion will leverage their learned models to produce something ostensibly new, but they're unable to truly create something from scratch, meaning the more content they produce without human fine-tuning, the less original content — and branded content in particular — will be.

That being said, with smart prompts and personal finesse, users can infuse their own creativity into AI-generated content. When smartly applied, Generate AI can add significant value.

Generative AI truly excels when used to augment the creative process or streamline workflows

Generative AI in Action

Across industries, many companies are using Generative AI not wherever they can, but wherever it makes sense to use and can add value.

1. OpenTable, the online restaurant reservation service, recently partnered with ChatGPT to provide bespoke restaurant recommendations via a new plugin. Users can ask ChatGPT questions like:

   Where's a highly reviewed brunch spot I can take my mom this Mother's Day in Charleston?

   ChatGPT will respond with suggestions accompanied by direct booking links on OpenTable. The service is currently available to ChatGPT Plus subscribers only, but will gradually roll out to more users after additional testing.

2. Large automotive retailer CarMax is using Azure's OpenAI Service to summarize massive amounts of car reviews into a few digestible sentences. So far, the company has successfully generated thousands of review summaries that, with a little fine-tuning, achieved an 80% editorial review approval rate.

3. Swedbank, a Swedish bank based in Stockholm, trained a deep learning-based generative model call Generative Adversarial Networks (GANs) to augment anomaly detection for fraud and abuse. Since these models can keep pace with the rapid evolution of modern fraud schemes, they can increase detection rates and reduce transaction costs incurred by financial crime.

Winning the Experience

In an increasingly fragmented market where consumer attention is harder and harder to maintain, adequate customer experiences are table stakes. Guiding users on a journey from awareness to conversion is no longer enough to endear them to your brand. To win customers, you must give consumers something different, and something exceptional.

Winning experiences are born from in-depth research and sculpted by 360 degrees of customer data. They anticipate customer needs and delight users with highly personalized solutions. And they do it through technology that is as advanced as it is invisible.

This fusion of research, data, and tech creates two types of experiences that win: immersive and frictionless.

Immersive Experiences

An immersive customer experience is built on multisensory interactions between a consumer and a brand. These interactions can take place on devices and wearables, through virtual reality (VR) or augmented reality (AR), or even in the natural world (holograms, smart mirrors, robot shop assistants).

TMRW Sports, which is building progressive approaches to sports, media, and entertainment, is trying to win fan experiences by launching TGL, the world's first professional virtual golf league. Co-founded by golf luminaries Tiger Woods and Rory McIlroy in partnership with the PGA Tour, TGL will tee off in a hybridized arena that merges virtual and live gameplay, complete with a gameplay simulator, a virtual green, and stadium technology.

Frictionless Experiences

A frictionless customer experience is the seamless integration of all technology facilitating a customer journey. Frictionless experiences understand, personalize, and streamline these journeys by eliminating any potential friction points so users can get from A to B as quickly and easily as possible.

Data and AI modeling are especially important to frictionless experiences, as without a three-dimensional picture of a customer's wants, needs, and behaviors, as well as the capability to extrapolate from that data to predict their i deal future state, brands can't anticipate potential friction and smoothly course correct.

The hotel industry, for example, has devised a way to deliver a frictionless experience that condenses the customer journey to a flick of the wrist. Similar to what theme parks like Disney World are doing with MagicBands, many hotels are supplying guests with RFID (radio frequency identification) bracelets that act as keycards, payment, access cards, and even pool towel tickets, for a safe, speedy, more reliable guest experience.

Immersive interactions can take place on devices and wearables, through virtual reality (VR) or augmented reality (AR), or even in the natural world (holograms, smart mirrors, robot shop assistants).

Sports venues are also investing in frictionless tech to immerse customers as painlessly as possible. Connected venues like the Chase Center in San Francisco now offer under-seat Aruba Wi-Fi 6E access points, app-based food delivery, and contactless payment to ensure fans are easily connected, engaged, and satisfied.

Where Immersive and Frictionless Meet

Though immersive and frictionless technologies can often be at odds when working in tandem, they can seamlessly merge the digital and physical for something even more elevated.

Take VR headsets, where the top-rated products are generally high-friction (i.e., tethered, cord-heavy, and cumbersome). The HTC Vive Pro 2, for instance, is as top-of-the-line as they come, but because it's high-friction, it's not as popular as many low-friction alternatives. Meta Quest 2, on the other hand, is arguably a weaker headset, but it's a better seller, in part because it's wireless.

Perhaps taking note of Meta Quest 2's popularity, the makers of the upcoming Valve Index 2 headset understand the appeal of a frictionless immersive technology like wireless VR headsets and will (as rumor has it) offer a tethered and wireless option for the new product.

We asked ChatGPT to briefly explain how Generative AI can be used to win customer experiences.

Generative AI can be used to provide personalized recommendations and personalized customer experiences tailored to each individual customer's needs. AI algorithms can analyze customer data such as purchase history and preferences to recommend the most relevant products and services, resulting in a more satisfying customer experience. Additionally, AI can be used to automate customer service tasks, such as responding to customer inquiries, to provide faster and more accurate customer support.

We're inclined to agree.

Sports venues are investing in frictionless tech to immerse customers as painlessly as possible.
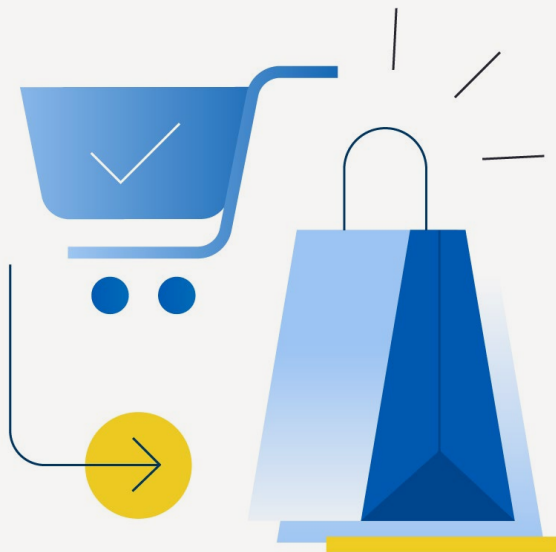
The Race for Engagement and Loyalty
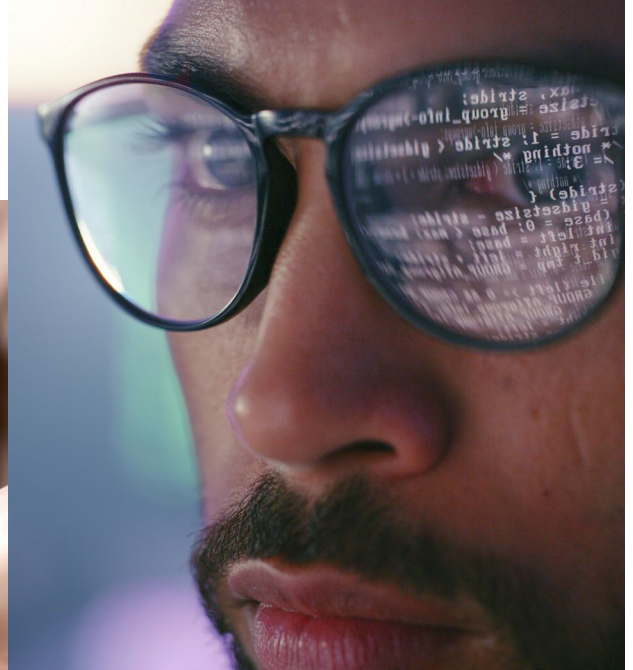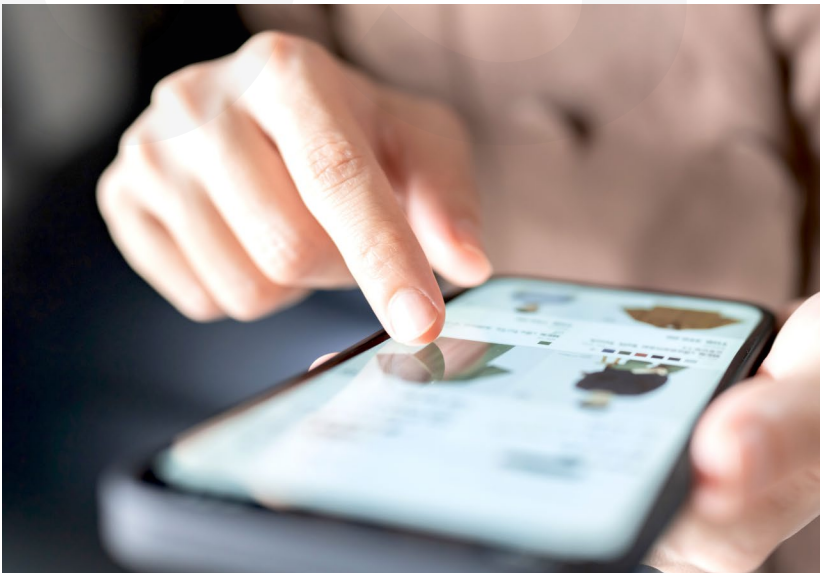
Fragmented markets also mean fragmented loyalty. With so many brands, channels, devices, and touchpoints pulling consumers in multiple directions, companies are in a race to engage customers and secure their loyalty before their heads have a chance to turn.

To win this race, companies are building upon technical innovations like Generative AI and immersive and frictionless technologies to merge the physical and the digital in a way that makes their product or service indispensable to their customers.

By harnessing the power of research, data, and AI modeling, we're able to better understand a customer's interest, pain points, and routines and adjust our products and services accordingly. Why would an Amazon consumer switch from an Echo to a competitor when Alexa always offers spot-on book recommendations and has their thermostat preferences on lock? Why would an Apple consumer ditch their Apple Watch when it remembers to track their sleep behavior and recommends their optimal bedtime?

When a digital offering is able to unobtrusively merge with and streamline a consumer's daily routine, why would they switch to something else?

We asked ChatGPT to explain how Generative AI can be used to capture consumer engagement and loyalty.

Generative AI can be used to analyze customer behavior such as purchase history, browsing history and engagement with customer service in order to identify potential opportunities to increase customer loyalty and engagement. This can help businesses better understand their customers and create personalized offers and experiences that will keep them engaged and loyal. For example, Generative AI can be used to provide personalized product recommendations, tailor marketing campaigns to customer interests, and reward customers for their loyalty.

Well said. Minimal fine-tuning required.

Who, Where, Why

Through customer journeys, 360 degrees of data, and predictive analytics, we can answer the three key questions to capturing a customer's loyalty: who they are, where they're found, and why they do what they do.

Answering the who, where, and why adds necessary context to customer data and uncovers opportunities to meaningfully connect. It's the difference between knowing a customer is searching for a chess set and knowing the chess set is for their father's 60th birthday. It's the difference between assuming a Facebook ad for a chess set might capture their interest and knowing the customer prefers reading product comparison articles from *Consumer Reports* and *Business Insider.*

When a brand offers you the right thing at the right time in the right way, remaining loyal is a no brainer.

New Dimensions of Customer Connection

By leveraging new technologies to merge the digital and the physical, companies are capable of not only digitizing numerous customer-facing interactions, but creating exceptional experiences that add new, more meaningful dimensions to the consumer-brand relationship, all in service of cracking age-old problems such as engagement, loyalty, and optimization.

As we've seen, Generative AI can be used to augment creative processes and streamline business processes. Immersive and frictionless technologies give brands the edge in an experience-saturated marketplace — especially when working in tandem. And indispensable experiences create lifelong customers.

Future-focused companies should concentrate their technology investments in these three areas to meet evolving consumer needs and set new standards for effectiveness and efficiency, convenience, and personalization.

Bree Basham
Principal, Customer Experience

Bree leads our Customer Experience practice, creating digital strategies and solutions using modern technologies to deliver meaningful and measurable experiences for our customers. She has served as a Creative Director for many omnichannel experiences within the retail space, as well as for a number of other industries that CapTech serves.

e: bbasham@captechconsulting.com
p: 704.604.1791

Brian Bischoff
Principal, Practice Areas & Services

Brian leads our business strategy for our practice areas and is a thought leader in digital technology strategy. He provides an objective perspective through the strategic analysis of current technology trends and designs and builds great experiences for our clients.

e: bbischoff@captechconsulting.com
p: 804.301.0397

Vinnie Schoenfelder
Principal, CTO

Vinnie is CapTech's Chief Technology Officer and plays a large role in helping define services, forge partnerships, and lead innovation for our clients. As a thought leader, he regularly helps clients solve their most complex business challenges.

e: vschoenfelder@captechconsulting.com
p: 804.647.3143

Let's do next together.

CapTech

CONNECT WITH US

@captech_consulting   @captech_tweets