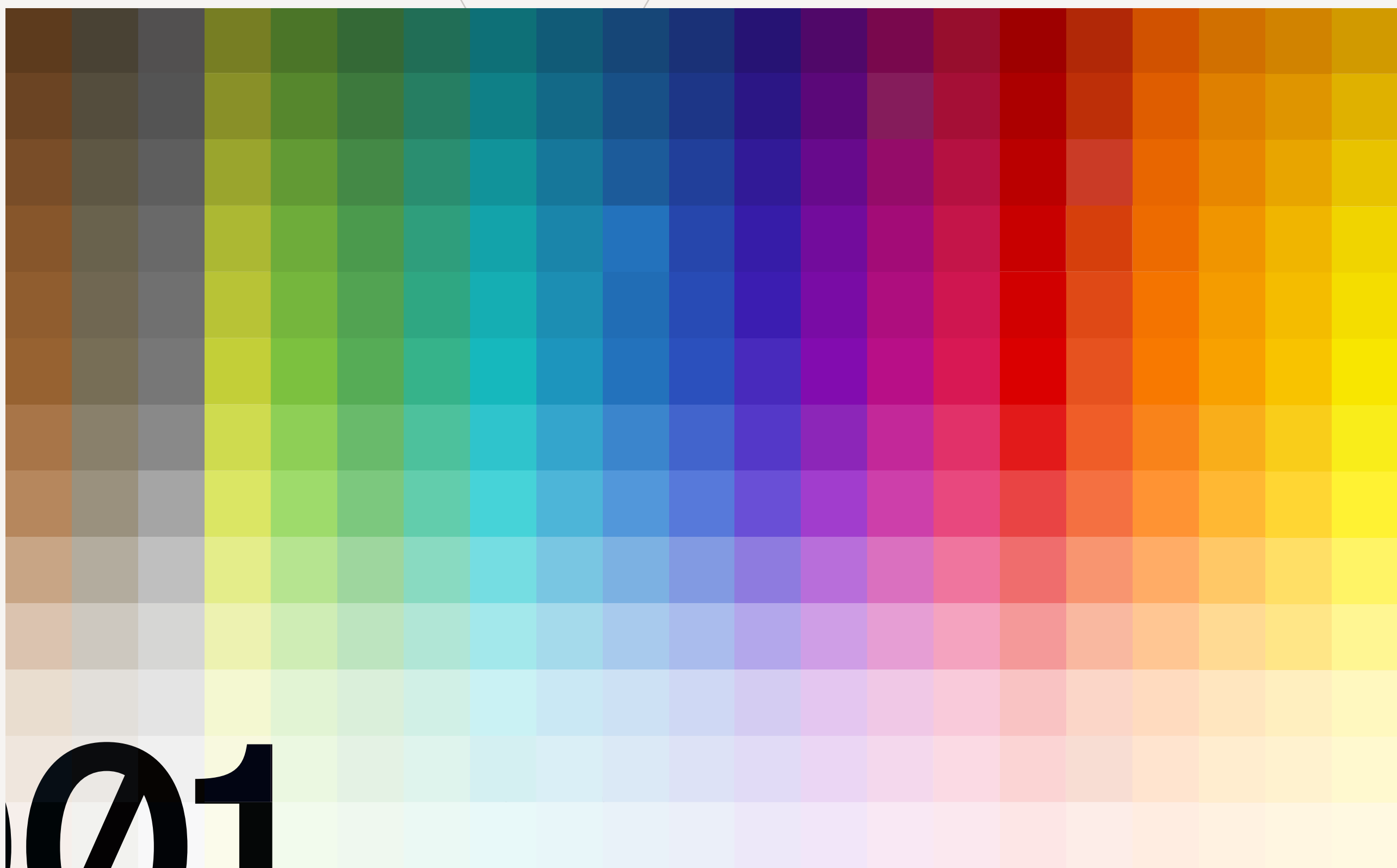
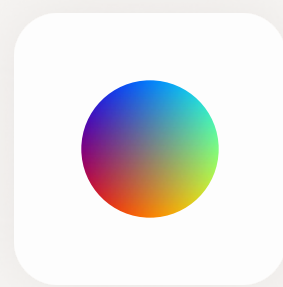


serendipity engines



dotdotdash



EXPERIMENT TEAM

EXPERIMENT CONCEPT dotdotdash RESEARCH & TEXT Nick Susi CREATIVE DIRECTION Duane King
STRATEGY & UX DESIGN Peter Kremer TECHNOLOGY Adam Paikowsky REPORT DESIGN AJ Minnis



Welcome to the Chromaverse.

Contents

- 001 Introduction
- 002 Current Paradigm:
The Hyperoptimization Trap
- 003 New Paradigm:
Serendipity Engines
- 004 Experiment:
Chromaverse
- 005 What's Next

Introduction

THE YEAR IS 2050.



The Consumer sits alone in their well-curated apartment. Every surface is covered with beautiful things, popular things. At least, that's what Alex told them. Alex, the artificial intelligence system, chimes from The Consumer's phone at 6:00pm, just as it did yesterday, and every day before that. It anticipates their every need. "You must be hungry. Your hand soap is running low. You'll want to look sharp for Friday's work event. Here are the best results for you." Chicken teriyaki, lemon verbena soap, a leather jacket, all flash on the screen in an instant. The Consumer nods. "Purchase." Ping. 6:01pm. Everything they own is perfect. But nothing feels... chosen. They try to remember, what is that missing feeling like **that thrill of the search?**

The year is 2025,

and at dotdash, we're
investigating a critical question:

What should the future of commerce
look and feel like in an AI-driven world?

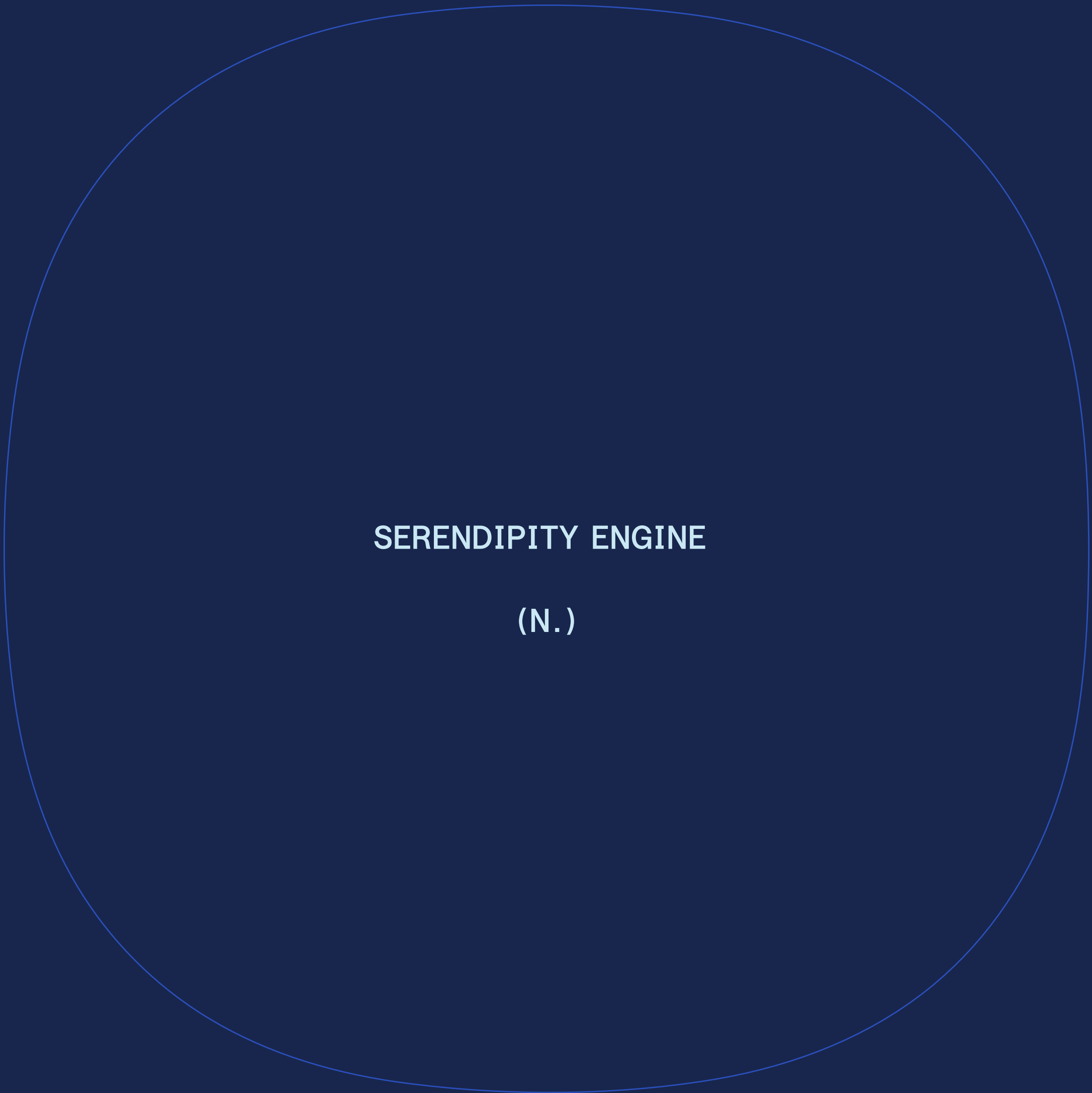
More importantly, what role should AI play?

The rising discourse claims AI will soon be everything, everywhere, all at once.

It will reshape what, where, how and why we buy – reciting recommendations, dictating the interfaces we use for shopping and shaping how we spend our time. A recent report by Citi refers to it as the coming “Do It For Me” Economy.

At dotdash, we believe AI shouldn't replace human curiosity in commerce.

We believe AI is a serendipity engine fueling the feeling of the search, not erasing it. It serves as a system that fosters unexpected, valuable, chance connections and discoveries by encouraging curious exploration over just goal-driven searches and deterministic outcomes.



SERENDIPITY ENGINE
(N.)

A system that fosters
unexpected, valuable, chance
connections and discoveries
by encouraging exploration
over just goal-driven searches
and deterministic outcomes.

That's why we built Chromaverse – an AI concierge prototype that helps people shop by color.



It scans catalogs by a shopper's color preferences, and surfaces relevant products and information through a fluid interface that adapts to the context of their needs. It goes beyond the traditional e-commerce experience.

It's an experiment in AI-driven commerce that isn't focused on convenience and ease, but rather ignites the feeling of serendipity and surprise that people love to get from a successful shopping experience.



The Hyper-Optimization Trap

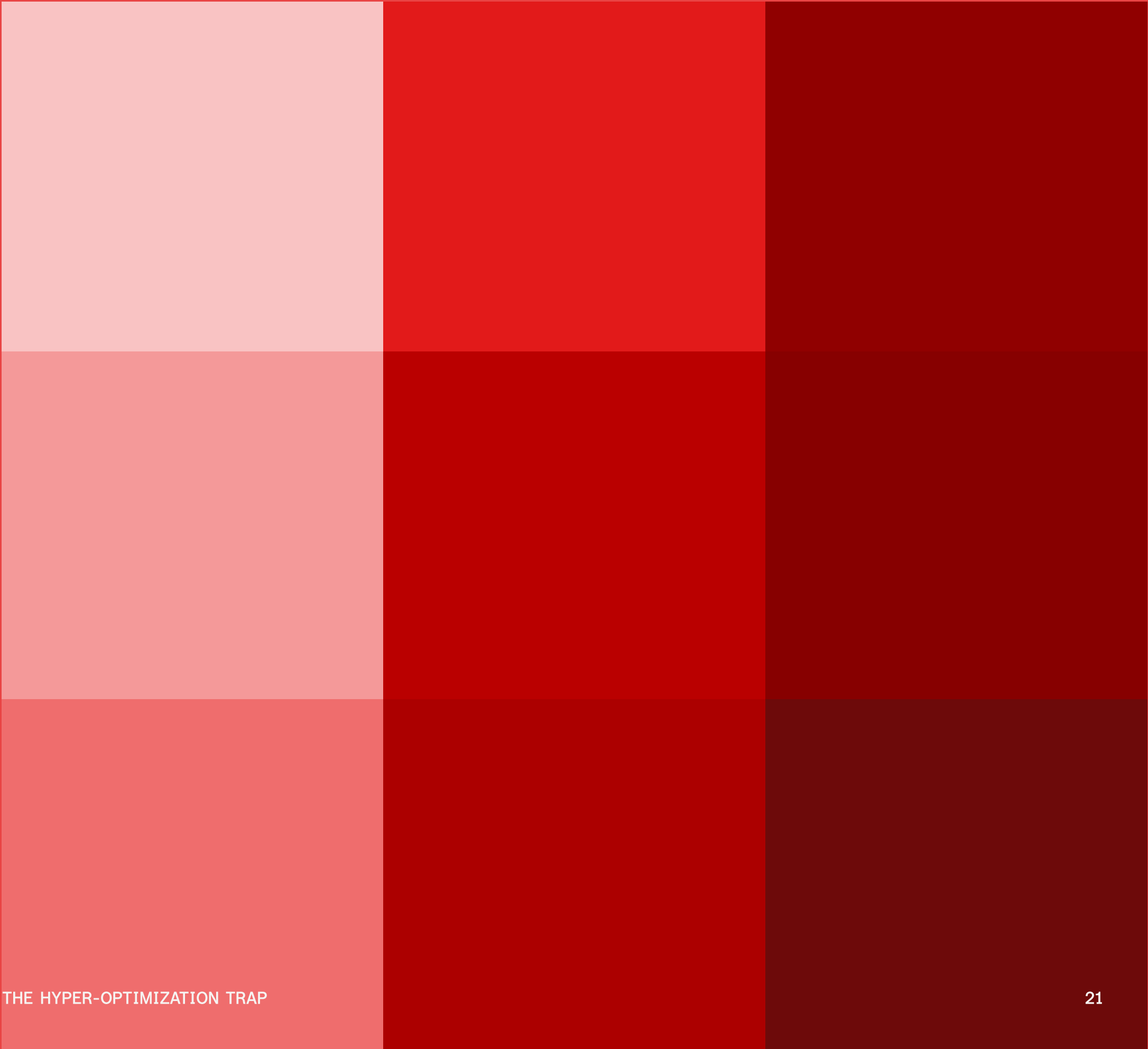
● CURRENT PARADIGM

The enemy of serendipity
is hyper-optimization.

Brands that chase a hyper-optimized e-commerce experience may find themselves with a hyper-homogenous outcome. There have never been more products and more marketplaces in history than today, and yet, the current state of e-commerce often looks and feels the same across categories, endlessly repeating familiar design patterns disguised as innovation. Algorithms now flatten unique recommendations, favoring fast and frictionless engagement and conversion over helping people chart their own journey of discovery, making e-commerce increasingly bland, risk-averse and predictable.

Why shop directly on a brand’s site when a person can get the same product and experience elsewhere?

What’s saved in time, may be lost in emotionally-connected, distinct experiences.



This is evident in both algorithmic recommendations and marketplaces.

According to a study in ZINE by cultural theorist Matt Klein, 62% of respondents want platforms like Instagram and Spotify to surface less popular recommendations that they may enjoy, even at the risk that they may not like them. Similarly, a Future Commerce study showed that 64% of respondents agree it's rare to come across an e-commerce website that feels unique or has unexpected functionality.

In other words, e-commerce is boring.

If brands are not careful, AI flooding into e-commerce may end up looking less like innovation and more like Amazonification 2.0.

Ever since the 2000s, Amazon's clean, intuitive and frictionless user experience and interface have become the standard of both brand approach and consumer expectation. Amazon set the paradigm, and most e-commerce sites followed suit. However, in chasing hyper-optimized speed, convenience and scale, many businesses have sacrificed a distinct brand, aesthetic and experience, leading to this homogenization. AI is poised to redefine the paradigm again, not just by integrating into existing e-commerce channels, but also by becoming the dominant e-commerce channel itself. Today's consumers don't buy everything, all the time, always from Amazon – just certain goods for certain moments.

What is the difference between how consumers want to search and shop for necessities and mass market goods like toilet paper, versus non-necessities and luxuries like clothing and furniture? That's the same lens we are using to anticipate and design for the next wave of e-commerce in an AI world.

Further, brands must consider today's largely negative perception and performance of e-commerce chatbots, which will shape how consumers experience AI in e-commerce.

E-commerce chatbots have been around since the 2010s, promising efficiency and better customer experience. However, a recent study by the AI contact center UJET showed that 80% of respondents felt e-commerce chatbots increased their frustration, and 78% had to escalate to a human anyway. Also, a recent Gartner study found that 64% of customers would prefer companies not use AI for support, mainly because it makes it harder to reach a real person. It's important to reflect – when are e-commerce chatbots actually being used by consumers, and when are they actually creating a positive experience? So while AI in e-commerce feels new, it's part of a longer lineage of conversational UI. It's not a silver bullet. Brands designing for operational efficiency without considering the real customer needs and perception of today risk introducing unnecessary frustration. Consumer acceptance will likely shift over time, but only if the benefits are clear and the experience actually feels enjoyable.

“E-commerce has been
guilty of the sea
of sameness.

MAI NGUYEN
CHIEF CLIENT OFFICER, DOTDOTDASH

I think this will happen with AI. There's this new technology that is focused on convenience and effectiveness, and everyone doubles down. I think businesses are going to mirror performance marketing, and lose brand, lose storytelling, lose narrative, as they hand everything over to something that they don't know how to harness. What ends up happening is brands have over-indexed so far, that we end up in this world of people who are missing visceral feelings.”

Serendipity Engines

NEW PARADIGM



Search Engines → Serendipity Engines

At the TechCrunch Disrupt conference in 2010, Google CEO Eric Schmidt took the stage to share his vision for the future of search. He called it a “Serendipity Engine.” Instead of just giving straight answers, he asked, what are people actually hoping to find when they search? It’s about connecting a person’s specific situation or context to their search, to lead to better results. A weather query isn’t always about the temperature. It might be about deciding what jacket to wear. Schmidt envisioned a future where search proactively and intuitively surfaces helpful, unexpected connections that people may not have considered to type. Since then, not only Google, but also marketplaces like Amazon, social media like TikTok and now AI have all expanded this vision of search even further.

Serendipity is the art of stumbling upon something valuable that was not part of the original quest.



The term was coined in 1754 by British writer and politician Horace Walpole after reading The Three Princes of Serendip, an adaptation of a 14th-century Indo-Persian Sufi fairy tale. In the fable, three princes embark on a journey to search for a lost camel they have never seen before. By picking up on small, contextual clues, they make a series of surprising and insightful discoveries. Walpole called it “accidents and sagacity” **chance, sharpened by wise observation.**

As generative AI and LLMs enter e-commerce, there's a common assumption by both businesses and consumers that AI should deliver precise, deterministic answers to queries.

That the outputs are the same every time from the same input. But these models are inherently probabilistic. They generate outputs based on patterns, not fixed rules. That means the same input can yield different results, which poses challenges in contexts where accuracy, consistency and reliability matter.

For brands that want to maintain a tightly controlled grip, this unpredictability can feel like too great a risk of eroding consumer trust.

As a result, many e-commerce experiences are either hyper-optimizing and hyper-homogenizing AI to eliminate variability, or avoiding the use of it altogether.

“Those scripted chatbots take so much time to go through this choose your own adventure type selection, but it doesn’t feel like an adventure. They don’t embrace the non-determinism of AI. They are scared of it, and then constrain it so much that it loses all of its personality and possibility.”

PETER KREMER
STRATEGY DIRECTOR,
DOTDOTDASH

Generative AI’s probabilistic nature should be viewed as its strength, not its liability.

It's not about giving the answer. It's about offering a possibility that may not be expected. Generative AI is great at randomness, surprise and discovery, eliciting the feeling, “I didn’t know I wanted that.” It is the perfect serendipity engine – a tool not to remove but to inject more emotional exploration and brand distinction, more happy accidents and sagacity, into one’s search.

“AI is not an answer
machine. It's a
possibility machine.”

DUANE KING
CREATIVE DIRECTOR, DOTDOTDASH

Right now, the design of AI interfaces are very question and answer based. However, that's a misnomer when it's a hallucinating machine that meaningfully, but randomly, tries to string bits of information that it knows together in a logical manner. Instead of being an answer or information retrieval machine, they should be collaborators, almost like a dynamic wall to play tennis against.”

AI hallucinations
are not flaws,

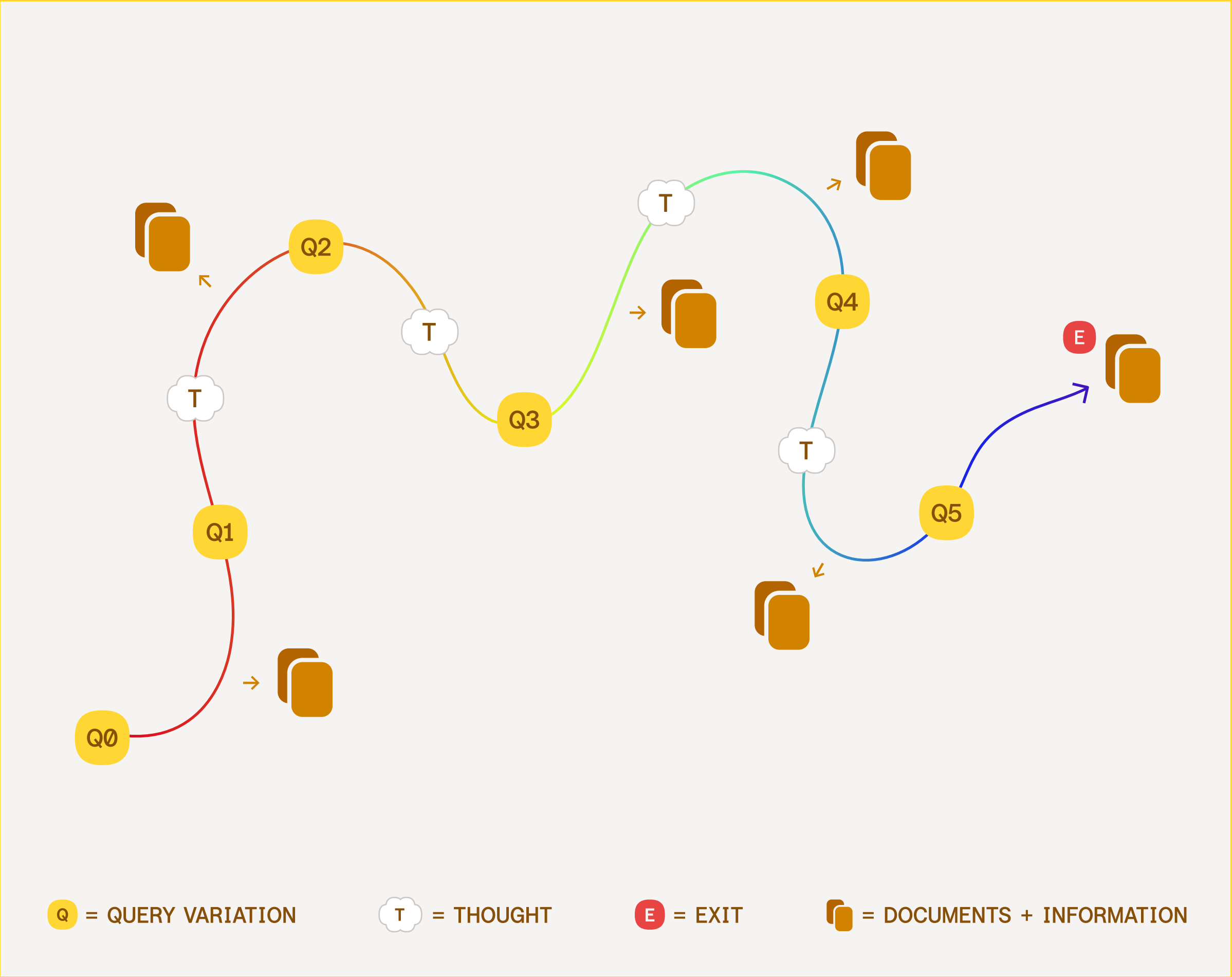


but fuel for
serendipity.

In fields like medicine, climate science and drug development, scientists are beginning to embrace them in some contexts to spark unexpected ideas and encourage exploration beyond conventional thinking. Researchers like MIT's James J. Collins have used them to invent novel antibiotics, while Nobel laureate David Baker credits AI hallucinations with helping design millions of synthetic proteins, leading to patents and biotech startups. Once seen as errors, hallucinations are starting to accelerate their search for breakthroughs.

Search isn't a straight line. It's a berrypicking trail.

In 1989, Dr. Marcia J. Bates of UCLA challenged the classic online search model with a simple truth: real people don't search once and stop. They wander, iterate and evolve, picking bits of information like berries, one at a time, from many different bushes as they unexpectedly spot more desirable berries that catch their eye. Instead of forcing users into static queries and rigid results, her “berrypicking” model proposed that search interfaces should reflect this natural behavior – non-linear, exploratory and ever-changing. As AI integrates into e-commerce, design systems need to adapt in real-time, surfacing diverse content and enabling discovery that mirrors how people actually search.



MARCIA J. BATES, 1989

Digital search experiences should feel like a playground, not a feed.

Launched in 2001, StumbleUpon was an excellent randomized discovery engine, letting people “stumble” onto websites matched to their interests with a single click. At its peak in the late 2000s and early 2010s, it had over 25 million users, generated a billion stumbles per month and drove more referral traffic than Facebook, YouTube, Reddit and Twitter. What made it special was its pure serendipity, surfacing niche content without followers, algorithms or explicit search queries. It felt like a magical, user-controlled journey through the open web. Ultimately, StumbleUpon shut down in 2018, struggling to survive the shift to mobile apps, closed platforms and ad-driven engagement. TikTok’s design took up this mantle to some degree, but AI-enabled e-commerce could truly bring back what made StumbleUpon great. With deeper context and semantic understanding, it can revive the joy of meaningful, curiosity-driven discovery and chance encounters, instead of algorithmically-dictated feeds – a smarter, more intentional form of stumbling.

If AI is to become an e-commerce guide for berrypicking and stumbling upon serendipitous discovery,



what should inspire its design? Who should be the guide?

As mentioned, too often, brands default to existing paradigms of e-commerce experiences and chatbots, falling into a trap for boredom and frustration. E-commerce can learn a lot from video games. In *The Legend of Zelda: Ocarina of Time*, Navi is Link's fairy companion and in-game guide. Short for "navigation," she is a distinct character, helping players progress with hints, reminders and locking onto important objects. She reacts to the environment, glowing different colors to highlight objects that might be of interest and reveal hidden interactive elements to encourage exploration. While helpful, Navi is also infamous for her constant interruptions, repetitive phrases like "Hey!" and "Listen!", and advice that can feel unhelpful or irrelevant. Still, she's a defining example of the strengths and pitfalls of assistive design. For AI in e-commerce, Navi offers clear lessons for designing for serendipity: be context-aware, timely and intuitive, but avoid being nagging and repetitive. Most importantly, always keep the player in control, whether they're following the main path or exploring side quests freely.

AI's assistive role in commerce-related search shouldn't feel like sales or customer service. It should feel like white glove service.



In luxury, human concierges act as lifestyle managers, anticipating needs and intent before it's expressed, remembering details and delivering ultra-personalized, high-touch experiences for specific interests and tastes, whether it's rare Patek Philippe watches or 19th-century Japanese pottery. They source lesser known and hard to find items through insider access and connections, as well as deep client knowledge, to surprise, delight and spark confidence in shoppers. This is the model AI should emulate in e-commerce. Not a generic chatbot reciting simple FAQs, but a context-aware, emotionally intelligent, proactive system – one that remembers preferences, understands aspirational identities and creates rich, continuous, personalized experiences. A true concierge model that spans platforms, categories and moments, built on deep trust, anticipation and the magic of meaningful serendipity, tailored to the user.

Ideally, the best AI concierges are like T-shaped people.

They combine broad knowledge with deep, focused expertise, connecting dots across disciplines while excelling in a specific domain. In e-commerce, that means more than scraping the entire internet only to return chaotic randomness. AI is only as good as the data behind it. Broad, bland inputs lead to generic outputs. To deliver the most relevant, serendipitous outcomes, an AI concierge needs curated, high-quality and context-rich data – designed for a clear purpose. Like a great human concierge, every AI concierge should be tailored and fine-tuned for specific tasks, contexts and tastes.

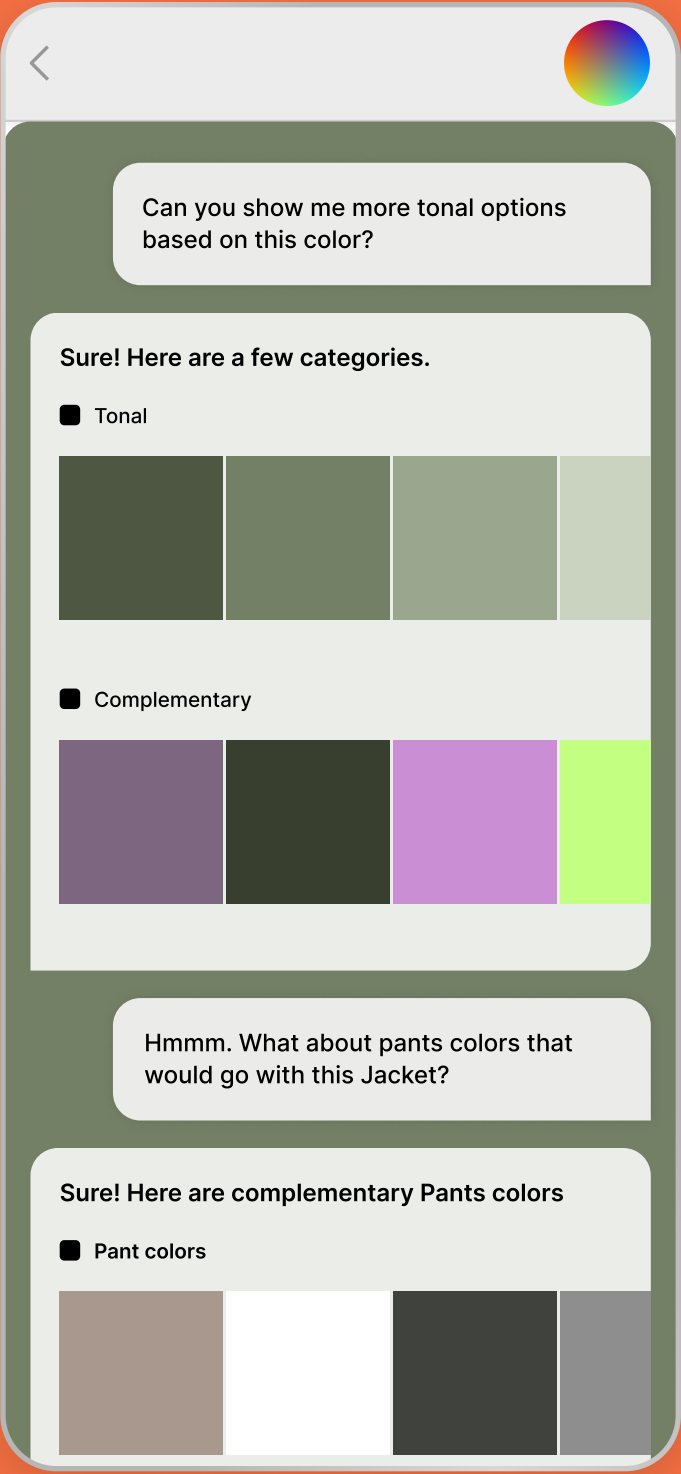
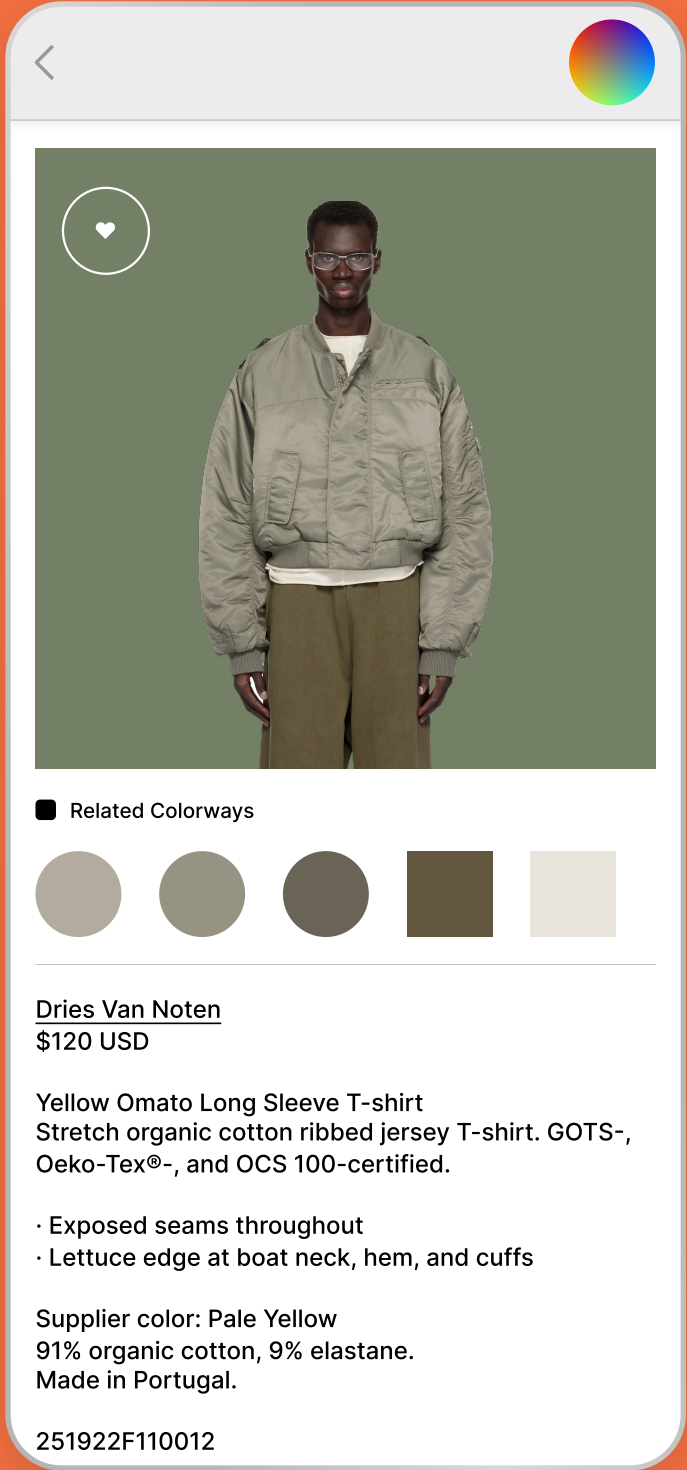
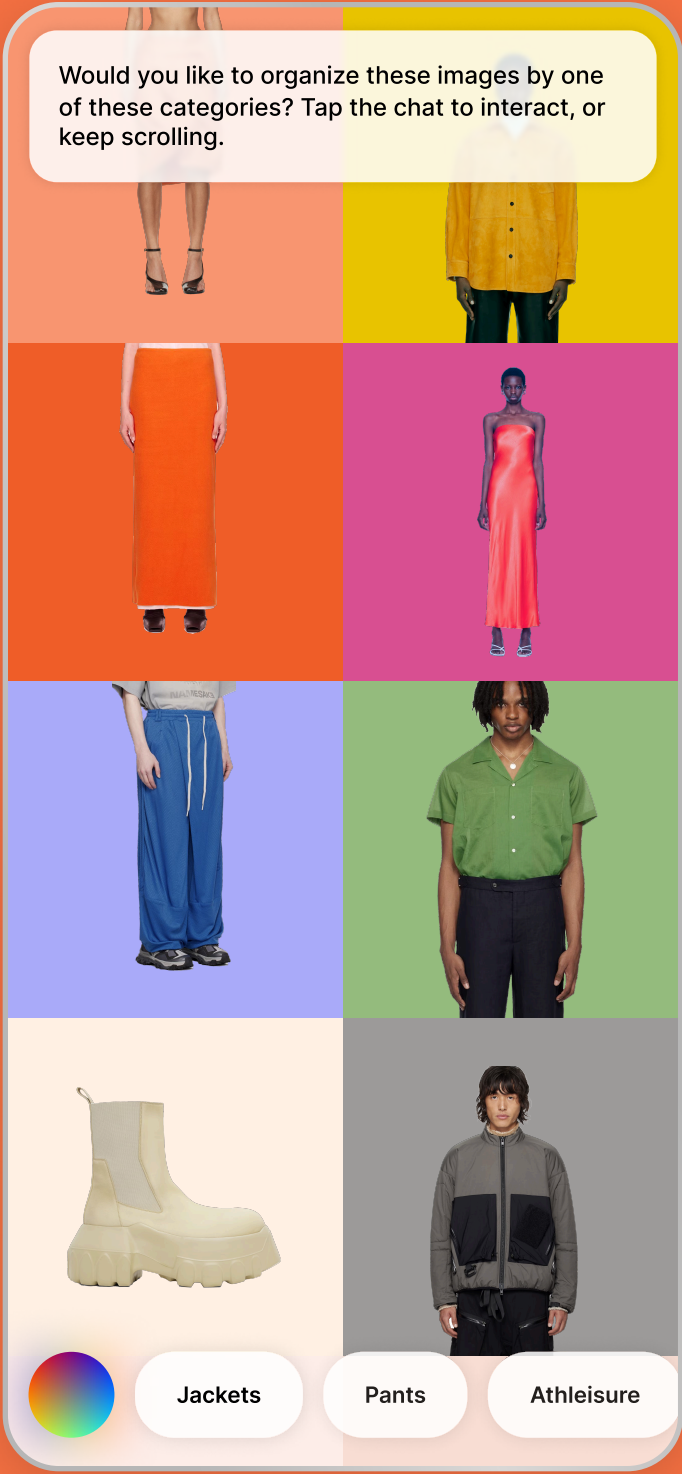
Chromaverse

● EXPERIMENT



All of these insights informed dotdotdash's creation of Chromaverse — a serendipity engine for discovering and buying a person's next favorite clothing item by color.

It's a T-shaped color concierge, blending deep color theory and expertise with a curated fashion catalog. Our color preferences are deeply personal and meaningful, and reflective of our individual and collective identities. Chromaverse offers personalized guidance based on a person's unique color and style preferences, not just for their main search, but with gentle nudges toward unexpected paths and side quests in fashion and color. It invites nonlinear exploration and discovery, powered by happy accidents and sagacity.



Design Principles for Serendipity Engines

Answers	→	Possibilities
Static	→	Adaptive
Utilitarian	→	Playful
One-Size-Fits-All	→	Personalized
Interruptive	→	Anticipatory
Mass-Market	→	Curated
Dictating	→	Empowering

Our explorations shaped the design principles of our prototype, imagining AI and e-commerce beyond hyper-optimized homogeneity and conventional chatbots, toward a more distinct, future paradigm.

ANSWERS → POSSIBILITIES

Instead of typical color filters, Chromaverse transforms a simple color query into an open journey, exploring the interplay between how shades and styles mix, match and clash.

STATIC → ADAPTIVE

Chromaverse blends visual browsing, conversational UI and PDPs into one fluid, responsive interface. It adapts to a person's intent in a nonlinear journey, offering possibilities without breaking context or sending them elsewhere. The corner avatar shifts shape and color based on their actions, while the nav bar toggles between styles and items that match their choices.

UTILITARIAN → PLAYFUL

Chromaverse isn't a dull, disconnected chatbot tucked in the corner. It is the heart of a distinct and memorable shopping experience, blending visually vibrant design with relatable conversation.

ONE-SIZE-FITS-ALL → PERSONALIZED

Chromaverse is tailored to a person's taste, surfacing the perfect shades and styles. Guide it through color chip selection, text prompts and real-world hue samples captured by their phone camera.

INTERRUPTIVE → ANTICIPATORY

Chromaverse offers subtle, real-time nudges to guide a person's curiosity and inspire trust, from color theory tips to deeper stories behind each clothing item, going far beyond the typical constraints of a PDP.

MASS-MARKET → CURATED

Chromaverse isn't a broad generalist or an over-specialized tool. It's T-shaped – trained on deep color theory and curated fashion archives, yet versatile enough to meet a person's needs.

Dictating → Empowering

Chromaverse invites, but it always keeps the shopper in charge, whether they choose to stay on their original path, or wander into new unexpected side quests.

What's Next

Chromaverse is just the start.

Chromaverse is just the start. Looking to the future, we continue to explore new paradigms of commerce and imagine additional features and capabilities of AI as a serendipity engine.

● PERSISTENT MEMORY

What if Chromaverse could remember a person’s style – their favorite colors, brands, even their birthday – unlocking smarter, more serendipitous discoveries every time they return?

Persistent memory would let Chromaverse retain a person’s preferences and context across sessions, enabling deeper personalization, less repetition and smarter adaptation over time. To implement, the system would integrate secure, account-based memory profiles and advanced tools like vector databases or knowledge graphs to store and retrieve their data.

● IRL CONNECTION

What if Chromaverse seamlessly bridged moments of serendipity between online and in-store?

Chromaverse could connect a person’s color and product preferences to local retail associates for more personalized recommendations and reserved items to try on in-store. In-store purchases and interactions could then feed back into Chromaverse to better refine future searches, suggestions and conversation. It could power a seamless, personalized journey across channels, boosting satisfaction, loyalty and sales.

● EXPANDED KNOWLEDGE

What if Chromaverse could spark serendipitous discoveries beyond fashion, tailored to a person’s exact tastes and the trends of the moment?

By expanding its dataset and capability, Chromaverse could unlock new categories like furniture, real-time awareness of trending aesthetics and deeper personalization. That would require more training and API integration into high-quality curated sources on color theory, interior design catalogs like Design Within Reach, live trend data from fashion and social media like DAZED and Pinterest, and even AI try-on apps like [Doji](#). It could even connect to a person’s social profiles to give Chromaverse a richer, multidimensional view of them. Doing so would help Chromaverse better reflect their interests, taste, communities and how they present themselves in professional vs casual contexts. It could model not just one version of them, but all their digital selves. A significant implementation hurdle is the absence of open AI protocols – the shared rules that would enable models and systems like Chromaverse to work seamlessly and interoperably with other platforms.

“By having an open set of standards, it would allow brands to more fluidly enter and exit different spaces and interact with platforms where their consumers are.

Without a standardized protocol, it's very costly for brands that want to show up in different places.

ADAM PAIKOWSKY
CHIEF INNOVATION OFFICER, DOTDOTDASH

But if all platforms had the same standards, and a brand wanted to show up on all of them, then they could build something once, and it would integrate with all of those places. For brands, this provides a helpful means for elastic scale and agnostic backends. For the customer, it provides the best, most seamless user experience.”

Whether building for 2025 or 2050 and beyond, brands must consider what e-commerce should look and feel like in an AI-driven world. AI will undoubtedly bring further hyper-optimized speed, convenience and scale, but it shouldn't be forced to be everything, everywhere, all at once. It risks creating hyper-homogenous experiences. The key is balance. Restraint is the winning strategy. Design for real customer needs and behavior. Use AI where it adds true value, and skip where it doesn't. Align it with what makes the brand distinct, as well as the right moments and channels. Experiment, but stay flexible.

Brands exploring the next paradigm should consider where AI can enhance the journey, not overcomplicate or erase it. Discovery should feel surprising, yet grounded in context, offering choice without overwhelming uncertainty. Stand out through distinct brand and product storytelling, then guide people into a seamless, familiar purchase flow. Always ask, when do customers want to save time, and when do they desire the thrill of the search?

The future
may not
need more
speed. It may
need more
serendipity.



Grey #9D9B9A

A full-body photograph of a man standing against a solid grey background. He is wearing a grey and black puffer jacket with a high collar and a black drawstring waist. He is also wearing black pants.

Brown #748066

A full-body photograph of a man standing against a solid brown background. He is wearing a brown, long-sleeved, button-down shirt with a colorful pattern. He is also wearing brown pants and a brown messenger bag.

Green #748066

A full-body photograph of a person standing against a solid green background. They are wearing green cargo pants with multiple pockets and a black drawstring waist. They are also wearing black sneakers.

Coral #F89570

A full-body photograph of a person standing against a solid coral background. They are wearing a coral-colored, wrap-style skirt with a large bow at the waist. They are also wearing black heels.

Denim Blue #617391

A full-body photograph of a man standing against a solid denim blue background. He is wearing a denim jacket over a patterned shirt.

Fuchsia #D85092

A full-body photograph of a Black woman standing against a solid fuchsia background. She is wearing a bright fuchsia, strapless, floor-length dress.

Cream

A photograph of a cream-colored, high-top boot with a thick, treaded sole. The boot is shown against a solid cream background.



dotdotdash is a global
experience innovation
agency, helping brands
create new paradigms.

Let's connect:
business@dotdotdash.io