
Vol. 2
Huge Moves™
2024

The Cover Story

Meet the cover artist, Refik Anadol, in our exclusive interview: “Portrait of an AI Artist” (p. 108). Experience his artwork in motion.

Masthead

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Contents

Subject	Article	Page
Artificial Intelligence	Achieving Alignment	10
Healthcare	The $4 Billion Bet	18
Banking	The Wallet Wars	26
Digital Sustainability	Betting on Net Zero	36
Semiconductors	What Happens When the Chips Are Down	44
Retail	Forget Bots: The AI Agents Are Coming!	52
Food	Eat More Plants	60
Travel	Coastal Culture	68
Social Media	The New Social Scene	78
Creativity	Creativity Is Capital	86
Places	The Capital of Creative Cool	96
Spaces	The Best Burnout Retreats for 2024	102
Product	Gadgets and Gizmos Galore!	106
Interview	Portrait of an AI Artist	108

Editor's Letter

Photography by Weston Wells

From the moment we published our first issue in 2022, it's been a wild ride. The business world has undergone dramatic transformations, and we've also had to up our game to remain relevant. So we raised the altitude of our storytelling platform.

Is it enough to celebrate the businesses, people and ideas making the kind of moves that will change the world for the better? Maybe… But what if we could take this one step further?

In Volume 2 of *Huge Moves* magazine, we don't just look at the who and what, or even why. With this issue, we take a very close look at how these **"10 Huge Moves"** are being made, despite daunting and difficult challenges. By taking a clear-eyed approach to data-driven stories, reported by veteran journalists and Huge's own credentialed subject matter experts, we've come across something that feels revelatory. It's alignment — not just for the bottom line, but for society as a whole.

Each feature narrative is a variation on this theme, telling a similar story about the resilience and ingenuity of people, companies and governments working together across borders both physical and digital. On page after page, the power and potential of collaboration shines through as the key to progress.

Take our cover art from one of the hottest AI artists on the scene today, Refik Anadol. These are never-before-published images from his latest project, "Winds of Yawanawá" (2023), which was co-created by young painters from the Yawanawá community, indigenous to the Brazilian Amazon. Together, using AI-driven "data as pigment," they've unveiled a stunning, multilayered artwork that responds to real-time weather data from the Amazon rainforest.

Launched as a limited NFT collection in July, it is a colorful homage to living in harmony with the natural world that also leverages new technology to benefit the people who inspired it. In **"Portrait of an AI Artist" (p. 108)**, you can hear directly from Anadol about this project, as well as his thoughts on blockchain and provenance in the age of AI, his true feelings about art critics — and what his next major global rainforest project is all about.

Of course, that's not all. This 116-page issue covers the biggest moves shaping the future of fintech, healthcare, retail, travel, social media and artificial intelligence.

In **"The $4 Billion Bet" (p. 18)**, esteemed journalist Chris Pomorski (*Vanity Fair*, *The New Yorker*) brings us the inside story behind Amazon's game-changing acquisition of One Medical, with insight from the founder himself. His story speaks to the fact that one business cannot revolutionize the consumer market on its own; rather, dramatic change comes from cross-sector collaboration.

To see how this is playing out on a global scale, skip over to **"What Happens When the Chips Are Down" (p. 44)**. In this feature, automotive journalist Patrick George (*The Verge*, *The New Republic*) not only gives us a clear understanding of the importance of semiconductors to our global economy, but just how far governments are willing to go to control them. (Don't miss Michael Schmidt, U.S. CHIPS program office director, on the record explaining the future implications of Biden's $280 billion CHIPS and Science Act.)

Ever wonder who's winning **"The Wallet Wars" (p. 26)**? Here, fintech's favorite reporter Mary Wisniewski dives into Apple's ever-expanding digital wallet, providing a glimpse of what's coming to the Western world of banking — one app that blends identity, banking and commerce. This move is so large it has invited regulatory scrutiny, and we've covered that, too.

In **"Coastal Culture" (p. 68)**, I look closely at how hospitality is approaching its sustainability goals. By canvassing everything from small family-owned businesses to the largest luxury conglomerates, I hope to illustrate where this is going, and who's investing in real change. For instance, in this story we're joined by Iris Lam, director of sustainability and global development at Mandarin Oriental Hotel Group, who sounds off on the relative strengths and weaknesses of environmental, social and corporate governance (ESG) in the luxury travel sector. Hers is a voice that cuts through the noise of a controversial topic.

In this issue, we're also breaking our own business news in **"Creativity Is Capital" (p. 86)** by introducing the latest data product from Huge: the Creative Capital Index. It's a remarkable AI-powered model that can measure a business' level of organizational creativity relative to its competition. Think of it as the S&P 500 index but for creativity and innovation, as told by one of its architects, global chief product officer Lisa De Bonis.

Taken together, the overarching theme becomes clear: Not one of our main characters has made their marks without collective buy-in, cooperation and partnership. But it's not easily earned. There is tension. There is conflict. You will find ideas that contradict each other, or that challenge tradition in such a groundbreaking way that there is no turning back.

It is a privilege to interview these business leaders at this tumultuous moment in time. To set down their stories in print is to give their ideas permanence. Ultimately, that's our aim: to honor and amplify not big egos, but big ideas.

I hope you'll have a gander and agree: These stories truly give us reasons to be hopeful about the future. Not only is alignment achievable — it is well worth the struggle. It's all right there in black, white and our personal brand favorite: magenta.

Happy reading,

Jennifer Leigh Parker
Editor in chief, Huge Moves

Contributors

Abigail Bassett

Abigail Bassett is an award-winning journalist and television producer whose work appears on CNN and in such publications as *Fast Company*, *Business Insider*, *The Verge* and *TechCrunch*. In **"The New Social Scene" (p. 78)**, Bassett covers the new players aiming to reinvent social media in a polarized world. Can civility stage a comeback?

20 24

Mary Holland

Mary is a South African writer based in New York. She frequently writes for *WSJ Magazine*, *Financial Times* and *Architectural Digest*. She is also the New York correspondent for *Monocle Magazine*. Brightening up our Out of Office section, her story **"The Capital of Creative Cool" (p. 96)** is a modern design lover's guide to Copenhagen.

Lisa De Bonis

Lisa De Bonis is the global chief product officer at Huge. With over 20 years' experience driving growth for clients, she has served as a judge at the Cannes Lions International Festival of Creativity, D&AD and the Drum Awards. For her *Huge Moves* debut, she offers us an inside look into the making of Huge's new Creative Capital Index in **"Creativity Is Capital" (p. 86)**.

Patrick George

Patrick George is a Brooklyn-based journalist who writes about the future of the automotive industry. His work appears in *The Atlantic*, *The Verge* and *The New Republic*, among other publications. He is also the co-host of the Vox Media podcast docuseries "Land of the Giants: The Tesla Shock Wave." His feature **"What Happens When the Chips Are Down" (p. 44)** places automakers in the center of the global struggle for semiconductor supremacy.

Chris Pomorski

North Carolina-based journalist Chris Pomorski writes for the world's top media outlets, including *The New Yorker*, *Vanity Fair*, *The New York Times Magazine*, *Bloomberg Businessweek*, and *The New Republic*. In **"The $4 Billion Bet" (p. 18)**, he brings us the inside story behind Amazon's game-changing acquisition of One Medical, with insight from the founder himself.

José Manuel Simián

José Manuel Simián is associate director of content strategy at Huge. He educated audiences on the topic of digital waste at SXSW 2022, and his writing on the matter is published in the *Journal of Digital & Social Media Marketing*. For his *Huge Moves* feature **"Betting on Net Zero" (p. 36)**, he helps readers understand how less content can be parlayed into more profits.

Luke Scanlon

Luke Scanlon is a U.K.-based lawyer at Pinsent Masons. He advises on legal and regulatory policies pertaining to artificial intelligence, including the implementation of responsible AI frameworks. On the subject of AI regulation, Scanlon has penned a powerful opinion piece titled **"Achieving Alignment" (p. 10)**, which calls for leadership, legal cooperation and comity among nations at this critical moment in time.

Mary Wisniewski

For more than a decade, Mary Wisniewski has covered digital banking and fintech for publications such as *American Banker*, the Associated Press and the *LA Times*. For her *Huge Moves* debut, Wisniewski dives into Apple's ever-expanding digital wallet, providing a glimpse of what's coming to the Western world of banking — one app that blends identity, banking and commerce. Don't miss who's winning **"The Wallet Wars" (p. 26)**.

Ian Volner

Ian Volner is a published author of numerous books about architecture and design. He regularly contributes articles to *The Wall Street Journal*, *Harper's* and *The New Yorker*, among other publications. His Out of Office guide for this issue is a dry, witty take on **"The Best Burnout Retreats for 2024."** If you need a laugh (and some seriously decadent travel inspiration), head immediately to **(p. 102)**.

Huge Moves for 2024

10

Our look at the most important people, businesses and ideas set to make a lasting impact on the world.

Achieving Alignment

The technological advancement of artificial intelligence is inevitable. Ensuring it is used for the betterment of society is not. For this, we need nothing short of leadership and comity among nations.

International bodies, governments and regulators across the world are grappling with the question of how best to regulate AI.

Central to many of these discussions are attempts to achieve alignment in two respects: with human interests, values and objectives, and with how the laws themselves operate across borders.

At a global level, this is no easy task. To date, there remain notable differences between proposed legal frameworks, even among those of the Group of Seven (G7), an intergovernmental forum that is now working together through the Hiroshima AI Process, a collective means for considering how AI can be regulated. To understand the scope of this challenge, I've outlined the key areas in which common ground is needed and the likely trajectory for the development of AI regulations that align with one another and the objectives of humanity overall.

Defining AI

For a legal framework to be effective, there must be certainty about what it is intended to regulate. Unfortunately, at this stage, there is a high level of divergence regarding what should fall within the scope of AI laws.

The European Union, through its draft of the AI Act, has issued a detailed prescriptive law intended to regulate all development and use of AI systems. In its initial draft, the European Commission, one of the EU's three key legislative bodies, defines AI systems to include not only machine-learning techniques but also all software that can for a set of human-defined objectives generate outputs using "logic-based techniques" or "search and optimization methods." The breadth of this definition would classify many existing software products used today as AI.

Other EU bodies involved in the legislative process have, however, put forward a more limited definition that parallels the approach the United Kingdom is taking.

The U.K. in its initial attempts to define AI has focused less on the prescriptive detail of the techniques or methods used and more on the behavior of the systems themselves.

For a system to be considered AI and therefore subject to future AI regulation, it must display two characteristics: the ability to act autonomously and to perform some level of adaptivity in response to training.

In the U.S., the National Institute of Standards and Technology (NIST), a standards-setting body, has taken somewhat of a middle-ground approach. Its definition of AI systems includes engineered or machine-based systems that can, for a given set of objectives, generate outputs. However, it restricts the category of software and systems that may be considered AI to those "designed to operate with varying levels of autonomy."

The White House's Office of Science and Technology Policy has taken yet another approach and in its Blueprint for an AI Bill of Rights distinguishes "automated systems" from "passive computing infrastructure." What differentiates the two is that automated systems influence or determine the outcome of decisions, make or aid decisions, inform policy implementation and/or collect data or observations; a passive computing infrastructure does not.

Various U.S. agencies — including the Civil Rights Division of the Department of Justice, the Federal Trade Commission, the Consumer Financial Protection Bureau and the Equal Employment Opportunity Commission — have similarly stated that automated systems, including those "used to automate workflows" fall within their regulatory authority, but there's no guarantee that their interpretations of that term (and how they apply it) will be consistent.

For the business community, achieving a common understanding of what will be subject to AI regulation is no academic exercise. If prescriptive requirements are introduced that restrict the use of AI, and there is no consensus on which software or systems are subject to those restrictions, the administrative cost that businesses will face in investigating and classifying systems to determine whether they are within or outside the scope of AI laws will be burdensome.

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The Issue of Enforcement

The ability to enforce AI laws is another hot-button issue. If enforcement mechanisms cannot be established that are effective across borders, attempts to restrict the development and use of AI in one country may have the unintended consequence of giving individuals or businesses located elsewhere an early-mover advantage, or cause unsafe practices to shift to locations difficult to govern.

The potential for a lack of consistent enforcement has led to a very real discussion about whether an international level of governance for AI can be established. Comparisons are being made to the use of nuclear power and the role intergovernmental organizations can take in governing, and, where necessary, restraining its development and use.

Unlike nuclear power and the restrictions that can be placed on the transport of uranium or the process of enrichment, the transfer of the raw materials and data required to build effective AI applications across borders is not easily prevented.

Developing an effective global enforcement system for AI is therefore problematic.

It is more likely that many countries will plan carefully for the jurisdictional reach of their own laws to extend beyond their geographical borders. In this regard, AI laws may include localization restrictions, and, for example, follow the path of U.S. securities laws that prevent crypto activity beyond U.S. borders in certain circumstances. Or they might mirror EU laws regarding personal data, which place significant restrictions on processing data outside the EU.

Who Should Have Authority?

A key decision for lawmakers is whether to restrict the use of AI to people and organizations that obtain a license from a statutory or regulatory authority. Generally, only authorized providers can give legal advice, provide financial services or build nuclear power plants — the reasoning goes that the same restrictions should apply to working with AI.

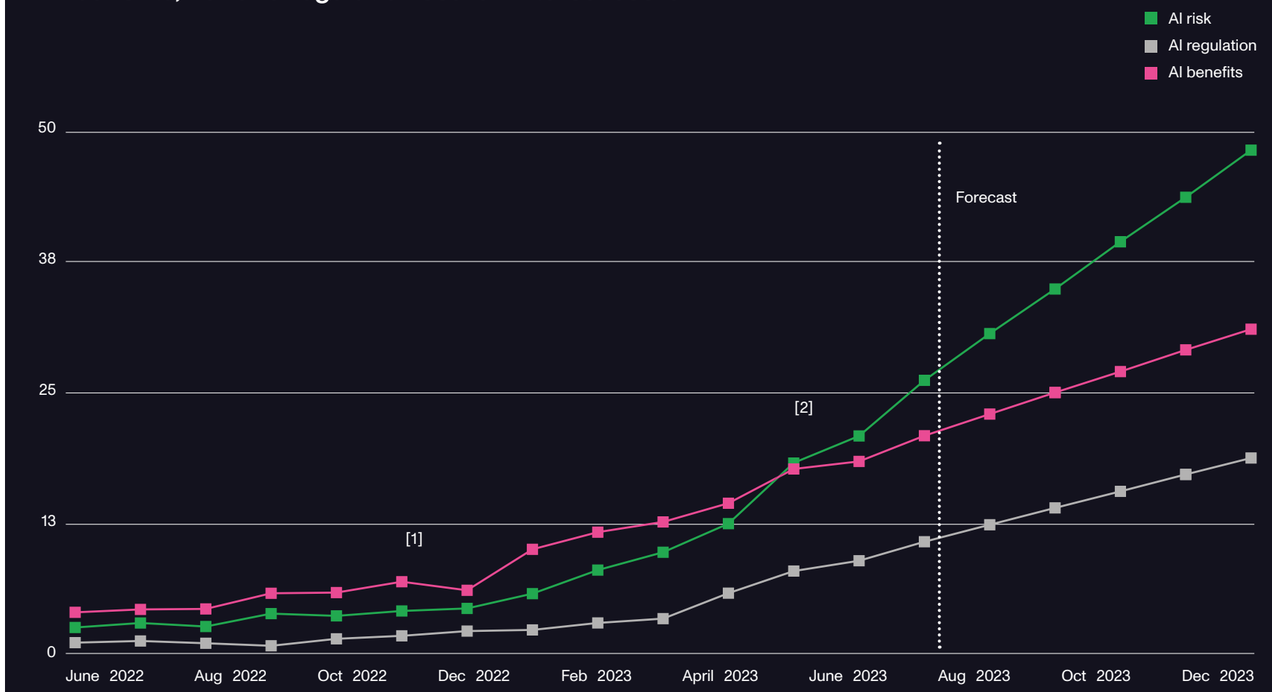
The EU has taken this approach and set out in its draft legislation prohibitions on the use of AI for high-risk purposes where detailed conformity assessments have not been passed. Before releasing an AI system, a business would need to engage in a process that requires a review of its quality-management system, technical documentation and, in some cases, source code and also give details of any third-party data sources it has used.

Calls for a similar approach are beginning to be heard in other places. For example, during the "Oversight of A.I.: Rules for Artificial Intelligence" hearing in May of this year, conducted by the U.S. Senate Judiciary Subcommittee on Privacy, Technology and the Law, multiple references were made to the need to restrict the use of AI in the U.S. to those who first obtain a license.

If licensing regimes are to be introduced in different jurisdictions, businesses operating across borders will need to pay close attention to the requirements of each jurisdiction. Significant regulatory enforcement fines may result if licensing requirements are not met.

Generally, only authorized providers can give legal advice, provide financial services or build nuclear power plants — the reasoning goes that the same restrictions should apply to working with AI.

AI benefits, risk and regulation search interest score



Sources: Google Trends, Huge LIVE analysis
[1] ChatGPT release
[2] "Statement on AI Risk." Center for AI Safety. www.safe.ai/statement-on-ai-risk

Huge LIVE analysis of Google search trends forecasts a continued correlation between AI benefits, risk and regulation. Search interest for AI risk spiked after the Center for AI safety released a one-sentence statement claiming AI might one day pose an existential threat to humanity.

Key Prohibitions and Protections

Whether or not strict licensing regimes are introduced, there is a high likelihood that many jurisdictions will take steps to ensure that a range of legal requirements for AI are set out more prescriptively in law. These requirements could range from protections against unfair bias and discrimination to complete prohibitions on activities deemed to be malicious or manipulative.

The EU's current approach to bias and discrimination requires organizations to take steps to ensure that unfair bias is addressed throughout the training, validation and testing of datasets. Throughout each of these stages, processes will be needed to demonstrate that an AI system does not rely on data that may lead to health or safety issues or discriminatory outcomes.

The EU's position also requires bias monitoring, detection and correction measures to be put in place, and for organizations to be particularly focused on preventing "automation bias" or overreliance on the output of AI systems. The risk of biased outputs resulting in negative feedback loops — that is, influencing future operations of an AI system — will also need to be managed.

Other jurisdictions are taking a similar approach to managing bias and discrimination and putting in place specific rules regarding transparency. There is a growing expectation that users be made aware of risks before they interact with AI directly — especially when AI is used in a manner that will directly impact their legal rights or financial interests.

A Clear Prescription

Every organization that uses an AI system to produce outputs needs to understand the extent to which the outputs it produces may be protected by intellectual property (IP) rights or result in the infringement on another business' or person's IP.

Courts have already begun to consider cases, such as those brought by Getty Images, where AI systems have generated outputs that are alleged to reproduce existing works protected by IP. (Though, at the time of this writing, the case law remains unsettled.)

There are also legal concerns regarding AI systems that generate identical results for two or more users, as this makes it difficult to determine which, or any user should have inherent rights to exploit the potential commercial value of the outputs created.

In some jurisdictions, including in the U.S., there is uncertainty as to whether outputs generated by AI can be owned by anyone at all.

Data protection regulators are considering how best to address instances of AI generating outputs that use personal data or private information without the consent of the individual to whom the data relates or another legal ground that allows for the data to be processed. In Italy, for example, the data protection authority briefly banned ChatGPT, and another AI company was fined 20 million euros for unlawful processing of personal information. In the U.S, at least one case is challenging the legality of using personal data in developing AI models.

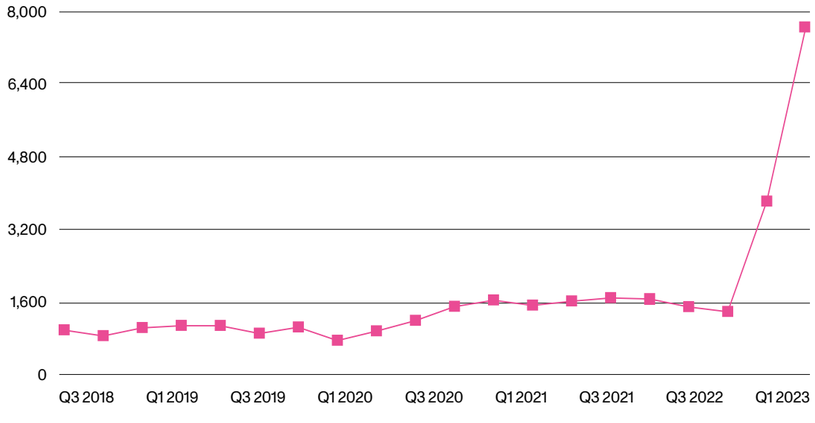
Related privacy concerns occur when trained large language models (LLMs) generate personal data by inference in response to user queries without the knowledge of the person to whom the data relates.

Perhaps even more alarming, and one of highest concern for lawmakers, is the extent to which AI systems can create misinformation at scale and negatively influence financial markets and political and social discussions, or otherwise result in harm. To counter this, lawmakers are considering how best to regulate the accuracy of data and AI models.

Existing legal protections against fraud, defamation, misleading conduct and those targeting misinformation online are being considered in the context of AI. In some jurisdictions, these protections may be strengthened, creating a greater liability risk for businesses that use AI without first putting in place accuracy and model control mechanisms that safeguard against the generation of misinformation.

AI's impact on advertising is also an area for concern and one that may be the subject of future direct regulation. The EU, for example, is taking the approach of prohibiting AI systems that deploy "subliminal techniques beyond a person's consciousness," which may distort a person's behavior and cause psychological harm.

Earnings call mentions of "AI" (2018-2023)



Source: CB Insights in partnership with SeekingAlpha gathers data from earnings call transcripts from 2,000 publicly traded companies, including the Fortune 500.

No mention is made by the EU, however, of how courts and regulators will determine whether a practice is a subliminal technique. As other regulation in the EU is already focusing on the use of "dark patterns," described as those that impair a person's ability to make autonomous and informed choices, it is likely that more attention will be given to the use of AI in advertising contexts, including for nudging, within choice architectures and overall messaging.

No Time to Waste

This is just a sample of the choices legislators and regulators need to make quickly — over the coming months, not years — to finalize their approaches, and use them to build cross-border cooperation. You cannot keep this technological genie in a bottle. There is no time to waste.

With the potential for AI to touch every aspect of business and our lives, it is imperative to actively engage with the policy discussion that is currently taking place. The success of these discussions will determine if regulatory frameworks can be built that allow life-changing AI use cases, such as those in medicine, to continue to evolve — while also implementing strong safeguards against harmful and destructive practices.

Ultimately, ethical and legal considerations must shape and temper the world's use of AI tools, rather than the other way around. Alignment is for our common good.

Luke Scanlon is a U.K.-based lawyer at Pinsent Masons. He advises on AI legal and regulatory policy and the implementation of responsible AI frameworks.

Words by: Chris Pomorski

Photos: Courtesy Getty Images, One Medical

The $4 Billion Bet

In the antiquated, labyrinthine system known as U.S. healthcare, one business aims to revolutionize the consumer market. Here, the inside story behind Amazon's acquisition of One Medical.

Long before he founded One Medical, the healthcare startup recently acquired by Amazon in a $3.9 billion deal widely expected to reshape the business of medicine, Tom X. Lee imagined that he might become an artist. But after graduating from Yale, Lee, who grew up in Seattle in a family of doctors, opted for what seemed like a more reliable career path. "It was harder to make a living in graphic design," Lee recalled last year. "So I ended up going into medicine."

He soon found, though, that working in healthcare did not conform to his expectations. As a medical student at the University of Washington and a resident at the Harvard-affiliated Brigham and Women's Hospital, in Boston, Lee became passionate about patient care. He was training to become an internist and saw the full spectrum of human infirmity, from anxiety to the last stages of terminal illness. But whether he was in a hospital, a clinic or a physician's office, the healthcare system, with its emphasis on volume, appeared designed to prevent doctors from doing their best work. "Our mission was to care for patients in a thoughtful manner, but what we were doing seemed antithetical to that," Lee has said. "I just started noticing dissonance with what we were doing from what we thought about why we had joined the profession."

The United States spends more on healthcare than any other nation in the world, but has worse outcomes than any other high-income country — the lowest life expectancy at birth and the highest rate of people with multiple chronic illnesses. The system is dangerously overburdened, with some 63% of physicians reporting symptoms of burnout and emergency room stays often exceeding two hours. Primary care, the most essential component of any functional healthcare system, is in crisis. General practitioners are paid much less than specialists, like orthopedists and dermatologists, and new doctors increasingly gravitate toward more remunerative fields. Ideally, a primary care physician should carry a roster of fewer than 1,000 patients, but many see well over 2,000 patients a year. According to the Association of American Medical Colleges, by 2034, the U.S. will face a shortage of as many as 48,000 primary care doctors.

David Blumenthal, formerly a primary care physician, Harvard Medical School professor and president of the health and social policy nonprofit the Commonwealth Fund, told me, "Obviously, I'm well connected, but I don't know if I could find someone for me or my wife if we needed new primary care physicians." Blumenthal went on, "Nobody, nobody is taking new patients. And I'm talking about Boston, which is a medical mecca in the world." For patients who are poorer, sicker and less well connected, finding access to primary care is more difficult still.

Lee had these systemic problems in mind when, after completing his residency, he enrolled at the Stanford Graduate School of Business, intent on learning the tradecraft of entrepreneurship and management that might allow him to create a more functional healthcare model. "I was so used to dealing with organs and bodies and people," he has said. "Then you get the concept of business, and it didn't make any sense to me when I first started. But then I figured it out."

With two classmates, Lee conceived his first company, Epocrates — a mobile medical reference app for physicians — as a student project in the late 1990s. Epocrates caught on, and Athenahealth acquired it for about $293 million in 2013. By then, One Medical, a small chain of primary care practices that emphasized accessibility and patient experience, had been up and running for six years and generating laudatory headlines. The *New York Times* dubbed it a more affordable twist on high-end concierge care: "a new model for primary care that aims to set a nationwide example."

"We know that at least doubling investment in primary care will result in huge benefits to health outcomes," Katherine Gergen Barnett, a family medicine practitioner and the vice chair of primary care innovation and transformation at Boston Medical Center, told me. "I see One Medical almost as a petri dish for: more investment in primary care equals better outcomes."

Beginning with a single location in San Francisco and quickly expanding across the country, the company drew lessons from the hospitality industry. Located primarily in urban centers, One Medical practices deployed a design palette that would not have been out of place in the coffee shops, spas and boutique hotels that often stood nearby. Their offices had a clean, modern look, and none of the back issues of *Highlights* or *Family Circle* frequently found in old-fashioned primary care waiting rooms. With the help of technology, Lee drastically reduced administrative costs and spent more on doctors and patients. One Medical physicians saw about 15 patients per day, not 30, and spent roughly half an hour with each one, rather than the more typical 10 to 15 minutes. Contrary to most concierge practices, One Medical accepted insurance, including Medicare. The membership fee, which is now $199 per year, comes with a mobile app that allows users to book same-day appointments, check medical records, request prescription refills and access providers 24 hours a day — including for basic diagnoses.

When Lee stepped down as CEO in 2017, One Medical had 60 offices nationally; today, it has 193, including in New York, Austin, Charlotte and Chicago, and major companies like SoulCycle use the service for their employees. At the time of its founding, interest in primary care from for-profit investors was limited. "Anyone we talked to said there's no way you can make primary care work — there's no margins," Lee once said. But One Medical eventually attracted more than $530 million in funding, including from Google Ventures and the Carlyle Group.

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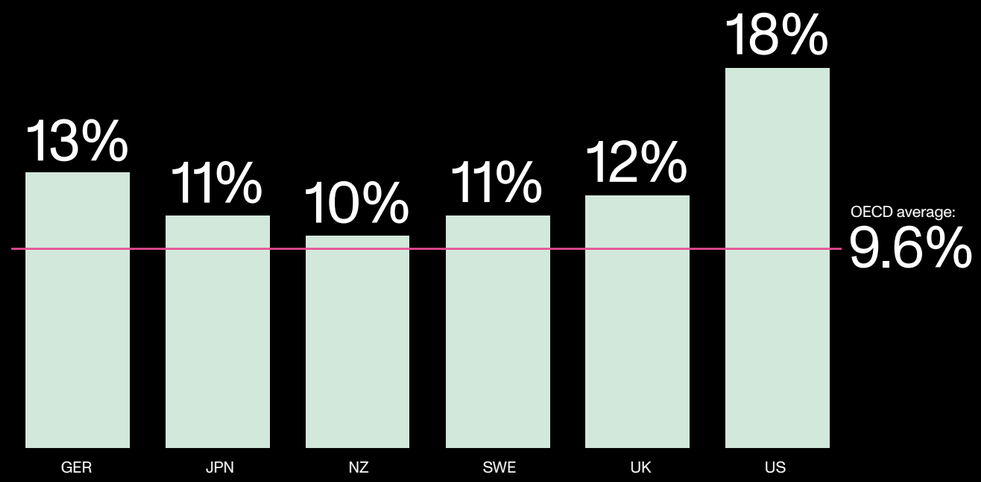
Corporate behemoths such as CVS and Walmart have lately made massive investments in primary care, too, and some industry analysts describe Amazon's acquisition of One Medical, which closed in February, as potentially revolutionary — a catalyst that could force traditional providers to up their game. "I envision that when Amazon is fully integrated with One Medical, it'll be pretty much a one-stop shop," Michael Abrams, co-founder of Numerof & Associates, a healthcare consultancy, told me. "I'm not sure I can name anybody else who has that capability."

One Medical complements Amazon's existing healthcare offerings, notably Amazon Pharmacy and RxPass, which provides Amazon Prime subscribers with access to a wide variety of generic medications for $5 per month. Sari Kaganoff, general manager of consulting at the healthcare venture capital firm Rock Health, imagines that with One Medical, Amazon might also leverage data from wearable devices — blood pressure and sugar levels, for example — to help subscribers manage chronic diseases.

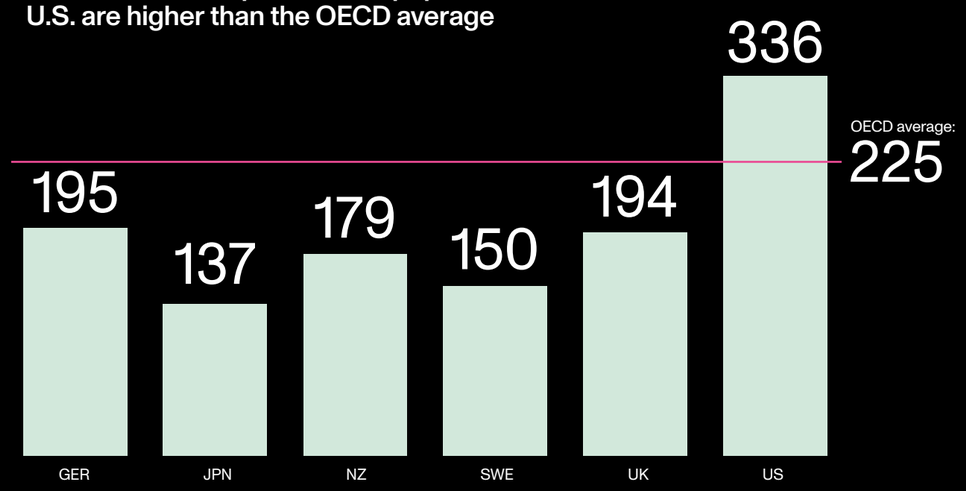
> "I envision that when Amazon is fully integrated with One Medical, it'll be pretty much a one-stop shop. I'm not sure I can name anybody else who has that capability."
>
> Michael Abrams
> Co-founder, Numerof & Associates

The U.S. is a world outlier when it comes to health care spending.

Percentage of GDP spent on healthcare (2021)*



Avoidable deaths per 100,000 population in the U.S. are higher than the OECD average



Sources:

Gunja, Gumas, Williams. "U.S. Health Care from a Global Perspective, 2022," The Commonwealth Fund. 31 Jan 2023

OECD Health Statistics 2022

OECD average reflects the average of 38 OECD member countries, including ones not shown here.

> “I want every person to have access to primary care. When you have venture capital coming in, it might not only increase access, but also serve to pay primary care physicians more.”
>
> Katherine Gergen-Barnett
> Vice Chair of Primary Care Innovation and Transformation, Boston Medical Center

It’s not difficult to see how the same data could be used for targeted sales of food and wellness products. “You have your Prime subscription, Rx-Pass, then you have Amazon Pharmacy, and on top of that you have coaching and other chronic disease management solutions as part of your subscription,” Kaganoff mused. “It’s like your whole life could be wrapped up in Amazon.” Abrams added, “It is taking the friction out of the process of healthcare. It also happens that it promises to dramatically increase the potential of Amazon to sell its products. I call it a win-win.”

Not everyone is so sanguine. Despite assurances from Amazon that customers’ HIPAA-protected information “will be handled separately from all other Amazon businesses, as required by law,” skeptics worry about data privacy. “I don’t think there is anything Amazon could do to make people trust the company with their healthcare information,” Caitlin Seeley George, of the technology and digital rights advocacy group Fight for the Future, told CNBC last year. “Pushing forward into healthcare raises some serious red flags, especially in the post-Roe reality where peoples’ data can be used to criminalize their reproductive healthcare decisions.”

There’s also the fact that One Medical has yet to turn a profit. In August, CEO Amir Dan Rubin announced he will leave the company later this year. (Rubin will be replaced by One Medical’s COO Trent Green.)

Amazon’s previous forays into healthcare have also been rocky. Amazon Care, the company’s employer-focused digital and telehealth primary care service, closed shop in December 2022, after just three years in operation. Haven, its joint venture with JPMorgan Chase and Berkshire Hathaway, which had promised widespread industry disruption, similarly shuttered, having made little headway in solving the challenges of rising costs and of a dizzyingly convoluted insurance system. According to Abrams and Kaganoff, One Medical offers a big advantage in the form of a turnkey solution — some 836,000 subscribers and dozens of primary care practices in markets across the country. “That’s hard to build,” Kaganoff said. “It takes time, especially because of how fragmented the system is. With One Medical, they could buy all that in one fell swoop.”

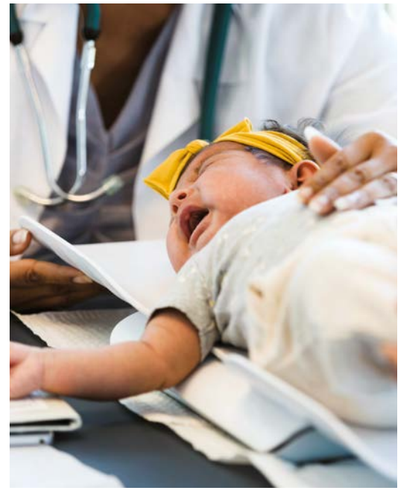
But to be successful, Blumenthal told me, Amazon will likely have to drastically change the One Medical model, coordinating with insurers and health systems to reduce the cost of hospital and specialty care, which account for a large portion of healthcare expenditures, and funnel the savings to primary care. “That to me is going to be the question,” Blumenthal said. “From a business standpoint: Can you find a way to make money? From a societal standpoint: Can you find a way to attract practitioners into this field and organize them in a way that meets the demand?”

In a recent episode of the podcast *Fixing Healthcare,* Tom Lee was noncommittal about Amazon’s prospects for success. “We’ll see,” he said. “It’s still very early to tell.” In 2018, Lee, having maintained the creative streak that once had him contemplating a career in the arts, founded Galileo, a health startup focused on extending high-quality digital care to underserved patients who might be ineligible for One Medical. “There’s just so much work that remains to be done,” Lee said. “We need more folks trying to solve the problem.”

Gergen Barnett, of Boston Medical Center, concurs. “I want every person to have access to primary care,” she said. “When you have venture capital coming in, it might not only increase access, but also serve to pay primary care physicians more. This in turn may place pressure on policymakers to increase payment for primary care doctors in academic and community health settings, and potentially encourage more medical students to go into primary care.” The trick, Gergen Barnett continued, is to ensure that the primary care provided by companies like Amazon becomes available to underserved patients. “What we often worry about for any sort of private payer is: How much cherry-picking is there?” she said. An excessive focus on the wealthy and well insured could exacerbate, rather than improve, the status quo, “taking this larger population of folks with private insurance out of the system, so that the primary care system, which is already under tremendous strain, is left caring only for people who are on Medicare or Medicaid.”

But Gergen Barnett is cautiously optimistic. With colleagues, she has already begun discussions with some of primary care’s newest — and potentially largest — for-profit providers about how to facilitate more equitable access. “It’s foolhardy to be afraid of what’s coming down the pike,” she said. “It needs to be embraced as an opportunity to accelerate the change in primary care. But we have to be doing it shoulder to shoulder. No one wants to be considered the enemy, and Amazon certainly is not. I think we all have a lot to teach each other.”

Chris Pomorski is an award-winning journalist based in Asheville, North Carolina. His features have appeared in* The New Yorker, The Guardian, Vanity Fair, *and* Bloomberg Businessweek *among others.



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Words by:
Mary Wisniewski

Photos:
Courtesy Getty Images, Apple Inc.

The Wallet Wars

In the past year, retail banking has faced a seismic shake-up, marked by bank runs and collapse. From its position in your pocket, the company finding an opportunity in this crisis isn't a bank at all — it's Apple.

The allure wasn't limited to rate. When Apple revealed a high-yield savings account on April 17, the product touted no-fee pricing and easy account opening within the iPhone's Wallet app — all wrapped in the shiny package of a globally respected brand.

Since launching in April, Apple Card's high-yield Savings account has reached over $10 billion in deposits from users. That's the banking version of a smash hit, despite the catch: To open an account, you must first have a Goldman Sachs issued credit card — the Apple Card.

At a time when financial institutions across the country have been hankering for deposits all year, Apple made the wooing look as easy as flipping a switch. In a May earnings call, Tim Cook, Apple's CEO, called the initial response "incredible."

The Wallet app is now a bank branch that helps identify Apple's retail customers. This model, known as embedded finance or banking-as-a-service (BaaS), presents a bold new direction for consumer banking.

In addition to physical branches and ATMs, banking is now also occurring behind the scenes of another brand's interface. The big idea is to become habitual in users' daily lives by offering a payments app already on their smartphones.

"This is the future of banking," says Richard Crone, CEO and founder of Crone Consulting LLC, a San Carlos, California–based mobile commerce and payments consultancy.

The World's Big Apple

Apple is simply too big to ignore. In June, it became the world's most valuable company, with a $3 trillion market capitalization. Approximately 53% of people in the U.S. have iPhones, according to Statista. And the vast majority of Gen Z users prefer the device, according to a new report from Bloomberg Intelligence.

The financial sector must now either contend with or partner with Apple — an operating system for the world's wealthiest people.

"More and more aspects of my life, not just what I consume, but how I consume, how often, who I transact with, all of that is now on my phone," says Theodora Lau, founder of Unconventional Ventures, a boutique fintech consultancy, and coauthor of *The Metaverse Economy*. "No one knows more about my life than Apple does."

The partnership may also help Goldman Sachs diversify its customer base. "We view this as one incremental and diversifying source of deposits, [enabling] us to deepen our relationship with Apple and tap into their ecosystem and the clients that we serve together," said David Solomon, chairman and CEO of Goldman Sachs, on its first-quarter earnings call. "And we'll take those deposits along with all the other deposits in our portfolio and deploy it into the client franchise."

Time will reveal what will become of the pair. Reports in late June claimed that Goldman Sachs may want out of its Apple partnership, handing it over to American Express instead.

F3

But the power couple's debut struck at the right moment. In 2023, rates on savings accounts became enticing again for a portion of the population, and Apple's APY of 4.15% at launch was eye-catching.

Impeccable Timing

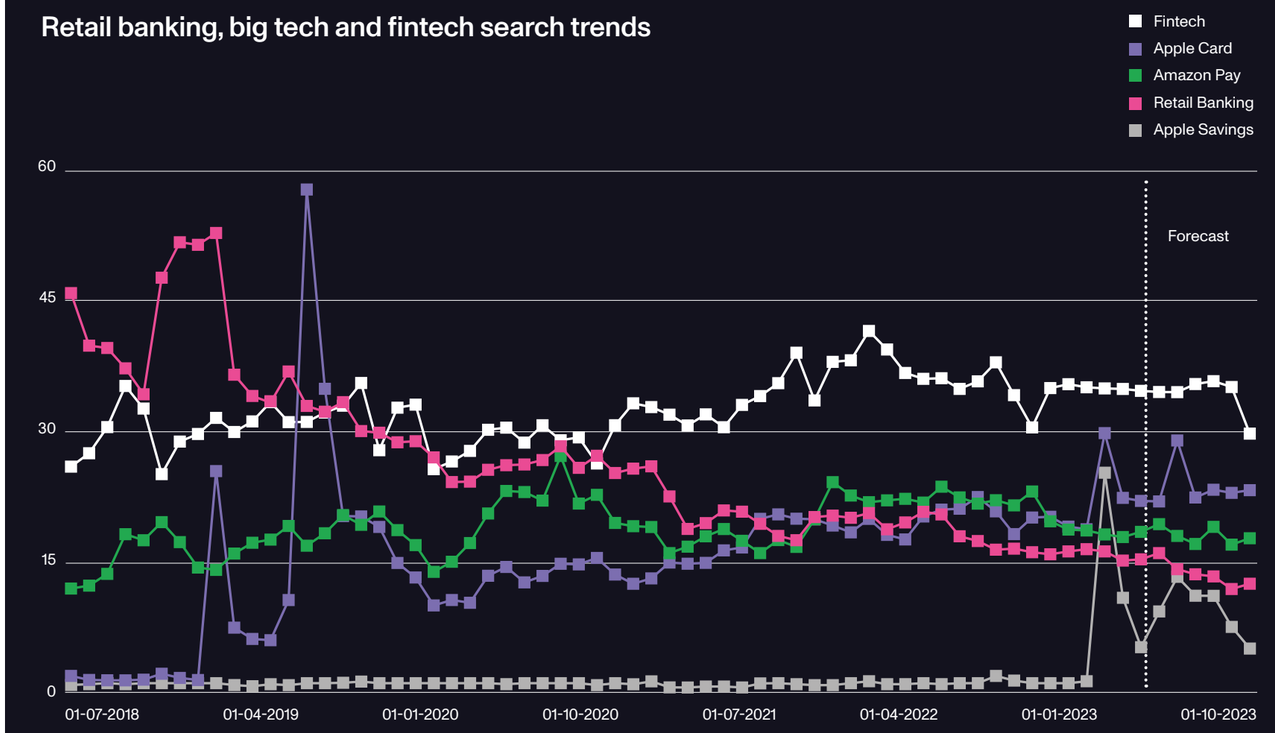
Even more striking was Apple's entrance into savings during one of the most chaotic banking periods of the past decade. This spring, First Republic, Signature Bank and Silicon Valley Bank collapsed when depositors bounced at signs of trouble. These failures made all kinds of people inquisitive about the stability of banks. For the industry, the drama demonstrated just how quickly a bank can lose trust.

That's not to say Apple's ambition is that of a bank; it does not, for example, permit people to deposit more than $250,000. But in expanding its financial services lineup, Apple has offered yet one more reason for people to stick with the brand. Before the savings account, Apple offered Apple Pay, Apple Cash (offering a prepaid digital debit card and peer-to-peer payments), Apple Card and Apple Pay Later, its version of buy now, pay later. Its ever-expanding digital wallet provides a glimpse of what's coming to the Western world of banking — one app that blends identity, banking and commerce.

"This is the intersection between embedded finance and, most importantly, mobile wallet and marketing," Crone says. "It's not just about Apple Wallet. It's certainly not about the Apple Card or Apple Cash or Apple Savings. It's about accessing the identity service that comes with a registered, contactable, known user inside Apple Pay."

It's also a clear nod to the so-called super app, where hailing a ride, talking to friends and managing money on an app like WeChat in China is part of everyday life.

Retail banking, big tech and fintech search trends



Sources: Google Trends, Huge LIVE analysis

Huge LIVE analysis forecasts a 24% decrease in search interest for retail banking by the end of this year compared to the other topics analyzed. This underscores the need for retail banks to adapt to the changing landscape.

In the U.S., signs of the concept are increasing. For example, PayPal offers a high-yield savings account with Synchrony Bank. Walmart-backed One, a fintech company that works with Coastal Community Bank, offers accounts that pay a competitive rate and cash back at the mega-retailer. Paze, a digital wallet developed by bank-owned Early Warning Services, which also runs Zelle, is yet another initiative striving to break into the category. That's on top of the likes of Starbucks, Amazon and Apple competing for mobile payments users.

For financial institutions, the stakes are very high. "The growing competition to banks from each other, as well as shadow banks, fintechs and large technology companies, is intense and clearly contributing to the diminishing role of banks and public companies in the United States and the global financial system," wrote Jamie Dimon, CEO of JPMorgan Chase, in his annual letter to shareholders. "The pace of change and the size of the competition are extraordinary, and activity is accelerating."

According to Cornerstone Advisors' annual "What's Going On in Banking" study this year, which surveyed roughly 300 financial institutions in the $250 million to $50 billion asset range, more than one-third of banks and credit unions said they view big tech like Amazon, Apple and Google as a "significant threat" in the coming decade — and that was ahead of Apple's expansion into savings.

Separate data from Cornerstone shows that digital banks and fintech companies have claimed nearly half of new checking accounts in 2023 so far.

A Matter of Trust

More than ever, soul-searching questions around what keeps customers with their institution matter: Is it trust? Or simply inertia, paired with a belief that a bank is a bank is a bank?

Jason Henrichs, chief executive officer of Alloy Labs Alliance, a community and midsize bank consortium, urges the industry to think hard about the answer. "I think we say 'trust' and we say 'relationship' and we all nod our heads and say, 'Oh, yeah, yeah, I know what that means,'" Henrichs says. "Then, asterisk, they do not in fact know what that means."

Yet research shows trust matters more than anything else in determining whether someone is satisfied with a primary bank.

"It's an incredibly tenuous time for both bank customers and financial institutions, and the need for trust between these two parties has never been more pronounced," said Jennifer White, senior director of global banking and payments intelligence at J.D. Power, in the firm's annual U.S. Retail Banking Satisfaction Study. In the study, now in its 18th year, trust ranks highest across seven factors measuring customer satisfaction.

Breaking up is hard to do. Attrition numbers for most institutions, according to White, remain in the single digits. More common? Consumers move money into new accounts, expanding their banking relationships to get what their main bank lacks, like higher interest rates, cash-back offers and money management tools.

As an example, White cites Bunq, a mobile banking app with a "value proposition that is very attractive." The Dutch-based challenger bank offers an account that analyzes savings and spending trends and lets customers bank in multiple currencies. It's a prominent account in Europe with ambitions to land in the States: In April, Bunq applied for a U.S. banking license. It aims to compete with the likes of Chime, Varo, Current and Apple.

Can a Bank Change Your Habits?

In the U.S., there are thousands of financial institutions to choose from, but Apple already stands out for its name, scale and reputation for essential, daily utility. It's already positioning itself as your personal financial ally. "We're focused on helping people live a healthier day on our financial products," said Cook during a Q2 earnings call.

Take Apple Card's savings: Apple Card users earn daily cash for making purchases. Now, those rewards automatically move into the savings account. For consumers who don't rack up credit card debt, such a feature might help improve their balance.

In time, it's easy to picture something bolder from a brand that has inspired users to track their steps to likewise track their savings. "Imagine if they eventually create these wheels that show not just how much money you spend, but also how much money you've been able to save, and how much interest you generate, to set custom goals," says Lau of Unconventional Ventures.

Meanwhile, managing personal finance is getting harder for many, especially after inflation soared for well over a year. In August 2020, 43% of the U.S. population was financially healthy, according to J.D. Power data. In May 2023, that number dropped to 31%.

Whether or not Apple can help consumers improve their financial picture remains to be seen. All kinds of startups and banks have tried over the years, many of them failing. Even Google dropped out of offering Plex, a checking and savings product on its Google Pay app, before launching it.

Yet Apple is already proving it can shorten the time it takes to open a bank account. In under a minute, iPhone users can open an account in an app already on their screens. Some see this aspect as the biggest draw. "They just made it so easy," Alloy Labs' Henrichs says. "Why wouldn't I go do that if they're paying a higher rate, right?"

To verify a customer's identity, Apple uses data it has on hand, including vetting the address tied to their Apple IDs and evaluating aggregated information from their payment cards connected to Apple Pay. That's on top of someone opening an account on a smartphone, which can track their location.

Banks and credit unions are also privy to all kinds of information on customers. But it's still not uncommon for them to require a customer to provide the same details to access a new product.

That's not to say the experience with Apple Savings is flawless. In June, damning reports surfaced around savers struggling to withdraw their money as quickly as they wished. While fraud prevention and ease of use has long been a challenge in banking, now, the tug of war is invading Apple's crisp image.

User errors inevitably add extra hoops, too. If someone accidentally enters the wrong routing number to fund an account, this can trigger a call between the applicant, Goldman Sachs and the existing bank. It's an awkward three-way of vetting identity set to hold music from Goldman Sachs. In my experience, the song "I Like Me Better" by Lauv played first.

Cue the Regulators

Bank charter or not, offering financial services invites regulatory attention. Apple, Google and Amazon may have a new regulator as early as next year: the Consumer Financial Protection Bureau.

When a bank like Goldman Sachs introduces new consumer products using a platform as powerful as Apple's, it's bound to attract scrutiny. And that's a good thing. Because digital banking calls for fail-safe guardrails — especially when you think about what comes next.

Imagine signing an auto loan while shopping for cars on Carvana. Or taking out a mortgage while looking for a home on Zillow. Or opening a savings account tied to a private-label credit card at, say, Nordstrom. These are all ideas in Crone's mind as he watches modern mobile wallets collide with the guardrails of consumer protection.

No matter how the rules of engagement are set — the new wallet wars are being waged digitally, and smartphones are the battleground.

"Retail banking needs to acknowledge that the problem it was solving — namely, parking your money in a branch you could go into — is no longer in place." Henrichs says. "The retail relationship needs to be shifted from one of convenience to one of value."

***Mary Wisniewski is editor-at-large at Cornerstone Advisors and covers digital banking and fintech for such outlets as* American Banker, *the Associated Press and the* LA Times.**

Betting on Net Zero

Companies have a responsibility to do their part in the climate crisis — but can greener digital products and less content mean more profits?

In his first decade working for creative agencies in England, Daniel O'Connell didn't think too much about climate change. "I was never that bothered about the environment or considered myself an environmentalist or anything like that," he says from his house in London.

But by 2018, as product director at the global creative consultancy Frog, now part of Capgemini Invent, things took a turn. "The stuff that Extinction Rebellion was doing along with the school strikes made me realize what a severe issue climate change was," he says. So he decided to make a change.

"We set up a very small working group of people who were interested in the issue. And then, luckily we had some support from leadership to set up a bit of a working group or task force," he says. They were focused on sustainability as a broad theme but started asking bigger and bigger questions about the impact of their work on digital products: What's going on? What does it mean for our business, our clients and our designers?

In other words, O'Connell had started to raise awareness about digital sustainability — a chameleon concept that takes on a number of different meanings but that here refers to the environmental impact large organizations can make by implementing eco-friendly digital practices.

O'Connell and his colleagues began to think seriously about the digital carbon footprint of their products. Their goal was not only to reduce carbon emissions by consuming less energy and space on servers but also to turn more efficient experiences into higher revenues.

In 2021, O'Connell left Frog and, with his ex colleague Chris Moisan, co-founded Product for Net Zero, a professional coaching service aiming to "spark change in product teams across the industry" by capitalizing on the "net zero" transition to a carbon-neutral economy. It's an opportunity that, according to a report from the New Climate Economy, is expected to inject $26 trillion into the global economy.

"We decided that we were going to try and focus our careers exclusively on climate and biodiversity," O'Connell says, aware of the leap — but not looking down. "That's kind of how it came about: sort of just personal interest and then, realizing the severity of the issue, being motivated to do something about it."

The motivation was sparked by something O'Connell and Moisan saw happening within the advertising industry at large: a basic unawareness about the footprint of digital products and operations.

"There is generally just a kind of lack of connection — not seeing that this is the product that I'm working on, and this is how it connects to the climate emergency, versus someone who is working in transport or in energy, food or agriculture," O'Connell says. "Those industries, I think, are much more active and engaged."

Tragedy of the Commons

In many ways, the digital carbon footprint is a tragedy of the commons — and an invisible one, at that. Agencies can easily design digital products without thinking about their environmental impact, just as companies can put them out into the world in a similar way, and users can go on operating without considering that each interaction triggers a chain reaction that generates greenhouse gas emissions.

Yet every new photo they upload to the cloud, every webpage they visit creates some environmental impact. Those impacts may seem negligible — an average website produces 4.61 grams of CO_2 per page view, according to German nonprofit Reset — but collectively they add up to the proverbial tragedy.

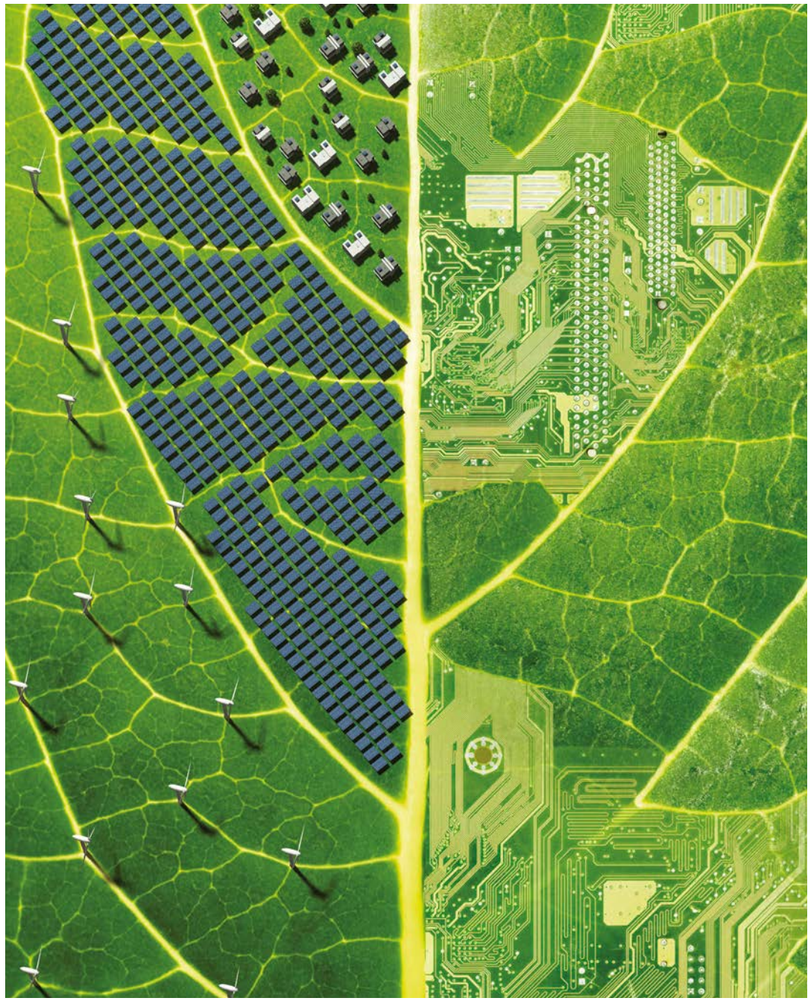
Large companies across industries are measuring their impact on climate change and are implementing their own net zero programs, sometimes promising complete carbon neutrality. A few actors on the most visible side of the spectrum — like the Big Oil companies that became synonymous with the worst actors in the climate crisis — have set lofty goals, raising skepticism among activists and watchdogs. (ExxonMobil aims to achieve net zero by 2050; Shell plans to "reduce the net carbon intensity" of the energy products it sells by 100% by 2050; and BP hopes to reach net zero "by 2050 or sooner," while also launching its own environmental products that include solutions for capturing and storing carbon.)

When it comes to the digital carbon footprint, Big Oil has a natural counterpart: Big Tech. These companies may not have played the same role as the fossil fuel industry in lobbying against climate change legislation, but with increasing frequency, media coverage is raising awareness of their impact.

Big Tech's Big Promise

Subsequently, Netflix joined other Big Tech companies in setting net zero goals and compiling a sustainability report. The 2022 version (released this June) claims the streaming giant is on track to meet its public sustainability commitments, which include halving emissions by 2030 from a 2019 baseline, bringing remaining net emissions from 2022 onward down to zero and reducing Scope 3 greenhouse gas emissions (i.e., those generated by assets not owned or controlled by the company, including data servers) by 2030.

Netflix's commitments align with the Science Based Targets initiative (SBTi), a partnership between CDP, the United Nations Global Compact, the World Resources Institute (WRI) and the World Wide Fund for Nature (WWF) that serves as the most reliable standard for corporations committed to minimizing their carbon footprint. So do the ambitious goals set by Meta, which claims to have achieved net zero emissions in its global operations in 2020; it has set a goal to reach a similar impact across its whole value chain by 2030.



Meta's plans explicitly account for the impact of Scope 3 emissions from its data centers. The company's servers are responsible for the highest percentage of its energy use, water use and greenhouse gas emissions. Unfortunately, many tech companies don't acknowledge this elephant in the room.

"Through our innovative server cooling process, data centers operating in 2021 were at least 80% more water efficient than the average data center," claims Meta's 2021 Sustainability Report, before noting that its six data center buildings that received LEED Gold certification in 2021 recycled over 50,000 tons (82%) of construction waste.

Google, for its part, claims to have been the first major company in history to become carbon neutral, in 2007, and the first in the industry to buy renewable energy at scale three years later. Other milestones include being the first major company to neutralize its legacy carbon emissions (2020), and — per its 2022 Environmental Report — being twice as energy-efficient on average at its data centers as compared to a typical enterprise data center.

But Google aims for more: to become the first major company in the world to run on carbon-free energy by 2030 (claiming that five of its data centers around the globe are now operating with near or above 90% carbon-free energy), along with more mitigation measures and sustainability measures, including "carbon-intelligent computing." (Google's plans, through parent company Alphabet, are marked as "committed" in the near term by SBTi).

For each promise of Big Tech, though, there is a skeptic: A 2023 report by the NewClimate Institute and Carbon Market Watch says that 24 of the world's largest companies, which together are responsible for about 4% of global CO2 emissions, have offered "net zero" climate plans that in reality add up to emissions reductions of only 36%. The Corporate Climate Responsibility Monitor also casts doubt on Google's carbon reduction promises.

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How does our digital waste measure up?

Websites with 10,000 monthly page views generate 132.3 pounds of CO2 every year.[1]

Amount of digital data collected that is never used, analyzed or accessed again three months after storage.[2]

90%

Amount of digital emissions, per global online user, each year. (Share of global emissions, totaling 1.6 billion tons.)[3]

912 Pounds

Trees needed to plant in order to offset annual e-commerce returns in the US.[2]

1.5 Billion

Sources:

[1] Website Carbon Calculator, www.websitecarbon.com.

[2] Gerry McGovern. *World Wide Waste* (Morrisville, N.C., Lulu, 2020).

[3] Sarah Griffiths. "Why your internet habits are not as clean as you think," BBC. 5 March 2020.

World Wide Waste

Gerry McGovern is perhaps the most prominent, outspoken skeptic of the corporate world's promises to mitigate its digital impact on the environment.

He is also a practitioner of digital sustainability. McGovern developed "Top Tasks," a method for getting rid of up to 80% to 90% of unnecessary content, menus and links on websites, and achieving better search results. The Irish consultant is also famous for coining the term "World Wide Waste," the title of his 2020 book. It can perhaps be summarized in one provocative fact: that up to 90% of digital data is not being used.

"What sort of society accepts 90% waste?" he famously asked — a question that lingers on, as we keep producing content and data at an exponential rate.

McGovern has been involved in web content production since the 1990s, three decades of experience that have allowed him to question the nature of digital content practices and the software we use for them.

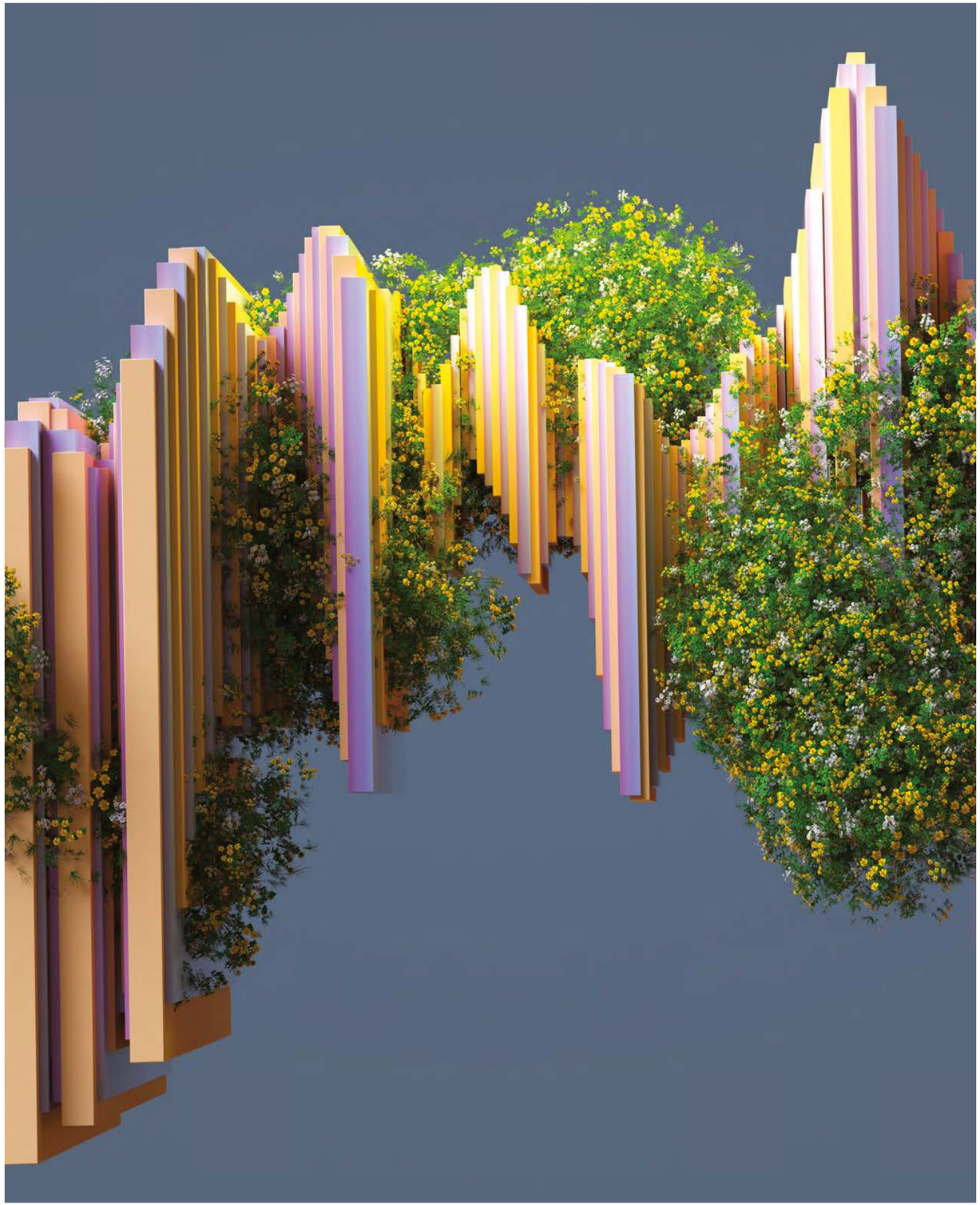
"They called them content management systems, but they were really content *publishing* systems," McGovern says from his home in Valencia, Spain.

"We never had serious maintenance! There is a saying: Websites are designed by dogs, but managed by cats."

For McGovern, practices for digital sustainability mean making large organizations aware that they're starting a cycle every time they hit publish. "It's not just an end-of-cycle process," he says. "We must really introduce serious maintenance and auditing at most organizations. They don't even know how many computers they have — let alone how much content!"

Practices for digital sustainability shouldn't stop at just deleting content, McGovern says. The whole cycle can resemble what we're doing with physical waste in many forms: recycling and repurposing content, and designing and accounting for that goal from the beginning of the cycle, starting with the code.

"Digital sustainability is not at the same level as user-centered design or accessibility in the industry," says O'Connell, noting that digital sustainability via green design and content management and repurposing are, in many ways, still nascent. "There are no standards, and there are four or five different ways to estimate or think about the footprint. We are seeing a set of best practices emerge, so it's not like Jakob Nielsen's 10 heuristics of usability."



The Bottom Line

In the long run, becoming digitally sustainable is not just about being a virtuous organization: It's also an economic opportunity.

Part of that opportunity is a no-brainer: Less content to create, manage and store means less energy devoted to its creation, storage and maintenance (and fewer billable hours). This also means lower costs. For users, less content that's more focused — and apps that are more agile — mean more efficient user journeys, which arguably translate into higher conversion rates and better results.

While the "less is more" doctrine is not widely adopted by organizations that may still be relying blindly on the "content is king" mantra and the promises of cheap cloud computing and storage, some notable examples reveal the potential impact. In the past decade, the Norwegian Cancer Society has reduced the content on its website tenfold, from 5,000 to 500 pages, after applying McGovern's Top Tasks method. Donations to the charity-based organization have doubled.

The most famous case of content consolidation and reduction to achieve better results both for users and the bottom line might be the U.K.'s government website. The Government Digital Service, launched in 2011, replaced 1,882 websites for 25 departments and hundreds of smaller agencies with the lean, unified gov.uk site. This substantial consolidation and reduction of digital waste meant achieving an annual operational cost of less than 30% that of the original sites, and more than $75 million in annual savings from department budgets.

Evidence of the economic benefits of reducing our digital carbon footprint is everywhere.

According to a report from the International Renewable Energy Agency, the cost of renewable energy continues to fall and in some cases has become cheaper than that generated by fossil fuels. By becoming more energy-efficient and switching to lower-cost renewable power, companies have reportedly achieved substantial savings.

For example, per the World Economic Forum, Unilever achieved $900 million in savings by sourcing low-cost renewable electricity, while IKEA saved $147 million over five years by implementing renewable energy. Similarly, climate leaders in the energy sector, including Enel, Iberdrola, Neste, NextEra Energy and Ørsted, generated total annual shareholder returns close to 30% from 2017 to 2020, a level comparable to that of Big Tech.

Energy and storage costs aside, reducing the digital carbon footprint and achieving better economic results and user experiences comes back to the atomic structure of digital. The future demands leaner, smaller, more efficient digital products devoid of unnecessary content and that don't contribute to the aforementioned tragedy of the commons.

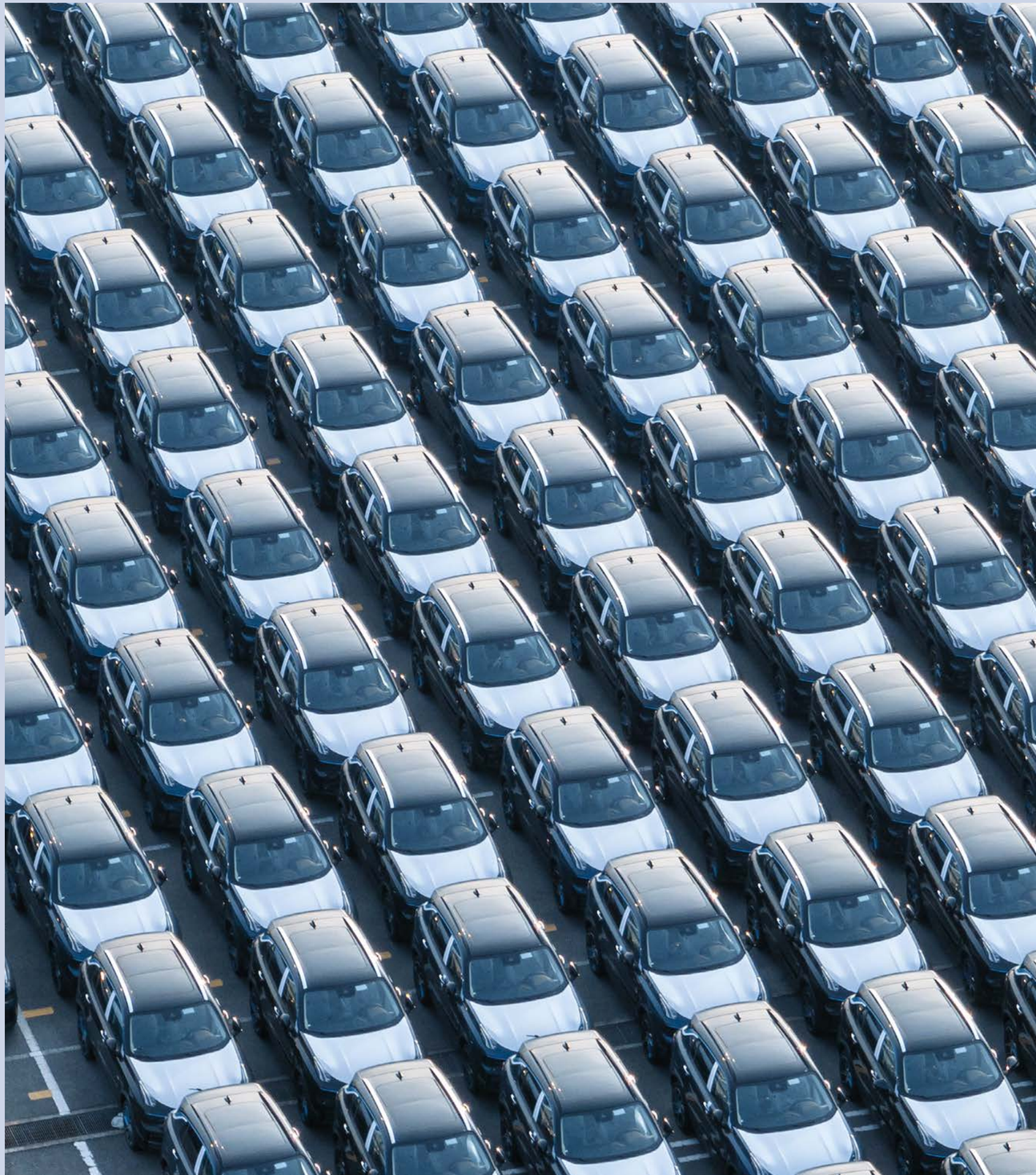
"The first step for agencies and organizations that create digital products is to acknowledge that there is a problem, confront its severity and start talking about what to do," says O'Connell. "And from there, engage with peers, the industry and clients on the issue. That's really, really important."

***José Manuel Simián is associate director of content strategy at Huge. He educated audiences on the topic of digital waste at SXSW 2022, and his writing on the matter is published in the* Journal of Digital & Social Media Marketing.**

Evidence of the economic benefits of reducing our digital carbon footprint is everywhere.

What Happens When The Chips Are Down

The pandemic exposed glaring weaknesses in semiconductor production, sending shock waves through the global economy. To understand the new power dynamics, look no further than the auto industry.



It is highly unlikely anyone will feel real nostalgia for the year 2020, soon or ever. But recall the commercials you saw on TV around this time three years ago. With somber music playing in the background, they usually went something like this: "*In these uncertain times…buy a Kia Telluride*."

At the height of the Covid-19 pandemic, that's exactly what happened. People bought cars. And VR headsets. And PlayStations. And Peloton bikes. And soon enough, semiconductors — the tiny, typically silicon-based chips that are crucial to all of those things and almost anything else with an on/off switch — became a scarce commodity.

Despite some recovery, we're still feeling the effects of the now-infamous "chip shortage," even as governments and industries worldwide conjure innovative, multibillion-dollar efforts to ensure this doesn't happen again. Last year, President Biden signed into law the CHIPS and Science Act of 2022. It's an unprecedented $280 billion effort to bolster America's local chip-making ecosystem and effectively create one that's ready for a new age.

But that's a very tall order. After decades of America's outsourcing to other countries, U.S. chip production infrastructure is woefully ill-equipped to produce the advanced, bleeding-edge semiconductors needed for the consumer devices of the future, like electric and connected cars.

"In 2021, auto prices drove one-third of all inflation, primarily because we didn't have enough chips to keep putting cars on the road," Michael Schmidt, the CHIPS program office director, told *Huge Moves* in an email. "Medical device manufacturers have had trouble procuring the chips they need for pacemakers, heart monitors and other devices that keep Americans alive."

Fast-forward to today, and the question of where and how a nation can procure chips is a national security issue. Many seeking solutions are looking to the automotive industry for innovative answers — because cars have emerged as a kind of poster child for the semiconductor crisis, and the path to an electric recovery.

Toyota: A Chip Shortage Case Study

"Frustrating." That's the one-word answer Jack Hollis gives to describe the state of the chip shortage, even in mid-2023. "Understand that it is real."

Hollis would know. He's the executive vice president for sales at Toyota in North America, which weathered the chip shortage better than most but has still been hit hard. Some of its most popular models, like the RAV4 Hybrid, remain tough to find these days with all the bells, whistles and choices buyers were used to before 2020. Toyota still defended its title as the world's biggest automaker at the end of 2022 by selling 10.5 million cars worldwide.

"It was a phenomenal year, globally," Hollis told *Huge Moves*. In the U.S., however, 2022 sales were down nearly 10% from the previous year. "Demand for Toyota products is still so much greater than the supply."

In America, new car sales collapsed at the onset of the virus in 2020 as the country shut down and people held off on big purchases. But sales quickly rebounded, driven by ultra-low interest rates and a lack of other travel options.

As a result, demand for chips skyrocketed. But the workers in the plants that made them kept getting sick and thus were unable to work; likewise with the countless people involved in the supply chain along the way. Moreover, semiconductor suppliers found their order books inundated for video game consoles, personal electronics and appliances; the chip industry itself couldn't keep pace with erratic market shifts, and automakers took the hit.

"If automotive seats or fuel injectors are needed, suppliers step up and fill the need. When suppliers and automakers stepped out of line for semiconductors, they were sent to the back of the line, since chip makers didn't prioritize the automotive industry," said Sam Fiorani, the vice president of global vehicle forecasting at research firm AutoForecast Solutions.

Automotive chips often use older designs because they're proven and reliable, Fiorani said; you don't want any computer-related surprises behind the wheel. "These chips make less money for semiconductor manufacturers, who would rather make the modern, and more expensive, chips needed for the latest gaming system with quick 3D graphics," he added.

Suddenly, new cars were nowhere to be found on dealer lots as automakers struggled to get completed cars out the door; ones that did ship often lacked key features they may have had before the pandemic, like HD radios, advanced driver assistance systems or even navigation. ("You want a 2024 RAV4 for the fourth quarter? Yeah, unless you want black or white, you're gonna wait until 2025," Hollis joked.)

What's more, Hollis said, the auto industry's appetite for semiconductors is only growing. For example, Toyota is overhauling its entire future car lineup and manufacturing system to compete with Tesla and new players from China. The auto industry's rapid shift to electric, connected and ultimately autonomous vehicles will require even more chips than today's cars do.

A June report from S&P Global Mobility confirms the trend. The research and consulting firm reported the value of semiconductors in vehicles will rise from $500 per car in 2020 to $1,400 by 2028 — imagine how that adds up when you build as many cars as Toyota.

The auto industry's rapid shift to electric, connected and ultimately autonomous vehicles will require even more chips than today's cars do.

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The automaker had to deploy some decidedly un-Toyota-like strategies to weather the worst of the chip shortage storm. That included stockpiling months' worth of chips early on in the pandemic, a lesson it first learned in the wake of the 2011 tidal wave and nuclear disaster that hammered Japan's auto industry. That tactic was in stark contrast to the lean, just-in-time production methods Toyota once pioneered. But here, it worked.

Tesla's response was altogether different: It responded by making many chips in-house and rewriting its software to work with the chips that were available (par for the course for an automaker known for its walled-garden approach), creating as much vertical integration as possible rather than relying on outside suppliers. As a result, Tesla largely hasn't been impacted by the chip shortage compared to other automakers, and indeed sold almost half a million EVs globally in the second quarter of this year.

Other automakers have not been so lucky. General Motors, for example, had a stockpile of 95,000 unfinished cars around this time last year, and Honda scaled back one of its Japanese plants by a stunning 40%. "Through the end of 2022, production of an estimated 14.95 million vehicles around the world has been affected by a lack of chips, and another 2 to 2.5 million will be lost in 2023," Fiorani said.

Car companies are moving fast to address this. Nearly all automakers are forming dedicated teams to revamp how chips are designed and sourced, or are looking for semiconductor partners to secure robust supplies for the future.

Earlier this year, GM inked a deal with New York–based semiconductor manufacturer GlobalFoundries. Under the terms of the deal, which will last at least three years, GlobalFoundries will have a dedicated production capacity exclusively for GM. Furthermore, production will happen in upstate New York. (The same company was also in talks with Ford as of late 2021, though it remains unclear what, if anything, has come from that.)

One thing is clear: A massive amount of public investment has been deployed to make sure America doesn't drop the ball again.

The Government's Huge Move

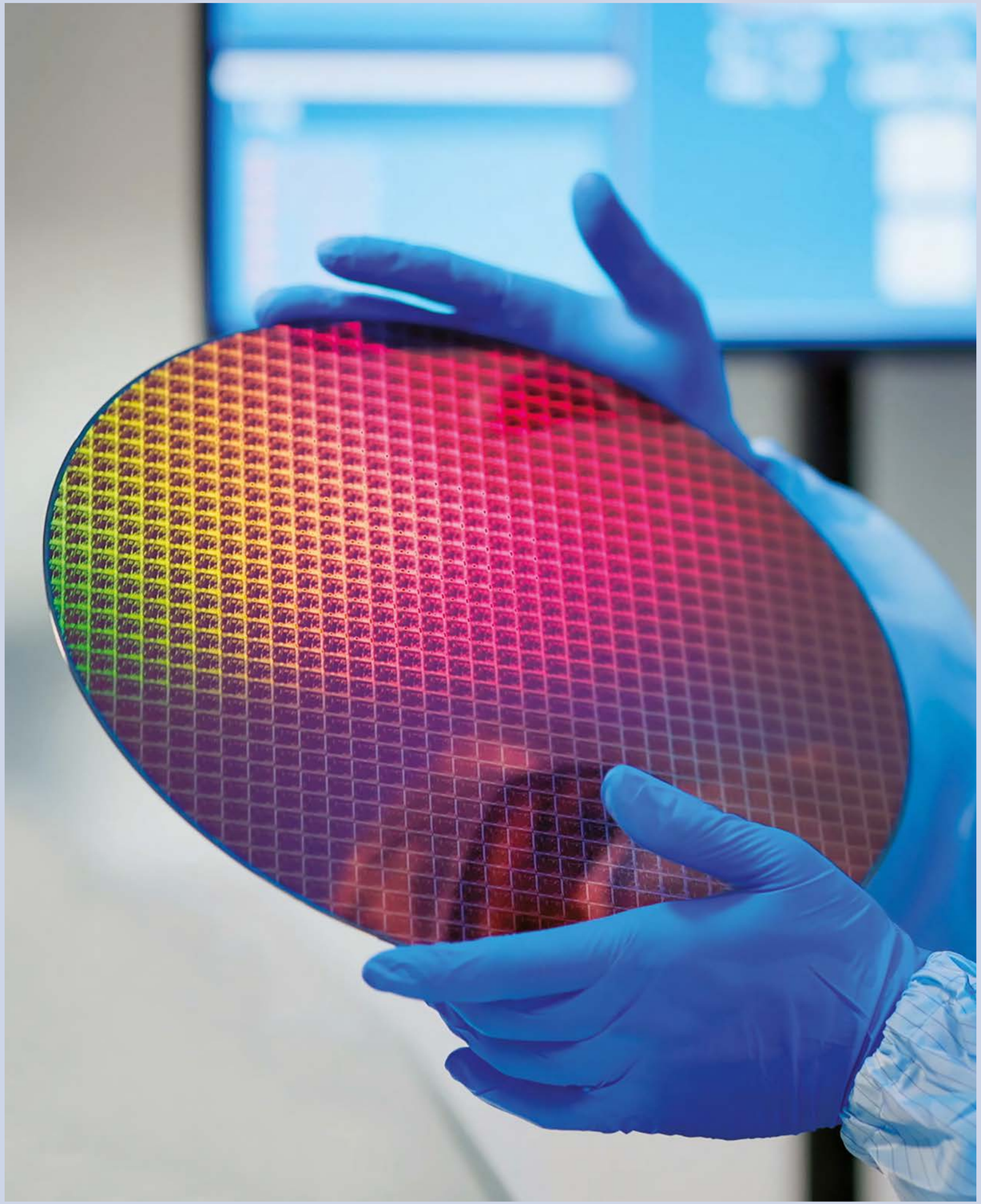
In 1990, the U.S. was responsible for 37% of the world's commercial semiconductor manufacturing. Last year, that share dwindled to just 12%. Decades of offshoring have centralized much of the world's chip manufacturing in East Asia, particularly Taiwan.

A 2022 study from the Center for a New American Security reported Taiwan boasts more than 50% of overall global semiconductor manufacturing capacity; the next-closest leader is South Korea, at 19%. And those countries didn't just make semiconductors — they figured out ways to design better ones, leaving America at a major R&D disadvantage, as well as a manufacturing one.

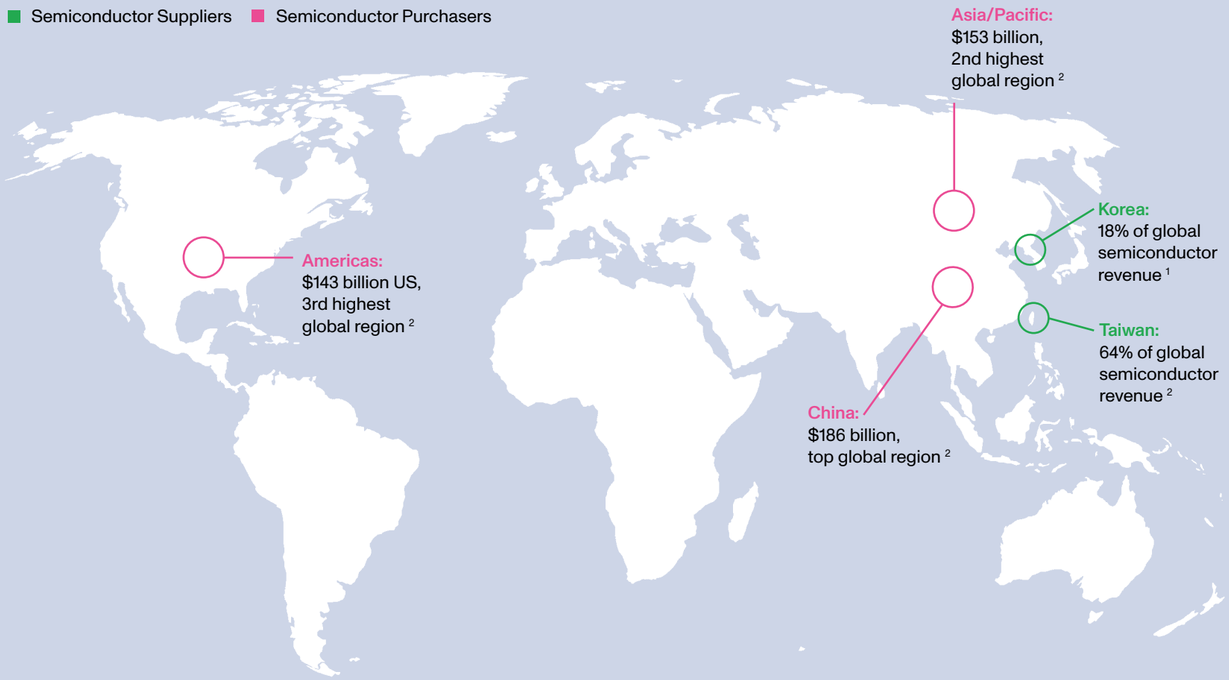
The CHIPS and Science Act is designed to tackle those problems head-on. It's a funding initiative worth about $280 billion over 10 years, including allocating $52.7 billion to direct grants and loans for companies that want to boost American chip R&D and manufacturing. Companies that apply for funding will compete for massive financial help to develop and make chips in the U.S. The act was backed by chief executives at numerous automakers and semiconductor suppliers.

"By the end of the decade, the U.S. will have at least two new large-scale clusters of leading-edge logic fabs [semiconductor fabrication plants], with each cluster including multiple commercial-scale fabs, a large and skilled workforce, nearby suppliers, R&D facilities and specialized infrastructure," Schmidt said. Other goals include having the U.S. be home to several facilities for semiconductor packaging — "the process of putting fabricated chips into containers that will ultimately be embedded in products" — and vastly increasing the production of current-generation chips as well.

To give an idea of its scale, the Bipartisan Infrastructure Law is allocating a comparatively paltry $7.5 billion to grow the public EV charging networks in America. "The CHIPS and Science Act is already starting to indirectly pay dividends; the department hasn't given out a single award yet, and we've already seen $231 billion in private-sector investment in semiconductor production," Schmidt said.



Semiconductors: Top markets for production and purchasing, 2021-2022



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[2] SIA. "Semiconductor sales worldwide by region, 2015-2022," *Statista*. 3 Feb / 2023.

[3] The Economist. "Taiwan's dominance of the chip industry makes it more important," *The Economist*. 6 March / 2023.

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Because the CHIPS Act was a bipartisan effort with committed funding, sources familiar with the program say it isn't going to vanish even if the White House or Congress changes hands in the 2024 election and beyond. The net effect of all this is that more companies will be encouraged to boost their semiconductor manufacturing.

"Bringing semiconductor production to the United States through the CHIPS Act will add some long-term security to domestic production of many items, including vehicles," Fiorani said. "As the industry transitions from internal combustion engines to battery electric power, there is a shift underway toward more modern chips that could make them more desirable for chip makers to produce."

With a bigger and more cutting-edge chip ecosystem at home, U.S. automakers and companies in other industries won't be as singularly reliant on Taiwan as they are now — or drawn into a potential conflict there.

"Relying on Taiwan, China and other foreign countries to supply chips for industries like vehicle production puts that supply chain at risk of political tensions between, or within, countries," Fiorani said. "Bringing the chip production into the U.S. will, hopefully, secure the supply from these outside influences."

China likely feels the same way; it's dumping about $140 billion into its own domestic chip industry. The CHIPS and Science Act is designed to ensure that America doesn't cede dominance by limiting recipients of funding from investing in semiconductor expansions in countries like China, Russia and Iran.

"We will be evaluating all applications based on how they advance U.S. economic and national security, and we will be conducting rigorous due diligence to ensure we're making the right choices," Schmidt said. "But this is not a zero-sum game: We expect that companies will be diversifying their footprints globally, not just in the United States."

The Road Ahead

As disruptive as the chip shortage has been, it could yield positive momentum — provided that semiconductor-dependent companies adjust their tactics to face this new reality. They'll need to act more like Tesla, more able to nimbly retool how products are built; or GM, eager to partner with companies taking advantage of huge government grants for dedicated chip supply lines; or even Toyota, willing to defy certain core business tenets in order to ensure a robust inventory for the future.

Semiconductors will soon be more important than they've ever been for tomorrow's consumer products, and automakers in particular will need more speed and more preparedness than they've ever had to meet this moment. If companies are still looking at semiconductors the way they did in 2019, they're in for a world of hurt.

It's also crucial to remember that unfortunately, the initiatives in the CHIPS and Science Act won't provide an overnight fix. Like the battery plants going up in numerous states to power the next generation of American-made EVs, these semiconductor factories will take years to ramp up.

"Building a new fab is an expensive undertaking, with tens of billions of dollars required before one chip rolls out of the factory," Fiorani said. And some experts say there remains a semiconductor-related skills gap of employees equipped to design and build the next great powerhouse. America has ceded semiconductor expertise to other countries for so long that it has to catch up on multiple fronts.

As to whether the chip shortage seems to be easing, that depends on who you ask. In January, a study from the German Association of the Automotive Industry predicted a 20% drop in global car production by 2026 if measures aren't taken to address the semiconductor shortage. And an uneven global economy complicates further recovery.

Fiorani, on the other hand, seems much more optimistic. "The situation is improving and should be a relatively minor annoyance in 2024," he said.

Hollis, Toyota's North American sales chief, also sees a light at the end of this tunnel: "I think this is something we're going to deal with all the way through the rest of this calendar year," he said. "I think in 2024 we can be more reliant upon the chip supply."

Patrick George is a journalist covering the future of the automotive industry. He is co-host of the forthcoming Vox Media podcast docu-series "Land of the Giants: The Tesla Shockwave."

F5

Subject:
Retail

Theme:
Autonomous Agents

Words by:
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Forget Bots: The AI Agents Are Coming!

You've heard of personal shoppers. But a personal AI agent? Here's what happens to the retail industry when AI has all the purchasing power.

"It's time to reimagine the way we interact with the internet." That's what HyperWrite CEO Matt Shumer wrote this past April on X, formerly known as Twitter, with a video showing the AI assistant his company had created ordering a pizza on his behalf. It navigated the web to Domino's website and filled out the form fields, all based on one simple text instruction.

It's a "Look, Ma! No hands!" kind of moment, almost literally. After a human types in the initial instruction, the AI assistant does all the rest. As the name might suggest, HyperWrite was originally intended to be an AI writing assistant. But as its Chrome extension took shape, Shumer's ambitions expanded with it.

"We've always had this vision that it extends, that it's this assistant that can do anything," says Jason Kuperberg, who co-founded HyperWrite with Shumer. "Executives have an assistant who's doing these things for them: ordering things, organizing travel, scheduling meetings, notes, research. What would it look like for literally every single person to have something like this?"

Fans are starting to help answer that question. YouTuber AI Jason used HyperWrite to read and reply to all unopened personal email. He also got it to respond coherently to a LinkedIn post about AI on his behalf (both of which he then paused before he spammed everyone). While the quality of these generated actions was mixed (sometimes fine, sometimes poor), the demonstration of successful multistep task completion gives us a glimpse into where things are headed.

In a different video, YouTuber MattVidPro AI asked the HyperWrite assistant to find the two cheapest humidifiers on Amazon as well as the cheapest 4080 GPU on eBay. Though clumsy and slower than most any human, it effectively completed the task.

"We know that it's early. We're pretty transparent: This is the worst it'll ever be," Kuperberg acknowledges. "But the first time you see it working and actually do something is crazy. It's like, whoa! This feels different from everything else that's out there."

At a time when the most magical often transforms quickly into the mundane, this truly felt — and continues to feel — like an enormous leap forward. It is also likely to deeply impact the retail sector in particular, in part because customers — especially Gen Z and millennials — are already signaling interest in personal virtual shoppers and AI shopping assistants.

Call My Agent

There are many features frequently touted when discussing generative AI. Most obvious: It creates things (words, code, images, animations, voices, worlds, songs). Also, it can synthesize lots of content into summaries we humans can more quickly process, including spotting both trends and anomalies in data. And it uses natural language to communicate, which adds to the dazzle of it all.

But there's one emerging capability that remains under the radar. And that's generative AI's ability to plan and execute tasks, sometimes even autonomously, just as HyperWrite's Chrome plug-in proves. There's a new word for this task-completing function: It's called an "agent."

An agent might still be controlled through a text field, but it goes beyond the familiar bot capability offered by a product like ChatGPT or, going back even further, classic chatbots that are programmed to guide you down preset paths. Here's the big difference: Agents actually autonomously complete tasks for you, interfacing with sites or APIs along the way.

"This is definitely a sea change thing," says Andy Mauro, who more than a decade ago led the team at Nuance that created Nina, the first mobile speech assistant for the enterprise (like Siri but for businesses). He also co-founded, built up and sold Automat.ai, which incorporated conversational commerce into brand websites.

Mauro has recently founded a new startup for a novel video game in which the player mentors generative AI characters, who have their own agendas and then go off on adventures.

"You're going to see a ton of new companies, and I think those largely will be something along the lines of an agent-style company, which can take a vertical slice of a useful problem that people have and build an AI that you can talk to and guide and direct that's aligned with you and then send it on an autonomous path to do something. In my case, it's a video game."

The danger, he cautions, is creating things that people don't actually want. It should be born from existing needs we can already see, like managing a calendar or shopping for the perfect gift.

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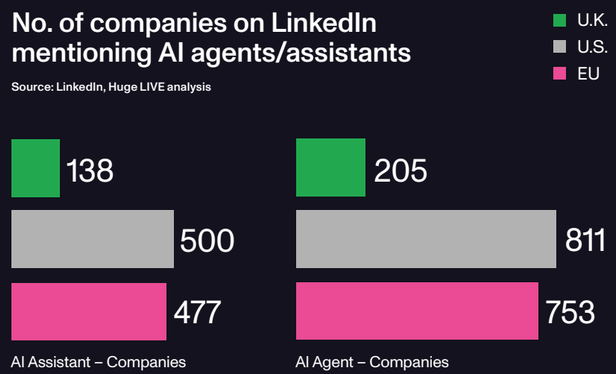


The Puppy Project

"Max" is my perfect dog. That's according to AgentGPT, another autonomous agent, which I tasked with finding a dog I could adopt. It had to meet a fairly complex set of criteria: under 50 pounds, less than five years old, good in an apartment, not a barker. I also added something you can't filter for: a couch potato. After working for less than two minutes, AgentGPT reported back: "One option that meets all the criteria is a dog named Max, who is available for adoption at the animal shelter in New York City." It went on to describe Max's calm nature, that he's three years old and 45 pounds, perfectly suited for apartments and not a frequent barker. I was sold.

Unfortunately, when I tried to follow the dog's profile page, the link led to the Petfinder.com homepage. Despite that mistake, I was convinced the agent had found my dream pooch. After it searched for two minutes, I proceeded to spend another 20 trying to track down this Max. Just one problem: Max, his details and his location were all made up — there was no real profile.

Eventually I asked my AgentGPT itself why the link didn't work. It explained it wasn't connected to any browser and was limited by information up to November 2021. Since the tool was built using GPT from OpenAI, it's not altogether surprising it calls out that date, which is when the OpenAI model was trained. Weirdly, though, the FAQs for AgentGPT insist it does browse the internet — a good reminder to me that these agent tools are still in beta (or even alpha) and suffer from the same hallucinations that GPT 3.5 and 4 are known for.

In just three months after launch, AgentGPT, which has $1.25 million pre-seed funding with support from both Y Combinator and Panache Ventures, captured 150,000 monthly active users and 25,000 stars on GitHub. But the founders shared in their press release that the likelihood of hallucinations and failure increases the longer you run your request. These are two of the biggest problems they're still working to solve.

Ambition, Actualized

For Jennifer Fleiss, co-founder of Rent the Runway and former CEO of Jetblack (a Walmart incubator service that used AI to offer personal shopping over text message), these emerging capabilities are feeding long-held ambitions.

"The world of AI has just accelerated and made it much more cost-effective and faster to accommodate that sort of recommendation flow and engine," Fleiss explains. "It's exciting to see that this is going to be an unlock for so many businesses."

"At Rent the Runway, for example, we're plugging in different versions of AI to find the right dress for XYZ occasion and to let the customer layer in that it's a beach night but it's gonna be cool. All the variables," Fleiss says. "And so I think various companies will use it to accelerate finding that best product match for their consumer."

In other words, the tools of the future might know the consumer better than most brands today are able to, by leveraging truly 1:1 personalization.

"What you'll start seeing more of is ways of having these plug-ins scrape and understand your personalization preferences," Fleiss points out, adding examples like allergies in the family or specific colors you gravitate toward or your price sensitivity. "So I think the personalization opportunities here are just so much richer in a way that will be even more efficient for the consumer."

She even imagines the possibility that individual data could be masked behind an agent to anonymize it but still remain accessible by a brand to offer the best products and experiences.

Empowering Customers

With the easy availability of these emerging tools, consumers may prove to be the early adopters ahead of businesses and brands.

"This is happening so fast, and enterprise generative AI has not been figured out yet. Customers are not bound by the same concerns that brands are," says Katherine Jones-Siemsen, head of product and commerce at Huge. "I think about extensions and apps that used to scour the web for promo codes and things like that. We might just be seeing shoppers hack shopping in that way at a pretty sizable scale given the tools at their disposal and given the low level of effort and skill required to make use of them."

She gives as an example the policy many companies have of price matching after something is sold if the consumer can find it cheaper elsewhere.

"That task management can be outsourced now. And it's not particularly hard to do," adds Jones-Siemsen. "The adoption and the ecosystem around these generative technologies is only going to get faster and easier."

Currently, price-match policies are reliant on the assumption that humans won't put in the labor to take advantage of them. However, it is possible right now for someone with a modicum of digital savvy to ask an autonomous agent to scrape their inbox for sales receipts, read the items and prices therein and then scan the web to beat that price. Moreover, the agent could generate the written request for price matching directly to the brand and then track that action in a spreadsheet, including writing follow-ups as needed.

Kuperberg at HyperWrite offers another example: "Something that we've heard is credit card rewards and airline miles and how that is a system that can be optimized and that people are already doing that."

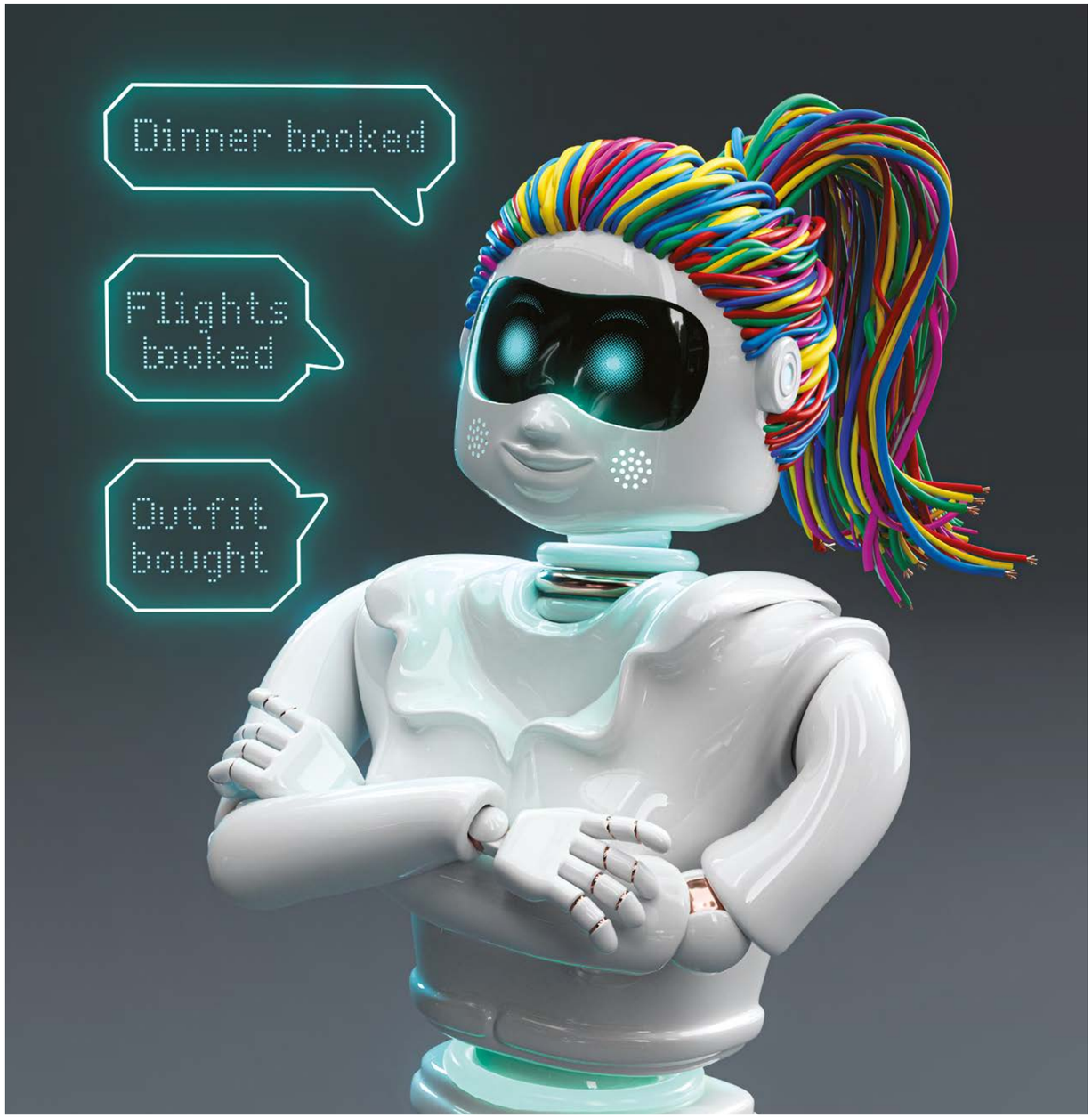
While these numbers don't signal that there's a demand yet or expectation for this capability, history shows us customers can be quick to adopt something when it benefits their wallet or saves them time. Klarna seems to be betting on this with an AI-powered shopping recommendation engine.

How Should Brands React?

The generational divide

	Gen Z & Millennials	Gen X & Baby Boomers
Want access to virtual personal shoppers	34%	17%
Want a more personalized shopping experience	57%	41%
Personal shopping assistants (AI/robots) will do most of the shopping for consumers	26%	14%

Source: *The Future of Retail Report*, Klarna. (May 2023)



One of the critical questions AI of all kinds raises is how a brand exposes or protects its data. Brands want that data to reach their customers, but what if the only way for that to happen is a nonhuman browsing the website?

"For years brands have had 'not a human' navigating their site," Jones-Siemsen points out. "There's price-matching algorithms, there's content and data scraping, there's crawlers trying to index your site. Those are very beneficial."

The change in this case, however, is that humans may never browse your retail site. They may abdicate a simple decision completely to an agent. Or they might have the agent serve them answers and recommendations in an interface of their choosing.

Kuperberg predicts that like SEO optimization, brands will want to do what he calls "agent optimization" to ensure that an AI agent — either engaging with your site or your APIs — is able to get the information it needs so it can advise the consumer.

It's possible to imagine, in that context, that experience benefits like ease of human navigation may degrade in importance. If an agent can find the best thing from anywhere, then it doesn't matter how hard the checkout was if the agent's the only one suffering through it.

This could change the nature of brand loyalty by putting the core emphasis squarely back onto the quality of the product — not the experience of shopping for it.

"Theoretically this allows brands to go back to having great products, having great post-purchase experiences and focusing a little less on operating transaction websites," Jones-Siemsen adds.

In fact, autonomous AI assistance may actually help people achieve a goal they often claim they want but don't always act on: values-based shopping, like factoring in sustainability or the inclusiveness of a brand. If someone's personal agent is trained to apply those values to all suggested purchases, brands won't be able to reach shoppers without authentically embracing those values.

"If you want to have brand control, you have to quite literally pick a side of what space you want to be in," says Mauro. "When you think about what authenticity is, this weirdo word brands have been using, it's that. You're taking a stance. And the only way you can do that is if you actually have a stated brand purpose and experience you want to deliver."

> "The world of AI has accelerated and made it much more cost-effective and faster to accommodate new recommendation flows. It's exciting to see that this is going to be an unlock for so many businesses."
>
> Jennifer Fleiss
> co-founder of Rent the Runway

Plotting the Future

Jones-Siemsen predicts that retail as we know it today will be completely rewritten within eight to 10 years thanks to these task-achieving autonomous technologies.

And as is already true with e-commerce today, some brands will adjust for this next wave faster than others, creating value for their business.

"The success in e-commerce, I don't think anyone would call it even," Jones-Siemsen explains. "There have been brands that saw where things were going a bit earlier and were able to build really strong, resilient advantages. They were able to figure out e-commerce, figure out how to invest, how to find profitability and how to find adjacent streams of revenue in doing so. I think this age of AI agents will be a landscape that is uneven, possibly to an even stronger degree."

What might that distant future look like? Do brands create their own agents, hyper-trained on their own data, to interface with customer agents instead of having them use the website?

"Agents need data, but they don't need interfaces," Jones-Siemsen notes. Perhaps in the future, the brands will go to the agents instead of waiting for the agents to come to them.

Someday, hopefully in the near future, an AI agent will finally find my "Max," that ideal dog I dream of. In the meantime, I'll have to resume the hunt the old-fashioned way: clicking links myself.

Emily Wengert is the head of experience innovation at Huge.

Eat More Plants

Plant-based food is more than just fake burgers — it's a maturing direct-to-consumer market. Thanks to a few successful startups, the entire category is ripe for growth.

A food movement is happening in America, and you don't have to eat tree bark to be a part of it.

While about 5% of Americans keep a vegan diet, many more now are eating plant-based foods on an occasional basis. There are several reasons people eat vegan foods, including health, concern for the planet and concern for animals. Recently, this has translated into soaring sales of vegan food products: In 2021, sales of plant-based foods grew three times faster than overall food sales. By 2028, the global vegan food market is projected to reach $61 billion, according to Fortune Business Insights — and that's a modest forecast compared to similar research from Statista.

When the Impossible Burger came on the market in 2016, it was revolutionary. Never had a plant-based product tasted, looked and acted like real meat so convincingly. Although Beyond Meat had been around longer, the vegan burger category exploded with the entrance of Impossible Foods. The company could now be worth as much as $10 billion according to Forex, after securing $500 million in a new funding round led by Mirae Asset Global Investments in 2021.

Vegan burgers have become so mainstream, they've even managed to infiltrate the fast food space. In 2019, Impossible partnered with Burger King to offer a vegan version of the Whopper, available nationwide. McDonald's (a Huge client), in turn, collaborated with Beyond to bring the McPlant to select locations. (The experimental run was discontinued in 2022.) Shake Shack, restaurateur Danny Meyer's antibiotic-free answer to fast food chains (now with more than 400 locations globally), launched its own veggie burger in April 2018, the Veggie Shack. Instead of relying on an outside company, Shake Shack came up with its own formula, made from nine vegetables and two grains, after several years of research and development.

It seems we've reached peak veggie burger, so what's next? Items like plant-based chicken strips and vegan milks have also infiltrated the market (can you go anywhere without seeing an Oatly ad?), along with multiple brands of vegan cheeses. Now, the vegan food industry is heading into its next phase: extreme specificity.

There's only so much plant-based ground beef and nut milks can do. What about specific cheeses? Seafood? Eggs? How about all the vegans missing their filet mignon? The latest plant-based food startups are filling that void with hyper-specific products like calamari and tuna sashimi, sunny-side-up eggs with runny yolks and medium-rare steaks — all made from plants.

Eggs had long been neglected by the plant-based food industry. There are companies like Eat Just that sell a mock liquid egg product (mostly used for baking, scrambled eggs or omelets), but nobody was focusing on mimicking whole eggs and the myriad ways they can be prepared. New to the market, and filling a very specific egg niche, is WunderEggs, which claims to be the world's first fully vegan hard-boiled egg distributor (the brand launched in Whole Foods in January 2023), and Yo Egg, which is currently the only brand offering plant-based sunny-side-up and poached eggs, both with runny "yolks." It launched in the U.S. in February 2023 at select restaurants after a 2021 launch in Israel, with more products in development, including hard-boiled eggs and hollandaise sauce.

Yo Egg: The Inside Story

"I focused on eggs as the sector that had the least amount of solutions, and was falling way behind alternative meat," says Eran Groner, co-founder of Yo Egg. As egg prices rose more than 60% last year, Yo Egg saw a boost in sales. The company has tripled its manufacturing capacity since it launched, making thousands of eggs per day out of its North Hollywood facility.

Groner, a seasoned food-tech executive with more than a decade of experience spanning factory farming and cultured meat production, used to work around chickens and cows. But then he realized removing animals from the equation was a way to be more sustainable and more stable. "Animals are the limiting factor. They utilize more resources that are not necessary. They pose other limitations, for example, with seasonality, and zoonotic diseases such as the avian flu," says Groner. "If you remove the animals from the equation, you solve those problems. And you are minus the cholesterol, minus the saturated fat; you end up having a more sustainable product that utilizes way less water."

When he tried vegan chef Yosefa Ben Cohen's vegan sunny-side-up egg alternative, he knew he had found the answer. With Yosefa and her husband, Nisim Ben Cohen, as partners, the three launched Yo Egg as a fully formed frozen product, initially to be only used in restaurants. As the product evolved, they were constantly looking for feedback.

"The quickest feedback loop is through food service because food service allows us to put the product out there and get feedback from chefs and from consumers, and then we're super quick implementing improvements based on the feedback that we have," says Groner. He adds that selling an entirely new food product direct to consumers is difficult. People are reluctant to purchase something they've never seen before at a grocery store, but they're more open to trying new dishes at a restaurant.

Currently, Yo Egg is available at select restaurants in Israel and across the U.S., including at chef Guy Vaknin's New York City vegan restaurants Willow and Coletta.

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"I look for products that offer three things: presentation, flavor and texture. It's tough to hit all three, but I also typically work with the products to, for example, infuse that flavor or pump up the presentation," says Vaknin, owner of City Roots Hospitality vegan restaurant group.

The Steak Alternative

Vaknin also serves Chunk Foods, a steak alternative, which also launched solely in restaurant settings. Chunk is ready to be pan-seared, basted, grilled, smoked, stewed, braised or baked, and it cuts, cooks, plates and pairs just like steak. Beet juice even gives it the proper coloring, and it sports the fibrous, tender texture of a cooked fillet.

In a 30-day case study at Vaknin's restaurants, Chunk was a bestselling dish, representing 29.6% of the food items revenue on average and accounting for 20% of the total restaurant revenue.

Chunk's founder and CEO, Amos Golan, has a background in cooking and engineering. He experimented with fermented soy and peas while working for a chocolate company and was impressed by the resulting umami flavors. When he moved to the U.S. in 2016, he noticed a boom for what he calls "plant-based 2.0," with things like the Beyond Burger launching in Whole Foods and the Impossible Whopper at Burger King.

"I got excited about it, especially as an Israeli — we eat rather clean, and we eat less-processed foods," Golan says. "I would look at the back of packages and ask, 'Why does there need to be 30 ingredients in here?'"

He answered his own question with the knowledge he had gleaned in his experiments with fermentation.

"I have these umami flavors, and I can get them without almost any processing, using a very traditional method," Golan says. "What if I can create a more authentic steak texture [versus ground beef] and address that part of the market that is currently completely unaddressed, which is 60% of beef that is sold in the United States. No one has created an alternative for that."

The predominant ingredient in Chunk is a patented fermented soy flour — Golan says the factory looks more like a bakery. He also claims he has the shortest ingredient list in the industry, and does not use any binders. Impossible and Beyond both sparked some backlash due to their long ingredient lists, which included what some consumers saw as too many chemicals.

"The powerhouse of the industry is methyl cellulose, which is a binder that is used throughout all products. Beyond, Impossible, they all have it, and it basically holds everything together," explains Golan.

"It also has this unique thermal behavior where it becomes tougher when it's heated up, so it creates the bite. But when it cools down it's a little bit like plasticine, so it's not really a very pleasant bite when it's cold."

(Methyl cellulose is a chemical compound created by heating cellulose with a caustic solution like sodium hydroxide and then treating it with methyl chloride. It is classified as a laxative by the National Library of Medicine.)

Chunk mimics the fibrous texture of steak, it can be eaten at any temperature without any issues and it holds water and fat very well, yet also releases them so that when you take a bite, it's a very juicy bite. Four ounces of Chunk has 25 grams of protein. With all these positives, crucially, Golan also realized the cost benefits of creating a product that could convincingly mimic steak.

"I thought, even if I don't get to the economies of scale of meat from day one, I can still create a product that is valuable in terms of how much people are willing to pay for it," he says. "I knew that I could get to the same price point as a burger patty, but I can sell it for twice as much because people are used to paying more for steak than a ground beef product."

After perfecting his recipe, he shared the product with some angel investors and got his first $50,000 investment (to date he has raised $17 million). While Golan was at MIT, he launched Chunk in the U.S. in September 2020, with an R&D arm in Israel launching in December of that year. Currently, Chunk is piloting with restaurants in the New York and Los Angeles areas, and will launch in Chicago soon. The company is ramping up distribution, with plans to get into more food service locations in the U.S. and hopefully go nationwide next year. Once manufacturing can be increased, the strategy is to enter fast casual chains and finally retail. Plus, more products like roast beef are on the horizon.

But making fake beef is relatively easy. One of the hardest proteins to replicate has proven to be fish and seafood. But that also means the category is ripe for innovation and investment.

The benefits of plant-based foods are myriad, ranging from sustainability to economic to health. According to the Good Food Institute, eating plant-based meat instead of beef reduces land use by up to

99%

emits up to

90%

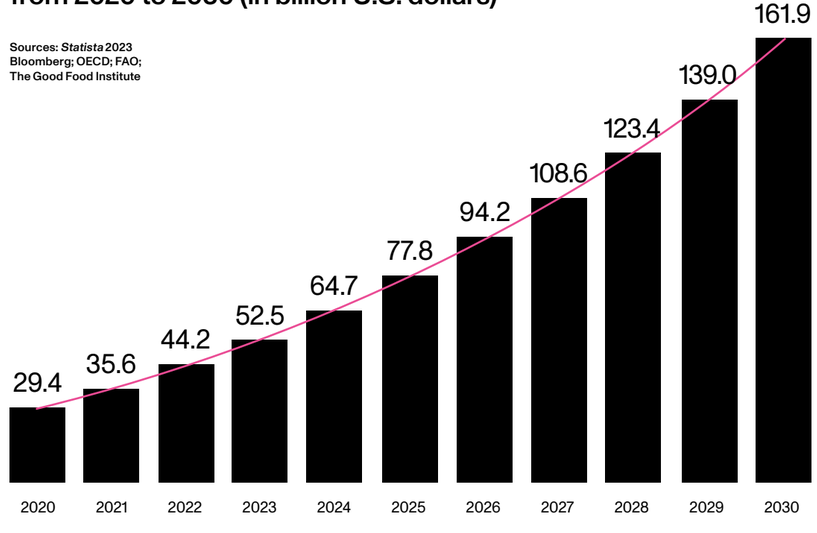
less greenhouse gas and uses up to

99%

less water.

Value of the plant-based food market worldwide from 2020 to 2030 (in billion U.S. dollars)

Sources: *Statista* 2023
Bloomberg; OECD; FAO;
The Good Food Institute



> “Established companies as well as startups are realizing that there’s money to be made through plant-based innovations — both because it’s trending and because it’s a necessity in terms of sustainability.”
>
> Guy Vaknin
> Chef, Willow and Coletta, New York City

“Vegan seafood is the next big market. There have been quite a few companies coming up and getting funded the past couple of years, and there are some great new innovations,” says Diana Edelman, founder and owner of Vegans, Baby. “I think with vegan seafood, it’s tricky to replicate the real thing, and I’ve been really impressed with some brands, while some I think have some more work to do. Overall, this is the market I expect to really rise in the next few years and see a lot more companies enter into.”

Good Catch is the largest vegan seafood company and was one of the first, launching back in 2016 with vegan tuna. In 2020, they added frozen fish patties and have since expanded their frozen line even more, with the first-ever plant-based salmon burgers being added in 2022. Good Catch products are sold in grocery stores around the country and served in restaurants in select cities, with plans to expand in Europe. In January 2020, the company completed a $32 million funding round, while landing partnerships including General Mills’ venture arm, 301 Inc, and LightLife’s parent company, Greenleaf Foods.

A newer company is tackling some of the most complicated seafood to mimic in vegan form: sashimi, calamari, shrimp and prawns. Boldly, a new privately funded company out of Australia that is set to launch this fall, has all of these and more. Boldly was co-founded by Allen Zelden, who is also co-founder of PlantForm, the private-label arm of a plant-based manufacturing operation with global distribution. The startup aims to fill a gap in the plant-based market.

“If you look at the plant-based dairy category, it’s now about 15% to 16% of total milk sales, but it didn’t require billions of dollars to get there — it slowly chipped away, and now it’s doing quite good things,” says Zelden. “On the other hand, plant-based meat categories are today 1.3% of total meat sales. And historically, for the two years prior, it was sitting at 1.4%. So it’s actually gone backward, after billions of dollars invested. All that’s happened is that the category’s cannibalized itself while we celebrate these record-breaking investments. But no one’s focusing on the awareness side, and that’s what I keep coming back to.”

Raising Awareness

For Zelden, that awareness means getting plant-based foods into the mouths of people who would never normally eat it, by meeting them where they are. Eventually, he believes more people will demand plant-based food, and the more categories that are out there, the better.

“We launched vegan seafood because it’s clear that we need to move beyond the burger,” he says. The core ingredient is konjac root, and while Boldly products are missing the omega-3s prized in real fish, Zelden is quick to remind that those nutrients are found in plenty of plant-based foods, from walnuts to Brussels sprouts. “This is us removing the artificial ingredients and flavors,” he adds.

Vaknin for one sees the plant-based category as continually growing, both in investments and consumers. “Established companies as well as startups are realizing that there’s money to be made through plant-based innovations — both because it’s trending and because it’s a necessity in terms of sustainability,” he says.

And having a variety of vegan products — the more specific, the better — seems to be the key to appealing to all tastes. “It’s important because it makes vegan dining accessible to a wider audience,” says Vaknin. “More folks are open to trying vegan food because it looks (and often tastes) like what they are used to, and these products help bridge that gap.”

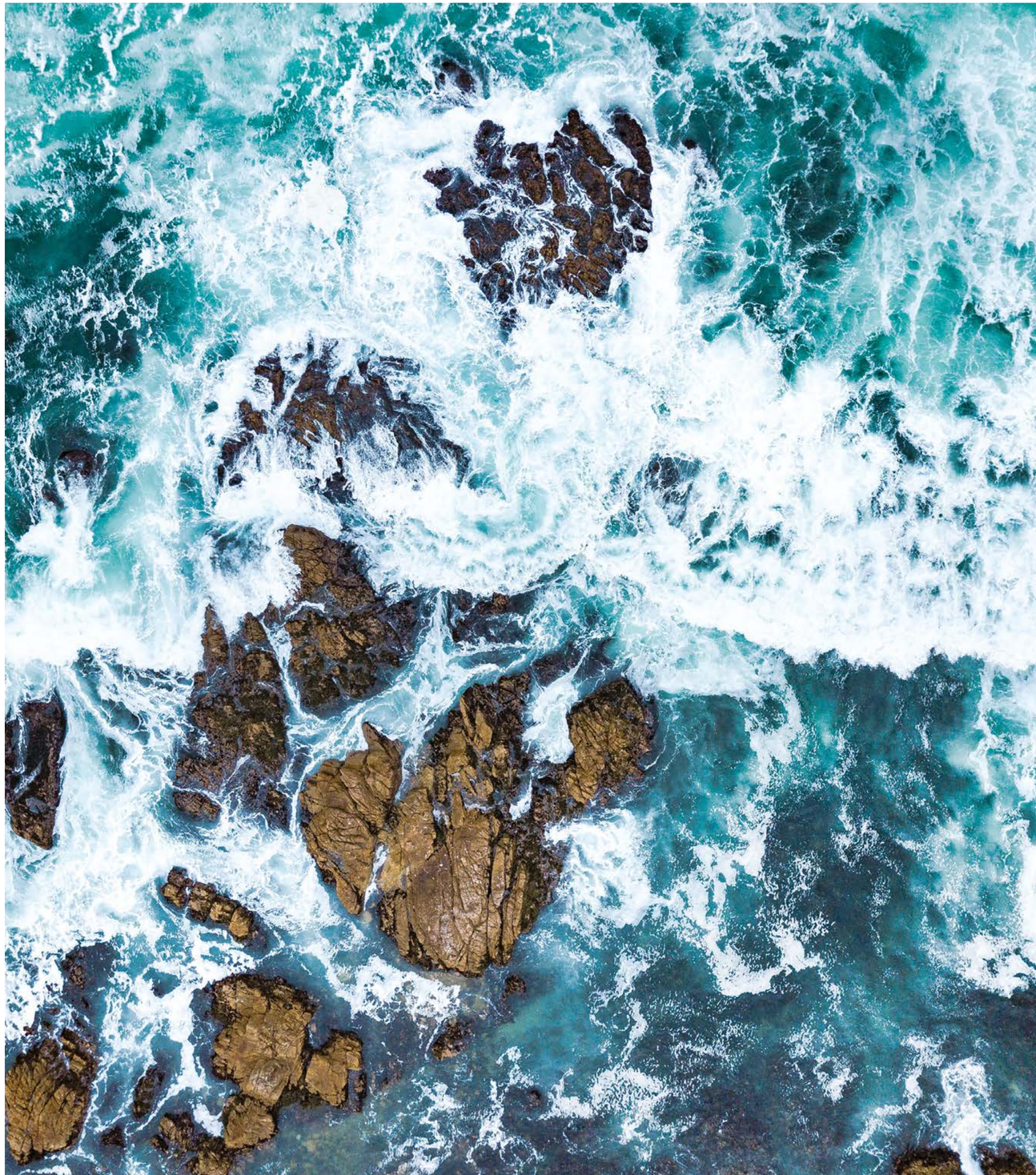
Devorah Lev-Tov is a New York–based journalist who writes about food and travel for multiple publications, including the *New York Times*, *Condé Nast Traveler* and *National Geographic*.

Subject:
Travel

Theme:
Conscious Luxury

Words by:
Jennifer Leigh Parker

Photos:
Courtesy Visit Mendocino,
Mandarin Oriental Hotel Group



Coastal Culture

The next frontier in hospitality won't just be more of the same old luxury — it's all about sustainability now, and forevermore. Meet some of the champions committed to doing good for the planet, for travelers and for the bottom line.

It's not quite 5:30 in the morning, but the crowd on Van Damme State Beach has already gathered in the mid-June fog, slurping thermos coffee out of paper cups and clipping waist belts onto their chest-high waders. They're "gearing up" for the shivering-cold tide pools off the Mendocino coast, to hunt for purple sea urchins.

"Forget everything you know about walking upright — you will slip on this seaweed like a banana peel, I kid you not!" shouts Kevin Smith, Ph.D., a local maritime archaeologist and foraging guide for hire. He's commanding a motley crew of 30-odd amateur adventurers to get down on all fours and crab-crawl over the exposed reef in search of the enemy. Armed with dull butter knives, we make our way to the pools, proudly prying the spiny sea urchins off the rocks and into our buckets, one at a time.

There is no chase in this hunt. Millions of purple sea urchins blanket the rocks and creep along the ocean floor from Baja California all the way up to British Columbia. Our morning catch, a few hundred between us, isn't even a drop in the bucket...because we're too late.

A marine warming event referred to as "The Blob" was first detected in 2013 in the Gulf of Alaska. It killed the local sea star population, one of the main predators of purple urchins.

"They were beautiful; I mean huge sea stars. When they died off, you started to see this spread of purple, and the overgrazing of kelp forests — which completely wrecked the ecosystem," says Smith, cracking open a spiny urchin shell with a spoon, shaking off the excess liquid and scooping out tender orange strips of edible uni.

More than 95% of the area's kelp forests have since been decimated, according to the state's Ocean Protection Council. "People don't know that. And it's right outside our door."

Smith is just one of the many proselytizers you'll find in this county, which has coalesced around the "save the kelp" banner — for good cause. Apart from creating a home that sustains a wide variety of sea life, kelp forests store a staggering amount of carbon — approximately 20 times more per acre than forests on land.

For the local hospitality industry, it's also a money issue. Seaweed forests pumped more than $250 million into the state's economy each year by way of commercial fishing and recreational diving, according to the Nature Conservancy, a global environmental nonprofit.

Roughly $55 million of that was due solely to a large, sweet and tender marine mollusk called abalone, once the star of its own cottage industry. Locals say it tastes better than lobster. But without kelp, wild abalone starve — which prompted the closure of California's recreational abalone fishery in 2017, along with a statewide moratorium enacted by the California Department of Fish and Wildlife. (A few licensed farms are what's left of the state's abalone supply.)

Before 2017, some 35,000 divers visited Mendocino and Sonoma counties each spring to collect abalone. They haven't returned. That's a significant loss in a place where tourism is the main industry.

Welcome to Urchin Fest

For this reason, the Visit Mendocino tourism board, together with the MendoParks association and its born-and-bred ringleader, Cally Dym, proprietor of the Little River Inn, now hosts an annual three-day Urchin Fest to increase tourism and provide a hands-on educational experience for travelers.

Participants are treated to an urchin tide pool excursion, a catch-and-prepare demo and educational talks on the beach, led by the Nature Conservancy and the Noyo Center for Marine Science. The event culminates in a Saturday evening dinner at the Little River Inn, this year helmed by chef Marc Dym and sushi chef Frank Takao, who can sling shots of uni like a Vegas croupier with one hand and assemble fresh tuna rolls with the other.

Surrounding hotels and restaurants — including the MacCallum House; the Inn at Schoolhouse Creek; SCP Mendocino Inn and Farm; the Elk Cove Inn, Restaurant and Spa; and the Inn at Newport Ranch — also get in on the action by offering weekend package discounts, inviting guests to join the festival or by serving uni on their menus.

One weekend won't change the nature of things in Mendo, as locals call it, but the camaraderie that comes with engaging hands-on with the natural world is what post-Covid travelers are yearning to (and paying to) experience.

Maybe no one will remember a hotel room or a flight. But we'll not soon forget that time we ate urchin gonads together at sunrise, looking cartoonish in our waders — and not caring a hoot who saw.

From these vertiginous craggy cliffs, anyone can plainly see the dead bull kelp washed up on the shore like a warning from deep waters. Some of us are paying attention. More need to.

If anyone knows this, it's Matthew Kammerer.

Maybe no one will remember a hotel room or a flight. But we'll not soon forget that time we ate urchin gonads together at sunrise, looking cartoonish in our waders — and not caring a hoot who saw.

Michelin Star Power

Say what you will about Michelin Guide ratings: Being conferred a star matters very much to restaurants owners and their staff members. Chefs with stars don't just gain fame; they might also realize the power to turn a relatively uncommon food source — like sea urchin — into a coveted delicacy.

That's exactly what executive chef Matthew Kammerer is doing at Harbor House Inn, a fine-dining destination with two Michelin stars that serves only 20 guests a night. In 2020, Kammerer's work here made him one of the first American restaurateurs to receive a Green Star award from Michelin, recognizing his dedication to sustainable gastronomy.

Drive less than 30 minutes south of Mendocino, and you'll find it perched on a cliff in a tiny town called Elk.

On Kammerer's multicourse tasting menu, uni is an amuse-bouche, setting the scene for what's to come. You notice the texture before anything else: creamy and decadent, like a briny-sweet mousse. Here, it's draped over a jiggly square of egg custard and submerged in a small bowl of dashi, artfully adorned with a few wildflowers. The presentation is fragile, a delicate balancing act that could easily topple with the tap of a hand-painted chopstick.

It's a clear nod to the vulnerability of the ocean right outside. It's also a fundamental rejection of the notion that you have to serve caviar, foie gras or wagyu beef to be considered Michelin material.

"Nature is in charge; nature is telling us what's available. If it's really windy and divers aren't diving, we won't have urchin," explains Kammerer. "As a chef, my question is always: What do we have? Let's use it. We have something called a 'utilize list,' showing us what's growing on the farms two to three weeks out. We know the fishermen by first names; they tell us what they're catching, whether it's mackerel or a certain type of rockfish. If we have it just for one day, that's fine. We'll make something else tomorrow."

Kammerer's locally sourced, environmentally conscious cooking is paying off. The restaurant has maintained high price points since opening despite its temporary Covid closure; the "full experience tasting menu" is $275 per person, not including drinks.

From here, Kammerer wants to grow. "I do see the value in Michelin. It's a goal to get it because of what it brings to this business. We'll be able to do more with it. We'll be busier, and it will bring us more opportunity. From zero to one star, we saw a boost. From one to two stars, we saw a big boost," Kammerer told me, just before Michelin re-affirmed Harbor Inn's two-star status in July.

After working in high-end kitchens from Boston to Belgium and Tokyo to Australia, Kammerer finally landed in the tiny town of Elk, California, because in it he found what he'd been looking for: a place to build his dream restaurant, and an owner to support his vision. The current owners, Edmund Jin and Eva Lu, purchased the Harbor House Inn in 2005. After they partnered with Kammerer in 2018 and quickly opened the restaurant and farm, it took only one year to earn their first Michelin star.

"This was all in a book, written down. A fictional place. I wanted a small, remote inn with 10 rooms near the ocean where I could grow food. I even wanted a historical building, something with character," added Kammerer.

In 1916, it was owned by the Goodyear Redwood Company, which used it as a loggers' retreat and showroom for local redwoods. Today, decorating the redwood dining room are plate-sized pearlescent abalone shells, which Jin himself caught out on local dives. To wit: This place is very much *of the place*, and an example of the kind of authenticity that so many in hospitality try, and often fail, to achieve.

In conversation, the young chef seems almost surprised by his own luck, though no one who knows him would likely ascribe his success to luck; he's a single, 34-year-old workhorse with an East Coast head for business and a Kaizen method management style — which essentially posits that continuous, small improvements lead to significant positive outcomes.

Dinner is a well-rehearsed, finely tuned performance. Five nights a week, 14 kitchen staffers feed 20 people a 12-course menu. They've been trained to hit their marks in prep, plating and service the way gymnasts might be expected to nail a landing — and every night is another shot at perfection.

"Is this scalable?" is the next big business question.

The Do-Good Hotelier

Ken Cruse, founder and CEO of Soul Community Planet (SCP) Hotels, fervently believes the answer is yes. In fact, he and his wife, Pamela, SCP co-founder, built the company around the concept that "profit follows purpose," touting the tagline: "Every stay does good." Launched in 2018, the hotel group now comprises 10 eco-friendly properties throughout California, Colorado, Oregon, Hawaii and Costa Rica, with aims to expand.

"People will go out of their way to pay more for products and experiences that align with their own core values. People buy what they feel good about," Cruse says.

Sure, SCP might sound like a hippie brand, targeting safe-space mushroom-eating forest bathers. And California has plenty of them (no judgment!). But Cruse insists that "holistic hospitality" is a niche market full of profit potential.

Local ceramist Leila Al-Hemali sells handmade coffee mugs and saucers glazed with urchin powder to Mendocino beachgoers. | alhemalistudios.com

"Most people identify with the label 'consicous consumer,' but more young people are actually acting on it. Our target market skews young, toward Gen Z, Gen X and millennials, who gravitate toward experiences rather than products. It's about who they aspire to be," says Cruse. SCP's second-quarter investor deck states that the brand is for "those who naturally put good into the universe."

"They don't have the deepest pockets, but that's changing. Millennials have more money to spend now. The age groups that we're catering to will get older and more successful," he adds.

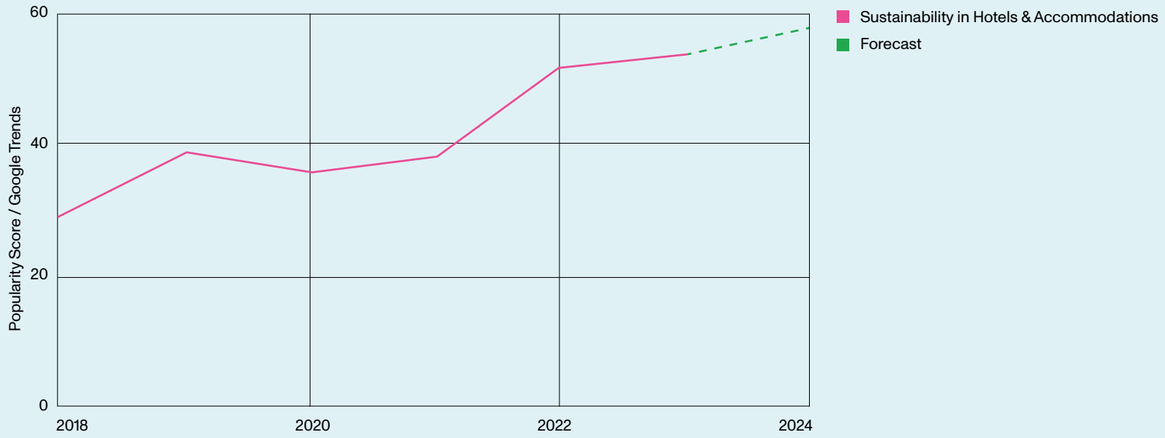
SCP hotel rooms hover around a $300 average nightly rate, which means the hotels are not in the luxury category. Instead, the Cruses are going for casual, eco-conscious and approachable. The brand's luxury, to use the term loosely, is inherent in the natural beauty of its pristine locations, and in the ease with which guests can participate in acts of altruism. Think of it like a points system, except the hotel points aren't for you — they're for the planet.

When you arrive at SCP's Mendocino Inn and Farm reception area, for example, you're greeted with cookies, a jar of chicken feed (in case you want to feed the farm animals) and a large chalkboard ticking off the partner charities and waste-reducing programs to which your stay contributes — including a running tally of the number of trees planted (146,000 this June) in an unnaturally deforested area via One Tree Planted, the number of pounds of trash collected from local beaches in Hawaii through the Hawaii Wildlife Fund and the number of trees planted along the Southern California coastline through the nonprofit organization SeaTrees.

Notably, SCP is not developing new-build real estate, but rather repurposing existing properties and outfitting them with features like solar panels, electric-vehicle chargers, water-recycling facilities and simple vegetable gardens. Cruse believes this model will drive growth: "We only have 10 hotels. When we have 50 or 100, it will drive more occupancy. Our expectation is that we'll see occupancy levels continue to improve with demand."

Increasing demand is key to all of this. Current forecasts are optimistic: The U.S. tourism and travel sector is expected to contribute $2.24 trillion to the U.S. economy by the end of 2023, surpassing the 2019 pre-pandemic high of $2.17 trillion, according to the World Travel & Tourism Council and the BBMG Conscious Consumer Report.

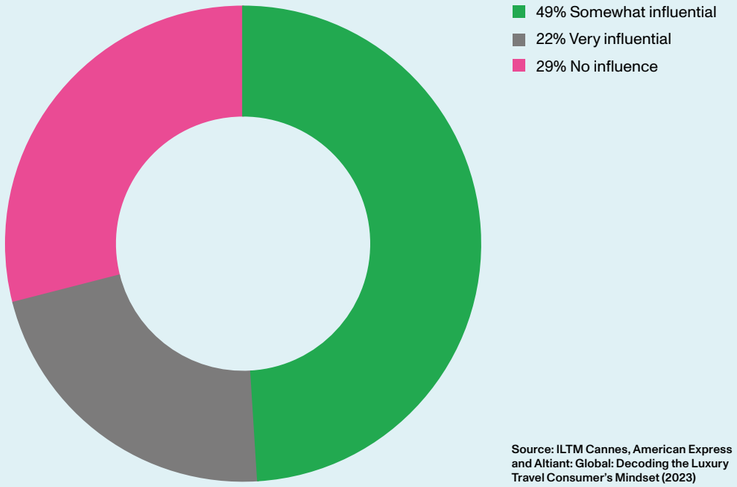
Yearly average search interest for sustainability in hotels & accommodations



Google Trends data reveals positive growth in search interest for sustainability in the hotels and accommodations category. Huge's LIVE machine-learning model forecasts a further 7% increase in average search interest for sustainability in the hotels and accommodations category in 2024. The trend is expected to continue, reinforcing the business case for incorporating sustainability into travel industry strategies.

Data source: Google Trends, Huge LIVE analysis

Likeliness of sustainability factors influencing travel



Source: ILTM Cannes, American Express and Altiant: Global: Decoding the Luxury Travel Consumer's Mindset (2023)

71%

of affluent travelers are somewhat or very influenced by sustainability factors when making travel decisions

Sustainability Is the New Status Symbol

Traveling sustainably has become chic, as it also now signals prosperity.

This is, in large part, due to the impact of inflation on consumer spending in just the past year. Though consumers claimed they were interested in sustainable travel, only the wealthiest among us can actually save elephants with a luxury safari or fund the restoration of a resort's coral reef. By making impact part of the travel experience, hotel brands of the highest order are setting a fashionable trend: to leave a place better than you found it.

Today, the most prominent luxury brands (which command room rates well into the thousands of dollars), including Dorchester Collection, Rosewood Hotels & Resorts and the Mandarin Oriental Hotel Group — are all treating sustainability as a serious corporate strategy, with its own department, staff head counts, budget allocations and accountability metrics.

Eugenio Pirri, the new joint CEO of Dorchester Collection, told *Huge Moves* that investing in renewable energy is a top priority for the company.

"Five years ago, ESG [environmental, social and corporate governance] was just part of regular operating costs. This year, for example, we're spending a few million alone on a solar project to provide power for the entire Bel-Air resort, and give back to the city of Los Angeles," says Pirri. "We take case-by-case studies to our board, and we have huge support. They believe it's a requirement. It's not a free bank account, but it's about what makes sense."

What makes sense for these high-end hotel brands is to remain competitive when guests are spoiled for choice. And the hotel labor market is still tight. "There is a reputational element to it. People want to stay with a sustainable brand, and employees want to come work for you, if you're leading the way," adds Pirri.

On the other hand, corporate ESG policies have drawn continued criticism for not living up to lofty promises, which is not lost on these leaders. The pressure is on to change this perception, and right soon. Because travelers vote with their feet.

A vegan guest room at Emirates Palace Mandarin Oriental

"It is fair for us all to keep questioning, challenging and reexamining prevalent ideas around sustainability and ESG policies. This is the only way we can collectively transform business as usual," says Iris Lam, director of sustainability and global development for Mandarin Oriental. "However, the practice of making and publishing ESG policies has its place, because it helps us incorporate sustainability in every level of decision-making as an organization."

Lam is one of four full-time staff members working within Mandarin Oriental's new sustainability department, formed in 2022. She predicts that a driving force in this category is the leverage of luxury travel agents: "They will become even more particular about the brands they work with, either by personal choice or because clients demand it. We can see the agents, booking platforms and consortia we work with are getting more concerned about sustainability and are starting to gravitate toward other people in the travel world who are like-minded."

Sustainable travel will become the new status symbol, if it isn't already. Because travel culture changed when the world stopped traveling. We became conscious and conscientious about the damage we'd done, and are still doing. Now, the melding of glamorous jet-setting with impactful, experiential environmentalism can become a powerful force for good.

As it turns out, the tree huggers and the urchin eaters had it right all along.

***Jennifer Leigh Parker is Editor-in-Chief of* Huge Moves *magazine. Her writing appears in* Forbes, Bloomberg Pursuits, CNBC, Skift *and the* Washington Post.

The New Social Scene

After the death of the blue bird, new players entered the chat. Can these newcomers reinvent the public square?

In the wake of Elon Musk's controversial takeover of Twitter in October 2022 — and subsequent disastrous rebrand to "X" in July — the entire social media landscape is undergoing significant transformation.

It was one of the strangest moves in the history of brand strategy, bewildering many in the industry, who fail to see the genius in it. But the warning signs were loud and clear: Musk's polarizing approach to content moderation and pay-for-play policies led to a mass exodus of users, with losses estimated in the millions. This shift spurred the emergence of new platforms such as Meta's Threads, Jack Dorsey's Bluesky, Mastodon, Post.news, T2 and Artifact.

Among these, Meta's Threads, launched this summer, stands out due to its vast user base (the platform added 100 million users in its first week). However, concerns about data protection, content moderation and free speech loom large. The question remains: Can we restore civility to our online discourse?

Over the past decade and a half, social media has been a catalyst for societal disruption. A 2020 Pew Research Center poll revealed that 64% of Americans perceive social media as having a predominantly negative impact on society, a sentiment that remains unchanged today.

Ramesh Srinivasan, a professor of information studies and director of the University of California Center for Global Digital Cultures at UCLA, suggests that we're at a crossroads, with social media creating individualized online experiences that foster division and polarization. The rise of new platforms promising enhanced privacy and decentralization doesn't necessarily address these issues.

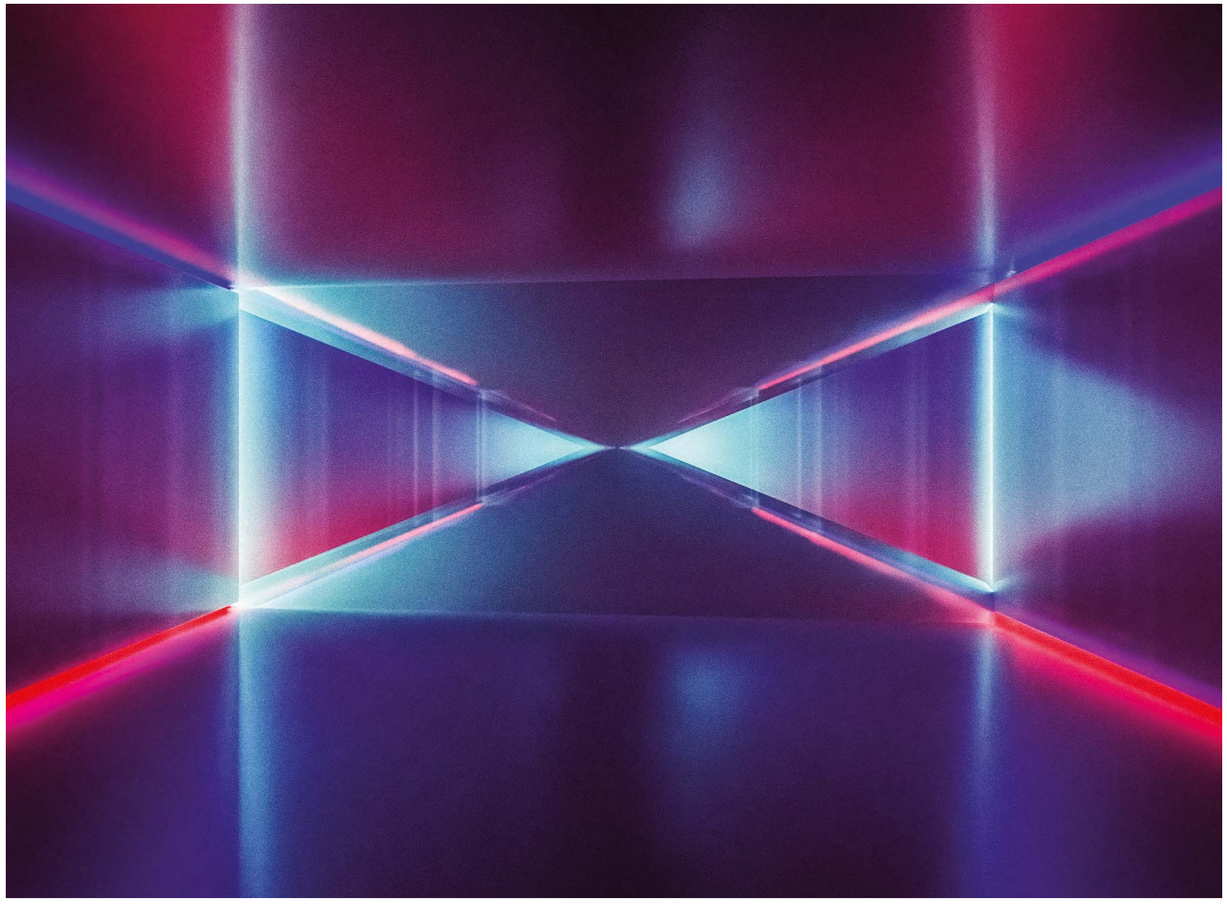
"All social media at scale means that individually, each of us is living in different worlds when we are online. So that means that in terms of any kind of question of democracy, or a larger global community, or even a national democracy, we're all actually in our own tunnels, so to speak," Srinivasan says. "Those tunnels are being architected for us invisibly, based on what will arouse and create outrage, which means that at scale, we're going to see one another with suspicion. We're going to get more and more into groupthink and polarization. We're not going to be able to have compassionate disagreements with one another."

The debate over online free speech versus hate speech has intensified, particularly since Elon Musk's takeover of Twitter, with content moderation becoming even more of a politically charged issue. Meanwhile, major social media companies, including Meta and Twitter, have reduced their content moderation efforts.

"Users have been sold a lie, and it's exemplified by how Elon Musk speaks about things. They're presented with a dichotomy that says you can either have free speech, or you can have safety. I think that users increasingly don't buy that. It's a false dichotomy," says Samuel Woolley, assistant professor in the School of Journalism and project director for propaganda research at the Center for Media Engagement at the University of Texas at Austin. Woolley is the author of *Manufacturing Consensus: Understanding Propaganda in the Era of Automation and Anonymity.*

Musk's actions on Twitter, including the removal of protections for users, has sparked deep concern over the spread of disinformation. The concept of free speech, Woolley argues, doesn't equate to unrestricted speech, and private companies have the right to regulate content on their platforms.

Balancing user well-being and market decisions is crucial in this evolving landscape.



Collective Effort

How do we rectify this? Major social media companies have consistently proven unreliable in handling user data and content moderation, and misinformation continues to proliferate at an alarming rate.

"We're in a moment of clear transition," says Woolley. The success of new platforms like Meta's Threads and the rise of others like Bluesky and Mastodon indicates users' dissatisfaction and their search for safer spaces for expression. The solution, it appears, won't come from a single source but rather will require a collective effort from all users.

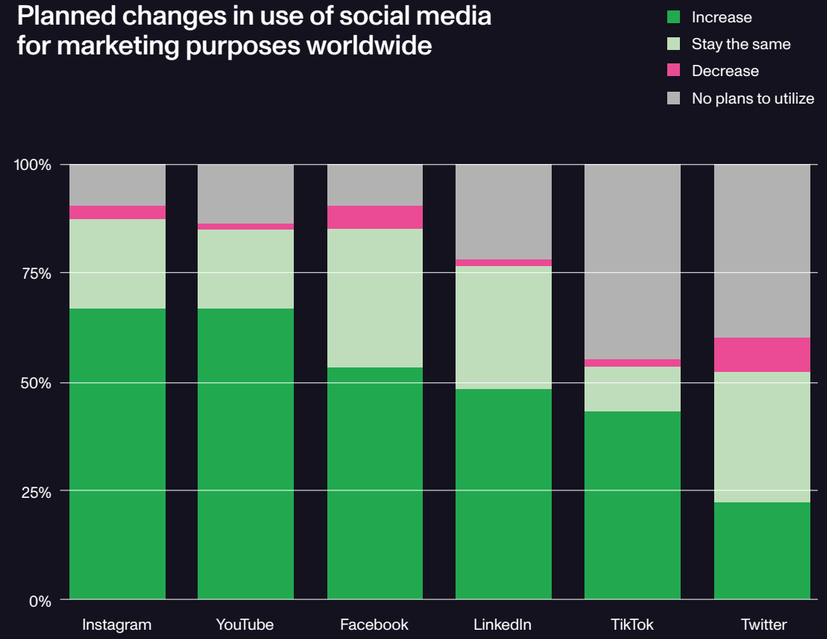
With nearly 5 billion global users, social media is a significant business arena. Danielle Wiley, CEO of influencer marketing firm Sway Group, notes that advanced technology allows businesses to measure ROI, offer shoppable content and target users geographically.

Brands are being forced to figure out which platforms make the most sense so that they can focus where it counts," Wiley writes in an email. "Social media was vital for businesses during the pandemic. The political environment has made things trickier. When everything is super polarized, like it is now, every interaction online becomes a high-stakes situation," says Wiley.

Influencers who sway user behavior can exacerbate misinformation. Political commentator and influencer Kaivan Shroff believes businesses and creators share a responsibility to moderate these spaces. Shroff, who had built a following of around 120,000 on Twitter before Elon Musk took over, says that many like him have felt "digitally homeless" since the billionaire stepped in.

"I think we've come to this place where now it's so easy to be for sale on a micro level," Shroff says. "Nobody wants to talk about it because the people getting paid don't want to talk about it, even on the corporate level."

Planned changes in use of social media for marketing purposes worldwide



Source: Social Media Examiner. (June 20, 2023). Planned changes in use of selected social media for marketing purposes worldwide as of January 2023 [Graph]. In *Statista*. Retrieved July 27, 2023, from https://www.statista.com/statistics/258974/future-use-of-social-media-among-marketers-worldwide-by-platform/.

Instagram is a quality platform that marketers are continuing to find valuable and will likely continue to do so, whether or not Threads is a mainstream hit.

Welcome to Decentraland?

Federated and decentralized networks, which are self-regulated by a collective, are discussed as potential solutions for moderation and civility issues on social media as well, though their implementation is not without challenges.

"Most of those projects are just too difficult to implement. They're too technically complex, creating challenges in allowing them to be viable competitors to platforms like Twitter," says Srinivasan.

Woolley agrees: "There's been movement towards connecting some of the federated platforms. The question is, at what point does it stop being a federated system? And does it just go back to becoming kind of the system that we know?"

While these systems alone may not solve civility issues, they could provide more user protections and enable businesses to connect with users in safer environments.

The Role of Regulation

Government involvement in social media regulation is a hot topic, particularly given the platforms' impact on free speech and public discourse, and their use of public internet resources. Some propose treating social networks like traditional media and telecom industries.

Woolley suggests that antitrust and monopoly laws will play a significant role in the future. "We know that Meta and Google are not akin to AT&T or telecom companies. But they do benefit greatly from the public good and supply a service integral to democracy, governance and human rights. We've got to learn to take a more nuanced approach to the problems in these spaces."

Srinivasan likens the situation to Amazon's use of public infrastructure without bearing the cost. "The internet is a digital infrastructure of packet switching, and none of these companies would exist without that internet."

However, government oversight of tech and social media in the U.S. has been limited. While Europe has implemented rules for social media moderation and user data protection, U.S. courts have protected social media companies from lawsuits related to content algorithms. Furthermore, a recent ruling from a U.S. federal judge limited government agencies' interaction with social media companies. These developments raise concerns about the erosion of content moderation and corporate responsibility, posing potential risks to democratic values globally.

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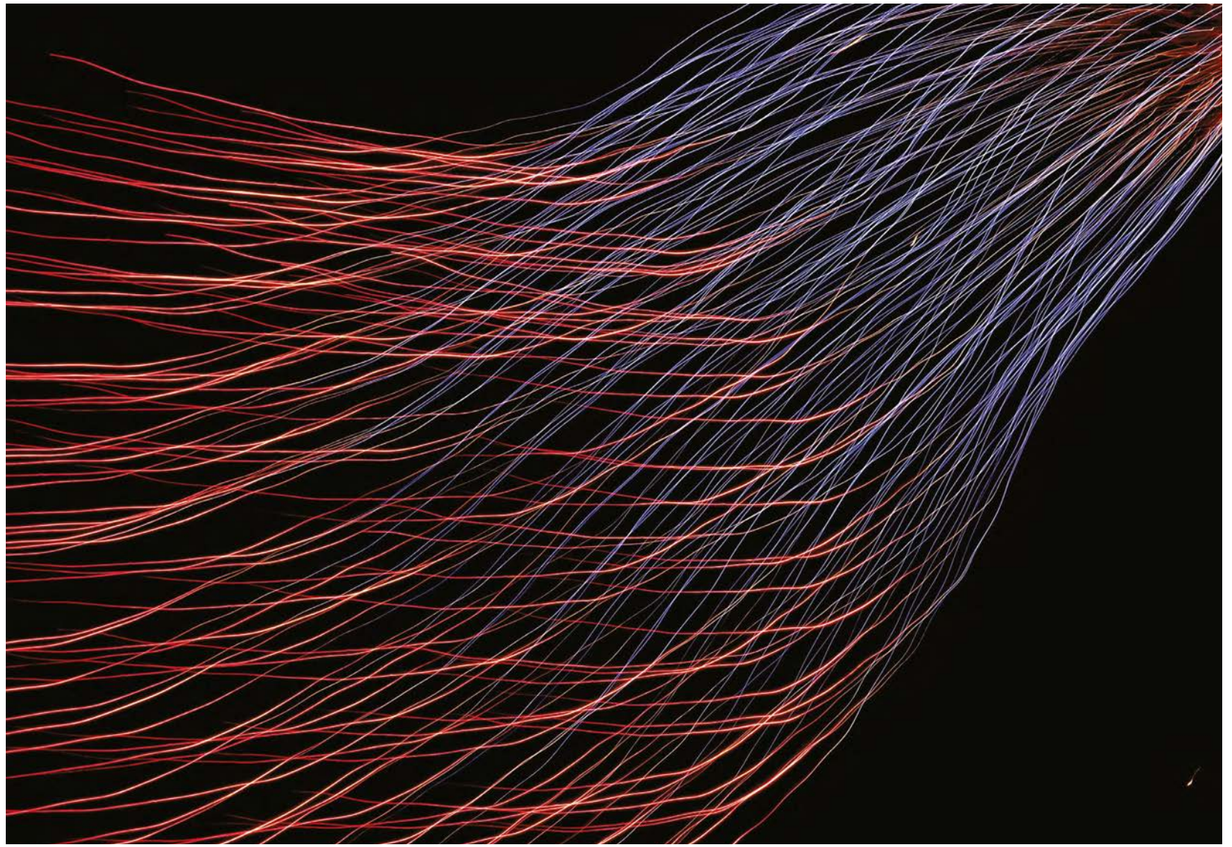


The Role of Users

Users and consumers also play a crucial role in fostering online civility. With 15 years of experience, the public is now more aware of the issues, toxicity and dangers associated with social media. Understanding how algorithms prioritize and amplify outrage and verifying shared content sources can help promote a more civil society.

Shroff emphasizes collective responsibility, while noting Twitter's unreliability. He finds Threads, which requires an Instagram account for access, a more accountable and moderated platform. "It's a lot of people posting, blocking bots and agreeing not to engage accounts that are clearly rage-gaming engagement," Shroff says.

The ability to block dishonest discourse and set rules on Threads has been appealing to users. "We have a chance to reinvent the public square," he concludes, highlighting the potential for a more civil and accountable social media environment.

AI Isn't the Answer

Social media companies, including Meta and Twitter, are touting the promise of AI to bring us back to some semblance of civility, but the technology as it stands now is nowhere near ready for prime time. Srinivasan says that algorithms powering ChatGPT and other AI large language models are partaking in simple stochastic parroting. "It's mimicry. It is not democracy. And mimicry is not creativity," Srinivasan says. These are essentially beefed-up chatbots trained on the very content we share on social media.

"AI has kind of been a MacGuffin for Zuckerberg and other folks," Woolley says. "They've presented it as the cure-all — a stand-in for the problems that exist, especially with content moderation. But AI as we know it right now is not sophisticated enough to do the kind of culturally, socially, linguistically nuanced content moderation that's needed when you are dealing with things as complicated as free speech or privacy or user safety. Automation and AI already play a critical role in scaling efforts to moderate content and to oversee the management of content on these platforms. But we're always going to need human oversight."

One thing is certain: Social media has become an inextricable element of our modern society. But the cat is now out of the bag, and we are years behind where we should be when it comes to regulating the space.

"We've already allowed the current network system to grow at an unfettered rate to incorporate billions of users under a communication regime that is thoroughly unregulated. The solutions to the problems that exist are going to involve very unsexy, systematic regulatory work that's careful and that has clear guardrails, teeth and repercussions," Woolley says, citing the need for both governmental and corporate regulation. "I think we're at a time in the world where we're going back to the drawing board and asking really important questions about what it looks like to create sensible regulations for maintaining a healthier space — a space that's better for everyone involved."

The path to restoring civility and reducing polarization in our online lives is complex and multifaceted. It requires collective efforts from all stakeholders, including users, businesses, influencers and government entities. It also calls for a more nuanced approach to content moderation, data protection and free speech.

The future of social media is uncertain, but the need for a more civil and accountable online environment is clear.

Abigail Bassett is a Los Angeles–based freelance journalist, on-air host and television producer whose work appears on CNN and in such publications as **Fast Company, Fortune, Business Insider, Forbes, the Verge** ***and*** **TechCrunch.** ***This is Bassett's debut story for*** **Huge Moves.**

Creativity is Capital

Though creativity can be an organization's most powerful asset, it is also very difficult to quantify. Now with a big assist from AI, a new statistical model is unlocking novel ways to capture explosive creative growth.

The cover art for Volume 2 of *Huge Moves* magazine is magnetic — a riot of color, form and abstraction. Some readers might focus on a small detail, while others might take in the whole picture. No matter how we experience the composition, we can recognize it as the creative output of many inputs. Refik Anadol's studio created proprietary algorithms, then the artist tirelessly manipulated and refined the imagery until the piece achieved the desired effect. The magic of creation is there, but so are the definable inputs that helped produce the artwork. If this were a statistics course, we might say that the creativity quotient of the art is high.

But among the numbers worrying the C-suite, you won't find a metric for creativity. In business, the *value* of creativity is never in question; where would Nike be without "Just Do It" and the Air Jordan, or Apple without the iPhone? Yet for as long as the modern corporation has existed, a narrow, even lazy view of creativity has prevailed. At best, creativity has been treated as the output of a specific department. And even then, it's been seen as a slippery, unpredictable, unreliable thing: a hothouse flower that drops its petals at the slightest breeze. Nothing resists measurement like creativity, and we live in a world where organizations, to say nothing of their shareholders, crave the comfort of statistically expressible information.

If we take a more expansive view, however, and see creativity for what it is — an expression of disparate inputs from across the business — an opportunity for measurement opens up. To put statistical rigor around an organization's creativity is to make the ineffable known. Suddenly a business' capacity for creativity can be quantified and understood as a form of capital, similar to financial or intellectual capital. If the applications of creativity were treated as a source of capital, they would become tools for increasing productivity and gaining strategic advantage. A business that consistently and effectively harnessed, focused and deployed its creative capital would have the jump on competitors — perhaps an insurmountable one.

This may sound like alchemy, an exercise in magical thinking. There are just too many variables, living across too many touch points, to build a valuable, viable snapshot of an enterprise's creative capital. And even if the capacity were there, by the time the snapshot reached you, any number of conditions might have changed, rendering the whole exercise pointless.

Fortunately, we're alive in an age where generative AI and machine learning are putting the lie to that thinking. Every day brings a new revelation in real-time data capture and analysis, to the point where yesterday's breakthrough can become yesterday's news.

The dominant narrative around generative AI is one of disruption: how it will blow the old modes to smithereens. When really, it's a paradigm shift in how we interact with the world. And a sizable part of that shift touches on how consumers interact with brands. History shows us that real advantage doesn't come from incrementalism, but from bold, creative applications of new technology.

In other words, smart companies don't squander good breakthroughs. They recognize them for what they are: chances for big swings and new approaches. And because we've reached a moment where technology is finally a match for the world's thorniest business challenges, brands can analyze data, glean insights and apply creativity like never before. The world's boldest, most innovative brands now wield the very thing that has eluded them: a statistical model that reflects the creative growth potential within their business — in real time. They wield the Creative Capital Index.

To put statistical rigor around an organization's creativity is to make the ineffable known.

A New Model to Measure — and Accelerate — Growth

Creativity is an organization's most powerful asset. According to Ocean Tomo's Intangible Asset Market Value Study (2020), creative companies hold higher market valuations through intangible assets like brand, reputation and intellectual property, which account for 90% of the S&P 500's total valuation. And Forrester's Creativity Catalyzes a Growth Mindset (2023) reports that firms that exhibit creativity grow 2.6 times faster, no matter their vertical or product focus. Unlocking the creative potential of a business is the key to driving durable, sustainable, predictable growth.

Over the past two years, Huge has evolved its understanding of creativity. Whereas for our first 20 years we might've viewed creativity as the output of a strategy, we now understand it as an expression of the sum total of a series of inputs — including strategy, but also an organization's people, products, operations and values. Through this broadened aperture, every consequential piece of a business becomes an input for measuring and generating creative capital. We designed the Creative Capital Index (CCI) precisely to understand these factors, so we could better guide clients toward the decisions and actions that can reduce underperformance and increase growth.

We've also come to understand that uncommon, exponential growth happens when you're applying data-fueled insights to the work you do.

At its core, CCI helps businesses measure, track and increase their creativity in ways that accelerate growth. To calculate a Creative Capital Index score, we analyze a company through three lenses: **Brand**, **Offerings** and **Experiences**. For the purposes of CCI, we get at the meat of these broad concepts by addressing the following questions in our analysis:

Brand:
What is the relative heat of the brand, and the resonance of its value proposition and brand purpose?

Offerings:
Are the brand's products and services relevant, high-quality and aligned to what customers want?

Experiences:
What is the quality of the total experience, inclusive of all touch points and expressions?

Next we defined "growth" to include calculations based on share price and share of search for each industry. Focusing on external data to provide an outside-in view, we analyzed billions of diverse data points from more than two years to understand their relationship to and impact on growth. Through that analysis, we developed our proprietary CCI algorithm.

Each industry in each market has a unique algorithm to reflect industry dynamics. Our historical data analysis shows that high CCI scores often lead to an outsize change in growth. Furthermore, CCI tracks how an organization's creative capital rises and falls over time compared to benchmarks within the industry.

A CCI score is a powerful key that unlocks opportunities to design and run tailored, potentially transformative programs that increase a brand's creative capital and business performance. Having this level of insight across an enterprise is like going from a black-and-white Kansas to a Technicolor Land of Oz. Let's step through and have a look around.

Diverging Drives

Automotive is the most competitive, dynamic sector tracked and captured by CCI, and for good reason. The steady drumbeat of model debuts, promotions, media attention and geopolitical intrigues, not to mention supply chain snags, all conspire to influence a brand's CCI score.

That dynamism is on clear display across aggregate CCI scores of three randomly selected automakers: Tesla, Ford and Toyota. All three brands are performing well above the industry average, a testament to their relative health across the public data that CCI queries and weights. Interestingly, Tesla's score went from the lowest of the bunch to the top in the 12-month period analyzed, an indication of the EV startup's ability to harness and apply its creative capital effectively over that span (fig. 1).

Looking across the applications, Tesla is not only outpacing but increasing the relative distance between its Offerings score and those of its competitors, with Ford and Toyota hewing to the industry average (fig. 2). Here CCI is examining whether the products and services offered by the brand are relevant, of high quality and aligned to what customers value. These factors are analyzed at scale, drawing on billions of sentiment indicators using semiotics and discourse analysis. Whether it's media coverage of a new model launch or the emotional intent of an emoji in a tweet, CCI is harnessing AI to crunch a staggering volume of inputs, with an extraordinary "eye" for nuance, to determine the relative value of these brands' products and services. And with a fully electric lineup that inspires borderline-messianic customer loyalty, Tesla is simply running away with the ball.

The Experiences application, however, inverts that narrative. Whereas Tesla's score tracks toward the industry average, Ford and Toyota outperform it (fig. 3). Remember, Experiences in this context refers to the quality of the total experience, inclusive of all touch points and expressions. Here we're looking closely at indicators of customer satisfaction, purchase intent and consideration, among many others.

Myriad factors may influence Tesla's relatively low Experiences score, from customer sentiment around service visits and the purchase process to wait times for product delivery. Closer interrogation of the data, ideally with Tesla in the room, could yield deeper insights into the brand's underperformance.

Broadly, CCI can help Huge objectively assess where an automaker is strong, and where to apply targeted interventions. Knowing where the gaps lie is one thing; filling them is another, and that's where programs built on bold, intelligent creativity make their mark.

Fig. 1: CCI score

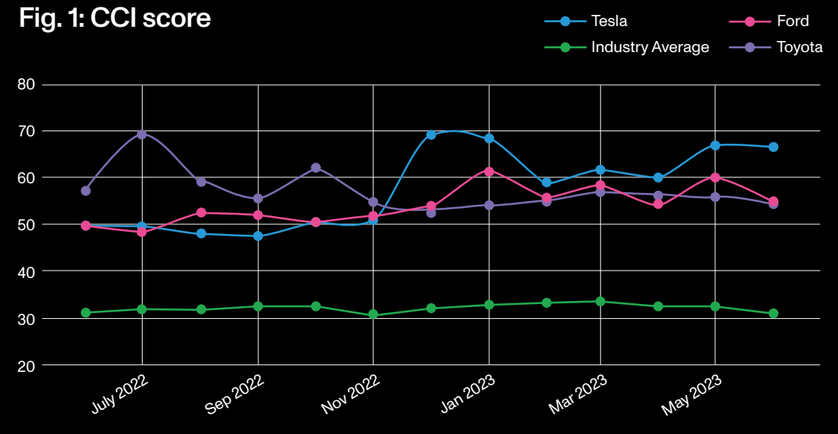


Fig. 2: Offering application

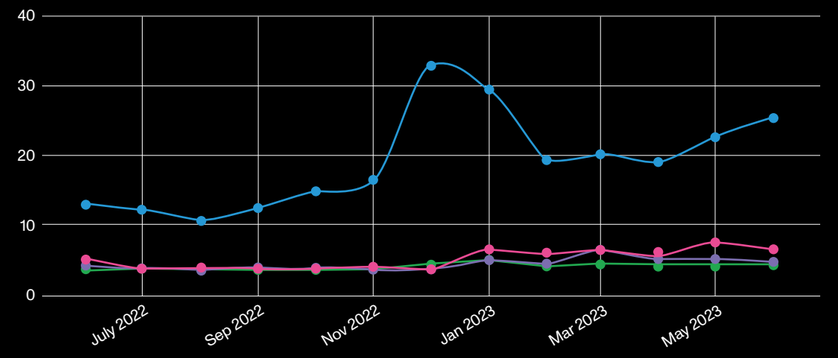
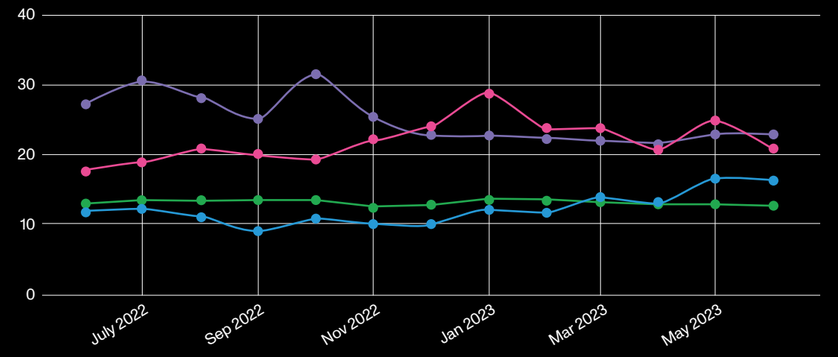


Fig. 3: Experience application



A Tale of Mismatched Shoes

Designer Shoe Warehouse, more commonly known at its 500-plus stores across 44 U.S. states as DSW, presents a fascinating study in creative capital contrasts. DSW's total CCI score does not deviate significantly in comparison to its biggest rivals, Shoe Carnival and Famous Footwear (fig. 4). But whereas Tesla excels on Offerings and waffles on Experiences, DSW struggles with a different challenge: fantastic Experiences factors but low Brand scores.

In the footwear subsector of retail, the Experiences metric plays a remarkably important role in consumers' perceptions, preferences and behaviors. Factors that inform an Experiences score may be the returns and exchanges process, the physical layout of stores, the e-commerce side of the business and many others. Such inputs may help drive DSW's strong Experiences score — and dampen those of its competitors (fig. 5).

Conversely, Shoe Carnival and Famous Footwear are walking all over DSW where Brand application is concerned (fig. 6). Again, numerous forces may be weighing on DSW's Brand score, from a lack of brand awareness to reputational factors, all of which would come into sharper relief through collaboration with the brand.

Regardless of sector or vertical, CCI acts as an AI-powered sparring partner, amplifying the strengths and exposing the weaknesses of a business in real time. Armed with the data-based insights CCI is precisely engineered to elevate, the brand can regroup, tone up and come out swinging.

Fig. 4: CCI score

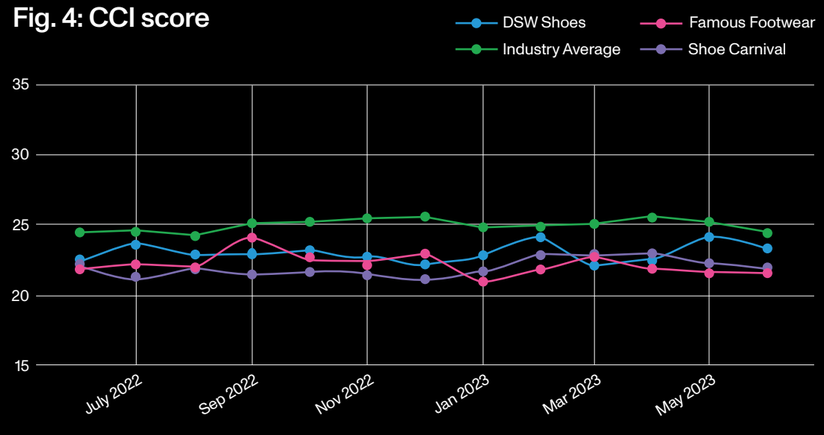


Fig. 5: Experience application

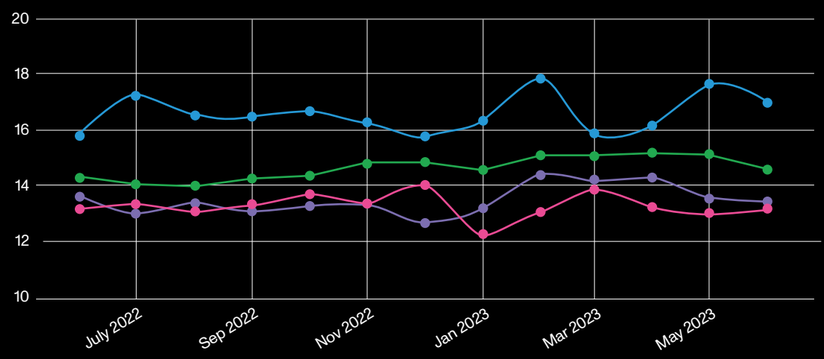
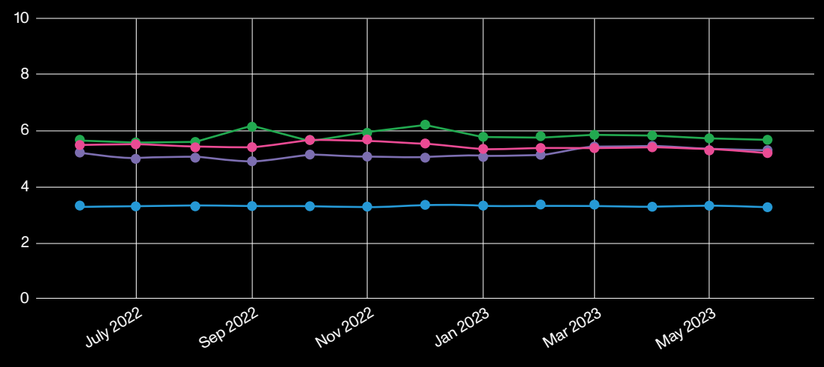


Fig. 6: Brand application



The Force Multiplier

A statistical model like CCI is born of a question that savvy business leaders ask themselves every day: "What do I need to do to be ready for what's next?"

Considering the challenges facing brands today, we believe that AI-powered capabilities will play an outsize role in spurring growth and creativity. We also developed CCI knowing that revelatory, scalable measurement will provide a strong basis for businesses to invest in their own creativity.

More broadly, AI is helping us glean insights at a speed and scale previously unimaginable. Our Data and Insights team's old saw went like this: "You invested 80% of your time preparing the data, leaving only 20% to analyze it." New capabilities like CCI invert that relationship. That's a big win for us and for clients.

But it would be lazy to characterize AI primarily as an efficiency play, though that's how it's typically portrayed in the media. It's already helping us be more creative, more strategic and more effective than ever before in our history. It's the engine that powers many of the Huge Moves we now make on behalf of clients. Paired with solutions like CCI, it's also poised to fuel uncommon creative growth for our client partners.

Lisa De Bonis is Global Chief Product Officer at Huge.

F10

Out of office

Where to stay, play and recharge in the year ahead.

Words by:
Mary Holland

Photos:
Courtesy 3 Days of Design, Audo Residence, Maria Bruun, Mater, Wonderful Copenhagen

The Capital of Creative Cool

Copenhagen isn't just producing good design — the entire city is rooted in it.

Copenhagen doesn't need to prove itself as a design destination. Since the 1940s, Danish designers like the late Arne Jacobsen, Finn Juhl, Louis Poulsen and Georg Jensen established themselves and their eponymous firms as trailblazers, anchored and uplifted by the city's standard-bearing cultural institutions, such as the Design-museum Danmark (which was recently overhauled) and the Louisiana Museum of Modern Art.

Copenhagen was named the UNESCO World Capital of Architecture for 2023, and the world still looks to the Danes for innovative solutions and inspiration. "When I talk to international collectors or galleries, they are looking at what is next for Danish design," says Maria Bruun, a Copenhagen-based furniture designer. "They know about Arne Jacobsen and Børge Mogensen but want to see what is next," she says. "They are curious to see how this heritage will be brought into contemporary time."

An indication of what's next can be found during the city's annual 3 Days of Design, a design fair that commences in June. It's Copenhagen's answer to Milan's Salone del Mobile, where studios fling open their doors, new products and collaborations are launched and design folks fly in from around the globe. From the hip Nørrebro neighborhood to the historic waterfront area of Nyhavn and buzzy Refshaleøen, a former industrial area (of Noma HQ fame), the city is bursting with fresh, new offerings.

While Danish design names dominate the agenda, the fair has also diversified, increasingly showcasing international players such as U.K.-based Tom Dixon; Cypriot-born, London-based designer Michael Anastassiades; and Canadian lighting brand A-N-D. "For the past few years, the fair has resonated so well internationally," says Bruun, who launched the Pioneer Collection, a range of sculptural stools at the fair with heritage brand Fredericia, a family-owned design company founded in 1911.

Bruun is one of the many contemporary creatives who is working with a heritage brand to create modern pieces rooted in craftsmanship, a growing trend in Copenhagen. “For a country that has so much history in design — which has been so referential to everybody — it doesn’t surprise me that designers today are deciding to celebrate that,” says Michael Anastassiades, who created a lighting exhibition during 3 Days with Dansk Møbelkunst Gallery, a brand that specializes in rare, vintage Danish furniture. These partnerships present not only an opportunity for well-known brands to renew their street cred, but for younger designers to leverage recognized names. “I’m hoping to establish my name and my work in this long tradition of Danish design,” says Bruun. “Working with Fredericia — a family-owned business that has worked with pioneers — is a big step in that direction.” Fellow designers have followed suit. During 3 Days, architect and interior designer David Thulstrup launched a new silver piece with the iconic silverware brand Georg Jensen. Meanwhile, iconic lighting brand Louis Poulsen unveiled a collection of colorful, playful lights in collaboration with NYC-based glass artists Heven.

In the past few years, a slew of new design shops have opened, too. Ferm LIVING launched its first showroom in a lofty, historic building with wooden beams, arched windows and old stone walls. In the giant, double-volume space, shoppers can browse the collection of minimalist homeware including flax couches, basket lamps and delicate ceramics. Nearby, Louis Poulsen unveiled a six-story HQ and showroom filled with a wide range of lamps — from classic pendants to contemporary floor lights. In fact, the whole congregation of small islands called Holmen, on the edge of the city center, has become a design destination in its own right, with shops such as Italian lighting manufacturer FLOS and Lammhults, which recently revealed a new HQ and showroom in a soaring brick building during the fair.

Green Ambition

With Copenhagen’s big sustainability ambitions (the city aims to be carbon neutral by 2025), it’s to be expected that some Danish brands are highlighting eco offerings.

“While simplicity and functionality are key characteristics of Danish design, we now also get recognized for new sustainable materials,” says Henrik Marstrand, founder of Mater, an ethical design and green-tech brand. This year, Mater launched new chairs in collaboration with OEO Studio (co-founded by Thomas Lykke), using Matek, the brand’s patented material made primarily from trash. The material, which has a wood-like quality and is made from beer, coffee and wood waste, as well as discarded plastic from the production of milk cartons, is proof that sustainability can be both functional and beautiful. “You do not compromise on design by being sustainable; they go hand in hand,” says Marstrand. Next, the Mater team will experiment with textile waste, a growing problem that’s in dire need of smart design solutions.

You only need to bike or walk across one of the bridges or go for a morning swim in the harbor to see how good ideas influence the city. “There is design in every corner of Copenhagen,” says Bruun. “It’s in our bicycle lanes, our signage.” Indeed, the city is constantly investing in creative solutions for infrastructure. Last year, more than 10 million euros was invested in bicycle tracks, which will add to the hundreds of tracks that already connect the various neighborhoods. In the neighborhood of Amager, a waste-to-energy plant called CopenHill is set in a soaring silver building designed by starchitect Bjarke Ingels and doubles as a recreational area with a climbing wall and ski slope that can accommodate up to 100 skiers. The facility can incinerate up to 600,000 tons of waste per year from some 645,000 inhabitants, and in turn produce power for 80,000 homes and heating for about 90,000 apartments. “We have a green mindset,” says Marstrand.

Copenhagen is a city built on the water, and a major initiative over the past decade has been creating more access to the harbor front through the introduction of new ferry routes and bridges. And not just any old bridges, but ones designed by local architectural studios like Cobe and renowned Danish-Icelandic artist Olafur Eliasson, who created a playful footpath consisting of five circular platforms.

The investment also extends to the water itself, which is swimmable now thanks to an initiative launched in the 1990s to clean the harbor by moving the major ports away from the city center and implementing wastewater treatment plants. Visit Copenhagen in the summer and you'll find locals lounging along the harbor front or diving into the water in designated swimming zones, morning, noon and night. Sunlight lasts up to 18 hours a day during midsummer, and the Danes soak up every minute of it. While some swimming zones are more informal, others (known as "harbor baths") have floating wooden decks and saunas. At Islands Brygge, a harborside stretch with a green space and floating pontoons designed by Bjarke Ingels, locals swim laps and dive into the water from the giant wooden cliff. It's proof of Copenhagen's symbiotic relationship: how good design informs the city and vice versa.

Meanwhile, some parts of the harbor front have been entirely overhauled, making space for a growing city center through smart architecture. Nordhavn, a former shipyard on a jagged peninsula in the north of the city, has been transformed by Cobe. The area was once derelict and void of life but is now connected to the city center via a new metro line and is buzzing with shops, restaurants, green spaces, harbor baths and sharp buildings like the Silo, a brutalist apartment block, and the Portland Towers, two former silos that have been converted into a BREEAM-certified office building. It's also become a design hub, with Handvärk Furniture, Edda Studio, Gubi and Audo Copenhagen setting up shop.

Further inland, the Carlsberg City District, a historic brewing area that was closed off for 160 years, is Copenhagen's newest neighborhood after a decade of rebuilding and restoration, most recently by BRIQ architects. Here, shiny new buildings and contemporary restaurants like the Japanese-inspired Kōnā sit alongside cobbled streets and old brick industrial towers from the 1800s.

No matter what part of Copenhagen you visit, you're bound to stumble upon beautiful spaces. Shop for candles and creams at FRAMA, set in a former apothecary with antique wooden shelves, or grab a coffee and sourdough bun from Atelier September, a cult café where you'll sit on Artek stools and HAY chairs on the sidewalk. "Creativity is everywhere," says Marstrand. "In public spaces, hotels, restaurants and bars, independent shops and even in schools." Here, design isn't just about making things look cool and shiny — it's a way of life.

***Mary Holland is a South African writer based in New York. She contributes to* WSJ Magazine, Financial Times, Architectural Digest *and other leading publications. She is also the New York correspondent for* Monocle Magazine.**

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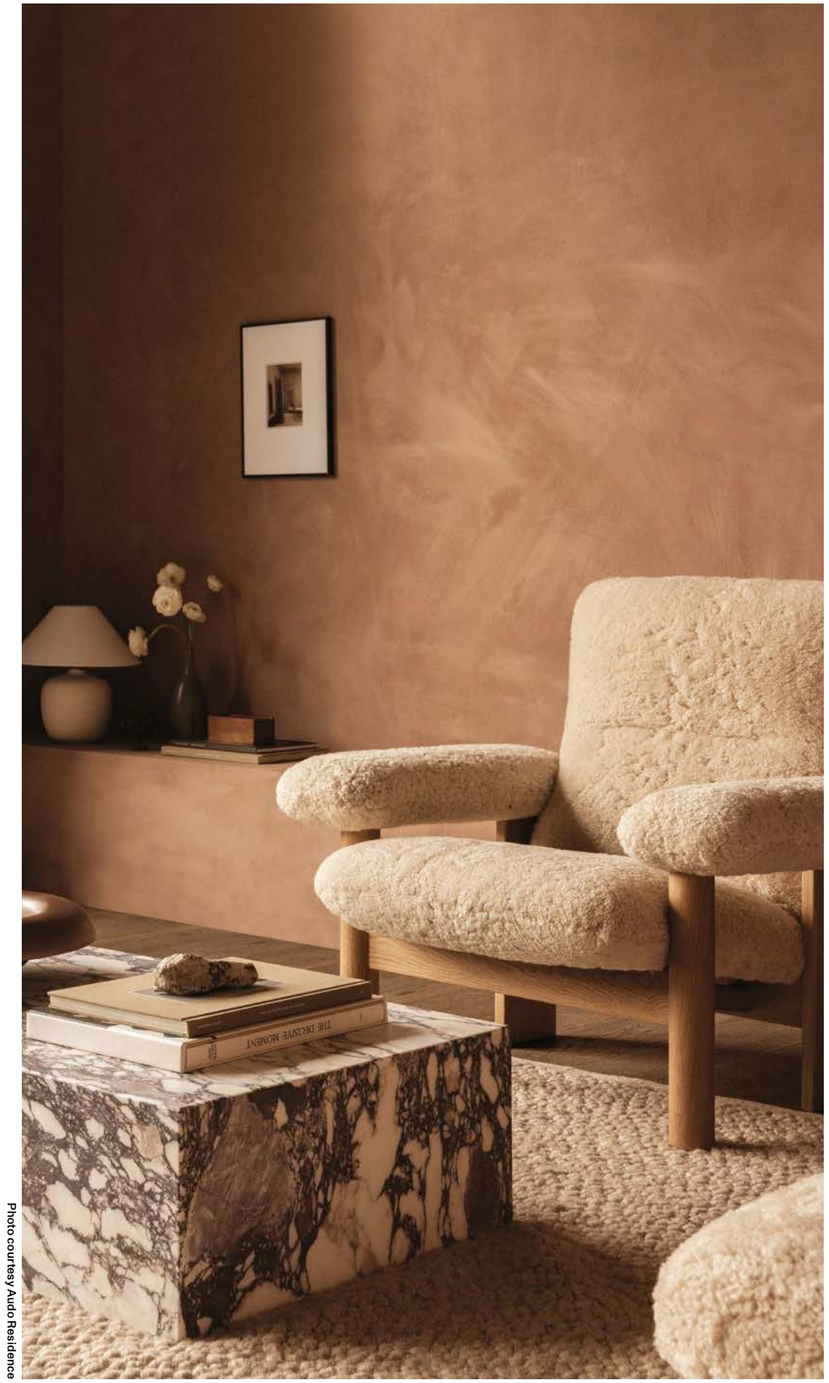


Photo courtesy Audo Residence

Where to Stay

Audo Residence
Set above Audo's HQ in Nordhavn, Audo Residence is a collection of rooms kitted out with the design brand's minimalist furniture. On the lower level, there's a shop, restaurant and café, where guests can grab coffee and sourdough buns. A few minutes away is one of the best harbor baths in the city, perfect for a morning swim.

Nimb Hotel
In a city that doesn't have tons of five-star offerings, Nimb Hotel — located on the edge of Tivoli Gardens (a historic amusement park) — offers a respite that is much needed during Copenhagen's high season. Rooms are dark and sleek, some with large outdoor terraces, and there's a rooftop pool with brilliant views over the city.

Where to Eat

Koan
From chef Kristian Baumann, Koan is a two-Michelin-star restaurant that recently opened in a space along the harbor front. The restaurant is an homage to Baumann's Korean roots and offers a tasting menu filled with Danish ingredients spun into fine kimchis, nori noodles and kkwabaegi (twisted doughnuts).

Apollo Bar
Set in the courtyard of the Kunsthal Charlottenborg gallery, Apollo Bar is a good idea at any hour of the day. Come for sourdough and whipped butter for breakfast or stop by for burrata or beef tartare and a glass of natural wine in the evening. While the courtyard is a lovely place to sun yourself, the interior, with its soaring ceilings, wooden floors and blue booths, is Danish design at its best.

Where to Shop

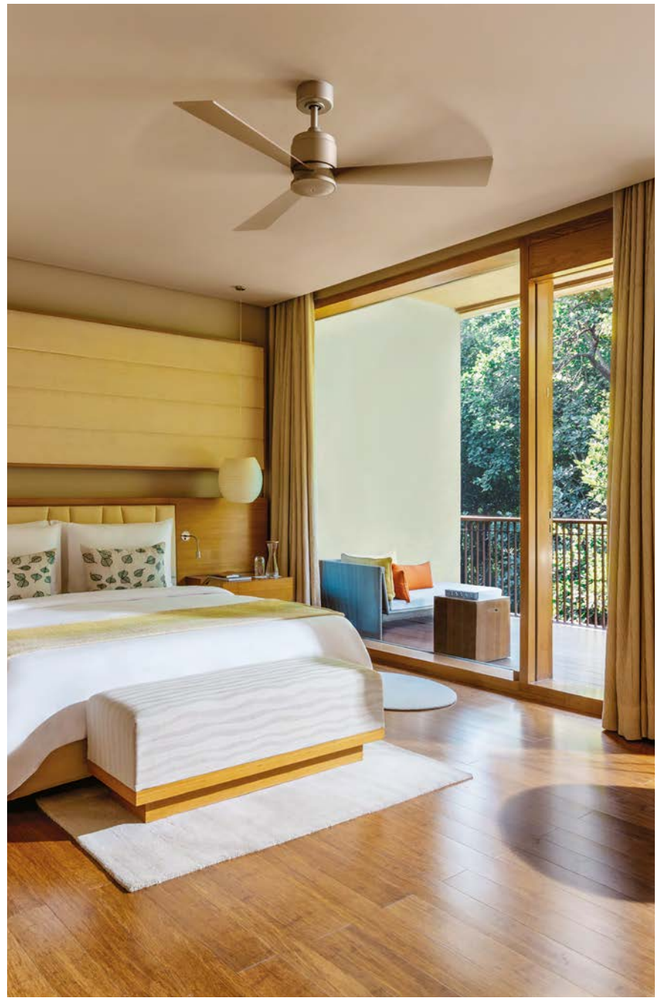
Stilleben
A collection of handmade objects including ceramics, textiles and glassware line the shelves of this quintessentially Danish store.

Illums Bolighus
Dating back to 1925, Illums Bolighus is a one-stop shop for most things Danish design. From Georg Jensen to &Tradition and Fritz Hansen, you'll find almost everything under one roof.

Words by:
Ian Volner

Photos:
Courtesy Euphoria Retreat, Six Senses

The Best Burnout Retreats for 2024



In the go-go post-pandemic economy, business leaders are seeking ever more luxurious escapes. A brace of enterprising new venues is catering to this fast-growing market.

All during the long, tedious slog between the outbreak of Covid and the arrival of the vaccine, people around the world prayed for a return to normal. But when normalcy finally arrived, the pace of the business world suddenly seemed more frenzied than ever before — a rush-rush sensation that squares with the numbers: from employment (currently nearing record highs nationwide), to demand (consumer spending shot up 8.6% in 2022), to inflation (9.1% at its peak last year, though moderated since), the U.S. economy — global epicenter of turbo-capitalism — has been on a tear, dragging us along with it. Keeping up has been tough, especially for those at the front of the pack.

I know, you might be thinking: *Cue the world's smallest violin!* but stay with me...

"Even if you're a director of a company, you still have the same issues as everyone," says Myrto Efraimoglou, marketing director and co-founder of Greek wellness getaway Euphoria Retreat. "It's a matter of self-realization." She has a point. Service-sector underlings might have found their off-ramp — the "Great Resignation" has been proof enough of that, as has its softer sister phenomenon, the "quiet quitting" trend — but what is the overtaxed, over-emailed, under-rested C-suite set to do when the responsibilities become simply too much?

Enter the burnout resort, the latest and greatest way for the well-heeled to take a load off. Euphoria Retreat, located in Mystras, Greece, which is home to a private forest, has been ahead of the curve. Two years ago, the resort launched "Feel Alive Again," a four-night retreat aimed expressly at helping the mega-stressed reacclimate to a world once again on the move. With an itinerary that includes meditation sessions, group outings and therapeutic methods derived from ancient Greek drama, the new restorative regime is intensive enough for the most fried CEO, but adjustable enough (and, at around $1,100 excluding accommodations, nominally affordable enough). "We wanted to answer not just to business leaders," says Efraimoglou. "Everyone has to reconnect with each other."

Reconnection and emotional healing are common themes among the current batch of retreats — but reconnection with a purpose. Unlike the quaint "vacations" of yesteryear, modern burnout programs increasingly position themselves not as pure breaks from the workaday week, but as means to extend and enhance the working capacity of attendees. Again, there is math to support the idea: A recent survey from research firm Gartner suggests that companies providing semi-obligatory "proactive rest," including regular and sometimes extended breaks from the daily grind, can increase worker performance by upward of 25%.

And by many objective measures, the work environment really *has* proven more challenging of late for the corporate upper tier, according to a recent Forbes report (which cites a Deloitte study on C-suite well-being). The report finds that nearly 70% of executives have lately considered leaving their positions for less stressful ones. With more PTO on their hands, and more reasons to use it, business-world honchos are helping drive up demand for ever more chillaxed destinations.

With that demand has come a concomitant increase in cost. In Switzerland, famed luxury resort the Kusnacht Practice recently launched its "Leader Retreat," a suggested 6-to-12 week rest cure that includes such perks as a personal mindfulness coach, and starts at the bargain price of $125,000 per week. For those of more modest means, there's the Balance, a clinic in Spain that starts at $33,000 a week. Opened on the Balearic isle of Mallorca in 2019, the rehab resort's latest offerings look beyond drugs and alcohol to the very first-world, day-trader problem of "crypto addiction."

For exclusivity not defined by wealth alone, consider one of the "Mindfulness Based Burnout Recovery Retreats" now on offer from the Institute for Applied Positive Psychology — for a reasonable-sounding $1,900, the organization promises seven mellow nights to help you "get on top of burnout once and for all," provided that you can make your way to remote Norfolk Island, about 900 miles off the coast of Australia in the middle of the Pacific Ocean. Never has "getting away from it all" been interpreted so literally.

Yet for the truly burned-out, neither distance nor dollars would appear to be any obstacle. Nor is time: For Jenny Graham, co-founder of the soon-to-open Casa Amoros in Spain's Costa Blanca Mountains, the most effective burnout remedy requires a commitment beyond the days or weeks her guests come to the facility, beginning a month prior to their arrival and continuing well after their departure. "We like to help you decompress before, monitoring your sleep, your caffeine intake," she says, "and then we slowly prepare you for when you come out." Having experienced burnout herself (while working, ironically, in a high-level position at a global luxury travel firm), Graham has come to believe that true rest does not come easy, but has to be learned and practiced like anything else. At Casa Amoros, a centuries-old agricultural estate has been remodeled to make it the perfect environment for a relaxation education, with the guest rooms furnished in natural materials in a palette of muted earth tones. "We're really taking the principle of emptiness as our key inspiration," says Graham.

On the opposite end of the visual spectrum, the Six Senses Vana practically pounds its guests into tranquility with stunning scenery. The second property in India from the vaunted international brand, the Vana location debuted earlier this year on 21 rolling acres near the historic northern city of Dehradun, packed to the gills with ornate temples and framed by the majestic Himalayas. As retreat manager and wellness director for the company's original branch in the country, Six Senses Fort Barwara, Dr. Neeru Jain notes that the chief problem of many chronic workaholics is that, much of the time, they're too busy to notice they're suffering from burnout at all: "We inform our guests that their aggressive approach at work is actually having a negative impact on their physical and emotional well-being," says Jain. At Fort Barwara and Vana alike, diagnosis is followed by a calming routine of yogic breathing and outdoor exercise, their healing power amplified by the sights and sounds of the subcontinent — as well as its cuisine, with the region's "straightforward cooking techniques," as Jain describes them, aiding in the recuperative process.

The fundamental structure of the American economy requires a serious reshuffle, one that places an accent on human welfare and that tones down the whole higher-ups-versus-worker-drones dichotomy.

Even without an Ayurvedic specialist to chart your course back to health, or a fully staffed kitchen to feed you en route, there are plenty of ways for the busy businessperson to keep an eye on their burnout levels and then take proper measures. The Mayo Clinic keeps a handy list of job burnout indicators, prompted by telltale responses to questions like: "Have you become cynical or critical at work?" and "Have you become irritable or impatient with co-workers?"

If this sounds like quite a lot of people (and certainly a lot of bosses), perhaps that only means that the whole culture of work needs healing from the ground up — that the fundamental structure of the American economy requires a serious reshuffle, one that places an accent on human welfare and that tones down the whole higher-ups-versus-worker-drones dichotomy. Or...maybe just an office field trip?

"Companies have been reaching out a lot more," says Bobbilee Hartman, founder of off-site corporate-retreat program Lodged Out, which structures tailor-made excursions for multitiered teams, especially in the tech space. Hartman's off-grid trips provide fun for the whole corporate family in such comparatively accessible locations as upstate New York. A far cry from the old ropes-course-and-trust-fall operation, Lodged Out includes encounters with the natural world and the rugged humans who live in it. In one recent outing, a visiting gang of suited city slickers met with a natural-fragrance maker, who led them on an ingredient-gathering mission through the woods and then sat down to discuss his business model. "He talked about being an entrepreneur," Hartman says, "teaching us stuff about work and about foraging at the same time." His facial tonic spray, Hartman adds, had an "earthy, pine-needle smell"—very soothing.

Ian Volner is a New York–based writer covering the world of design and architecture for* Architectural Digest*, the* Wall Street Journal*, the* New Republic *and others. Now a regular* Huge Moves *contributor, his work is not only deeply reported, but provides our editorial team with much-needed comic relief.

2024 Edition: Gadgets and Gizmos Galore!

If you haven't mastered the art of fully flexible work yet, this guide is for you. Here you'll find Huge's annual roundup of smart home products that promise to improve productivity and make us all feel just a little more prepared for what's to come.

1 **Google Little Signals**
"Gentle nudges at the right time, in the right way" is how Google's video narrator describes this fantastic little product line in her gentle Scottish brogue. It's not for retail yet, but these prototypes are essentially a glimpse of what "ambient notifications" could look like. An exercise in ambient computing, this "design study" (i.e., we're not beta testing yet) explores subtle sensory patterns. Can wind, shadows or motion replace blaring lights or beeping notifications? On the site, Google provides instructions on how to build these devices using Arduino, an open-source electronics platform. Then it's up to you to pull out the soldering iron and start creating. I love that every step of the process feels challenging and creative. It pushed me to reflect on what I might need in my work-from-home life and which signal I find pleasing. As I continue, I realize how many more considerations there are: Where will this live in my physical space, what kind of vessel will I make to house it, will I want others? I'm excited to see how it will take shape.

– Madison Behringer, UX Design Lead in San Francisco, CA

2 **Coway Airmega Air Purifier** ($229.99)
This air purifier was recommended to me by a friend in the Forest Service. As a current Colorado resident and West Coast native, I've grown up living through late-summer fire seasons, and I know that most affordable at-home air purifiers fall short when it comes to big room coverage. But the mighty Airmega works great against wildfire smoke in bigger spaces and does it quietly, too. Since the air outside is sometimes cleaner than it is inside, we have started using it year-round for pet hair, dust and dander. Overall, it helps my family breathe easier at home.

– Katie Goodson, Director, Program Delivery in Denver, CO

3 **Prohood Laptop Case** (£29.99)
I get bogged down having to work at my desk all day, so I love switching up the scenery and heading to an outdoor coffee shop. But when it's nice enough to sit outside, the on-screen glare from the sun makes it impossible to get work done. So I love that this is not only a built-in case, but it also has a light-blocking hood, plus it's lightweight and water-resistant. Because, let's be honest, it's only a matter of time before I spill my coffee!

– De'Andra Roberts, Senior Communications Manager in West Palm Beach, FL

4 **Playdate** (Preorder for $199)
Playdate is a handheld video game console developed by Panic. It's everything I never knew I needed, and don't actually need, but really want. It's the definition of a treat. Few other products know how to unlock those giddy feelings you got opening presents as a child. Panic, the maker of the device, did the impossible; they made a ridiculous idea come to full fruition and absolutely perfected it. Making a physical crank the focus of a gaming console has made me completely rethink how stories can be told. Sometimes, constraints are the most powerful drivers of creativity.

– April Littrell, Senior Copywriter in San Francisco, CA

5 **Bose Noise Cancelling Headphones 700** ($379)
These headphones create a personal oasis in the middle of chaos, whether I'm walking down a busy street or tuning out the background noise while I'm head down on a work project at home. I've invested in several noise-canceling headphones before, but none of them have worked quite as well as these. The built-in microphone system means my calls always go smoothly, and whenever I want to swap back to Spotify all I have to do is tap my right ear. I'll never go back to earbuds again.

– Polly Adams, Senior Copywriter in Jacksonville, FL

6 **Goyouth Under-Desk Treadmill** ($318.99)
With Covid's lockdown came the realization that I wasn't walking as much as before. As it turns out, a full day of Zoom meetings creates a painfully sedentary pattern. Enter the desk treadmill. I use the wireless remote to set it slow at first, get into a groove, and suddenly I'm on my way to crushing my daily step goal while I work. Since it's lightweight and has a solid set of wheels, I also roll it over to my home gym and use it there, too. Major bonus points: It has a minimalist aesthetic and a low noise level.

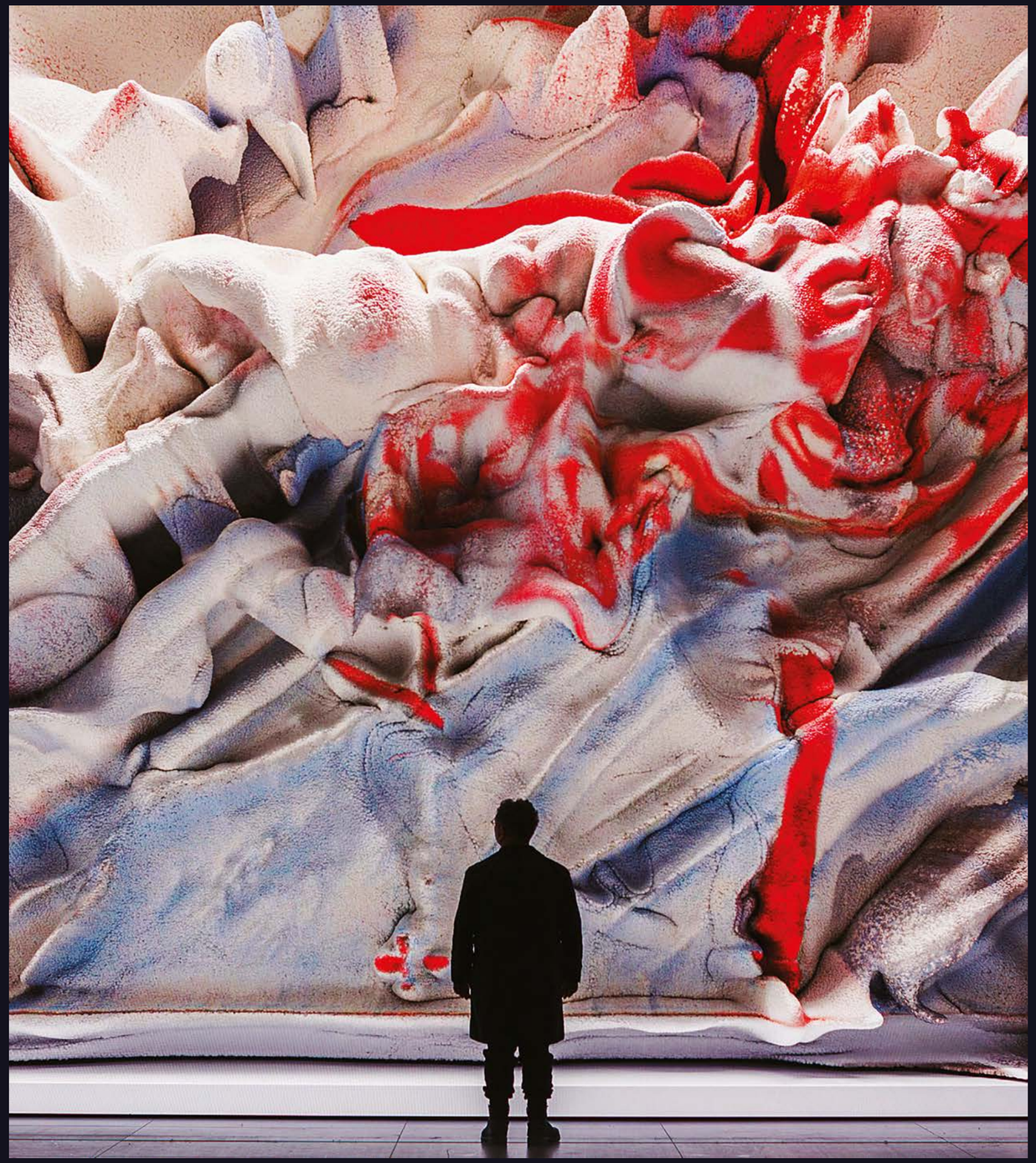
– Allison Henry, Visual Design Lead in Windham, ME

7 **Allivia Portable Monitor** ($310.99)
Once you have two screens, you can never go back. This portable monitor for a dual-screen setup has truly made life easier for me as a remote worker. It allows me to extend my workspace and master the art of multitasking. Whether I'm managing spreadsheets, editing documents or hosting virtual meetings, the second monitor is a basic need. It's become an essential tool in my work-from-home arsenal.

– Wad Khalafalla, Director of Communications in Washington, D.C.

Words by:
Jennifer Leigh Parker

Photos:
Courtesy Refik Anadol Studio



Portrait of an AI Artist

Refik Anadol, one of the hottest media artists on the planet, sits down with *Huge Moves* to discuss his past, his present — and the future of his field.

When you ask Refik Anadol to talk about himself, he inevitably winds up talking about others — and that's kind of the point.

To explain how he became an artist, he cites with encyclopedic knowledge all the pioneers that came before him. To explain his approach to teaching, he talks about his students, underscoring that the key to adding value to their lives is "trusting their journey." And when it comes to his artwork, one of the first words he uses is "public."

"My focus is public art. It has been since day one, because I believe art is for anyone, at any age, from any background. There is no beginning, no ending, no door, no ceiling. It's a mindset of openness," Anadol told me during our hourlong interview for *Huge Moves*.

This is a pretty strong choice, considering Anadol's lofty position in the art world right now. He's one of the first modern artists to use artificial intelligence in public artwork, and he is internationally recognized as a pioneer in the aesthetics of data and machine intelligence. Essentially, his art lives at the intersection of humans, machines and creativity — making him the perfect partner for many of the largest titans in both tech and academia.

Google, Microsoft, IBM, Intel, Nvidia, MIT, UCLA, Harvard University, Imperial College and Stanford University, among other brain trusts, have all partnered with the Refik Anadol Studio, powering it with the latest cutting-edge science, research and technologies. As a result, the output from Anadol's studio is quite literally larger than life. Forget "finding your voice" in the traditional *Artist's Way* sense — this guy has his own force field.

Standing before Anadol's living data sculptures and paintings in "Unsupervised — Machine Hallucinations," at the Museum of Modern Art in New York (2022–2023), or watching weather data from the Amazon rainforest undulate in the mesmerizing tribal artwork series "Winds of Yawanawá" (2023) — it's natural to experience a sense of awe. But it wasn't until I listened to Anadol speak that I came to better understand the deeply radical, forcefully challenging energy that informs his life and work.

In this interview, you will hear directly from the bespectacled, black-haired artist about his stance on provenance, his true feelings about art critics, how he built his career without gallery representation — and what his next major global rainforest project is all about.

This interview has been lightly edited for clarity and concision.

You studied photography at Istanbul Bilgi University. How did that shape your practice?

In my undergrad years, I was fortunate to deep dive into many mediums: typography, web and advanced photography — not just digital. I learned medium- and large-format photography. I experimented with Magnum Photos, not necessarily to document life, but to document space in a modern photography context. And then I deep dived into videography, computer graphics and 3D modeling. Finally, in my last year, I was super obsessed with the idea of data and started programming my own ideas in 2008.

2009

Anadol graduates from Istanbul Bilgi University.

Did you have a mentor at this time in your life?

Peter Weibel (1944–2023) was one of the early media art pioneers that inspired me so much. Unfortunately, we lost him. He was the CEO of the ZKM Center for Art and Media Karlsruhe, the first museum in the world dedicated to science, technology and media arts. He was one of our mentors in my first MFA in Istanbul. That's how I learned about media art, and that's why I started using data as pigment in 2008. That was the magical year, when all the stars aligned: I was graduating, starting an MFA, and I met Peter Weibel.

I was finishing one journey and starting anew with an idea — about data becoming a pigment. I'm still chasing this dream.

2011

Anadol's first large-scale data sculpture appears on Istiklal Street, Istanbul.

When I did my first data sculpture in Istanbul in 2011, I just felt that if I'm doing all this by myself, what will happen if I have a team? What will happen if I have a truly deep discourse around this topic of the future of the arts? And I knew Silicon Valley is where the future is invented. But I also know that L.A. is a magical space, where the Light and Space movement was started by artists like James Turrell and Dan Flavin.

It was probably the very first time artists and technology companies were coming together. This is the late 1960s. I thought that I had to go back to the pioneers who had been thinking about this. I knew that UCLA had an incredible art and technology program, so that's how I landed in Los Angeles. I got my second MFA from UCLA's Department of Design Media Arts.

And now you teach at UCLA.

For the last nine years, yes. Teaching is super important in my life; I grew up with teachers. To me, learning to learn is fundamental. It's a mindset. It doesn't matter which school I'm in; I just need to learn. I think it's one of the most powerful skill sets for a human that can bring value to life. So that's what I'm doing in my teaching. I'm not necessarily "passing the torch," but I'm trying to bring value to their work and to trust their journey.

As a student, you won an important award. What was it?

In the spring of 2013, I got invited to Seattle, to a Microsoft Research event. Every year, Microsoft Research invites 10 Ivy League schools and their 10 best student projects to share their dreams on the stage. Most of these are eight-minute elevator pitches: *Here's the software that will change the world!* It's a bit cheesy — but hopefully, some smart vision may come from that.

I was the only artist on the stage that year. And I won an award with the idea of projection mapping using AI and data.

2013

Anadol wins Microsoft Research's Best Vision Award.

So that was the first time I got major funding for my research. I came back to L.A., and that money funded the studio. We got our first computers with that money; and most importantly, the Los Angeles Philharmonic and Frank Gehry said: All right, your idea is not just an idea. Your proposal has value.

My first dream was to open a studio. But my second dream was to one day take Frank Gehry's Disney concert hall! *(He laughs.)* At that time, my dream of projection mapping on the Walt Disney Concert Hall (WDCH) was really an obsession, in a good way. I was really dying to give that building a life.

2014

The Refik Anadol Studio is established.

In a way, Frank Gehry put your studio on the map.

Yes. In 2014, we transformed the interior space of the Los Angeles Philharmonic (the façade project came later). It was our first project in Los Angeles, and it got significant attention. We quickly got another project in San Francisco, which is still up and running in the Salesforce building. I think it's the first permanent AI data sculpture in the world. It was a magical year.

2015

"Virtual Depictions: San Francisco" is unveiled inside the 350 Mission building.

Refik Anadol: Director of Refik Anadol Studio in Los Angeles and lecturer in UCLA's Department of Design Media Arts.

AI has changed a lot since then. How do you feel about it now?

For me, the real AI journey started in 2016, when I was the first artist in residence at Google. Since then, I've had the same feeling. Think about an artist, every morning: You go to the studio with the same brush, same canvas, same tools. To me, every morning, I wake up and it's new; it's the feeling of freshness. Every day is a new day. So I'm really grateful for the residency because it allowed me and my team to learn from the best in the field. And then it allowed us to dive even deeper into computation, hardware, software.

2016

Anadol enters Google's Artists and Machine Intelligence Artist Residency.

One year later, Nvidia enters the picture.

Yes, I met with the CEO Jensen Huang in 2017, and he is also a supporter of art and creativity with AI. Our paths crossed naturally: I'm a gamer. I love computation. I love computer graphics. But after meeting with Huang, Nvidia started to support us. This was a huge takeoff. I'm so grateful for Microsoft Research as a student, and to Google for my first residency. But Nvidia was our first major tech partner.

How do you work with Nvidia?

Nvidia does some of the most successful research using generative adversarial networks (GAN), [in which two neural networks compete with each other]. It's a complex approach to machine learning, which I think is important for an artist.

We co-develop the algorithm, and we write new software on top of it. They're always with us when we have major breakthroughs.

That's what makes this research profound, which I'm calling machine hallucinations. *If a machine can learn, can it dream*? That was my fundamental question in the residency at Google. Because one day, I hope all data, all information will be a part of a library that every human can freely access. It's an ultimate dream: making art for everyone in the world.

It's the idea of finding the language of humanity. I'm holding these dreams in my heart, and that shaped my relationship with AI. Of course, last year was very important because AI finally became more accessible. Finally, people are aware.

I mean, in human history, we've never had this discovery before. We had the printing press. We had photography, we had cinema, we had the industrial revolution — but these machines are not intelligent. They need human intervention. Now we have something like a mirror of our intelligence. It's a new renaissance. And I'm very grateful that I witnessed the birth of it.

2018

"WDCH Dreams," an audiovisual performance, is projected onto Walt Disney Concert Hall, Los Angeles.

Hallucinations, illusions, dreams are prevalent in your work. We're stepping outside reality. A computer program is said to "hallucinate" when it generates falsehoods. Do you feel that a departure from reality gives us a better understanding of what's real?

That's one part of it. But I don't believe using AI to create something real is inspiring. What is inspiring to me is dreams, fantasies, hallucinations — things that are not necessarily the construct of a direct reality. When I first witnessed AI, I thought it just mimicked reality, and that's boring. But what was really inspiring to me is what happens if a machine can dream, can create new connections and new worlds that don't exist. That is the world that inspired me.

Now, AI is a space where I can create a "thinking brush," a brush that I can dip into the mind of a machine and paint with machine consciousness. That's literally what we program when we create our own AI models; the intention is a thinking brush.

Many artists are worried about IP and copyright protections. How do you feel about AI crawling your content?

I'm generally fine. I mean, ChatGPT knows me pretty well! (He laughs.) Our project at MoMA, "Unsupervised," received 25 reviews. One was from GPT; it's one of the best reviews, to be honest. It's just not a toy. It's well-established research that OpenAI put together. Same for Google's Bard. You can write my name and Bard knows me better than many — no offense — lazy art critics. I mean, that's the reality.

You're not worried about fair compensation?

I'm not worried because creativity is a human-machine collaboration. It's a 50/50 exchange. Yes, people can mimic anything they wish. I'm more concerned about human copycats than AI copycats, to be honest. Some people are using our works and styles and contexts and making money! AI is just in research mode. And I'm okay with that. Humans are the problem, not AI.

Is that why you turned to blockchain?

Blockchain did a lot of work around this and supported artists like me who have been wanting independence in their practice, both economic and social. I have been independent since day one; I work with galleries temporarily, but they don't represent me.

Where do you see things going, in terms of media arts?

I think about MoMA. It's truly a benchmark, a place with historical context. First of all, MoMA put their data online seven years ago. So let's give credit to the people who envisioned that one day this may be a thing. And MoMA also started collecting games, under curator Paola Antonelli. She took very brave first steps to put games into the context of art. These are very powerful statements that come from the same institution. It's not by chance — it's the ethos of the institution. MoMA's curators are visionary minds, but it's also the museum directors and the board members working together. There's a lot of thinking and close collaboration. To me, that's really the game-changing context.

2022–present

"Unsupervised — Machine Hallucinations," is unveiled at the Museum of Modern Art (MoMA), New York City.

MoMA has extended your exhibition three, four times now?

It was originally supposed to run two or three months! It was just a simple, beautiful exhibition. And it became this thing that I think will be discussed for decades. It's a symbol of the moment. It's a symbol of generative AI, a symbol of digital art. It represents something beyond me, in my humble view.

Let's talk about our cover subject, the Yawanawá tribe.

The Yawanawá family, to me, represents one of the most important parts of humanity — which is ancestral wisdom. They have been living in the heart of Amazonia for more than 1,000 years. They preserve their language without any technology, they preserve their culture without any computer and they are protecting our rainforests, the lungs of humanity.

So it's about my respect for them. Their way of learning and remembering is way beyond any project I've ever done. My wife and partner, Efsun Erkılıç, introduced me to Amazonian cultures seven years ago, and I was met with the practice of ancestral wisdom, plant medicines and how they live in peace with the flora and fauna of the rainforest.

We were hosted by them in the Yawanawá sacred village of Aldeia Sagrada. It's a very unique space in the state of Acre in Brazil. We connected truly and honestly. Chief Nixiwaka is a hero who brought peace to his territory. He's an inspiring human.

So I thought, it's my time to help. I asked them: What are your dreams? I took down their dreams and connected them to their natural environment. We worked with young Yawanawá artists, and their hand-painted drawings. They have a special painting technique that incorporates spiritual rituals. During these rituals, they see beautiful patterns that exist in nature; on the trees, the flowers or in animals, which become these beautiful paintings.

To move the artworks, we merged their images with wind and weather data from their village and trained an AI to generate 1,000 unique data paintings.

It's a colorful homage to living in harmony with the natural world, using new technology. Why did you launch this project as an NFT collection?

Chief Nixiwaka has a dream. He wants to bring Amazonian leaders to his village next year. His dream is to create an infrastructure, a village, a museum, a school. And he needs funding.

Via the NFT sale, we raised more than $2.25 million for them to preserve their culture, preserve their language and protect the rainforest. Protecting rainforests means protecting them against deforestation by private companies.

The rainforest is a fully connected network; we can't just cut through it and assume it's the same. It has to remain as raw as possible. To do that, these people need infrastructure. They need to stay there. The reasoning behind the protection comes equally with being able to live safely and successfully.

So now an Indigenous tribe has a smart wallet in the heart of Amazonia! I mean, I'm sorry for any bank or any government. They couldn't do that. Using blockchain, I was able to help them to do that.

What's next for you?

Our next project is called "Dataland." At the moment, we are creating the largest AI model in the world dedicated to rainforests, via open-source software. We're talking about every single rainforest, from Africa to Australia to Indonesia. We are physically going to rainforests with a team to record video, audio, photography and lidar, while gathering climate data from across the world. We are communicating with institutions, university libraries and scholars. It is a profound project that we plan to unveil in L.A. next year. For this, we are creating a physical museum space to become one of the most advanced, immersive rooms in the world. [The venue has not yet been disclosed].

Was this inspired by the Yawanawá?

Beyond Yawanawá — we will dedicate the research to humanity. We will generate several artworks, of course, but it's a gift for humanity, for curious minds that love nature. I hope it will become an example of how research with AI can be done.

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