

# 2021 Tech Trends & CES Takeaways

January 11-14, 2021

**Wavemaker**



# What is CES?

CES, having evolved beyond its initial ‘Consumer Electronics Show’ namesake, can now claim it is the largest tech trade show in the world – and the internet.

Historically hosted in Las Vegas and annually produced by the Consumer Technology Association (CTA), CES went virtual in 2021, for the first time in its 54-year history. The yearly iconic showcase for the newest and far-reaching tech, gadgets and experiences pivoted to an online platform designed to connect thought leaders, policymakers, and business leaders virtually to drive education, collaboration and partnership. Introducing consumers to both established and startup brands from around the world, CES is more than just technology. It’s the ultimate cross-industry meet-up for pioneers and business leaders, no matter its iteration.

Smaller in scale and number of exhibitors (~1,900 vendors vs. 4,500 in 2020), this year’s CES cut through the hype and clutter. Exhibitors focused on their bottom line and core offerings providing tangible signals to where the marketplace and technology is heading. With plenty of pandemic-inspired technology designed to service both current needs and rapidly-changing behaviors, this year’s CES provided a more focused view of our human potential.







# 2021's Key Theme: Integrated Intuition

2020's unprecedented events continue to impact our world - with nearly every person and business feeling its ripple effects. Some brands offered pivots, technology tests, investments, acquisitions, and other nimble actions that could be attributed to the immediate impact of the pandemic on both a business' frontend (e.g. retail closures, consumer behaviors) and backend (e.g. supply chain issues). Many of the disrupted industries and brands we saw weren't the result of COVID; their evolution (and, in some cases, revolution) was simply expedited by the pandemic.

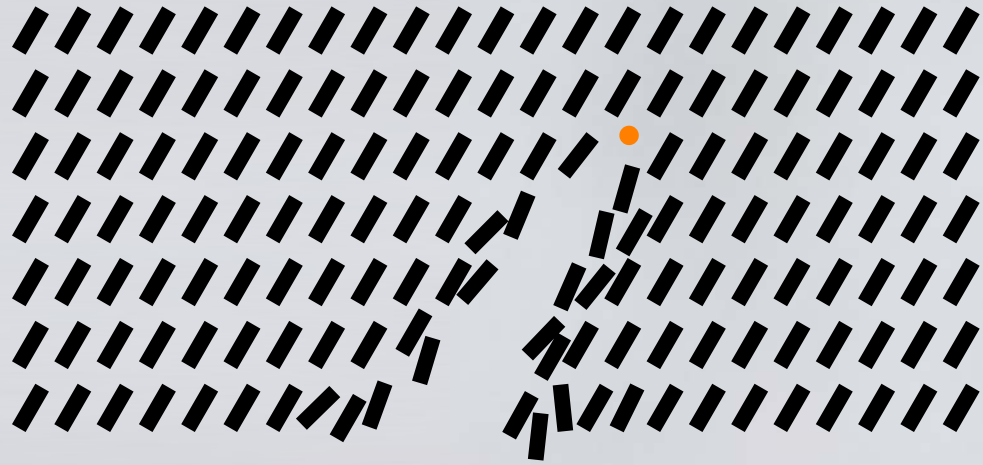
Last year, more people across all demographics than we could have ever predicted became tech-proficient and online-agile simply because it was the only option they had, resulting in new levels of digital proficiency in their everyday lives. Whether it was finding ways to connect with loved ones, mastering endless professional

Zooms, confirming kids stayed on track with online education, or simply procuring hand sanitizer - digital aptitude and adaption experiences saw massive acceleration across all demographics based purely on necessity.

As we embrace 2021, the key theme for marketers is **integrated intuition** – the ability to seamlessly integrate the tech platforms, devices, and data sources to expedite decisions and connect with consumers more intuitively on their platform of choice.

While the pandemic continues to create behavioral short-term scabs and longer-term scars, the ability to bring together the best of data-driven actioning with EQ-driven insight is key to how brands go to market this year.

Whether it's driving education, entertainment, or enterprise - **integrated intuition** will be critical to unlocking value and true connection.



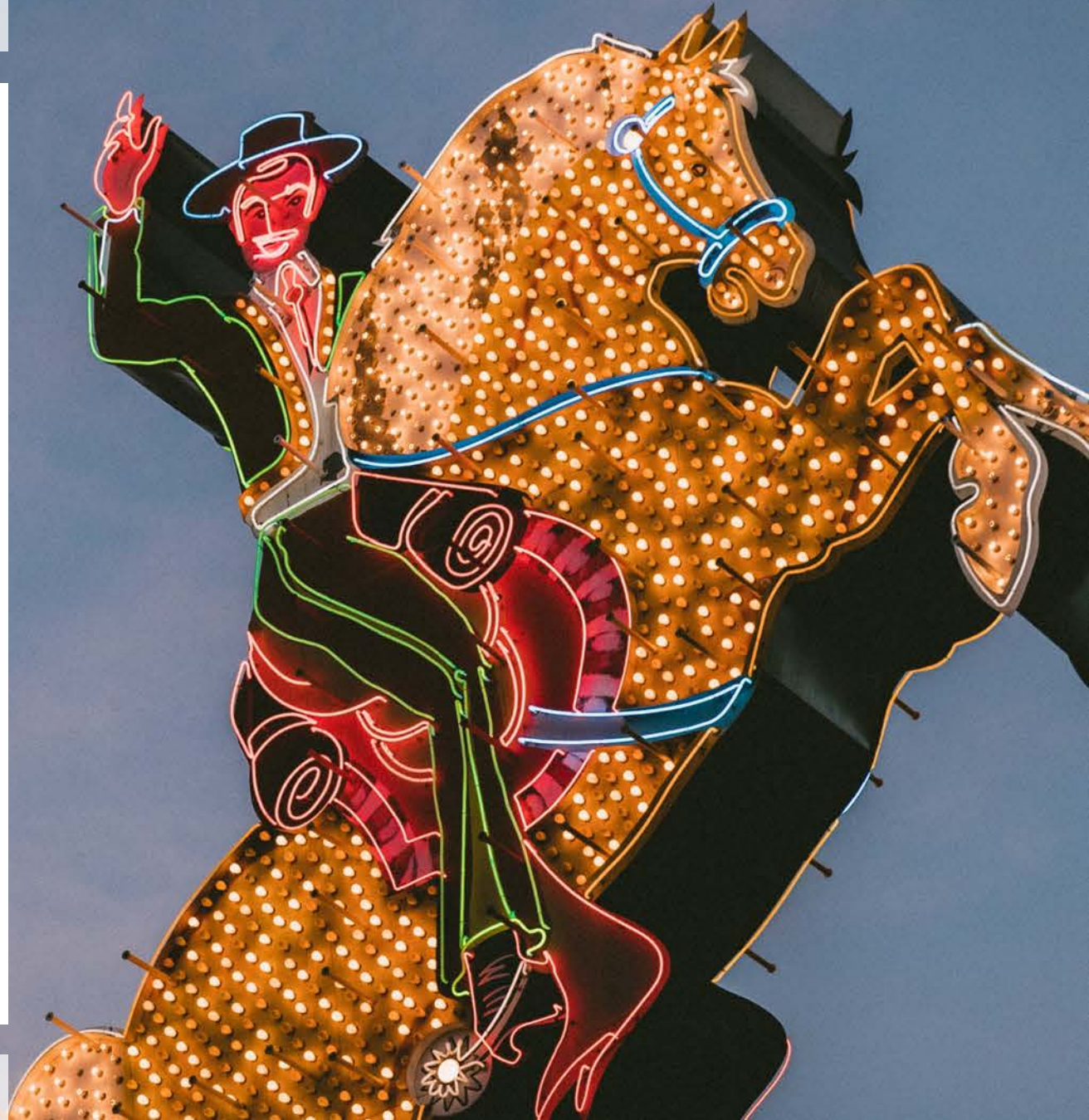
# A deeper dive into the tech trends for 2021 through the lens of CES





# 2021 Tech Trends

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# Digitizing dullness: transforming everyday routines for efficiency

We've had the tools to efficiently digitize our must-do, albeit mundane, needs and to-do's (e.g. grocery shopping, doctors' visits) for a while - smartphones, internet, wearables, tablets, and other tech have long provided easier ways to accomplish baseline necessities. Many previously chose not to trial offerings like eCommerce-based grocery, telehealth, or even socializing until 2020 gave them no other choice. As Michael Miebach, CEO of Mastercard put it, "years of digital acceleration have been kind of compressed into months."

In 2020, more consumers across more demographics tested and embraced the notion of digitally 'trying on' and buying hair color online, FaceTiming a general practitioner for an annual physical exam, or hosting a family reunion via Zoom. The barriers of concerns about the efficiency of these offerings has been absolved due to desperation to find safe ways to accomplish everyday needs.

As privacy and safety concerns continue to be addressed by platforms and providers, costs continue to come down (especially for tools like telehealth, as insurance companies change policies around reimbursement) and general barriers around understanding, ease-of-use, and efficiency are removed or lowered. The openness to testing and embracing the digitization of basic needs has massive implications for plenty of industries. This CES, we saw platforms and developers ready to solve for common needs - bringing together AI-driven technology that gets smarter and more useful as it gets to know the user better.

As the power to choose returns, consumers will likely retain the platforms offering digitalized dullness, streamlining and enhancing the efficiency with which we handle physical, mental, financial, and emotional needs.

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**Over this past year of COVID-19 lockdowns, telehealth saw usage by US broadband households jump from 15% to 41% between Q2 2019 and the same period in 2020.** Source: Park Associates

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*Digitizing dullness: transforming everyday routines for efficiency*

## Why this matters to brands

**Increased consumer comfort will drive increased consumer investment.** While many were forced to upgrade their digital proficiency out of pure necessity, the simplicity and ease of use when it comes to buying home goods, taking masterclasses, connecting with friends across long distances, or simply finding alternative options for Friday Date Night cannot be undone, even as we move through the pandemic. Consumers want ease & simplicity.

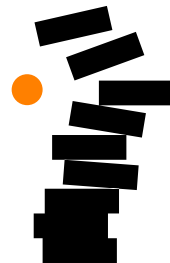
**Helping consumers have smarter homes isn't always about a tech solution.** The state of the economy has hit families across the country differently. For example, while many homes are seeing higher traffic and increased use/investment in smart home technologies, there are also plenty of households touting frontline workers and those with economic disparity who aren't invested in (or investing more in) smart home technology. They are, however, seeking solutions that make life easier, be it an app or physical product that can provide support.

**Make the mundane exciting.** Not every tactic or strategy requires first-to-market flash; simple, tangible ways of minimizing the hassle of a to-do list, shaving time off tedious chores, or simply providing a new solution to an everyday problem can have far greater impact than a one-off, headline-grabbing execution.

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**A little over half (54.3%) of U.S. consumers believe it's important to be equipped with the latest technology.**  
Source: GroupM (December 2020)

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*Digitizing dullness: transforming everyday routines for efficiency*

## Favorite examples from the digital exhibit floor

**OrCam Read** – For those with reading challenges, the pen-sized wireless device provides seamless audio text playback from any printed surface – e.g. newspapers, product labels – or digital screen – e.g. smartphones, tablets – in real time. It's the first personal AI reader capturing full pages and screens while ensuring data privacy.

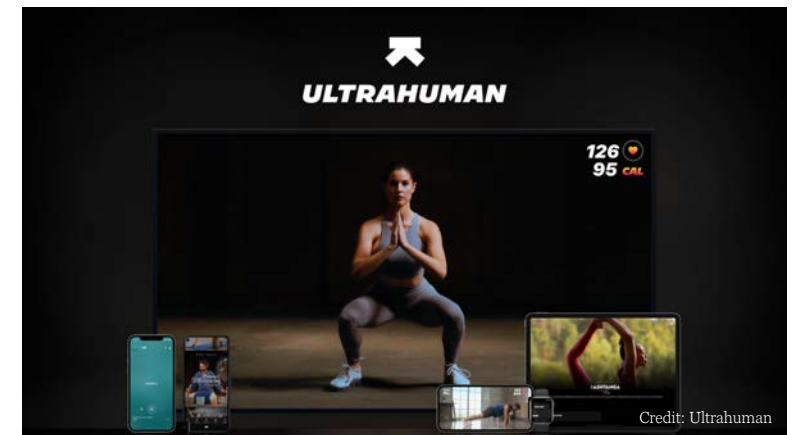


**Bot Handy** – Samsung's home robot uses a camera and AI to recognize objects and serve as an extension of you in the living room or kitchen - loading laundry, setting the table, and even pouring you wine.

**JetBot 90 AI+** – Samsung's robotic floor cleaner uses LiDAR for navigation and touts a self-emptying dustbin.

**Ultrahuman** – Bringing together the best of mental and physical health & wellness offerings, the health and fitness platform provides one place to help people meditate, workout efficiently, and optimize sleep with the help of athletes, neuroscientists, artists, and psychologists.

**Galaxy Upcycling at Home** – Samsung's program addresses the eco concerns around the mounting number of devices people buy and dispose of, providing ways for consumers to repurpose older Galaxy into IoT tools.







## Smart home: home is where the hub is

Even before the pandemic, home has always served as the hub. However, delineation between home life and everything else was thrown out the window in 2020, when where we lived, worked, learned, sweat, played, and shopped all merged into one single location: the home.

Homes are becoming smarter not because they can be, but because they need to be. There's increased interest in smart homes and healthy homes, especially as people come to terms with knowing that they'll be spending much more time learning, working, and playing at home in the near future. This has impacted industries like fitness, furniture retailers, etc., and has massive opportunities for in-home technologies to earn their place by doubling down on alleviating everyday frictions and delivering tangible utility. For example, LG launched the Life is ON – Make Yourself at Home campaign at CES, introducing a new online positioning and product line-up redefining what "home" means and showcasing products and services designed to make everyday life more comfortable, convenient and enjoyable, combining future-forward technology with crowd-pleasing living in a non-obtrusive way that solves for everyday frictions. KOHLER took a similar route, showcasing products designed to provide an escape from the stresses and anxieties of everyday life while home more.

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**The smart home market in 2020 grew 6.7% over 2019 to \$88 billion, \$11 billion below pre-pandemic expectations.** Source: ABI Research

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*Smart home: home is where the hub is*

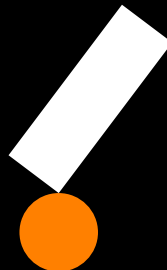
## Why this matters to brands

**2020 accelerated the deterioration of long-standing behaviors when it came to how we work, learn, entertain, play, and shop.** Data points – from how, when, where, why, and who of shopping - are now in flux. 2021 will continue to be an epic ‘iterate on the go’ experiment in how the ‘swim lanes’ between on and offline tools no longer exist to deliver utility for consumers in their prime need states while at home or within the periphery of ‘local’.

**What’s most likely going to remain post-pandemic is the number of activities pivoting to at-home.** This includes the overall time spent for activities previously considered solely out of home, and a mental restructuring on how consumers are investing in in-home technology or ancillary devices that amplify and improve the hub.

### **Local has never been more critical.**

It’s not simply about personalization; it’s about understanding the new ways consumers see and define their neighborhood and local area, including where they are redirecting their spending and physical traffic.





Smart home: home is where the hub is

## Favorite examples from the digital exhibit floor

**KOHLER** – Focusing on wellbeing while at home, Kohler introduced the Stillness Bath (inspired by Japanese forest bathing, shinrin-yoku), the Innate Intelligent Toilet (a smart toilet at a more affordable price point), and the Touchless Residential Bathroom Faucet (hands-free activation).

**PenguinSmart** - Enables intelligent, individualized rehab therapy for kids with speech and language delays. Combining data sciences with expert insights to empower caregivers to become a key part of the rehab journey and addressing immediate needs from home.



**myQ Pet Portal** – Chamberlain’s fully-automated IoT dog door enables pets to go in and out as they please when owners aren’t home (or nearby), utilizing aesthetically pleasing pet portal doors, a Bluetooth collar sensor, AI-driven app, and remote monitoring to ensure the dog is safely cared for.

**Linksys AXE8400** – Linksys’ new router supports Wi-Fi 6E connections on the 6GHz band, as well as detect motion and send alerts to a user’s phone while working with other smart home devices. Even without owning a 6E device, users’ homes experience benefits.

**LG Electronics** – The Furniture Concept Appliances are designed to blur the line between state-of-the-art home appliances and designer furnishings with the InstaView Door-in-Door refrigerator, Fridge and Freezer pair, WashTower and Styler, and more.

**LG** – Announced that Google Stadia and Nvidia GeForce Now are coming to LG 2021 TVs, providing more gaming options designed to provide a better in-home entertainment experience.





# 03

## Quantifiable self: from interesting to imperative

Thanks to wearables, people are now more ‘plugged in’ to their personal data than ever before, be it how they spend device time, how brands leverage their data to provide utility, how their privacy is protected, and how they can better improve themselves using their own ongoing data production. As a result, the category is growing and evolving - offering more devices that provide not only new ways to collect unexpected sources of data, but also increased ways of quantifying that data for self-monitoring, self-understanding, and self-betterment.

With timely tools introduced for monitoring COVID-19 symptoms, the quantifiable self is more than just about losing weight or sleeping better; it can be a matter of life and death. We saw platforms designed for individuals, as well as healthcare providers, support systems, and even workplaces to ensure healthy & safe living and assistance as we move towards whatever ‘normal’ will be.

We saw epic growth around telehealth, something many of the new devices feed into. Whether its managing diabetes, blood pressure, seizures, or asthma, companies are finding ways to automatically sync with medical professionals to ensure faster, more accurate, more proactive support vs. only providing data to the user and expecting them to know how to share it or decode it for the right advisor.

Bridging the gap between personal health monitoring and professional telehealth offerings is an elusive task when it comes to both technology infrastructure and consumer trust. We have a ways to go to helping consumers understand their data’s utility and how it can be applied to immediate help.

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**When it comes to data from health and fitness trackers 54.7% of consumers say that only they should have access, 27.0% say “yes” that a spouse or family should have access, and 23.1% agree that a doctor or hospital should.**

Source: GroupM (December 2020)

**Shipments of remote health-monitoring devices rose 73% from 2019 and are on track to jump another 24% this year.** Source: Consumer Technology Association (CTA)

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*Quantifiable self: from interesting to imperative*

## Why this matters to brands

**As the battle to earn the consumer's wrist real estate (and, eventually, the rest of your body) heats up** amongst Apple, Google, Samsung, Fitbit, and even luxury brands like TAG Heuer and Hublot, there's opportunities for brands to explore not only how to leverage the data consumers are aggregating and willingly offering, but also what a consumer who is in-touch with an ever-increasing number of personal health and wellness metrics means for brands tapping into EQ-based marketing.

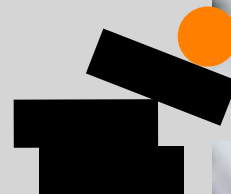
**Brands don't necessarily need to partner with a wearable device company or platform to reap the benefits of a consumer invested in living a quantified lifestyle.** If a consumer knows how they feel, they don't need you to tell them. In fact, consumers are now often more than happy to tell you how they feel. For example, how many times has someone bragged about how many steps they've taken in a day and showed you their smartwatch? How does that change your messaging and positioning in the marketplace, as well as the utility your marketing strategy offers consumers?

**2020 was the year we became painfully aware of how our personal behaviours and actions can impact the health and happiness of ourselves and those around us.** As we move towards a society driven by (and obsessed by) personal data access & insight, now is the time to consider how you can tap into the EQ-driven side of personal betterment and human desire to evolve and work towards living the healthiest, happiest, most meaningful life possible.

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**Smartwatches and fitness trackers have enjoyed a pandemic-driven boost in 2020, with consumer spending on wearable devices likely to continue to rise throughout 2021 and into 2022.** Source: Gartner

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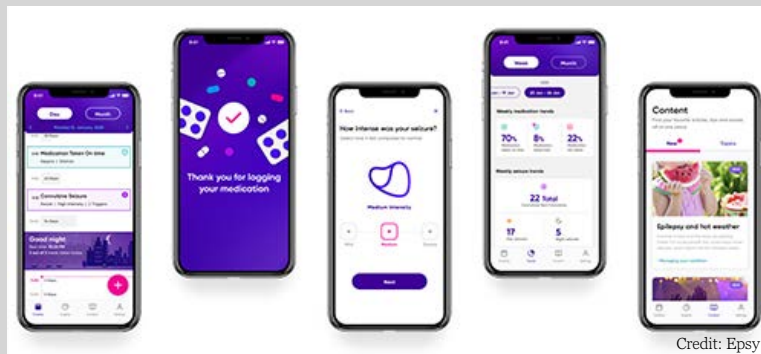
Quantifiable self: from interesting to imperative

## Favorite examples from the digital exhibit floor

**CarePredict TouchPoint** – An activity monitoring companion app to Tempo, a wearable for seniors that tracks changes in daily activity patterns that precede health conditions. It alerts caregivers based on concerns such as missed meals, restless sleep, or increased fall risk, allowing for early intervention and preventive care.

**VitalSight** – A blood pressure cuff that automatically uploads a user's data to their doctor via a secure data hub.

**Epsy** – A digital platform for managing epilepsy that empowers patients, caregivers, and healthcare professionals to provide actionable insights for better support.



**BULO** – At-home device providing custom breathing exercise guidance based on analysing lung capacity, endurance, and muscles. The connected device and app tracks changes over time, offering different exercises to ensure effective lung use.

**EyeQue Vision Check2** – Device utilizing a smartphone-powered ophthalmic refractometer to measure a user's refractive error to generate EyeGlass Numbers (EGNs) - the lens-power needed to correct near-sightedness, farsightedness, and astigmatism. Not only is it fast and affordable, but practitioners can also use it to issue eyeglass prescriptions remotely.

**FallCall Detect** - Designed for Apple Watch, the app aims to reduce false ambulance activations through 24/7 central monitoring and the ability to distinguish between high-impact and low-impact falls, offering older adults a smarter way to age in place.







## **Untethered living: the impact of location-based freedom (or freefall)**

Gone are the days of assuming work is only done in an office, learning is only done in a school, movies are only watched in the theatre, and reunions are only done in-person. 2020's upheaval of how we work, learn, live, and connect has untethered consumers from their previous work and living structures. While offices and schools will reopen, the trends around the decentralization of long-standing assumptions (e.g. you need to go to a doctor's office for a wellness exam) have been upended for good.

Untethered living provides consumers with plenty of opportunity, but also anxiety, when figuring out the solution that works best for them, their families, their employers, and their overall living. Some behaviors may revert post-pandemic, but the overall mindset and ability to flow from an office to a park to a basement will remain. This means seamless connectivity and experiences need to be present wherever the consumer flows through.

If location is freed, so too is the technology, a massive opportunity for augmented reality wearables and devices. We saw plenty of headsets, glasses, and other form factors designed to give users physical freedom while digital enhancing work and play. For example, we saw companies (Microsoft's AltspaceVR, Facebook's Oculus Quest 2) showcase their visions for virtual work, from VR-based conference rooms to collaboration and onboarding tools, while plenty of companies like Vuzix showed form factors that looked more like glasses than technology.



*Untethered living: the impact of location-based freedom (or freefall)*

## Why this matters to brands

**Virtual visits (be they medical or social) will continue to be an option beyond the pandemic.** The forced acceleration of trialing the concept and adapting it into consumers' lifestyles will remain in the future, giving brands a new opportunity for connecting and collaborating with consumers virtually alongside (or instead of) traditional in-store and OOH offerings. How can your brand show up and become an invited guest into your consumers' intimate spaces like their kitchens, bathrooms, homerooms, cars, or offices?

**Face to face will never be fully replaced.** Consumers may be more open to tech-driven solutions that get them closer to the emotional and physical human needs they have, but brands need to understand consumers aren't looking for a total replacement to the physical aspects of life. There will always be a desire to physically shop and sample; how you compliment vs. supplement that digitally is critical.

**5G will unlock new levels of potential to provide untethered experiences.** As 5G rolls out across the country and embedded in new devices purchased, brands have the chance to tap into its unprecedented speed and power to bring new intricacies to app and on-the-go offerings.





*Untethered living: the impact of location-based freedom (or freefall)*

## Favorite examples from the digital exhibit floor

**Noopl** – The accessory plugs into iPhones to help drown out background noise in loud environments for those with hearing sensitivities or issues.

**Vuzix & Jade Bird Display** – Announced collaboration on the co-development and cross-supply of solutions incorporating superbright microLED display engines and Vuzix waveguides, resulting in wearable glasses and displays with the tech built into the frames themselves, which look like regular glasses.



**ThinkReality A3** – Lenovo's enterprise AR glasses, designed to tether to a PC or select Motorola phones via USB-C, are designed to provide professionals – from office workers to industrial workers - with smart glasses that increase productivity and decrease everyday errors in small businesses, global enterprise, and everything in between.

**Pocketalk** - A voice translator that fits in your pocket, during the pandemic it has found that its usage pivoted from international travelers to educators and first responders.

**Perfect Corp.** – The new YouCam Video, powered by YouCam Makeup's AI and AR tech, is an advanced video editing app providing a complete makeover via virtual makeup, virtual hair color, and retouch tools for users to edit selfie videos in seconds, making both photos and videos powerfully accurate – critical for product sampling.

**Mobile Gaming Clip** – OtterBox's gaming accessories designed for mobile gamers includes a mobile gaming clip designed for Xbox One, Series X / S, and the Elite wireless controllers.





## 5G: clearing misconceptions & paving the path for the future

We've heard "5G is coming" for a few years now. You've seen glimpses of what its potential could unleash for brand experiences. With three US carriers touting nationwide 5G coverage and smartphone makers like Apple and Samsung making 5G-enabled devices, we finally got to (virtually) see what 5G is truly capable of when it comes to expediting & improving communications – between employees on Zoom, between patient & doctor on FaceTime – content speed & depth, etc. With nearly everything growing 'tele'-presence – from health to fitness to concerts to education to work to gaming – seamless, expedited speeds are critical to keeping life going.

In reality, 5G is still slowly being rolled out across the country, via carriers and technology providers. Verizon announced that its nationwide 5G service (including 4G-like slower connections that reach further than traditional 4G) covers 230 million people in 2,700 US cities. While that's massive progress, there's still a ways to go.

As Verizon CEO Hans Vestberg explained during his keynote, 5G simply is "the platform that makes other innovations possible." We could not agree more. The imperative is on brands to give consumers better reasons to upgrade to 5G-enabled devices and tap into the power of its full benefits.

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**While general awareness of 5G among U.S. consumers is "wide and increasing" – rising from 74% in January 2020 to 89% in November – the wireless industry has done a relatively poor job of articulating reasons to upgrade to the next-gen service.** Source: Hub Entertainment Research, Variety

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*5G: clearing misconceptions  
& paving the path for the future*

## Why this matters to brands

**There's a lot of confusion as to what 5G actually is amongst consumers, something brands will need to solve for.** According to a recent GroupM study, when asked "Do you have a 5G device such as a mobile phone that can connect to a 5G network?", 51.5% of respondents answered "yes." This highlights the consumer confusion around what 5G is, the type of devices they have, and what the 5G experience can be. With the right experience, though, brands can go beyond any expectation.

**The eventual demand will result in the need to seamlessly cater to on and offline demands transparently & fluidly.** The integration and interlaced opportunities create professional, personal, and brand-driven experiences that cater to a specific consumer's need states wherever they are will be a critical driver of brand success in 2021 and into 2022. All it takes is one true 5G experience to feel the noticeable change in connectivity, giving brands an exciting challenge to meet.



5G: clearing misconceptions  
& paving the path for the future

## Favorite examples from the digital exhibit floor

**Verizon + Skyward + UPS Flight Forward** – Announced a partnership for connected delivery drones that use 4G LTE in the first stage, with the goal of testing 5G connections later in 2021.

**Verizon + Live Nation** - Verizon's 5G UWB will be live at 15 Live Nation venues so that when we return to live performances, the bandwidth will be available and, until then, the venues can produce enhanced livestream virtual performances with multiple camera angles.



**Verizon + NFL** – Verizon's 5G UWB will be live in 28 stadiums by the end of 2021, enabling AR effects for users with 5G devices via the NFL app's Verizon's 5G SuperStadium.

**Verizon + Smithsonian** – Over the next 5 years, Verizon will use 5G to provide high-fidelity 3D scanning of the museums' collection for its "Race, Community, and Our Shared Future" initiative.

### **Verizon + Metropolitan Museum of Art – The Met**

Unframed, powered by Verizon 5G Ultra Wideband, showcases a dozen digitally rendered galleries and 50 works of art from the museum's collection, accessible for free from any 4G or 5G smart device. Four of the AR works are enhanced with activations accessible only to Verizon 5G Ultra Wideband users.







## Digital screens: window to the world(s) we live in

We've never spent more time in front of screens. With the increased demand for contactless environments - be it at the gym, restaurants, school, etc. - we saw a massive push for how displays can provide solutions for upgraded and more convenient life – think a smart home, the workplace, retail environments, mass & private transportation, and anywhere else consumers venture. Brands like LG unveiled display products and technologies focused on the redefined role of displays in today's contactless era, delivering a slew of display solutions optimized for emerging consumer lifestyles.

This year we saw brands push transparent OLEDs that were borderline gimmicky, ranging from 10% transparent to 40% transparent. However, creative application to this technology unlocks plenty of opportunities, including the theoreticals we saw like a smart subway window (with maps and schedules overlaid on the screen) and restaurant partition (showing the menu while also the kitchen).

We also saw a lot of companies positioning their screens & displays as tools for amplifying and enhancing the gaming process, enabling recent device drops like PlayStation 5 and Xbox Series X to run at their maximum 120Hz potential.

This aligns with increased use of both voice and visual search. Between limited opportunities for conversation due to remote working, remote schooling, and less overall human context, the interest and testing of voice and visual as a supplement for companionship and utility continues to increase.



*Digital screens: window to the world(s) we live in*

## Why this matters to brands

**Screens are the new platforms & portals.** They unlock offerings from virtual try-on to telehealth to purchasing to storytelling. As the ways and reasons we use screens evolve based on the activity or need state, understanding the form factor needed helps you design the best experience. It's not about copying and pasting tech across screens, but understanding why specific types service certain purposes.

**Virtual visits, be they medical or social, will continue to be an option beyond the pandemic.**

The forced acceleration of trialing the concept and adapting it into consumers' lifestyles will remain in the future, giving brands a new opportunity for connecting and collaborating with consumers virtually alongside (or instead of) traditional in-store and OOH offerings. How can your brand show up and become an invited guest into your consumers' intimate spaces like their kitchens, bathrooms, classrooms, cars, or offices?



Credit: LG



*Digital screens: window to the world(s) we live in*

## Favorite examples from the digital exhibit floor

**LG Electronics** – Its webOS 6.0 Smart TB platform offers a more intuitive content discovery experience. LG ThinQ AI in webOS 6.0 supports voice commands for both Google Assistant and Amazon Alexa, making TV management and searching across streaming services, internet, and broadcast channels easier.

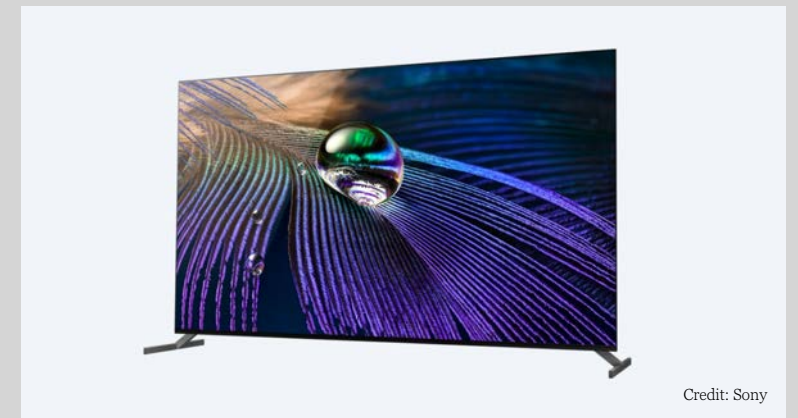
**LG Display & Eyesafe** – The first ever Eyesafe Certified TV display designed for human health, a 65" OLED model, meets Eyesafe requirements for low emissions of blue light and optimal color performance.



**LG Display** – Showcasing their transparent screens – an opportunity to provide videos and/or information on a transparent surface - their online showroom highlighted potential use scenarios, including as a restaurant scenario (i.e. a sushi bar where patrons could see a screen between them and the chef to see the menu while simultaneously seeing the chef at work).

**Lenovo** – The Yoga AIO 7 desktop's entire display screen can rotate, transforming the 27-inch landscape monitor into a vertical form factor suited to content like Twitter feeds, long documents, or TikTok videos.

**Bravia XR** – Sony's TV claims to be the world's first cognitive intelligence TV thanks to its Cognitive Processor XR, powered by cognitive intelligence, which divides the screen into zones and detects where the 'focal point' is in the picture. The goal – as most companies tout it - is to go beyond AI to create an immersive visual and sound experience.





## Content: pushing the boundaries of possibility

We want our content like we want our Zoom meetings: smarter, more efficient, and sometimes even shorter. Think Zoom fatigue vs. the power of TED talks: One feels never ending and pointless while the other packs power within its truncated parameters.

Services have become a rapidly growing space, both at CES and in consumers' media diet. As we've shifted towards working out, entertaining, gaming, learning, and working from home more, we saw offerings pivoting to take advantage of consumers' increased time seeking content and refreshed need for fresh content, OOH-quality replacements or compliments (i.e. theatre-quality screens, boutique gym-quality equipment), and the new ways we engage with it (hint: at home). A sign of the changing times, Nielsen launched a service measuring the viewing of theatrical films released direct-to-consumers via streaming services, a direct response to the pandemic's impact on movie studios accelerating direct-to-consumer streaming of films (think: HBO Max debuting Wonder Woman 1984 at the same time as theatres this past December).

Companies like Sony sought to offer alternatives like "cinematic experiences at home" via platforms like the Bravia Core, made exclusively for Bravia TV owners using always-on "Pure Stream" tech (streaming at up to 80 Mbps) delivering "lossless" picture quality comparable to Blu-ray. Other companies sought ways to deliver content in fresh, unexpected ways to address concerns, like Sesame Street & Skoog's interactive platform combining tactile and educational play with an ever-growing content library so kids can access music and stories without a screen.

Knowing that the content consumers crave is more diverse than ever and reaches more industries than imaginable, we saw devices and platforms stretch the limits of what can be defined as content, how content can be created, where content can be consumed, and what content is worth engaging with.

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**It is estimated that streaming currently accounts for 24% of total viewing among OTT-capable homes, up from 21% a year ago.** Source: Nielsen

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Content: pushing the boundaries of what's possible

## Why this matters to brands

**It's TBD which behaviors revert vs. solidify.** As Scott Brown, Nielsen GM of Audience Measurement, noted, a lot of future behaviors we will need to wait and see what becomes scabs vs. scars, and that “a bigger question might be what will audiences do following any recovery, how the behavior adopted during stay-at-home orders might influence habits when consumers have the ability to go back to theatres to enjoy that experience and how content creators will leverage data to make the best decisions regarding distribution platforms in the future.” Brands need to embrace an agile mentality to be creative with their spend and strategies to adjust to changing tastes.

**Content requires a platform.** Whether it's an actual platform or brand support, there's no shortage of actual content; it's quality and brand alignment that's critical. The ability to go niche and micro with content strategies enables brands to tell stories and align with stories that may focus on a specific consumer, but delivers the EQ needed to drive brand connection.



*Content: pushing the boundaries of what's possible*

## Favorite examples from the digital exhibit floor

**JZ200** – Panasonic's 2021 flagship OLED 4K TV touts a HCX Pro AI Processor that not only improves picture quality via its HCX Pro AI chip (that can identify the content being viewed and auto-adjust the image and sound to match), but also delivers a massive upgrade to a video game's performance (via a Game Mode Extreme setting), perfect for consumers who recently got PlayStation 5s or Xbox Series Xs.

**Airpeak** – Sony's drone for video content creators utilizes mirrorless cameras and AI to keep images steady as it flies.



**Infinity Game Table** – Offering those the ability to play any board game imaginable at home, the touchscreen table removes the need to use (and find) all the cards and pieces we often lose around the house. Users can play within their own households or against other users online.

**Reah Keem** – LG introduced Reah Keem as their virtual influencer during its CES live-streamed event. A digitally created influencer with over 6,000 followers on Instagram and a SoundCloud page, Keem is an example of how the notion of content (and influence) is rapidly evolving.

**LUMI Keys 1** – The first integrated hardware, software, and content platform for music learning designed to make learning the piano at home easy and seamless. Users can select songs they like via companion app and play them instantly via the illuminated keyboard, enabling users to engage in exercises that builds long-term musical skills and empowers users to learn on their own.

**Wondercise** – The on-demand fitness platform's Live Multi-Point Motion Match Fitness Training System brings a layer of gamification to working out, utilizing wearable hardware to track movements and provide feedback.







## Experience: Bringing human touch, making everyday life more humane

Humans are meant to be community-driven and socialize. The lockdown impacts over the last 10+ months have taken their toll on consumers' mental, emotional, and physical health. The massive uptick in searches for experiences on and offline that provide safe and fulfilling ways to be entertained, inspired, educated, and connected into the communities, passions, preferences, and people that matter isn't just about finding fresh fun but about finding an outlet that can provide the support needed to manage mental health.

Whether it's working out with far away friends from home, joining a music festival remotely, or finding dual options that don't make you choose (or feel that you've chosen) between a superior or inferior on/offline experience, this year we saw companies demonstrating the tools and platforms designed to power the next generation of entertainment (e.g., concerts, comedy shows, gaming), health (e.g. workouts), streaming (e.g., video & audio movies & series), and more.

Virtual experiences – professional and personal – will continue to be the norm and grow into strong complementary, and, for some activities, complete replacement for offline experiences put on hold or reimagined due to the pandemic. As the tools evolve, successful offerings will keep in mind users' physical & emotional needs (e.g. human connection, screen time limitations) to ensure usage complements healthier living.

*Experience: Bringing human touch, making everyday life more humane*

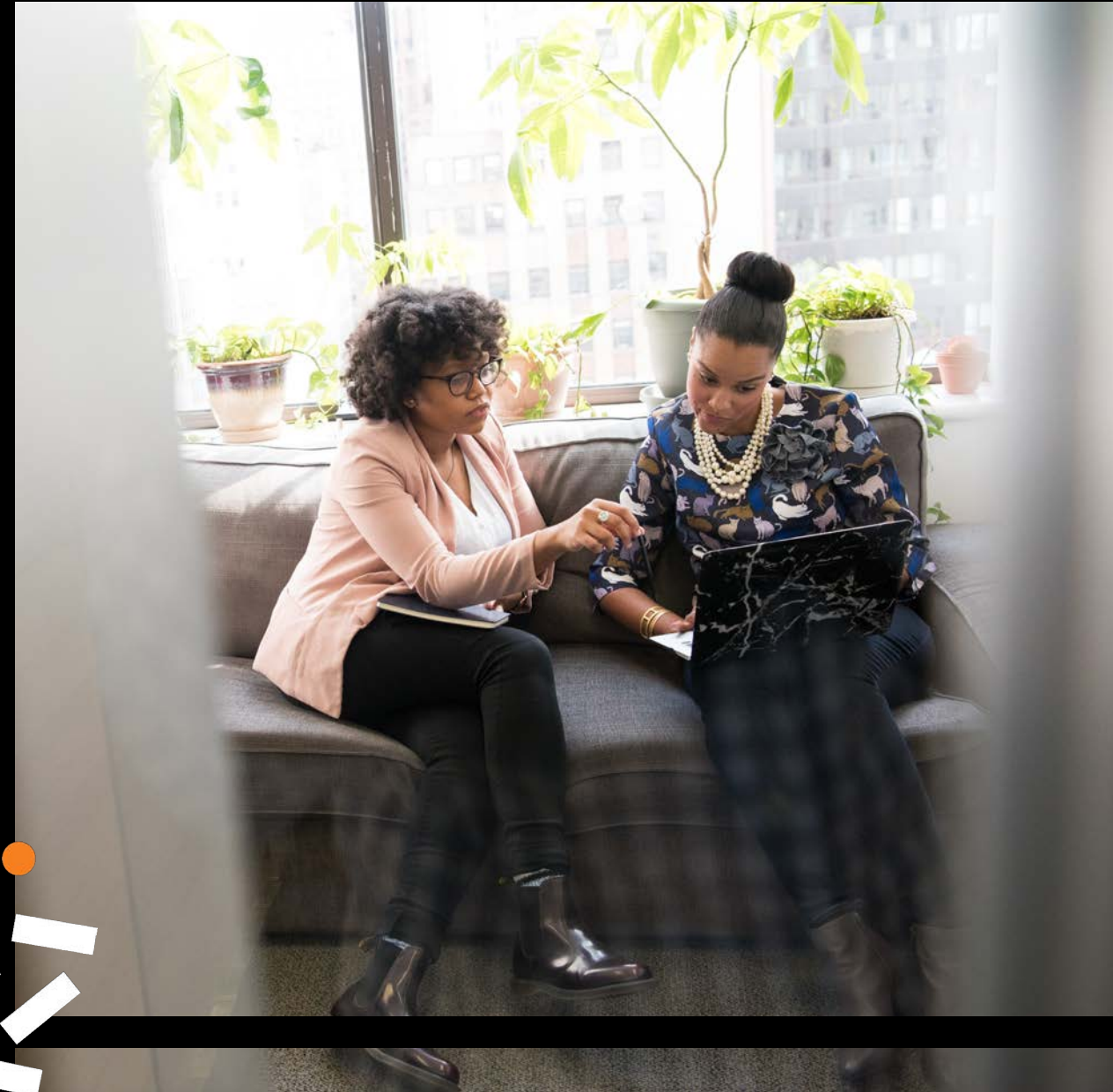
## Why this matters to brands

**Without physical constraints, the creative ones lift.** This is the year we move beyond replicating facets of experiences and events to retrain ourselves to reconnect with the tools and platforms at our disposal with fresh eyes and ways of living.

**Online offerings may have larger reach – but not for the reasons you think.**

Interactive online platforms not only let brands scale events that would be limited physically, but also enable introverts and extroverts to engage and connect in ways that wouldn't previously be possible.

**This doesn't mean consumers are opting solely for virtual or digital experiences and touchpoints.** On the contrary, while proficiency has grown, so too has the demand and desire for real-world experiences, be they physically shopping at a store or having a conversation with a colleague face to face (or over coffee inside a restaurant).

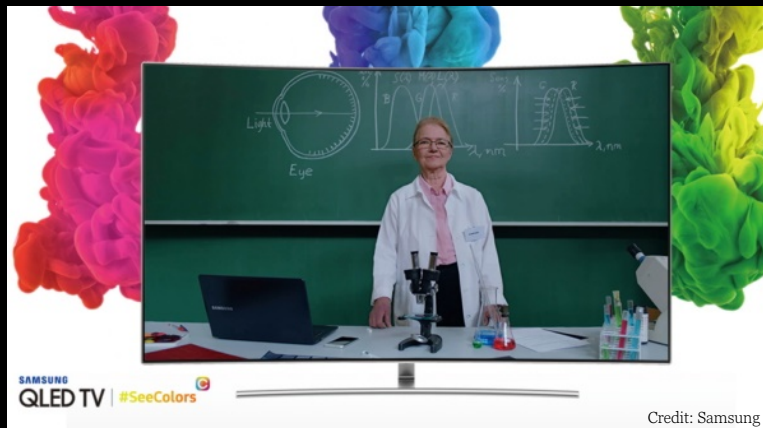




*Experience: Bringing human touch, making everyday life more humane*

## Favorite examples from the digital exhibit floor

**Samsung** – To drive inclusivity amongst consumers with low vision or hearing issues, its QLED and Neo QLED models will come with features like Closed Caption and Position (the ability to move captions to avoid blocking other text on a video) Sign Language Zoom (the ability to zoom in on the sign language window,) SeeColors (enables people who are colorblind to see the full spectrum of colors), and Learn Remote Control (verbally tells users what each button on the remote controls are).



**LG Display** - LG showed a concept TV for gaming, a 48-inch 4K 'Bendable CSO (Cinematic Sound OLED) display' that switches between flatscreen and a curved screen modes, enabling users to shift the screen's shape based on the content they're engaged in (i.e. flat for streaming movies and curved for playing games) to ensure the most immersive experience possible.

**Sony** – Its 360 Reality Audio services and product offerings, including new video streaming capabilities and content creation tools, helps those creating both audio and video content evoke feelings of being in a music studio or live concert – all without leaving home.

**Panasonic** – Hosted an immersive, multi-dimensional listening and viewing concert experience during CES featuring Cold War Kids showcasing its new tech like the LUMIX BGH1 camera, Technics True Wireless in-ear headphones and Panasonic PT-RQ35K 4K projector.





## **Virus management: beyond the motherboard**

As we become location agnostic and increasingly transient as to where and how we work, learn, and play, increased confidence in seamless safety will be required to bring a revival to indoor businesses and operations like schools, hospitals, offices, manufacturing sites, shopping malls, retailers, restaurants, even a grandparent's home or care facility. Touchless is table stakes; safety precautions needs to become so prevalent and ubiquitous that they become unnoticeable and a baseline assumption, just like you assume when you enter a store the lights will be on and products will be on the rack.

This trend of 'germ-busting' technology designed to create confidence in the safety of spaces indoors and out had a massive digital footprint this year. Ensuring a consistent state of safety may have been something consumers took for granted pre-pandemic, but will be top of mind in the years to come and will dramatically impact where they spend money and their time.

This year we saw countless devices for pandemic-era technology – and the concerns around safety that will linger in the years to come – for both residential and professional use. While much of it focused on air quality and pathogens, much of it tapped into behaviors that are expected to remain, such as desire to minimize contact with surfaces.

This pandemic productization provides insight into how businesses and spaces of all types will be able to upgrade and update to comply with public health needs and help drive physical engagement in spaces recently avoided.



*Virus management:  
beyond the motherboard*

## Why this matters to brands

**Whatever the 'next normal' will be  
will require consumer confidence.**

Biological safety has never been so top of mind for consumers, with even platforms like Yelp adding features to rate pandemic-based procedures. While in-person activities and experiences will resume - seamless, invisible yet noticeable safety protocols and features will need to be put into place and part of the marketing strategy for driving foot traffic and engagement.

**Normalize the 'Now Normal'.** It's not about stoking fears; it's about proactively providing solutions for consumer concerns to encourage them to leave home and engage with your services and products in a meaningful way that cannot be replicated online, but can be made safer and more sanitary.



*Virus management:  
beyond the motherboard*

## Favorite examples from the digital exhibit floor

**BioIntelliSense BioButton** – Coin-sized disposable wearable continuously measuring a wearer’s temperature, heart rate, and respiratory rate, and analyzes changes that may indicate the signs and symptoms of an early COVID-19 infection. It serves as a scalable health screening and contact tracing solution, the BioButton enables safe return to life.

**Project Hazel** – Razer’s N95-class face mask features active ventilation and auto-sterilization for safety, internal LEDs to make a mouth visible in low light, and audio-processing algorithms to make a user’s voice project & sound clearer.

**CLOi** – LG’s robot utilizes UV-C to disinfect high-touch, high-traffic areas like schools, offices, and airports.



**Handsteco** – Offers sinks with built-in AI designed to guide users in public spaces (e.g. offices, hospitals) through hygiene techniques.

**GHSP Grenlite** – Uses UV-C technology to reduce virus exposure in personal vehicles by detecting when surfaces or controls have been touched, dosing the area with UV-C light to clear the air or surface.

**InstaView** – LG’s refrigerator features UV light designed to eliminate "99.9%" of bacteria its water dispenser, as well as the ability to use voice (vs. touch) to open it.

**ADIBOT UV-C Disinfecting Robots** – UBTECh’s UV-C light disinfecting robots provides a hospital-grade solution against COVID-19 to help businesses and schools reopen safely, combining robotics and AI with UV-C technology that disinfects targeted surfaces and air by deactivating the DNA and RNA of harmful pathogens.

**LUFT Duo** – Personal, portable air purifier is designed to be a travel companion (think: in-car, office, airplane) providing those who have allergies, or may be higher risk for COVID-19 “good air, anytime and anywhere.”

**MaskFone** – A face mask with a built-in N95 filter, as well as earbuds and microphone to make calls & listening to content easier while wearing.





# Transportation: a hands-off, guard-down approach

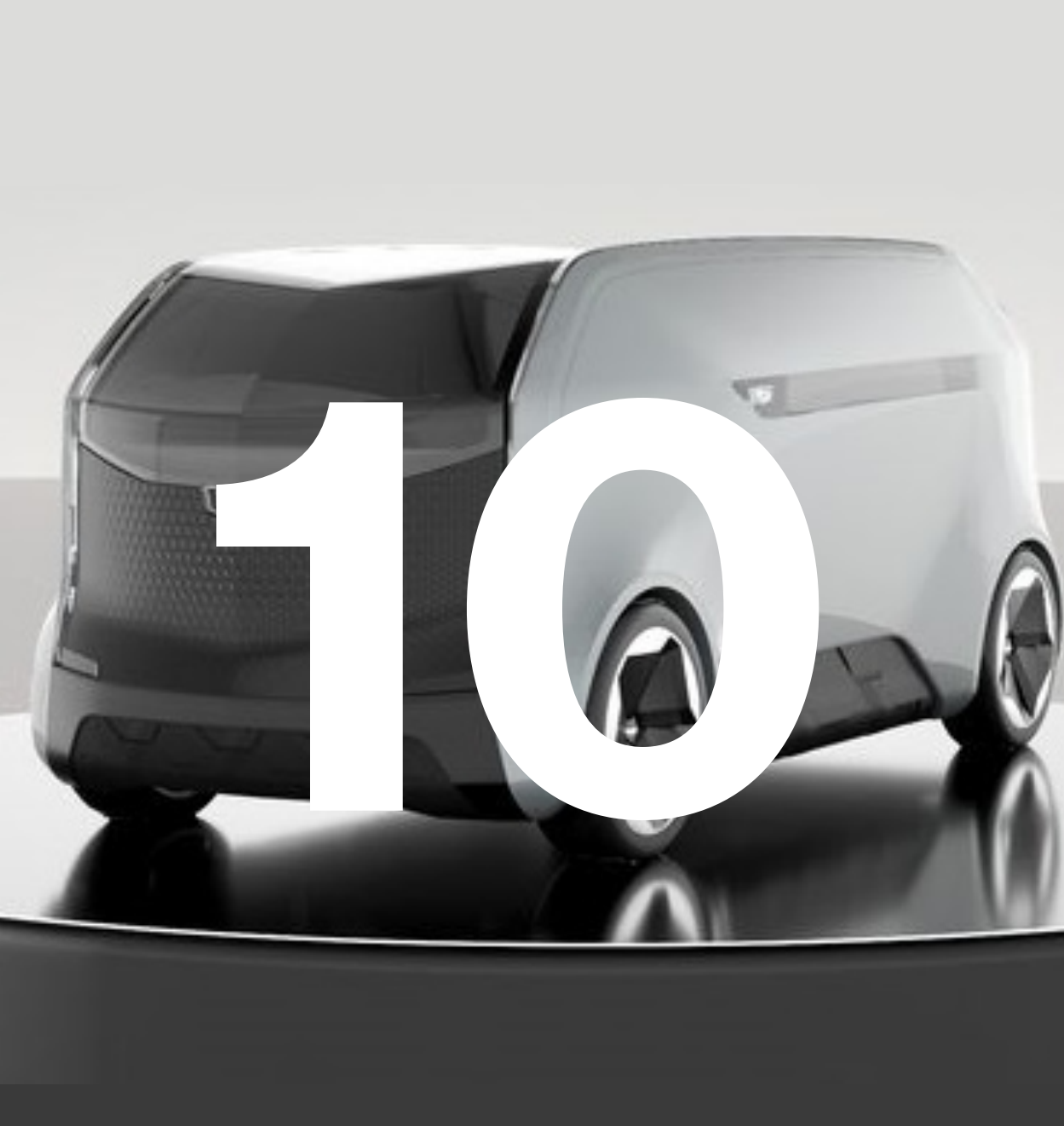
Transportation has continued to be a hallmark of CES, carving out its niche as part automotive show part future of mass transportation.

Electronic vehicles (EVs – known for cheaper fuel, lower maintenance costs, and less air pollution) and autonomous vehicles (AVs – known for using AI, sensors, radar systems, and minimal human input) were the two terms we heard the most (remember: not all self-driving cars will be electrically-powered). Designed to reduce global warming and create the most intuitive, hands-off driving experience possible, we saw plenty of companies tout models of transportation vehicles for private, public, and delivery usage, all designed to maximize efficiencies pending the need (i.e. last mile delivery, hands-off driving experience).

What became clear is that, for AVs to succeed, the technology can't only be superior, but also needs to scale through legislation and convince consumers they're a safe option. We saw companies like Mobileye focus not only on technology improvements but also offerings like automated, worldwide AV mapping capabilities to expand its AV test fleets globally - giving consumers the chance to demo and increase interest/comfort. GM, for example, launched its new safety brand, Periscope, touting three key focus areas - vehicle technology, research, and advocacy – designed to ensure safety for everyone on or near the road – from passengers to drivers to those nearby.

As consumers get comfortable with giving up control in their vehicles slowly as different facets of today's cars offer more and more automation, we saw info-tainment as a massive area of interest, with more screens and content-based platforms than ever to test new ways of engaging in the transportation experience through senses like sound, touch, and sight.

And, of course, it wouldn't be CES without insight into what the future of mobility could be, with companies like Cadillac sharing a glimpse into the future of "personal air mobility" with prototypes of an autonomous shuttle and an electric vertical take-off and landing (eVTOL) aircraft, known as a flying car.



*Transportation: a hands off,  
guard down approach*

## Why this matters to brands

**There's still a ways to go.** We're far from an actual world with mass deployment of AVs in either private or public sectors. In-vehicle technology aside, the rules and requirements around local infrastructure, data-sharing requirements, environmental impact, etc. still needs to be sorted out on local, state, and national levels. However, EV tech and environmental enhancements have the potential to expedite the future of transportation, even merging with AVs for new levels of efficiency and safety for passengers, passerbys, and the world at large. This also offers massive opportunity for last-mile delivery success.

**New travel trends will impact time spent in car.** With more people taking road trips and driving into their travel consideration set, the reasons people drive will evolve (instead of previous trends like heavy commuting). Understanding the mentality of why people are driving is as critical as understanding where they're driving to.

**Format configuration will open new opportunities.** As we saw from the different form factors displayed amongst AVs and EVs, the power of audio and video will remain supreme, even as the power of touch frees up. As we've seen with audio platforms doubling down on audio content like podcasting while building up their video capabilities over the last year, these platforms will become table stakes when it comes to reaching the ears (and eyes) of passengers and drivers as they get back on the road.





*Transportation: a hands off,  
guard down approach*

## Favorite examples from the digital exhibit floor

**Hyperscreen** - Mercedes-Benz's 56-inch touchscreen (debuting in the upcoming EQS luxury electric sedan in late 2021) is part of the second generation MBUX info-tainment system that offers a completely personalized digital, voice-controlled in-car user.

**Panasonic Automotive + Klipsch + Dolby Atmos Music** - Designed to push the boundaries of in-vehicle entertainment, the three companies announced a proof-of-concept collaboration featuring sound technology to create an immersive in-car premium audio soundscape.



**Cadillac Celestiq** – GM's "ultra-luxury, fully electric ... show car" will be built on GM's Ultium electric vehicle platform, and feature all-wheel drive, four-wheel steering, and a full-glass modularly adjustable four quadrant roof with smart glass.

**BrightDrop** – GM's new business unit offers commercial customers an ecosystem of electric and connected products starting with the EV600 (an electric van with a 250-mile range) and EP1 (an electric pallet). With FedEx as its first partner, it also offers a cloud-based software platform accessed via the web or by mobile app for real-time insight into how to improve operations.

**Envisics** – Announced a partnership with Panasonic Automotive Systems to develop and commercialize a new generation of head-up displays for cars, trucks and SUVs. Focused on the automotive application of holography into cars, the goal is to bring the technology mainstream by 2023.

**Bolt Electric Utility Vehicle (EUV)** – Chevy's refreshed Bolt offers GM's hands-free driver assist system, Super Cruise.





## Last call: other top tech finds



Yves Saint Laurent Beauté Rouge Sur Mesure Powered by Perso



ColdSnap



X-HMT Heat and Massage Chair by X-Chair



Swap



LG Rollable



Reachy



Mode



L'Oréal Water Saver



Oticon More



Capture App





## Summing up CES

CES was enlightening for understanding the challenges, opportunities, and tools a post-pandemic world will bring consumers, businesses, and brands. Understanding how technology platforms and providers of all sizes across many industries are developing to solve for specific need states and frictions provides insight into how your brand can future proof. While some devices seem unnecessary, thinking bigger picture provides insight into how tech can be utilized – for example, transparent screens may not be a big draw for the home, but utilized in public spaces they could help high-traffic areas provide information without disruption.

The power of technology, and the ability to tap into these technology trends, is rooted in consumer understanding - not tech prowess. It's critical to understand and define your challenge, your consumer's true needs, and determine the ideal solution before determining which technologies and platforms can help you best deliver said solution. For example, AI, when

leveraged properly on the front or backend, can help move disparate data from interesting to actionable. However, it is not substitute for human understanding and EQ-driven insight. Predictive tools and technologies enable marketers to utilize data from previously unreachable sources to build a stronger holistic understanding of the intricacies of consumers. But, ultimately, AI isn't going to lead to the automation of consumer behavior via data-based influence. AI driven tools like image & language recognition/translation, identifying preferences & behavioral attributes, etc. can be helpful, but don't guarantee how a consumer behaves or buys at the end of the day – because consumers can't usually articulate why they last-minute gravitate to a particular purchase or decide to swap brands.

Human and EQ-centric strategies will leverage more intuitive platforms and tools to understand and serve more fluid online and offline consumer behaviors and build your brand's **Integrated Intuition** as a result.

**For more information or a  
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**Wavemaker**<sup>•</sup>

