FUTURE OF THE HOME

How design and technology are meeting the need to maintain health, safety, purpose and wellbeing at home in light of the pandemic.



ARITCO REPORT 2021

ARITCO™

POWERED BY SPRINGWISE™

REPORT OVERVIEW

PURPOSE

This report was compiled by Springwise in partnership with Aritco to explore how the COVID-19 pandemic is shaping life within the home. It offers valuable insight into key trends, the latest technologies and innovations from across the globe that reveal how our living environments are rapidly changing.

CONTENT

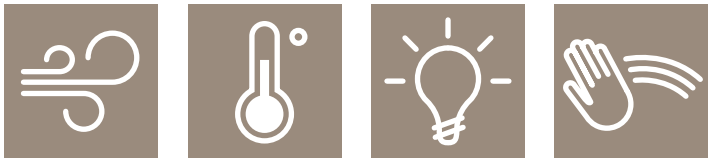
This report explores the future of the home through the lens of consumers and the innovators working to meet their evolving needs. In particular, how a desire for well-designed hygienic, calming, and purpose-driven solutions are reimagining the home, and how the home ecosystem is changing to incorporate all facets of daily life.

4 A Message From Aritco — Next Level Living
5 A Message From Springwise — #InnovationForGood
6 Reimagining What a Clean, Safe and Sustainable Home Looks Like
22 An Evolving Home Ecosystem to Stay Healthy and Connected

INNOVATIONS

CLEAN, SAFE AND SUSTAINABLE HOME

12 Artistic Air Purifier *(Sauberair)*
13 Antibacterial Ceiling Fan *(Nanyang Technological University)*
14 Ceiling Air Purification *(Armstrong World Industries)*
15 Energy-Harvesting Windows *(US Department of Energy)*
16 Infrared Home Heater *(Koleda)*
17 Circadian Lightbulbs *(TUO & University of Washington)*
18 Antibacterial Modular Room Kits *(MINIWIZ)*
19 Sanitising Shelf *(Umeå Institute of Design & Electrolux)*
20 Contactless Lift Panels *(Techmax Solution)*



Air | Heat | Light | Touchless

EVOLVING HOME ECOSYSTEM

30 Modular Home Office *(MUTABOR)*
31 Optimised Video Presentations *(All Turtles)*
32 Data Encryption Device *(Winston Privacy)*
33 Remote Respiratory Monitor *(Turtle Shell Technologies)*
34 Virtual Travel Tour *(Visit Faroe Islands)*
35 AI Music Therapy *(Muru Music Health)*
36 Grocery Voice Ordering *(Carrefour and Google)*
37 AR Art Viewing Tool *(Etsy)*
38 Predictive Maintenance Platform *(Augury)*



Work | Health & Wellbeing | Shopping

NEXT LEVEL LIVING

Innovation has been at the core of Aritco's values since the company was founded in Sweden in 1995. Over the years, we have revolutionised the lift industry with a simple idea – opening up spaces for everyone by improving mobility everywhere and blending efficiency with aesthetics. We call it "Next Level Living". We design our lifts based on the company's focus on Scandinavian design, smart functionality and safety, and we have manufactured and installed them in more than 35,000 private homes, schools, offices and retail stores around the world.

In 2016, the design team at Aritco turned its attention to the domestic setting and launched the Aritco HomeLift, taking residential accessibility to a new level. Designed as a customisable piece of furniture that can be retrofitted into almost any home, the Aritco HomeLift went on to win a Red Dot Product Award 2017 and a Gold Medal at the European Product Design Awards. It was also nominated for the Best Domestic Design category at the Wallpaper* Design Awards, was named a finalist for Stora Design Priset (Great Design Prize) 2017 and was one of five finalists for the Grand Award of Design by Teknikföretagen and Svensk Form.

The COVID-19 pandemic has meant that a high percentage of the world's population has spent most of 2020 confined to our homes which have become hubs for work, exercise and education as well as leisure. Design and technology have driven new innovations that support the evolution of the home into a clean, safe and sustainable space with an integrated, digital ecosystem. The research and development team at Aritco has been working hard integrating some of these innovations, particularly the use of antibacterial UV light into the design of both the public and commercial lifts, as well as the home lifts, to adapt to this "new normal".

We hope you enjoy this deep-dive into the global innovations that will shape our homes in 2021 and beyond. Watch this space for news from Aritco about how our lifts will continue to revolutionise how we move around our homes in safety, comfort and style.

David Schill
Marketing Director, Aritco Lift
aritco.com

ARITCO™





CREDIT: ISTOCK

#InnovationForGood

Despite the unprecedented disruption in how we all now live, we at Springwise have been laser-focused on the positive innovation that has come in response to the global COVID-19 pandemic. Some of the most promising solutions we've seen have been targeted at the home environment, as you'll see in the pages that follow.

But first, a few words about Springwise and what we do. We are the world's leading idea-spotting network and we have been publishing the most interesting business innovations since 2002. Our mission is to be the place of record for innovations that matter — to spot the innovators, the entrepreneurs, the original thinkers, the disrupters and the outliers from across the developed and developing world and to bring these new ideas to a wide readership. Access to Springwise's daily innovations, and extensive database of over 10,000 solutions, is now free for all, via our website, daily and weekly email newsletters, and the Springwise Innovation smartphone app.

Above all, what drives us is to be a force for good in a world that needs all of the positive inspiration it can get. This is why our focus is on #InnovationForGood — the solutions aiming to solve the most pressing problems with sustainable and purpose-driven ideas. Along with our parent company Re_Set, a London-based boutique consultancy for disruption, innovation and sustainability, we are a proud Certified B Corporation and members of 1% For The Planet. We take a purpose-driven approach to all of the work we do, including what you'll find in this report, which we've proudly compiled on behalf of our friends at Aritco.

The development of sophisticated technology has been making homes smarter, safer, and more sustainable for several years now. But, as with most things, the pandemic has accelerated existing trends while spurring brand new ones — including a hyper-focus on health and wellness and the urgent need to adapt our living environments to co-exist with where we now work and shop from on an increasingly frequent basis.

Such drastic shifts are not easy to adjust to, especially under the fog of a deadly health crisis and the anxieties that it provokes. But based on history and what we've seen in 2020, the most important innovation often comes out of times of great hardship. We hope you find our take on the future of the home informative as well as inspirational.

Justin Sablich
Editor, Springwise
springwise.com

POWERED BY SPRINGWISE

REIMAGINING WHAT A 'CLEAN AND SAFE' HOME LOOKS LIKE

As we spend more time at home, there's a desire for well-designed hygienic solutions to ensure a safe environment and a turn toward stress-relieving, calming, and purpose-driven solutions.

Pre-pandemic, wiping noses on tissues rather than sleeves and washing hands when working in the kitchen were fairly prosaic measures for health. Most people followed them most of the time. Since early 2020, however, the concept of what constitutes clean (and safe) underwent rapid, radical change.

The home has now gone beyond simply being a place to relax, eat and spend time with family. It has become a place of work, a ward for illness, a vacation destination, a centre of education, the local fitness centre and more. As scientific knowledge of COVID-19 grows, consumers are responding by adopting new behaviours and adapting old approaches. Every item that enters the home is viewed now through a lens of extreme hygiene. Where has it been? Who touched it? How much risk is everyone comfortable with?



ANTIMICROBIAL AND TOUCHLESS

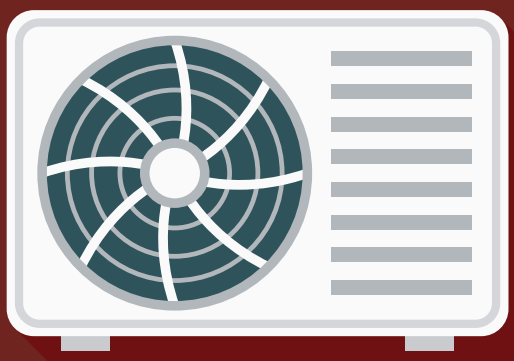
Many designs are beginning to include touchless options, for both ease of use and increased sanitation. High traffic zones of the home with frequently contacted objects now require layouts and arrangements that can incorporate additional layers of safety practices and procedures.

As people try to keep their distance from each other while indoors, living spaces, too, are being reconsidered for maximum efficiency and safety. Even with the possibility of a vaccine bringing relief from the need for extreme shielding and isolation, high levels of hygiene are likely to remain a constant, especially for people desiring a return to in-person work and leisure activities. Already, designs, materials and processes previously associated with and used predominantly in commercial and public places have become relevant to and required in peoples' living spaces.

Experts predict that the wet tissue and wipe market will increase by more than €5.3 billion by 2024,[A] with the nascent global antimicrobial coating market expanding to €4.1 billion by 2025.[B] This growth is driven in large part by significant increases in the need for sterilisation and disinfectant. Innovators are already looking beyond household cleaning products and incorporating antimicrobial characteristics into everything from clothing and edible films on fresh produce to personal devices and wall paint.



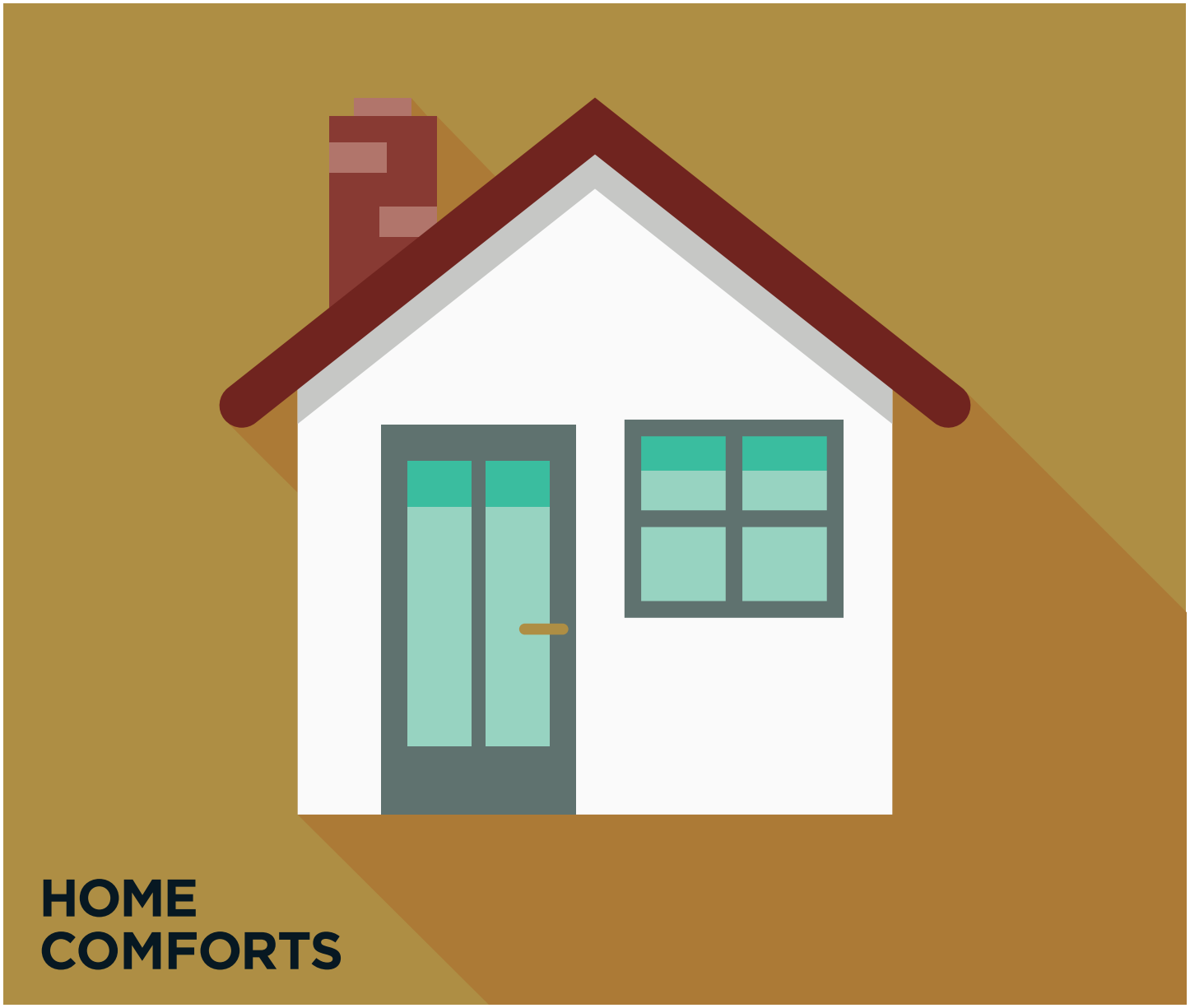
INDOOR AIR QUALITY



As well as what we touch, what we breathe has come under increased scrutiny. Dealing with urban smog was a good training ground for technologies and systems now required within almost every building, residential and commercial.

Air purification is fast becoming a household imperative, and even more so for families with vulnerable members of all ages. Systems and devices that work on everyday moulds, dust and asbestos must now work on microscopic, infectious virus particles. And they must seamlessly integrate with the rest of the home, its gadgets and occupants' way of life.

Industry standards continue to intensify as the characteristics of COVID-19 become better understood. Amongst the worldwide community, comprehension that this is unlikely to be the last, or only, global pandemic in modern times is slowly seeping into our collective consciousness. This understanding further drives demand for devices that are no longer a luxury nor for city dwellers alone. By 2027, the international air purifier market is expected to attain sales of €18.2 billion.[C]



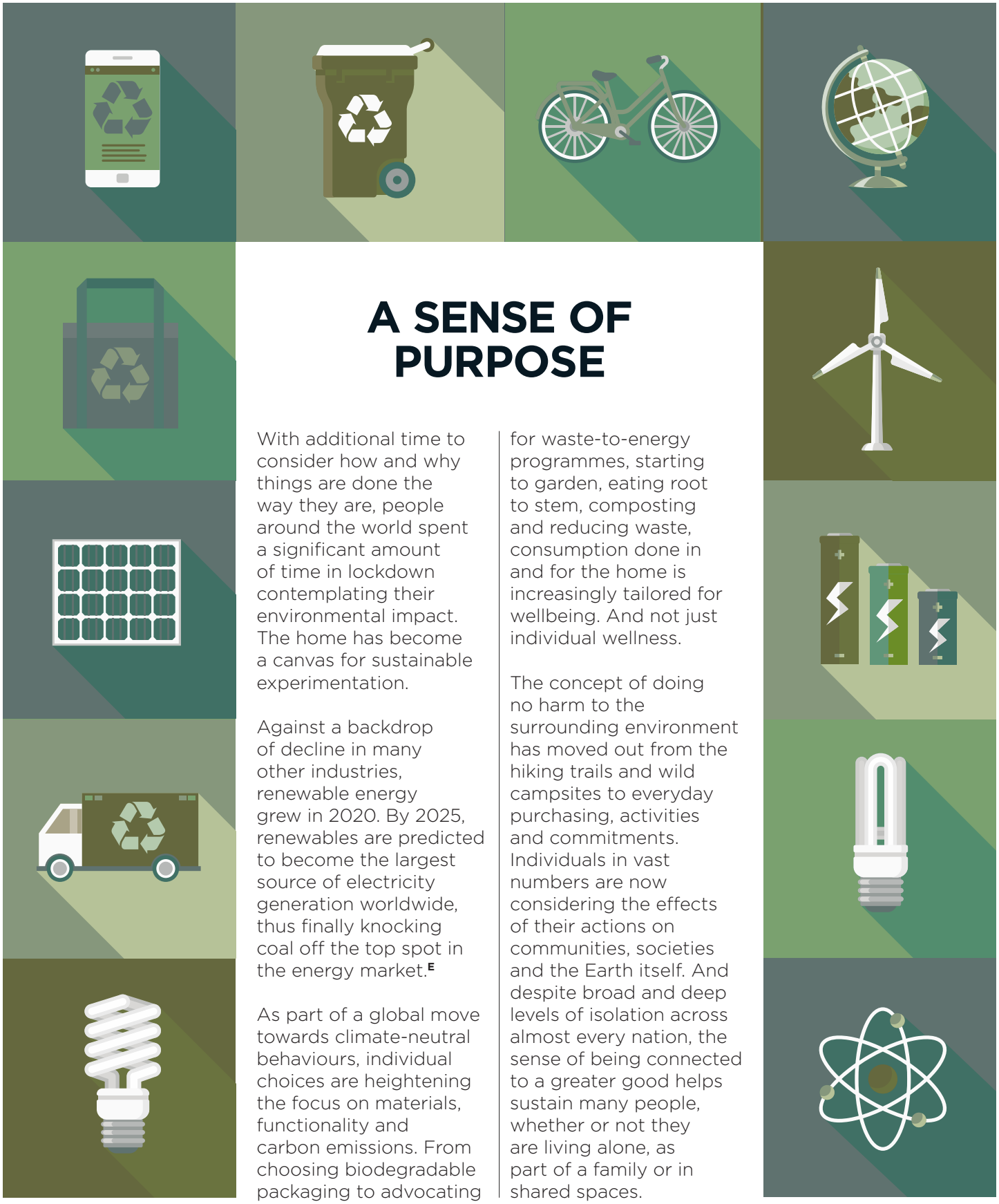
HOME COMFORTS

No one can forget the images of mountains brought into view for the first time in decades, wild animals roaming city streets and water clarity that hadn't been seen in a lifetime, all because humans were staying indoors. With our activity increasingly confined to the spaces in which we live, comfort and wellbeing have commandeered more attention. Far from being an extravagance for those with time to spare, health and wellness at home have become foundational to our survival.

Health at home used to mean general safety features for those with limited mobility. Now the concept encompasses a host of additional aspects. Telemedicine programmes reach more vulnerable, isolated individuals than ever before, with the global telemedicine market size projected to grow by 23.5 per cent by 2026.[D] With mental health care gaining parity with physical care, everything from the impact of the built environment to how we work is being improved.

Designers and architects are following the mass exodus from city centres to homes with innovations that go far beyond single-use structures or devices. Research into sensory inputs combined with developments in material science contributes to multi-layered designs centred on end-users' comfort. Naturally grown ingredients and sustainable practices are widely viewed as necessities, particularly as access to nature was so reduced in 2020.

In replicating functions that used to take place elsewhere in the community, house and garden improvements must meet a considerable list of criteria. Ease of use and ability to integrate with other household appliances are of particular consideration. Incorporating wellbeing into home hubs of activity requires well-designed solutions that provide surprising and unexpected amounts of functionality via minimal climate and spatial footprints.



A SENSE OF PURPOSE

With additional time to consider how and why things are done the way they are, people around the world spent a significant amount of time in lockdown contemplating their environmental impact. The home has become a canvas for sustainable experimentation.

Against a backdrop of decline in many other industries, renewable energy grew in 2020. By 2025, renewables are predicted to become the largest source of electricity generation worldwide, thus finally knocking coal off the top spot in the energy market.[E]

As part of a global move towards climate-neutral behaviours, individual choices are heightening the focus on materials, functionality and carbon emissions. From choosing biodegradable packaging to advocating for waste-to-energy programmes, starting to garden, eating root to stem, composting and reducing waste, consumption done in and for the home is increasingly tailored for wellbeing. And not just individual wellness.

The concept of doing no harm to the surrounding environment has moved out from the hiking trails and wild campsites to everyday purchasing, activities and commitments. Individuals in vast numbers are now considering the effects of their actions on communities, societies and the Earth itself. And despite broad and deep levels of isolation across almost every nation, the sense of being connected to a greater good helps sustain many people, whether or not they are living alone, as part of a family or in shared spaces.

CREDIT: ISTOCK

A Technavio Research, November 2020
B Antimicrobial Coating Market Report | Reportlinker.com, November 2020
C Global Air Purifier Market Report | ResearchAndMarkets.com, November 2020
D Telemedicine Market Report | Kenneth Research, November 2020
E Global Renewable Energy Report | International Energy Agency, November 2020

CLEAN, SAFE AND SUSTAINABLE HOME



Air Heat Light Touchless



CREDIT: SAUBERAIR

WHAT
Air purifier doubles as attractive home decor

WHO
Sauberair

WHERE
Taiwan

CONTACT
biz@sauberair.com

AN INVISIBLE AIR PURIFIER DISGUISED AS A PIECE OF ART

The Sauberair FLAT eliminates a wide range of pollutants in the air, using minimum power, while also being hidden from view.

The Taiwan-based company Sauberair has made a conscious effort to disguise their latest invention as home décor, creating a sleek air purifier that looks like wall art.

The Sauberair FLAT is just three and a half inches thick and disguises itself as a custom piece of wall art that can be hung around the home, while also eliminating a wide range of pollutants. The air purifier can be easily controlled with an accompanying app and with built-in smart sensors. FLAT automatically monitors the air quality and reacts to provide a fresher and healthier environment.

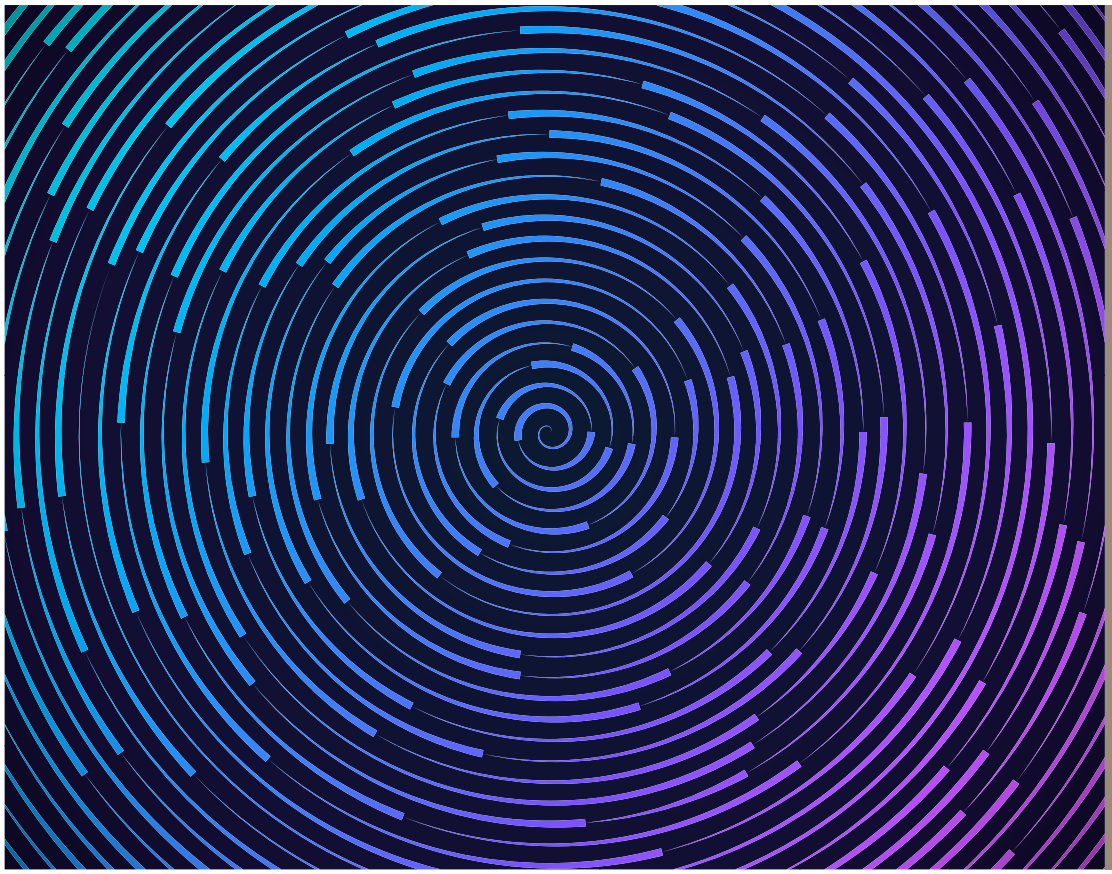
Despite its compact appearance, the Sauberair FLAT is capable of cleaning a 19-square-metre space within 12 minutes. The app will alert the user when the filter, which can be easily removed, must be replaced with a new filter press-fitted in. FLAT uses a reliable non-woven fibre material filter that guarantees high dust-holding capacities.

This means that it has a longer lifespan and the airflow will not reduce rapidly when accumulating mass amounts of dust. The purifier's intakes and exhausts are built around the sides, keeping the front face intake for the art, which sits in a wooden frame.



TAKEAWAY

Easy integration within a household is essential for long-term adaptation of many of the emergent devices and technologies. Designing for beauty as well as function is one of the best ways of doing that, and something the FLAT achieves through its slim shape. It also helps make it more accessible for use in smaller living spaces. With mental and physical wellness now tied so directly to our homes, purpose-driven solutions must contribute directly to a calming sense of safety while providing flexibility in their installation and application.



CREDIT: ISTOCK, NTU SINGAPORE

WHAT
Eco-friendly ceiling fan that kills germs

WHO
Nanyang Technological University

WHERE
Singapore

CONTACT
lesterkok@ntu.edu.sg

BLADELESS CEILING FAN USES LESS ENERGY AND KILLS MICROORGANISMS

A newly developed system is capable of cooling a small room at twice the speed of a conventional fan whilst only using half the energy.

Researchers at the Nanyang Technological University, Singapore (NTU Singapore) have developed a ceiling fan capable of cooling a small room at twice the speed of a conventional fan (about 100 cubic meters per minute), whilst using just over half the energy (42 watts compared to 75 watts).

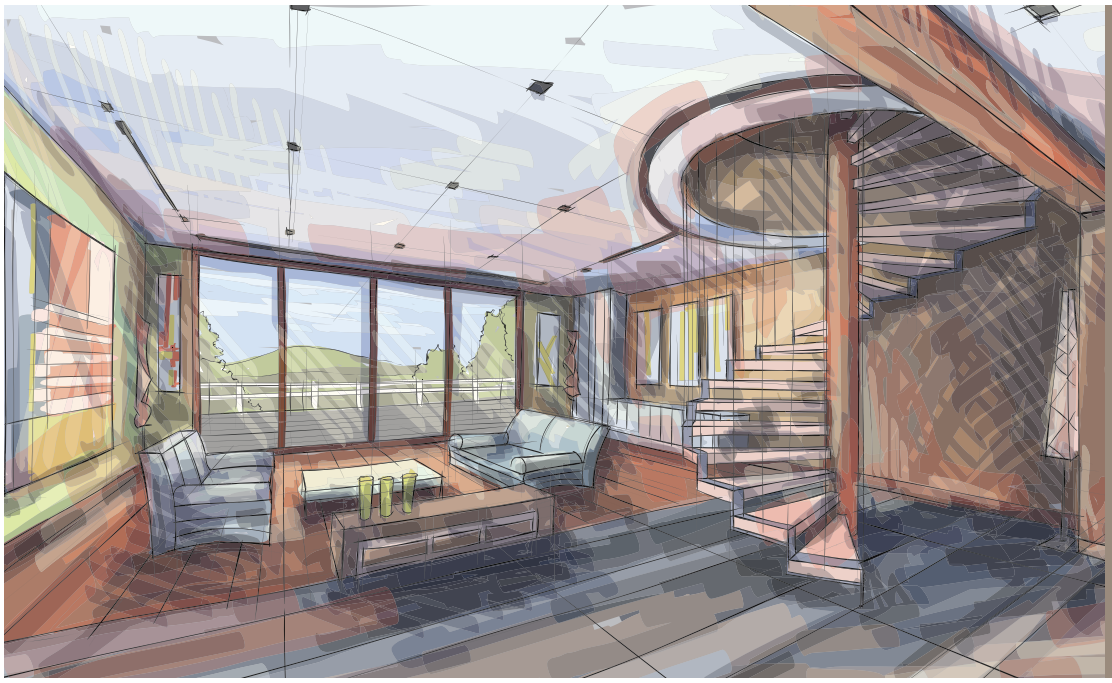
The Vortec fan works by sucking cool air from below the fan, diverging the heat and moisture from those sitting underneath. Its UFO-like shape allows air to be showered outwards from the top of the spinning vortex, creating an air curtain that falls and cools people around it. In addition, an LED lamp in the centre of the fan provides light in different temperatures of white. An ultraviolet light source also helps to kill microorganisms such as bacteria and viruses, to reduce the spread of diseases through the air in confined spaces.

In addition, an LED lamp in the centre of the fan provides light in different temperatures of white. An ultraviolet light source also helps to kill microorganisms such as bacteria and viruses, to reduce the spread of diseases through the air in confined spaces.



TAKEAWAY

Conventional ceiling fans contribute significantly to residential electricity consumption. During one month of trialling Vortec at the Co-Op Café at the NTU Innovation Centre, which is the size of a four-room apartment (90 sqm), utility costs were reduced by an estimated 50 per cent. Additionally, the UV LED lamps, produced by Seoul Viosys, achieved an impressive 99.9 per cent disinfection of COVID-19. Home appliances that can both save money by using less energy and create a safe home environment are likely to be in high demand in a post-COVID world.



CREDIT: ISTOCK, ARMSTRONG CEILINGS

WHAT
Ceiling panel system that purifies indoor air

WHO
Armstrong World Industries

WHERE
United States

CONTACT
jenniferjohnson@armstrongceilings.com

CEILING PANEL SYSTEM WITH ULTRAVIOLET AIR PURIFICATION

The system removes 97 per cent of pathogens in the first round of cleaning, bringing healthcare-quality disinfecting capabilities to working and living spaces.

Armstrong World Industries has partnered with Medical Illumination International Inc. to create the 24/7 Defend ceiling and air purification system. The portfolio of products includes cleanable ceilings and trims, AirAssure ceiling panels and the VidaShield UV24 air purification system. Used together, the collaboration brings healthcare-quality cleaning and disinfecting capabilities to home and office spaces.

The AirAssure ceiling panel design reduces the volume of air that leaks out of a space, thereby improving the performance of filtration systems. The ultraviolet air cleaning technology sits behind the ceiling panels, cleaning the air up to four times an hour.

Able to remove 97 per cent of infectious particles from the air with the first round of cleaning, the 24/7 Defend system can be installed in new spaces or retrofitted for existing rooms.

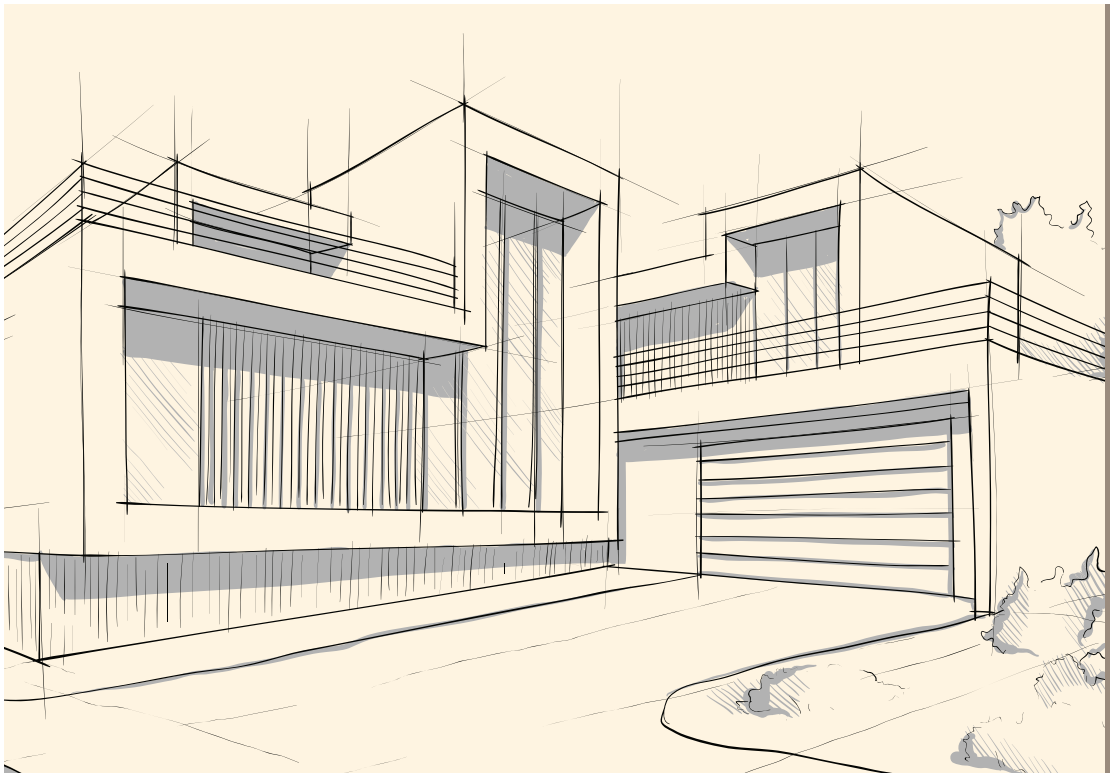
Alongside the new products, Armstrong provides the cleaning and disinfecting guides for a range of ceiling panels, tile and trim materials, including woods and metals.

As communities strive to return to in-person meetings within both work and personal life, a mix of integrated cleaning solutions and technological improvements are becoming essential to the maintenance of higher standards of both public and private cleanliness.



TAKEAWAY

Retrofitting existing buildings for new health and safety requirements could very well make room for additional innovations as building owners consider the needs of different spaces. Some may upgrade every area of a nursing home or a brick-and-mortar operation, whereas others may find new ways of trading that require smaller numbers of structures. As those decisions are made, collaborations within a community, whether that be single buildings or a range of businesses across geographical areas and industries, will become more and more important to new ways of living and working.



CREDIT: ISTOCK; DENNIS SCHROEDER, NREL

WHAT
Window prototype harvests energy and cools in-door environments

WHO
US Department of Energy

WHERE
United States

CONTACT
nrel.gov

WINDOWS THAT BECOME SOLAR CELLS WHEN HEATED

Windows are in development that can switch colours when heated by sunlight to keep buildings cool and act as solar panels at the same time.

Researchers at the US Department of Energy's National Renewable Energy Laboratory (NREL) are developing windows that automatically change colour when heated and can also act as solar panels. The thermochromic photovoltaic technology can block glare and reduce the need for cooling, while also harvesting energy from the light that can provide a source of electricity.

The windows are made from a thin film of an emerging solar cell material called perovskite. This is wedged between two panes of glass, with a solvent vapour injected into the gap. When the humidity is low, the perovskite remains transparent and natural light is let in as normal. But when the glass reaches temperatures between 35-46 °C, the vapour causes the perovskite crystals to rearrange themselves into different shapes, each one changing the colour of the glass in about seven seconds. Changing from yellow, orange, red and brown, each colour blocks light to different degrees and cools the room down in the process.

The NREL team believes that a prototype thermochromic photovoltaic window could be developed by the end of 2021.



TAKEAWAY

With much of the previous attention on improving construction sustainability emphasising materials and processes, it is interesting to see developing interest in windows, which are crucial to any build and often the crux of a design. A range of recent innovations focused on improving functionality provides homeowners with additional means of contributing to environmental efforts without sacrificing comfort or style. And with integrated solar technology, windows serve an additional purpose as a source of energy, helping to increase efficiency by reducing the need for panels elsewhere.



CREDIT: KOLEDA

WHAT
Infrared home heater reduces energy consumption

WHO
Koleda

WHERE
Switzerland

CONTACT
koleda.co/contact

HOME HEATER USES INFRARED RADIATION, SAVING ENERGY

Using thermal radiation to heat objects directly, this in-door heater uses around 30 per cent less energy than traditional systems.

The Solus+, by the Swiss startup Koleda, delivers heat via infrared radiation, whereby heat is transferred directly to the objects in the room. This uses around 30 per cent less energy than traditional convection heating systems. The heater can be installed by simply plugging it in, and is designed as a smooth, flat panel that fits almost everywhere in the home, requires no ongoing maintenance and will not burn out.

The Solus+ can also connect to a companion app, which allows users to monitor and adjust the heat of each unit individually. It also lets users turn units on while on their way home, for a warm house the minute they walk in the door, and prevents them from accidentally leaving the heat on while away.

The company claims the Solus+ will not lose this efficiency over time and is both faster and easier to use than traditional heating systems.

According to Koleda CEO, Maxim Interbrick, it is high time for a new way to heat homes: "As the world moves towards renewable energy sources, and the electricity grid becomes cheaper and cleaner, we set out to develop an innovative solution for environmentally conscious homeowners."



TAKEAWAY

Most home heating systems have not changed much over the last few decades – they use a boiler to heat radiators, or force warm air through vents. They rely on the principle of convection, which is the transfer of heat from one place to another by the movement of a fluid that for this purpose includes air. However, these systems are energy-inefficient and expensive. Thermal radiation heats objects directly, rather than warming the air around them, making it more energy-efficient than convection heating. All of this translates into a more affordable heating system as well.



CREDIT: TUO

WHAT
Circadian lightbulbs that improve sleep quality

WHO
TUO & University of Washington

WHERE
United States

CONTACT
info@thetuolife.com

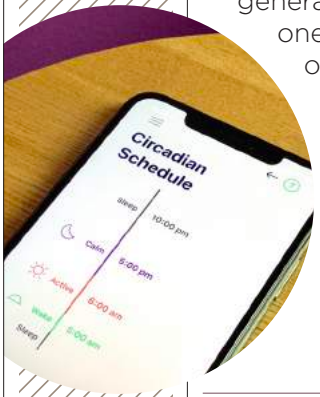
CIRCADIAN LIGHTBULBS PROVIDE PERSONALISED BODY CLOCK LIGHTING

TUO's lightbulbs look like most others on the surface, yet contain app-controlled wavelengths that mimic those that occur naturally at sunrise and sunset.

Researchers from the University of Washington were able to identify a cell in the retina of the human eye that signals to the brain when it is time to wake and sleep. Named s-cones, the highly sensitive photoreceptor cells react to wavelengths of light found at sunrise and sunset. This research was then licensed to the smart lighting company TUO, which used it to create lightbulbs that help users fall asleep and wake up naturally.

What was significant about the researchers' finding was the low level of brightness required to kickstart the body's biological clock. Products currently working with blue wavelengths of light as a means of regulating internal rhythms are much more powerful than the light needed to activate s-cone cells. Blue light products are also less accurate because s-cone cells react to other colours.

TUO began selling their circadian lightbulbs in November 2020. They work like regular white light bulbs when not connected to the internet. When connected, the circadian bulbs emit the required wake and sleep wavelengths of light, as directed by the accompanying app, which allows users to create a custom circadian schedule that will calculate the appropriate light modes and time exposures automatically.



TAKEAWAY

Circadian health directly influences sleep patterns, and the €3.7 trillion global wellness industry[A] has taken note. Sleep aids and guides are now ubiquitous, and the effects of not getting enough, or the right quality of sleep, weighs heavily on many. One of the simplest methods of reducing stress lies in helping someone else, and a reduction in stress can make it easier to sleep well, which in turn enhances general health, making altruism one method for improving overall wellbeing.

A Global Wellness Institute | 2018



CREDIT: MINIWIZ

WHAT
Modular Adaptable Convertible (MAC) room system

WHO
Miniwiz

WHERE
Taiwan

CONTACT
contact@miniwiz.com

ANTIBACTERIAL MODULAR ROOM KITS WITH SELF-CLEANING UV TECHNOLOGY

The walls are nano-coated with recycled aluminium and have an integrated ultraviolet self-cleaning system.

The circular economy experts and product engineering studio Miniwiz specialise in transforming post-consumer waste into high-performance materials. Their Modular Adaptable Convertible (MAC) system upcycles such waste into medical-grade, antiviral, antibacterial modular rooms.

The MAC wards are lightweight for easy transport and consist of interlocking parts to facilitate rapid assembly. Each modular room contains negative air pressure, which helps cool the space and prevent airborne pollutants from harming individuals within the space.

The walls are made from recycled plastic bottles and are nano-coated with recycled aluminium. An integrated ultraviolet self-cleaning system works with the aluminium to create the kit's antiviral and antibacterial properties, which Miniwiz says reduces 99.9 per cent of bacteria count while repelling viruses.

While the MAC kits were initially developed with the idea of replacing makeshift hospital wards in mind, they are designed in a way to be used in a variety of settings. Using similar technology and design, Miniwiz hopes to offer similar setups to home consumers and envision them being used in restaurants and hotels as well.



TAKEAWAY

When not needed for emergency healthcare, the MAC kits could be ideal working spaces at home or in offices. The self-cleaning system keeps each room safe for use by multiple groups and individuals, and the connectivity makes it easy to create pods of multiple rooms for socially-distanced team working. Additionally, as remote and flexible employment arrangements become more of a social norm, it is likely that home-based professionals will begin looking for something more hygienic, and businesslike, than the sitting room couch for a home office.

CREDIT: ELECTROLUX; STIJN VAN CUIJK, JAKOB KOHNLE, LAURENZ SIMONIS/UMEÅ INSTITUTE OF DESIGN



WHAT
Home shelf sanitises skin and devices

WHO
Umeå Institute of Design & Electrolux

WHERE
Sweden

CONTACT
registrator@umu.se

SHELVED SANITISATION STATION DISINFECTS HANDS AND DEVICES

Located at the entrance of the house, the Muhō is a post-COVID home solution that disinfects devices like smartphones and hands instantly.

With the goal of creating post-COVID home solutions, a team at Umeå Institute of Design have collaborated with Electrolux to develop a hallway sanitisation-station.

The Muhõ envisions a new type of furniture for homes that goes above and beyond, to keep life organised and safe. Made to be conveniently located at the entrance of the home, it allows you to instantly disinfect your device and hands, preventing any potential germs from entering the house.

As UV light acts as a disinfectant by breaking down the DNA of any bacteria or viruses, the Muhõ comes with 3 UV-C light-enabled shelves to place items such as phones, keys, wallets, or sunglasses on. Once an object is placed on the shelf, a contact-sensor activates the UV-C light in seconds, killing any germs that have accumulated on the items. The lowest shelf has a built-in hands-free sanitiser dispenser, allowing you to clean your hands while your items are being disinfected.

To add an extra flair to the design, the Muhõ comes with a smart mirror that not only allows you to check how you look but also gives you temperature and weather updates.



TAKEAWAY

Efficiency is going to increase as a design priority as many aspects of life change to accommodate post-pandemic health and safety requirements. The multiple layers of risk-assessment and growth in numbers of steps of personal hygiene that surround almost every daily activity make routines and schedules far more complicated. To combat that drain on time, creators must rethink, repurpose and invent new ways of performing tasks that are essential to the smooth running of what has become the incredibly multi-functional home.



CREDIT: PHOTO BY SVEN DE KOE ON UNSPLASH, TECHMAX SOLUTION/YOUTUBE

WHAT
Contactless lift panel prevents spreading of germs

WHO
Techmax Solution

WHERE
India

CONTACT
info@techmax.co.in

SYSTEM CONVERTS LIFT PANELS TO CONTACTLESS

The Sparshless system is affordable and easy-to-install, allowing users to avoid coming into contact with potential viruses.

The Indian IoT company Techmax Solution has developed a touchless lift panel, the Sparshless, that can be retrofitted to almost any elevator. To call the elevator, the rider simply places their hand below the unit. Once inside, they can choose a floor by pointing to the corresponding button on the Sparshless from a distance of around 15-20 mm.

The system is compatible with all elevators and aims to be both affordable and accurate. It comes with a 4, 8 or 14 button option, but these can also be customised.

The Sparshless is installed next to the existing panel, which will makes uninstallation an easier process as well should the needs of a user change.

According to the company, a commercial lift button has the potential to contain a significant amount of bacteria. The company believes its innovation can play a major role in preventing the spread of harmful bacteria where lifts are in heavy use, including multi-story apartments, commercial complexes, hospitals, malls and more.



TAKEAWAY

We're starting to see a world where almost anything can be made contactless, from lift panels, shopping checkouts, home deliveries and more. Not only would this help to reduce the chance of accidental virus transmission and curb global pandemics, but it could also help reassure people to come back to work, shops and restaurants, as well as those who are integrating more touchless technology in their living environments. It is also easy to envision this particular type of touchless technology being adapted to make a wider range of processes touchless.



AN EVOLVING HOME ECOSYSTEM TO STAY HEALTHY AND CONNECTED

How do we maintain meaningful connections with the outside world while integrating work, shopping and healthcare into daily home life?



Digital connections certainly increased in 2020, although much of the uptick in time spent online was due to changes in working practices. Businesses large and small found ways to accommodate and support the unexpected and long-term need for many employees to work remotely. With the home, rather than the city centre, now the hub of daily activity, everyday routines changed drastically.



ESSENTIAL DAILY EXPERIENCES

Lunches, doctor's appointments, shopping, school and more went virtual almost overnight. Brands able to respond with agility found new ways of reaching regular, and new, customers — often by providing more contactless and remote items and services while incorporating aspects of emergency community care.

Small coffee shops started delivering locally and added essential toiletries to their menu. Health professionals provided care via video link. Banks set up regular calls with customers. By 2025, it is estimated that at-home consumption could be a €2.5 trillion market, with consumer products, leisure/recreation and education the top three areas of expenditure.[A]

For some companies, the unexpected downtime meant teams had an incredible opportunity to introduce solutions to challenges that had never been experienced before. Mixed reality shopping, modular home working spaces, virtual offices, and myriad telemedicine options brought the world into the home. Such an acceleration of digital living reduces time-related restrictions on when activities can take place or be completed. This is useful, yet also dangerous, when the divisions between work, administration of the home, health and recreation are so blurred, if not gone.



CONNECTION, NOT ISOLATION

So far, what technology can not yet do is replicate the human touch. Millions of people around the globe were separated from loved ones for months and many will remain apart well into 2021.

Before COVID-19, loneliness was a growing epidemic in some of the world's wealthiest countries. When the virus forced vast and immediate restrictions on social interactions, experts predicted an overwhelming rise in mental health conditions. A mix of stressors appear to be compounding the detrimental effects the global pandemic is having on peoples' wellbeing. The American Psychological Association found that 78 per cent of adults say the coronavirus pandemic is a significant source of stress in their lives.[B] Public Health England reports an increase in the proportion of people reporting depressive symptoms and with symptoms worse than previously reported.[C]

In response to and alongside those changes, outpourings of community support focused on reducing isolation and strengthening networks for the most vulnerable. What came as a surprise was the wider spread effects that aided in uplifting numerous others, including those organising the care.

Entrepreneurs in the arts and hospitality, two industries devastated economically by the coronavirus, approached the changes wrought by global shutdowns with imagination and heart. Across distances, worries and almost constant change, innovations such as drive-in opera, online stand up comedy sets, DIY-kits and remote, robot-facilitated tours helped establish and maintain a sense of connection — different methods from what used to be the norm, and highly reliant on virtual aspects, but inspiring pivots nonetheless.



E-COMMERCE IN A GLOBAL PANDEMIC

Before COVID-19, e-commerce was already the future of retail. Brands knew that, and flagships around the world were increasingly experiential and digital while also playing to the exclusivity of location.

Although a range of technologies make it possible to bring some of those points of engagement into the home, not all companies were ready for the pace of change. For the most part, established online retailers had a head start. By May 2020, Shopify replaced the Royal Bank of Canada as the nation's largest public company.[D]

With additional space in their daily routines, consumers were thinking through the full supply chain of their purchases. This led to ongoing growth in shopping decisions built around climate neutrality and a broadened understanding of the means of corporate lip service and greenwashing. The result being that for great numbers of people, carbon neutrality, transparent production processes, inclusivity and diversity, coupled with hygienic and safe transportation, are high priority requirements of doing business with a brand.

Further automating delivery logistics assists in maintaining healthy social distancing, and the use of robots and drones often increases efficiencies. Such savings could benefit a range of companies, particularly as experts predict that online resale will grow by 414 per cent from 2019 to 2024.[E]

The flip side, of course, of remotely operated delivery services is a continuing decline in human interactions. Personalisation is one very focused way that brands are working to assuage that loss. Often dependent on augmented and mixed reality technologies, bespoke experiences create a connection through an engaging occasion centred on one particular person. And during what is undoubtedly one of the most bewildering years of peoples' lives, moments of lightness, joy and fun stand out particularly brightly.



CREDIT: ISTOCK

DATA PRIVACY

With the nucleus of most peoples' lives shifting location, we've seen exponential growth in digital security requirements. Businesses suddenly had to oversee vastly distributed networks of employees. Families had to organise internet services for a huge swell in online traffic.

Overall, levels of comfort with some automation and artificial intelligence, namely via virtual personal assistants, have been rising amongst the general public. Although privacy was a concern for many, for millions of others it wasn't a pressing issue. News of the hackability of home security cameras and other devices, combined with the growth of fake news and knowledge of deep fake technologies, suddenly made the issues of data security and privacy personally relevant.

Smart appliances are becoming commonplace, with AI-powered refrigerators, coffee makers, hoovers and dishwashers already providing households with another level in sustainable efficiency. IoT technology is growing at a rate of 15 to 20 per cent each year.[F] As the range of its application widens, so too does the collection of associated data, which further compounds the challenges of protecting online information.

The COVID-19 pandemic has been a boon to cybercriminals. By November 2020, phishing attempts throughout the year had increased by 220 per cent. More than half of all fraudulent sites masqueraded as some of the biggest tech names on the planet, including Apple, Microsoft, Netflix and Paypal.[G]

The continued rollout of 5G and development of distributed computing is helping build stronger (and ideally safer) digital networks capable of handling the greater activity loads that are becoming the norm. Even when the health emergency has passed, it is likely that the expansive volume of online daily living will continue in a multitude of ways, particularly as innovators work to create bespoke hybrids of real and virtual interactions.

A Contactless Economy Report | Deloitte, September 2020
B American Psychological Association Survey, October 2020
C Public Health England, November 2020
D BNN Bloomberg, May 2020
E 2021 Ecommerce Trends | ecomdash.com, November 2020
F Computer Weekly, October 2020
G Phishing and Fraud Report | F5 Labs, November 2020

EVOLVING HOME ECOSYSTEM



Work

Health & Wellbeing

Shopping



CREDIT: MUTABOR

WHAT
Modular home office design for upgrading presentations

WHO
MUTABOR

WHERE
Germany

CONTACT
mutabor.de

HOME OFFICE KIT ADDS STYLE AND FLEXIBILITY TO PRESENTATIONS

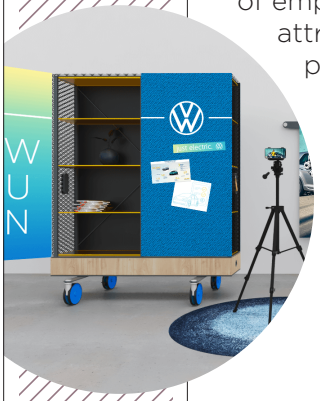
MUTABOR offers employees working from home a brand-adequate design for the home office workplace

The Hamburg-based creative design company MUTABOR created a modular furniture construction kit that can transform one's home office environment, amounting to a professional upgrade of the remote-working presentation experience. The system helps present webinars from home with an elevated and work-appropriate aesthetic.

"The Branded Home Office" kit includes presentation stands and storage cabinets with doors doubling as display boards, providing several options for displaying whiteboards and poster-sized imagery. There's also an easily-adjustable desk which, like the other items, are wheeled in order to make arranging your personal setup as easy as possible.

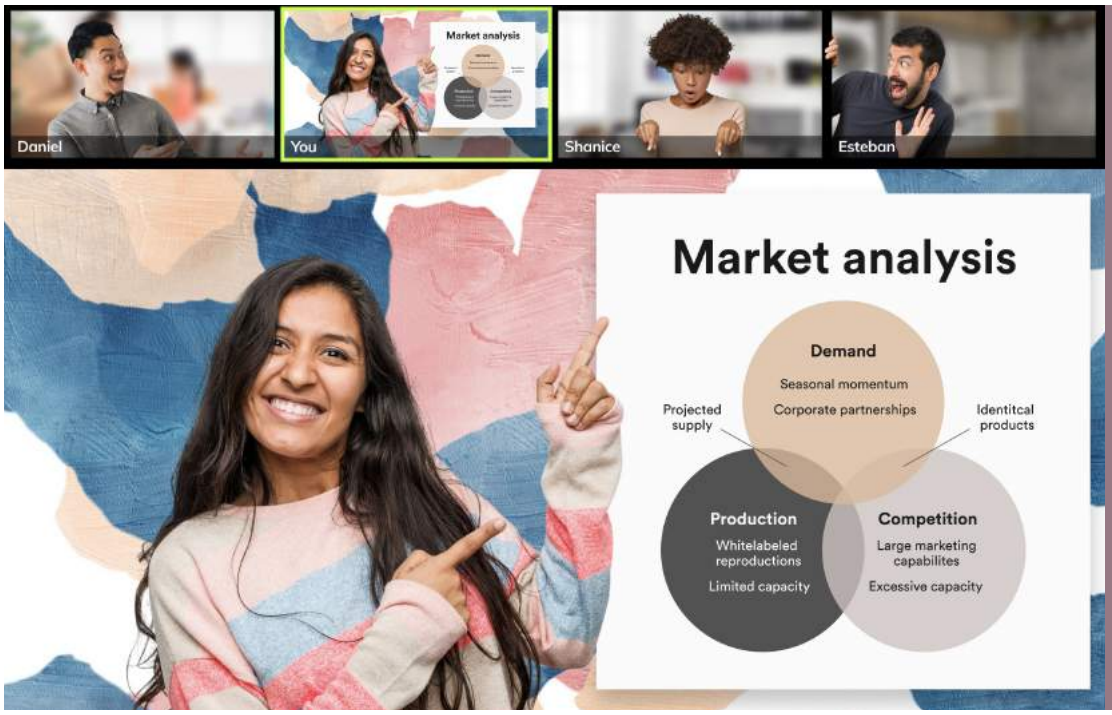
The idea is to replicate the in-person presentation experience in ways that software and digital add-ons cannot, including the ability to give standing presentations in a way similar to what would be done in-person.

"The home office should support modern collaboration formats. After all, it's not just a matter of using adequate software to facilitate communication and creative exchange on a laptop or static screen. It is more than that. For those who prefer to stand during presentations or moderation, a modern workstation should enable precisely that," the company says.



TAKEAWAY

This concept was crafted at the height of the COVID-19 pandemic when video meetings and webinars became part of the new normal and it aims to provide employers with ways to support their staff with the increasing needs of a home office space. While many digital solutions have emerged that optimise the video conferencing experience, few take the physical design of the home office into consideration. "In times of employer branding, the attractiveness of the work-place goes hand in hand with creative workplace design. New working methods call for new spatial concepts," the company says.



CREDIT: ALL TURTLES

WHAT
Digital platform for creating engaging video meetings

WHO
All Turtles

WHERE
United States

CONTACT
hello@mmhmm.app

PLATFORM OPTIMISES ZOOM MEETINGS WITH ENGAGING FEATURES

Users can choose from a vast library of virtual backgrounds, position a live video stream anywhere on-screen and synchronise backgrounds with another presenter.

The digital studio All Turtles has developed the Mmhmm platform that aims to put the fun back into remote, video meetings.

All Turtles was founded with the realisation that a lot of remote presentations that might have been energetic in person, ended up being flat and dull when remote. So, they set out to design a set of tools that allows anyone to create compelling and interesting video presentations themselves. Users can choose from a huge library of virtual backgrounds, position a live video stream anywhere on the background or on the material you are discussing and even shrink or grow in size.

Other features include a virtual laser pointer; the ability to collaborate remotely on creating presentations; a tool to synchronise backgrounds with another presenter, for a smooth transition; and to easily upload a video to sharing platforms like YouTube. The app works on a number of remote conference platforms and not everyone in the meeting needs the app – only the one presenting.

The company was inspired by its own experiences with boring and restrictive video conference calls, saying: "Suddenly, we were all just bland heads-in-a-box, and it was harder than ever to collaborate with, present to, and entertain each other. So, we built Mmhmm to fix that."



TAKEAWAY

Aside from reinvigorating remote work meetings, Mmhmm could also be a game-changer for all types of remote video content, including for home-based education. Making video more dynamic, without requiring any special skills, could increase the democratisation of video content, making it more accessible and useful. According to Mmhmm, Beta testers interested in the app have included designers, musicians, religious leaders, and even hospital clowns. This represents a major opportunity to make video conferencing more impactful for users wherever they work and live.



CREDIT: WINSTON PRIVACY

WHAT
Data protection device for the entire home

WHO
Winston Privacy

WHERE
United States

CONTACT
support@winstonprivacy.com

SMART HARDWARE SYSTEM ENCRYPTS ALL ONLINE HOME DEVICES

A data security platform promises to prevent all invasions of privacy within the home, from being watched by a smart TV to smartphone app data collection.

Created by an ad-tech industry veteran, Winston is an easy-to-install smart hardware encryption system that protects users' online privacy. Once running, the hardware filter protects every connected device in the home.

The system works with all websites, devices and streaming services, including Amazon's Alexa, webcams, smart TVs and Wi-Fi routers. The filter protects users from pop-ups and cookies and, most importantly, blocks all surveillance of users' online activity, from potential hackers and businesses trying to increase sales.

With Winston installed, all invasions of privacy, from being watched by a smart TV to smartphone app data collection, are prevented. Winston works by scrambling and encrypting a users internet activity and location with that of 20 to 30 other Winston users. The groups change hourly, making it impossible to track and follow any individual. Users have personal dashboards for network analytics in order to see who is trying to track them and through what content.



TAKEAWAY

Ease of use is vital for the millions of individuals and families now completing the majority of their activities online. With a multitude of in-real-life tasks moved to the digital sphere, quick and minimal set-up requirements make it much more likely that appropriate safety measures will be installed and followed. Furthermore, in conjunction with the growth in connected and AI-powered technologies comes changes to user habits and requirements, making virtual security systems designed with inbuilt flexibility an essential component of home living, working and recreation.



CREDIT: DOZEE

WHAT
Contactless health monitoring system

WHO
Turtle Shell Technologies

WHERE
India

CONTACT
contact@dozee.io

REMOTE RESPIRATORY MONITOR TRACKS SYMPTOMS AS PATIENT SLEEPS

The contactless system can track changes in heart rate and sleeping patterns, reducing the number of unwarranted in-person medical visits.

Turtle Shell Technologies in India has developed a contactless health monitoring system. Dozee uses a slim sensor sheet that fits under a typical mattress and connects to the internet in order to capture early health warning signs, such as changes to heart rate and breathing and sleeping patterns.

The system works by tracking micro-vibrations produced by the body and uses machine learning and artificial intelligence to build a comprehensive picture of each individual's baseline statistics and overall health profile. The goal of Dozee is to help patients access a diagnosis or checkup before a condition deteriorates. The system meets the clinical 98.4 per cent accuracy required for use in medical settings.

As well as COVID-19, the sensing system helps track sleep apnea and monitor chronic conditions such as hypertension and other respiratory illnesses. The co-founders of the company focus their research and development on helping to make preventative healthcare part of life. Future versions of Dozee will include temperature monitoring capabilities among other developments.



TAKEAWAY

Already an area of growth, remote patient monitoring became a more urgent need at the onset of the coronavirus pandemic. Ageing populations will likely further the trend, as more and more families and communities become accustomed to home-based online consultations and the use of digital health records. We expect to see even more focus on home-based preventative care moving forward, especially with the need to reduce burdens on overwhelmed healthcare systems during health crises, and as users continue to become more comfortable with the technology.





CREDIT: KIRSTIN VANG/VISIT FAROE ISLANDS

WHAT
Custom VR-tours for home-bound tourists

WHO
Visit Faroe Islands

WHERE
Denmark (Faroe Islands)

CONTACT
info@visitfaroeislands.com

A VIRTUAL TOUR OF THE FAROE ISLANDS WITH REMOTE-CONTROLLED GUIDES

From the comfort of their own homes, virtual visitors were able to control their tour guides — camera-wearing locals — via an app.

At the height of global COVID-19 lockdowns, The Faroe Islands, a Danish territory, came up with a way to allow people around the world to go on a self-guided tour of the archipelago. Camera-wearing locals responded to sight-seeing commands from people at home, allowing virtual tourists to control their own route.

Virtual visitors controlled their tour guide using a free app and had two minutes of control over the guide, who also provided a commentary. After their two minutes were up it became someone else's turn, although virtual tourists could rejoin the queue for another two minutes any number of times.

The remote North Atlantic islands depend heavily on tourism to augment traditional trades such as fishing and sheep-herding, and this year the Faroe Islands had planned to ramp up tourism with two new 200-room hotels in the capital, Tórshavn. Although the pandemic disrupted that ambition, the hope was that the virtual tourism app would encourage people to visit in person once it was safe to do so.

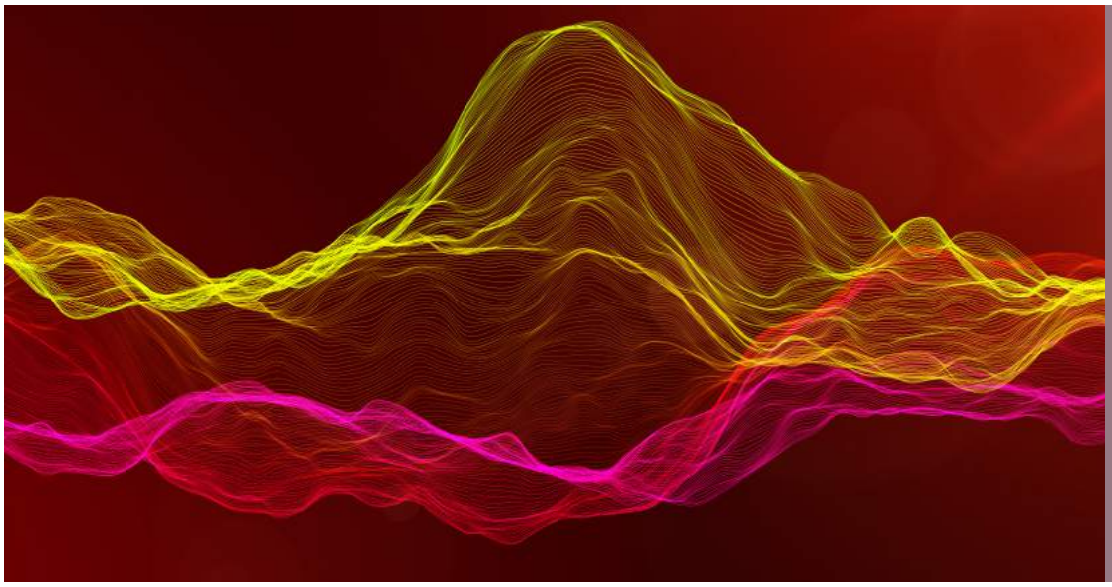
Until then, according to Visit Faroe Islands, they believed that seeing the islands through a remotely operated guide would at least "bring you joy and inspiration during these challenging times – and we, of course, hope to welcome you in person once you are free to travel again."

TAKEAWAY

For many, the pandemic resulted in fewer social interactions and increasingly blurry boundaries between work and home life. On top of this, the ability to travel — one of life's greatest pleasures — was also taken away. It's no surprise that depression has risen during the pandemic, with one US study[A] finding the disease has increased three-fold. Innovations like this show the potential to recreate some of the joys of travel from home, providing a much-needed respite from the stresses brought on by COVID-19, and demonstrates the potential to provide meaningful experiences to those unable to travel for a variety of reasons.



A Prevalence of Depression Symptoms in US Adults Before and During the COVID-19 Pandemic | JAMA, September 2020



CREDIT: SHUTTERSTOCK; MURU MUSIC HEALTH

WHAT
AI music therapy platform

WHO
Muru Music Health

WHERE
Australia

CONTACT
murumusic.com/contact

MUSIC THERAPY PLATFORM USES AI TO IMPROVE COGNITIVE FUNCTION

Muru Music Health relies on user input and AI algorithms to create personalized playlists that aim to trigger mental health benefits.

Muru Music Health has developed an AI music therapy platform for those suffering from cognitive decline. The platform, which provides access to a catalogue of a million songs — the majority of which were released before the 1980s — was created with the ageing population in mind, but the company plans to expand its use to also address broader mental health disorders and support general wellbeing.

A web-based platform built on Google Cloud, the platform uses technology the company calls "AI Music Brain" — a human-assisted AI system that analyses large quantities of music to find similarities based on personal music taste. But unlike popular streaming platforms, Muru relies directly on the user's individual input. Customers can provide feedback by liking or disliking specific songs and writing comments. All of this results in a dynamic playlist that keeps updating and evolving based on the user's feedback.

"The difference here is we are looking at the individual, and we're looking specifically for music to help them relax, exercise, or trigger positive memories. That means we can't really rely on music listening of another user because it doesn't have the same effects," Muru Music's founder Nicc Johnson says.

Beyond broadening the health benefits derived from the platform, Johnson hopes to integrate the platform with connected devices, like home smart speakers and wearables.

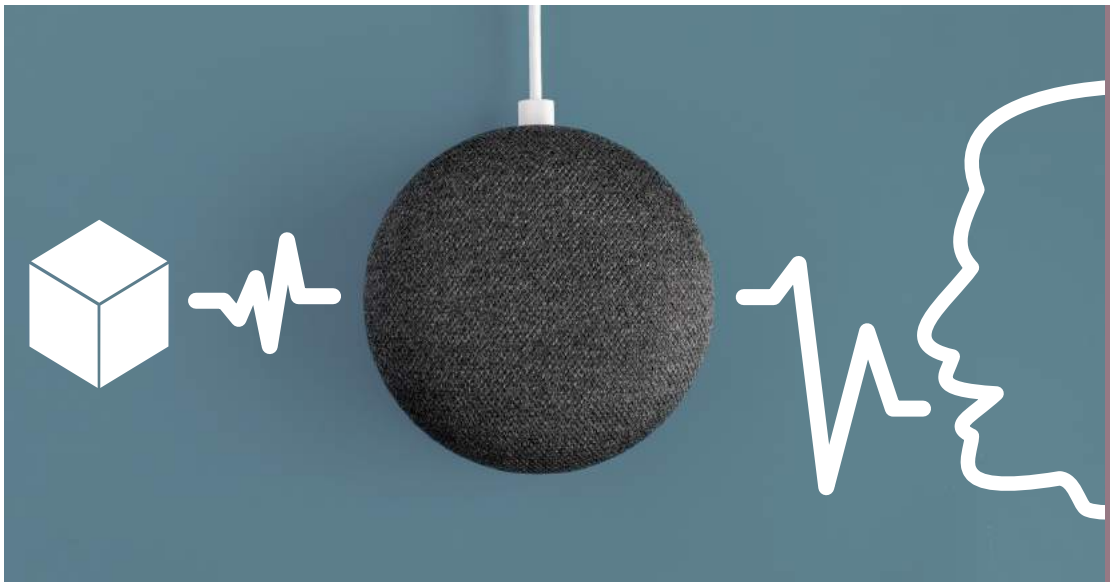


TAKEAWAY

This merging of music therapy and AI shows great potential to support mental health ailments in a way that's easily accessible in modern living environments. A Cochrane study[A] on depression "found that music therapy plus treatment as usual is more effective than treatment" alone. Other research has demonstrated similar positive results when studying trauma and schizophrenia. Music appears to act as a medium for processing and addressing emotions, and can also be used as a stabilising or calming agent for anxiety or dysregulation.



A Music therapy for depression | Cochrane, 2017



CREDIT: SHUTTERSTOCK, UNSPLASH

WHAT
Voice ordering of groceries

WHO
Carrefour and Google

WHERE
France

CONTACT
presse_france@carrefour.com

CARREFOUR AND GOOGLE PARTNER ON VOICE-BASED GROCERY SHOPPING

The French retailer became the first in the world to offer its customers the voice shopping service on Google Assistant.

Carrefour Group, the French retailer operating stores across 30 countries, partnered with US tech giant Google to launch a voice-based e-commerce grocery shopping experience. The system allows shoppers to make purchases through the Google Assistant and Google Home devices, share shopping lists and convert the shopping list into a shopping cart. Carrefour was the first retailer in the world to integrate with the new voice-based grocery shopping experience on the Google Assistant.

"Shoppers today are saddled with disconnected experiences through the shopping journey," says Sébastien Missoffe, VP and managing director of Google France. "We wanted to explore new distribution models and e-commerce technologies to deliver simple, frictionless and deeply relevant experiences for shoppers in France."

Users are able to give a specific voice command to start the experience on Google Assistant and then build their shopping list. That includes specific words such as "milk," and product or brand names. The shopping lists can then be shared with others, like family members, who can also add any items they want. Finally, Google Assistant will convert the shopping list into a shopping cart, proposing products that most closely reflect the user's preferences. This will be based on whether the shopper has already purchased the product, or because the Google Assistant has deduced the preferences based on the general purchasing habits of the customer at Carrefour, best price available, and best sellers.



TAKEAWAY

There is growing evidence that consumers are becoming more comfortable using voice-recognition devices in the home and are seeing voice assistants as "the smarter, faster, and easier way to perform everyday activities," as a study by PWC found.[A] According to this study, roughly 50 per cent of consumers have already made purchases using a voice assistant and another 25 per cent have considered it. "The majority of items purchased are small and quick and are things that someone could buy without necessarily having to see it physically," PWC found, and staple grocery items fit this mould perfectly. Further partnerships like Google and Carrefour's will only encourage this trend further.

A Prepare for the voice revolution | PWC, 2018



CREDIT: ETSY

WHAT
AR tool to visualise prospective wall art

WHO
Etsy

WHERE
United States

CONTACT
etsy.com/contact

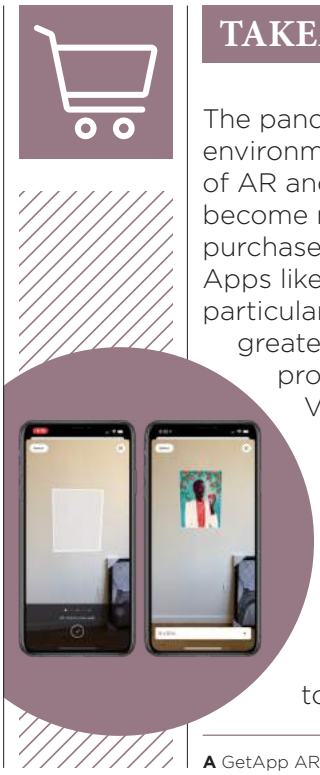
AR FEATURE ALLOWS SHOPPERS TO VISUALISE WALL ART

The tool enables users to get a sense of an Etsy's products' size, look and feel in their space of choice.

Etsy developed an augmented reality (AR) tool to help users visualise art, photos and prints in their homes. Etsy users can open the retailer's app on their iPhone or iPad and use the new augmented reality tool to visualise how wall art will fit into their home or space.

Whilst the beta launch of the tool only includes prints, photographs and portraits, there are already over five million items available in the art and collectables category. The company also hopes to expand its AR feature into other categories in the future and plans to make the feature available on Android too.

Already operating ahead of the game for some time, the virtual-only retailer developed the feature as part of an effort to provide customers with "a more visual shopping experience". The tool enables users to get a sense of products' size, look and feel in their space of choice, an advantage for furniture brands, where determining the size of a bed or table is particularly important to ensure it fits in the dimensions of the room.



TAKEAWAY

The pandemic has created an environment where the benefits of AR and VR for shoppers have become more relevant as shoppers purchase more goods from home. Apps like Etsy's are becoming particularly useful and follow a greater movement of retailers providing more AR and VR tools as consumers become more comfortable using the technologies. A recent survey by Gartner and GetApp[A] had 47 per cent of the respondents saying the pandemic has changed their attitudes towards AR technology.

A GetApp AR/VR Survey 2020, August 2020



CREDIT: ISTOCK, AUGURY

WHAT
Predictive machine maintenance platform

WHO
Augury

WHERE
Israel and United States

CONTACT
info@augury.com

AI-DRIVEN PLATFORM PREDICTS MECHANICAL ERRORS IN MACHINES

Augury's platform gathers key metrics using sensors and analyses them with algorithms to make predictions about a machine's health.

The self-described "machine health" startup Augury has developed a predictive maintenance platform that uses artificial intelligence to analyse machines for mechanical errors. The idea is that readings and patterns embedded within the noise from motors, compressors, pumps, industrial-scale heaters and more can be used to detect a problem.

Augury's sensors record the readings and process the vibrations, temperatures and magnetism metrics of the machines, before uploading them to the cloud to be analysed by AI algorithms, which are generated by baseline readings in the cloud backend. The system gradually begins to recognise abnormal sounds and faulty movements and the machines analysed are then compared to similar appliances on the cloud, relieving the need to retrain models.

The company plans to expand the use of its technology by implementing it into more consumer appliances and have it be more accessible to different parts of the world. It will be adding new language support, including for its product suite and the alerts customers receive. It will also expand the range of country-specific certifications, which will allow for the systems to be deployed in more regions.

"We've seen machine health emerge as the foundation of any digitization and 'Industry 4.0 strategy'," Augury's CEO Saar Yoskovitz says.

TAKEAWAY

This type of predictive maintenance technology has been used for some time now in machines like jet engines and gas turbines, but more adaptable versions like Augury's may be making their way into more homes in the future. The COVID-19 pandemic has only made the need more evident for reliable remote maintenance, as lockdowns made in-person assessments of mechanical systems less tangible. Regardless of this, the ability to save time and money using such systems is enough to appeal on its own.



CREDITS

Compiled and Edited By:
Justin Sablich
Editor, Springwise
justin@springwise.com

Writing & Research:
Keely Khoury
Springwise Editorial Team

QUESTIONS FOR ARITCO?

marketing@aritco.com
+46 8 120 401 00

Aritco Lift AB
Elektronikhöjden 14
175 43 Järfälla
Sweden

ARITCO PRESS ENQUIRIES

Belinda Fisher
Belinda@friendsandco.co.uk

QUESTIONS FOR SPRINGWISE?

info@springwise.com

Springwise
New Wing,
Somerset House,
Strand, London
WC2R 1LA

Copyright © 2020
Springwise Intelligence Ltd.
All rights reserved.

POWERED BY