

Is it Time for True Wireless Buds Yet? / Why We're Still Not Ready for AI / And the Perfect Latte Macchiato

HIWM

SINGAPORE

JUNE 2018
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THE POWER TO DECIDE

The Rise of eSports

Competitive video gaming isn't the next big thing. It's already here.



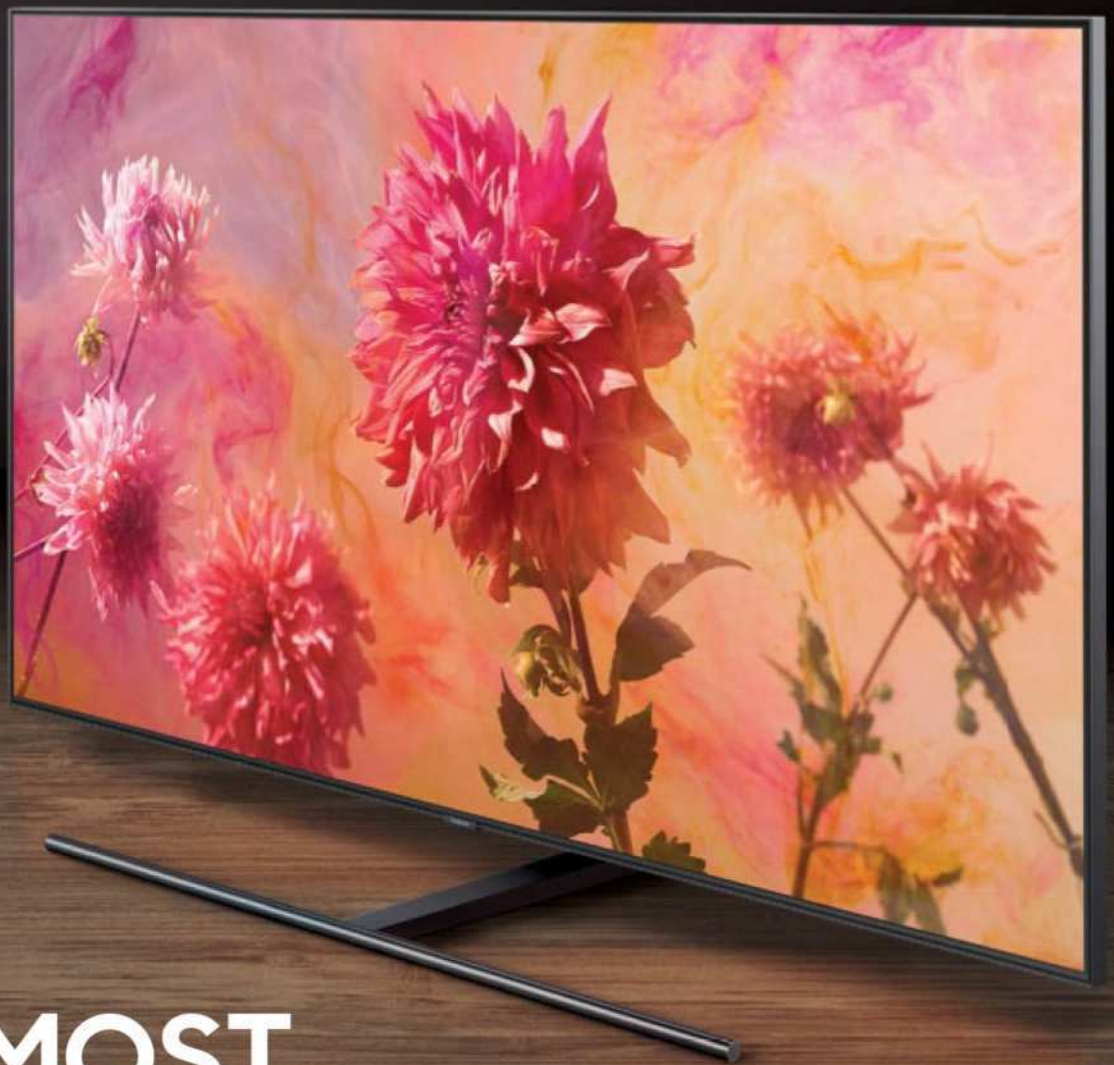
LOGITECH G613
Cutting cords on gaming keyboards

LG 34UC89G
It's curved, it's wide, and it hits the G-Sync

RAZER BASILISK
The sniping clutch you need right now



S\$6.90



2018 QLED Q9F 4K Smart TV

THE MOST POWERFUL TV*

Powered by Quantum Dot Technology and Q Engine

Quantum Dot Technology

Nano-sized particles that each emit different colours to achieve 100% Colour Volume[†], for realistic, accurate images.

Q Engine

Incomparable processor that instantly analyses every scene to deliver the most life-like picture in excellent contrast, colour and details.

Direct Full Array

Get pinpoint precision control of the backlights to experience the most true-to-life images with never seen before details.

QLED TV

SAMSUNG

* Compared with 2017 Samsung QLED TVs.
† QLED TVs have received verification from world-class testing and certification association, Verband Deutscher Elektrotechniker (VDÉ), for its ability to produce 100% colour volume. 100% colour volume measured to DCI-P3 Standard.

www.samsung.com/sg/qledtv

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* For the A share class of the Fund

ED'S NOTE

JUNE 2018



And we're back on gaming

Video games, where do I start? It's definitely going to take more than this page to cover the topic, so I'll cut to the chase.

Competitive gaming isn't new. Words like esports and cyberathle aren't new. Big ticket competitions have come and gone, all of them championing this oft misunderstood community. All of them trying to be the one the make the scene mainstream.

While big ticket competitions for Counter-strike, Dota, LoL and StarCraft have been accepted globally as a phenomenon, the scene as a whole has always been viewed as a niche activity; popular only among its community and drawing funds from the video games ecosystem.

In this issue of HWM, we look at the nascent world of esports. Nascent in the sense of the form it has evolved to in order to finally be taken seriously - outside of the world of gaming and gamers. Of course, it's still very much a geeky affair, but the doors have been thrown open where discussions about Overwatch League may one day be carried out with the same seriousness, fervor and reverence as the Premier League.

Zachary Chan
Editor



ON THE COVER PICTURE THE RISE OF ESPORTS

All prices quoted in this magazine are in Singapore Dollars (SGD), unless otherwise specified.

What you should know about mesh networking

How mesh networking kits like the D-Link Covr can solve your Wi-Fi woes.

Should you get a mesh networking kit? If you have Wi-Fi dead spots that you can't seem to solve, then the answer is yes.

In theory, a single modern router can cover up to around 2,000 square feet. But in real life, walls, electronics, and even furniture can block Wi-Fi signals. It's why many of us struggle to get fast and stable Wi-Fi, even in smaller apartments.

A mesh networking kit works slightly differently from traditional routers. Instead of relying on a single router to cover the entire home, a mesh kit uses multiple 'hubs' placed throughout the home. These hubs communicate with each other and create a Wi-Fi 'mesh' to envelop the home. That's why mesh networks can cover a wider area than a one router.

There are other benefits to using mesh kits. D-Link's Covr mesh networking kits, for example, are easy to set up and use. Unlike using



a secondary router to create a second network, for example, the Covr hubs use a single wireless name (SSID) so that your devices don't have to jump from network to network as you move through the home.

The Covr kits are also pre-paired out of the box, so you don't have to worry about complicated setups. Just plug them in. A friendly app will help you configure the Covr hubs so you

get the best coverage. The Covr kits make advanced technology easy.

D-Link Smart Steering technology, for example, will seamlessly connect your devices to the strongest Wi-Fi signal available, and you won't even notice any changes. Dynamic Adaption automatically directs your devices to the best Wi-Fi channel, avoiding congestion and ensuring the fastest possible connections.

INTRODUCING THE NEW COVR KITS



Covr-C1203: An attractive solution for the everyday user

The Covr-C1203 is an attractive mesh networking kit with a sleek design that'll brighten up any home. You can even swap its color plates! It's equipped with the latest MU-MIMO, smart roaming, and band steering technology. Best of all, it comes in an affordable package, so anyone can enjoy great Wi-Fi at home.



Covr-2202: A powerful package for extreme performance

The Covr-2202 tri-band mesh networking kit offers powerful performance for the most demanding users. 4K movie streamers and gamers will love it. It has the same features as the Covr-C1203, with an additional 5GHz band that's used as dedicated backhaul for increased bandwidth.



Covr-P2502: For those hard to reach areas

The Covr-P2502 is a breakthrough device that's especially useful for hard to reach locations. The kit uses your home's powerline to extend Wi-Fi, and it works with both the Covr-C1203 and Covr-C2202 for complete Wi-Fi coverage.



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The best of true wireless earbuds

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This is how LG's α9 processor is evolving OLED TVs in 2018

■ LG, the world's best-selling OLED TV brand*, has released its 2018 OLED TVs. The LG OLED TVs have already achieved industry recognition, taking home four CES 2018 Innovation Awards for video display, digital imaging and embedded technologies.

The most powerful processor in an LG TV

The α9 (Alpha9) Intelligent Processor is the most powerful processor that LG has developed to date; 50% faster than the processor in LG's 2017 OLED TVs. The α9 Intelligent Processor optimizes its processor speed and graphics to enable next-generation technologies for the best visuals ever seen on an LG OLED.

Quad-step noise reduction dramatically reduces gradient noise. Compared to conventional dual-step noise reduction, the α9 Intelligent Processor produces sharper visuals with smoother graduations.

The α9 Intelligent Processor also delivers more lifelike colors, with advanced color mapping and a palette that's 7.3 times richer than before. The α9 Intelligent Processor can analyze images and detect objects on the screen with greater precision. This lets it create richer textures with cleaner edges.

Perfect blacks for stunning contrast

LG OLED TVs are capable of infinite contrast, with true blacks that make visuals pop off the screen. Pixel dimming, a display technology available only on OLED TVs, is what makes that possible. 8 million self-lighting pixels control light independently, producing deep blacks and stunning contrasts. OLED black levels are 200 times deeper than LCD/LED TVs, according to an internal LG test result.

The next frontier of home entertainment

LG's 2018 OLED TVs are ready for HDR and HFR, the next frontiers in visual quality. LG's Cinema HDR supports most HDR (High Dynamic Range) formats, including Dolby Vision and Advanced HDR by Technicolor, as well as HDR10 Pro and HLG Pro. HDR overcomes the limitations of conventional displays, and reveal details previously hidden for a life-like viewing experience. HDR 10 Pro for 2018 OLED TVs are also updated with dynamic metadata that further enhances the viewing experience.

Enjoy powerful, moving audio with Dolby Atmos Cinematic sound on the LG OLED TVs. Dolby Atmos is a surround sound technology that creates an 'all-around' soundstage, immersing you in three-dimensional audio.



An intelligent assistant in every OLED TV

LG's 2018 OLED TVs introduce AI ThinQ operating on LG's webOS smart platform. AI ThinQ is an intelligent digital assistant that lets you intuitively control the TV simply by speaking to the LG Magic Remote. Change the volume, the channel, the input source, or ask AI ThinQ for information like the weather. You can also search for content you want to watch, which works with apps like Netflix as well.

Look forward to firmware upgrades in the second half of 2018, which lets you perform searches like the time difference between countries and video recommendations from apps like Netflix and YouTube.

The best features in every OLED TV

All of LG's best features come in every 2018 OLED TV. The α9 intelligent processor, Cinema HDR, AI ThinQ, and more, are found in the W8 to the E8 and the C8. Enjoy image quality with the next-generation of display technologies in LG's OLED TVs now.

To find out more about LG's 2018 OLED TVs, visit <http://www.lg.com/sg/oled-tvs>

*Based on HIS Markit, Technology Group, TV Sets Market Tracker, Q4 2017. Ranking is not an endorsement of LG. Any reliance on these results is at the third party's own risk. Visit technology.ihs.com for more details.



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SAMSUNG QLED Q9F 2018

Quantum Dots return this year better than ever.

AFTERSHOCK APEX 15

Affordable gaming laptop with a mechanical keyboard.

VIVO X21

The Chinese got a fingerprint sensor behind glass first.

SURROUND CLEANING

You've heard about 360-sound, but what about 360-cleaning? The new SpeedPro Max from Philips features an innovative 360-degree suction nozzle for powerful dust pick-up and exceptional cleaning performance in every direction. Thanks to the wireless design and wide array of cleaning attachments, this is one vacuum for all your cleaning needs.



“WIDESCREEN” FOR FILM

The novelty of instant film photography is gaining popularity again and Fujifilm’s expanding their Instax line to cameras to accept different film formats. The Instax Wide 300 for instance uses the Instax Wide film, which measures 86 x 108mm (double the width of standard Instax mini film), making it a much better conversation piece at parties where you can now capture all your friends at once, and then some.





GO BIG, GO ULTRA-WIDE

The reason why you don't use your TV as a gaming monitor is because it doesn't have the features needed for high-level gameplay. In comes the Samsung C49HG90, a 49-inch curved behemoth that boasts Samsung's QLED technology, a super ultra-wide resolution of 3,840 x 1080 pixels (equivalent to two 27-inch 16:9 monitors side-by-side), 144Hz refresh rate, 1ms response time and HDR. Practically a gaming wet dream.

FENDER GOES WIRELESS

Fender's Puresonic BT headphones use Bluetooth 4.1 and aptX technologies for steady audio streaming. 6mm micro dynamic drivers deliver crisp highs and great bass performance, while the in-built battery offers 6 hours of playback time on a single charge, and can easily be charged via USB.





SONY'S FIRST DUAL REAR CAMERA SMARTPHONE

The Sony Xperia XZ2 Premium is a 5.8-inch smartphone with a 4K, 3,840 x 2,160 pixels (~760ppi) resolution HDR display and a dual rear camera setup. Sony's first dual-rear camera smartphone pairs a 19-megapixel f/1.8, 25mm, 1/2.3-inch, 1.22µm RGB lens paired with a 12-megapixel f/1.6, 1/2.3-inch, 1.55µm monochrome lens. The focus for Sony here is low-light performance, and the XZ2 Premium's setup will be able to record video at ISO 12,800 sensitivity, and photos at ISO 51,200.



QUALITY MUSIC IN EVERY ROOM

Harman's new Omni 10+ speaker features both Wi-Fi and Bluetooth support so you can easily stream your favorite songs and playlists from Spotify using your mobile phone as the remote. The speaker also supports 24bit/192 kHz audio streaming, so if you'll get the most out of your Tidal HiFi subscription.

ELEVATE YOUR STYLE

Sure, you could get a cheap laptop stand anywhere. But you get the Twelve South Curve when design matters. The Curve features elegant curves with a matte black finish that elevates your MacBook and your style. 70 percent of the base is exposed for optimal cooling, and the Curve allows access to your MacBook screen.



YOUR LIVING ROOM'S SIGNATURE

LG's Signature W8P OLED TV continues to offer strong support for the various flavors of HDR out there: Dolby Vision, HDR10, HLG, and Advanced HDR by Technicolor. But there are new additions too, including a new α (Alpha) 9 processor, improved color-mapping capabilities, and 120fps high frame rate support.

And to give you the ultimate A/V experience, the included soundbar supports Dolby Atmos surround sound.





ALWAYS BE ON TIDE

The funky looking Base Tide Pro has 550 pre-programmed tides and sunrise/sunset locations inside a super durable case. So you'll always catch the surf or the sun on time. The watch can dive down to 100 meters with water-resistant pushers, and has a patented double-locking loop for secure wear.



UNDER YOUR THUMB

The Vivo X21 is the first smartphone in Singapore with an in-display fingerprint scanner. The scanner is located under the display, allowing for a specific spot on the glass to be pressed to unlock the phone. The X21 also boasts a Qualcomm Snapdragon 660 processor and dual rear cameras pairing a 12-megapixel lens with a 5-megapixel lens.

THE SMARTEST BULB IN THE ROOM

Unlike the Philips Hue, TP-Link's LB120 smart LED bulb connects to your home Wi-Fi network without going through a hub. You can finetune the color from soft white (2700K) to daylight (6500K) and monitor power usage right on your mobile device using the free Kasa app; and if you've an Amazon Echo or Google Home speaker, you can set up the light to be voice controllable.



Smart ways to take back your day with the Canon imageCLASS MF635Cx

Who doesn't want to have more time back in the day? We all need to get things done, but what if the devices around us were clever enough to achieve more in less time, and with better results to boot?

A clever device like the Canon imageCLASS MF635Cx multi-function printer (MFP), for example, with features that simplify everyday tasks. The imageCLASS MF635Cx MFP prints, scans, copies, and faxes. It comes with advanced features that streamline workflows and create high-quality prints. It does all this without adding complexity. Instead, an intuitive user interface makes even advanced functions easy to use.

Here are the many ways the imageCLASS MF635Cx can help you take back your day.

Complete multiple actions in a single step

There's a saying that if you do anything more than twice, you should automate it. The new Application Library on the imageCLASS MF635Cx helps you do just that. It comes with several integrated actions that execute multiple steps using a single click.

The 'Scan to Preset Destination' app, for example, lets you scan a document and send it automatically to a pre-defined destination. 'Print Template' lets you store and print frequently used documents using a shortcut button, without having to dig through a directory.

Save time with automated double-sided scanning

If you've wasted time flipping papers for double-sided scanning, you'll appreciate the imageCLASS MF635Cx. It comes with a 50-sheet single-pass Duplexing Automatic Document Feeder (DADF), which is a first for imageCLASS laser MFPs.

The DADF can scan both sides of a document simultaneously. With rapid scanning speeds of up to 50 pages per



minute (ppm) in monochrome and 27 ppm in color, you'll finish your scans in no time.

Easily connect to and print from mobile

Received something on your smartphone that you need to print right away? With the imageCLASS MF635Cx, it's easier than ever to connect your mobile device. All you have to do is to scan a QR code using

the Canon PRINT Business app.

The imageCLASS MF635Cx supports a wide range of mobile printing solutions, including Canon PRINT Business, Canon Print Service, Google Cloud Print, AirPrint, and MOPRIA. So you can readily get your printout no matter what device you use.

Impress your clients with richer color prints

The imageCLASS MF635Cx features Canon's V² Color Technology with a new color profile. This expands the printer's color palette significantly in comparison to its predecessors. You'll enjoy richer and more vibrant color printouts with deep contrast and depth.

With a print resolution of up to 9,600 (equivalent) x 600dpi and print speeds of up to 18 pages a minute, you'll also enjoy detailed printouts in no time. The imageCLASS MF635Cx isn't just fast, it also has stamina, with a robust monthly print capacity of up to 2,500 pages.

Make printing a pleasure with an intuitive interface

Say goodbye to complicated controls and frustrating experiences. The imageCLASS MF635Cx comes with a luxurious 5-inch touchscreen and intuitive user interface. It's easier than ever to get things done, cutting back on confusion and time wasted. The touchscreen comes with controls that are immediately understandable, and even has a virtual keyboard for smooth input.



Built Small, On A Heritage Of Excellence.

Introducing the imageCLASS MF635Cx.

It's easy to see that the imageCLASS MF635Cx offers stellar performance. Featuring Canon's famous MF technologies, this laser genius is ideal for SMEs, SOHOs and workgroups. Using less space while saving time and money, and doing more – be it printing, scanning, copying or faxing. These strengths are shared across six other new imageCLASS devices. The multi-function MF525x, MF429x and MF426dw offer speed, cost-saving features, an easy-to-use 5" colour LCD touch screen and smart applications to support streamlined work processes. While the monochrome LBP (Laser Beam Printer) devices – LBP215x, LBP214dw and LBP162dw – pack fast print speeds in a compact body. Taking your mind off tech, and focusing on business is now simpler.

Powerful | Secure | Productive | High Quality | Wi-Fi Connectivity-enabled | Easy-to-use



imageCLASS MF525x



imageCLASS MF429x



imageCLASS MF426dw



imageCLASS LBP215x



imageCLASS LBP214dw



imageCLASS LBP162dw

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Fujifilm X-H1 is built to meet the professional needs of video and photo work. Equipped with a 24.3MP APS-C X-Trans CMOS III image sensor and the X-Processor Pro Engine, it allows you to capture high quality imagery quickly and with low noise at sensitivities up to ISO 51200. With an in-body image stabilization and a dedicated dual processor that will process images with advanced speed and precision. In addition, new features like feather-touch shutter that enables delicate shutter release actions for more photographic opportunities. Film Simulation ETERNA, simulates cinematographic films and this mode can be used to attain high quality video recording with high degree of perfection.

Photo Credit:
DERRICK ONG



Taken using FUJIFILM X-H1



In-body Image Stabilization

A three-axis accelerometer, a three-axis gyro sensor together with a dedicated dual processor that will carry out processing and correction approximately 10,000 times every second to achieve image stabilization performance with advanced speed and precision.



Feather-touch Shutter Button

The X-H1 is equipped with the new feather-touch shutter button that can respond to delicate shutter release actions to capture all photographic opportunities. When combined with the firm-hold design of the grip, the shutter button controls camera shake for fast-response operability.



Film Simulation ETERNA

Featuring "ETERNA" mode, a new Film Simulation mode suitable for video recording, simulating the output of cinematographic films. Characterized by subdued color presentations and rich shadow tones, this mode can be used to attain video recording with a high degree of perfection and reducing color-grading workload in post processing.

1. THE SIMPLE AUDIO BOOST FOR ANY TV

Let's face it, today's anorexic TVs aren't build for audio. Just how many times have you pushed the volume to max and still find the soundtrack all mushed together. The RSB-3 features dual Klipsch Tractrix horn tweeters, midrange drivers and integrated subwoofer for a compact, simple and affordable upgrade to any TV. You also get built-in Dolby Audio decoding as well as Bluetooth connectivity.

1

KLIPSCH REFERENCE RSB-3



2. FOR WHATEVER LIFE THROWS AT YOU

Verbatim's new ToughMAX USB drives were specially designed to withstand the extremities of life. With an enclosure made of super strong KyronMAX compound, the ToughMAX USB drive can withstand up to 2,250kg of pressure. It is also water resistant to 30 meters and can endure temperatures of -25 to 150 degrees Celsius. The ToughMAX USB drive is available in 16GB, 32GB, and 64GB capacities.

2



VERBATIM TOUGHMAX USB DRIVE



3

3. THE ULTIMATE BUSINESS NOTEBOOK

This year's ThinkPad X1 Carbon is equipped with Intel's new Coffee Lake processors for some nice multi-tasking oomph, but it's the 500 nit Dolby Vision HDR display that makes it truly impressive. And with all the privacy concerns these days, it's got a useful webcam privacy shutter to keep out prying eyes. With a 15-hour battery life and fast charging up to 80% in just an hour, you can really take it out all day. All this power comes in an ultralight package that's just 1.13kg.

LENOVO THINKPAD X1 CARBON (6TH GEN)

4

4. MID-RANGE INFINITY

Samsung's Galaxy A6+ is a more affordable version of its A8+ launched earlier this year. The phone has a 6-inch Full HD+ Super AMOLED Infinity Display with an 18:9 aspect ratio. On the back of the phone there's a dual-camera module (16MP f/1.7 + 5MP fixed focus f/1.9), while on the front, you'll find a 24MP fixed focus camera with f/1.9 aperture. The phone is powered by a Qualcomm Snapdragon 450 processor.

SAMSUNG GALAXY A6+



PICTURES: KLIPSCH, VERBATIM, SAMSUNG, LENOVO

5. SURVEILLANCE FORCE

Available in microSDHC and microSDXC form factors and in 32GB, 64GB, and 128GB capacities, the new PRO Endurance memory cards from Samsung were specially designed for high endurance applications like video recording. According to Samsung, these memory cards have 25 times the endurance of speed-focused memory cards. The 128GB version, in particular, can record up to 48,300 hours of Full-HD footage non-stop! High endurance aside, these cards are also waterproof, temperature proof, X-ray proof, and magnetic proof.

SAMSUNG PRO ENDURANCE MEMORY CARDS



5

6. PHOENIX RISING

Samsung has just announced new high-end consumer PCIe-based NVMe SSDs. Dubbed the 970 Pro and 970 Evo, these use Samsung's newest 3D NAND and a brand new controller called Phoenix. Both support the PCIe 3.0 x4 interface and NVMe 1.3 protocol. The 970 Pro differs by using faster 64-layer 3D MLC NAND, whereas the 970 Evo uses higher density 64-layer 3D TLC NAND. Expect to attain transfer speeds of over 3GB/s with these drives. All will come with 5-year long warranties.

SAMSUNG 970 PRO AND EVO SSDS



6



7

7. THE BEST OF SCHIIT

As its name suggests, this is Schiit's third-generation Lyr tube headpho amplifier. The Lyr 3 might be a single-ended design, but it packs loads of power. How much? Try whopping 9W per channel at 16 ohms. Users can opt for the Lyr 3 to be outfitted with a DAC module, thus turning it into an amp and DAC combo. Or, vinyl lovers can choose to have their Lyr 3 with a phono input module for use with an analog turntable. For headpho enthusiast, this could be the last amplifier you will ever need.

SCHIIT LYR 3



8

8. SUCCESSOR TO A LEGEND

It has taken Sennheiser the best part of 15 years, but they have finally announced the successor to its legendary HD 650 headpho. Even though the new HD 660 S looks mostly similar to its predecessor, it is a markedly different animal with completely new drivers that have a lower impedance rating and are therefore easier to drive. In fact, Sennheiser says that a smartphone will be able to power these headphos quite nicely.

SENNHEISER HD 660 S

9. BIG SCREENS NEED BIG SOUND

Perfect for today's large screen, high-definition TVs, the RSB-6 and RSB-11 come with dual Klipsch Tractrix horns and two mid-range woofers for excellent vocal and soundtrack performance. The RSB-6 comes with a 6.5-inch wireless downfiring subwoofer, while its larger sibling, the RSB-11 has an 8-inch wireless subwoofer with a sidefiring driver. Both soundbars also feature direct 4K video passthrough with HDMI 2.0 ports, Dolby Audio decoding and Bluetooth support.

KLIPSCH REFERENCE RSB-6 AND RSB-11



10. FLOAT FREE

Cooler Master's upgraded MasterCase MC600P comes with a flexible internal layout that accommodates a wide range of system configurations. A removable partition plate separates the PSU from the motherboard for a neater look, and you can easily adjust the drive cage via a clip-and-click mechanism. Its solid front panel and discreetly placed air vents also convey an impression of elegance, while a soft LED glow along the bottom adds an extra bit of flair.

COOLER MASTER MASTERCASE MC600P



11. WELCOME HOME, GOOGLE

Powered by Google Assistant, the Google Home is more than just a speaker. With a simple "OK Google" wake word, you can use Home to get answers, turn up the music, manage your everyday tasks, or control smart devices around your home. Google has also tied up with local news sources that the Home will be able to access, such as Channel NewsAsia, The Straits Times, Money FM 89.3, The Business Times, and Business Insider Singapore.

GOOGLE HOME

12. LIGHT UP YOUR DESK

Logitech's G560 LightSync speaker is a 2.1 speaker system with support for technologies like DTS:X Ultra for simulated surround sound. This is also the first speaker from Logitech's gaming division, and it's dressed to look the part. There are four discrete lighting zones, and you can cycle between various lighting presets or set them to respond to select games like Fortnite or Final Fantasy XIV.

LOGITECH G560 LIGHTSYNC PC GAMING SPEAKERS

12



13. CLICK CLACK

The Aftershock APEX 15 is the company's first laptop to come with a mechanical keyboard. It uses optical switches which rely on light for actuation instead of a mechanical connection, so they're more resistant to performance degradation issues. The APEX 15 is also equipped with a hexa-core Intel Core i7-8750H processor and NVIDIA GeForce GTX 1060 6GB, making for an affordable, powerful, and portable package.

AFTERSHOCK APEX 15

13



14

14. TRACK WITH FLAIR

The Tile Style helps you keep track of your things in, well, style. Attach it to your tote or luggage bag, and the Tile app will help you track it on your smartphone. The Style features increased range and volume, so you can track it further and find it easier with its ringtones.

TILE STYLE



15. THE ONE TO BEAT OLED

Samsung's 2018 flagship QLED TV claims to be the one that finally pushes quantum dot technology to surpass OLED. The new Q9F features a direct full-array backlight to ensure superior blacks and contrast in addition to stunning brightness. This 4K UHD TV also boasts 100% DCI-P3 color volume as well as dynamic HDR 10+ support. The usual Samsung frills are a given such as the One Connect Box, single slim cable design, Smart Hub and an Ambient Mode.

SAMSUNG QLED Q9F

15

The Billionaire's

■ For the mega-rich, exclusivity is paramount. And if you want to one-up your friend who has just unloaded his spanking new McLaren Senna GTR off the flatbed, you could do a lot worse than the new Brabham BT62. Compared to the 75 Senna GTRs that McLaren are making, only 70 Brabham BT62s will be made.

The T62 is the first car from Brabham

Automotive, which is run by multiple Le Mans 24 Hours winner David Brabham, son of three-time F1 champion Jack Brabham. The 70 units are in homage to Jack's 70th anniversary in motorsports.

Powering the BT62 is a Brabham-made 5.4-liter naturally-aspirated V8 that produces 700hp and 667nm of torque. More impressively, thanks to its mostly carbon fiber construction, the BT62 weighs



PICTURE BRABHAM

Track Toy

Brabham BT62

By Kenny Yeo

just 972kg. This gives it an incredible power to weight ratio of 720hp per tonne. All that power is sent to the rear wheels only through a six-speed racing sequential gearbox.

To let drivers exploit all that power, the BT62 features loads of aero. There's a huge adjustable wing, equally large rear diffuser and front splitter,

and aeroblades all over. All told, Brabham says the car will develop over 1,200kg of downforce. No performance figures have been shared, but expect the BT62 to do 0-100km/h in under 3 seconds and have a top speed north of 330km/h. One number that Brabham has shared is the price. A cool US\$1.5 million.



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**M O R E
I N S I D E >
RISHI CHANDRA TALKS
GOOGLE HOME**

Is a smart home assistant key to a smart home? We ask the VP of Home Products at Google for answers.

H I - F I , C H I - F I

Instead of cheap knockoffs, Chinese audio products are getting some recognition.



**LESSONS FROM
A MASTER
PHTOGRAPHER**

Before iconic photographer Abbas Attar passed earlier this year, HWM's own Alvin Soon was fortunate enough to have been given some pointers by the legend.

PICTURE ALVIN SOON



Search is about answering your question, but it always stops there. It never could actually finish the task. And Assistant is about getting things done.

A MISSION TO HELP PEOPLE GET THINGS DONE IN A BETTER WAY

It's been 18 months since Google launched the first Home speaker. What has the team learned so far from users? Anything that the team didn't expect until customers started using Home?

A couple of things surprised me. One was the amount of time kids spent with the product. Kids of all ages actually think of it as a primary computing device. They don't expect to type into Google, they expect to talk to Google. And a lot of questions that kids asked are questions we'd never have thought of, like "What's your favorite color?"

The second piece we learned is that voice control is what makes the smart home take off. It's hard to explain the value of a smart home with a phone, because the phone is a little cumbersome. But put a Google Home in there and anyone can use it – talk to it and tell it what to do. We didn't anticipate how much engagement we're going to get because of Home's smart home capability.

Some people may say that Amazon's goal with the Echo is to get more people to buy stuff on the Amazon store. Or Apple's goal with HomePod is to showcase Apple Music. So what's Google's goal for Home?

Google's mission is to organize the world's information and make it accessible and useful. In our

Rishi Chandra, Vice President and General Manager, Home Products, Google

By **Ng Chong Seng**

Photography **Orland Punzalan**

mind, Assistant is the next path of delivering that. Search is about answering your question, but it always stops there. It never could actually finish the task, and you always got to find something else – a program, a service, or what have you – to finish the task. And that's what Assistant is trying to do: get things done. The home is the place you always try to get things done. And Google Home is our first set of products around that.

You've talked in the past about looking for daily use cases, use cases that will convince consumers that they need a product like Home. Have you found any? Obviously, we'd like to get anything done for you, but that's going to take time. So we try to focus on areas that we think we can deliver. So, for example, how

do we make voice an easy way to get your entertainment, control your media, play your music, check your calendar? Voice control of smart devices is another example. Once you have an opportunity to talk to it, you are never going to go back. Everything else will feel like too much friction. These are the everyday use cases we found so far.

Google Home just launched in India, and it's now in Singapore. But compared to India, we've a much smaller market. So why is Google bringing Home and opening a Google Store here?

Along with high broadband connectivity and tech-savvy consumers, Singapore is a great market for Google. The other thing is that it allows us to learn as we expand broader into Southeast Asia. Whether it's about understanding different accents, different language support, different ways a product is being used, we think it's a good reflection of the broader Southeast Asia market.

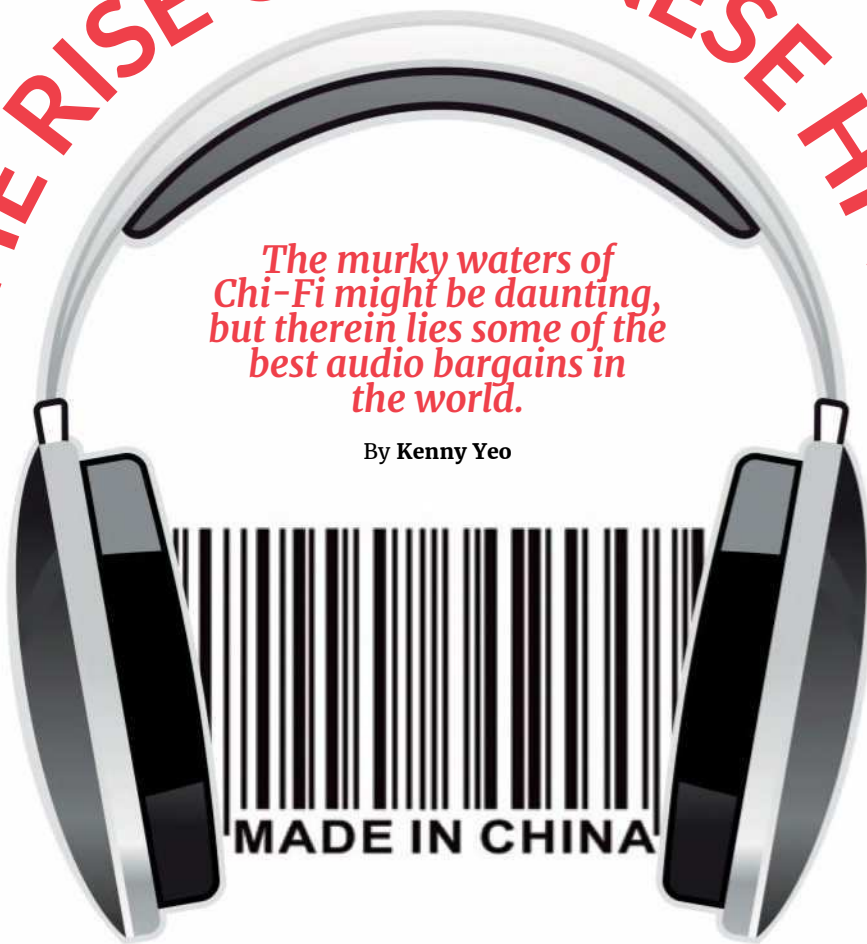
Tell us something interesting about yourself.

My daily driver is a Pixel and Chromebook. But my wife is an iPhone user. She does run all the Google apps on the iPhone, and she knows Pixel takes better pictures, but she just loves iMessage.

THE RISE OF CHINESE HI-FI

The murky waters of Chi-Fi might be daunting, but therein lies some of the best audio bargains in the world.

By Kenny Yeo



‘Chi-Fi’ is the term audiophiles have endearingly given to the cheap and value for money audio equipment coming out of China. These span the whole gamut of audio devices, from in-ear headphones to portable digital audio players, even amplifiers, and DACs (digital-to-analog converters).

It is hard to say for certain when this little audio revolution of sorts began. But the proliferation of online marketplaces like Lazada, Shopee, and Carousell has made it easy for music lovers to find and buy Chi-Fi.

Bewilderment is often the first feeling that greets beginners when they start shopping for Chi-Fi. The sheer number of options can be overwhelming and it can be difficult to know where to begin. After all, can headphones that cost only \$12 actually

be any good?

The answer, much to my surprise, is yes. Depending on where you look, the KZ ATE can be had for as little as \$11.57. You don’t get much for your money. The headphones come in a small box and all you get are a pair of headphones and a couple of extra silicon ear tips.

But what you also get is a sonic

But what you also get is a sonic experience that leaves you wondering if other brands are mad for charging exorbitant prices

experience that leaves you wondering if other brands are mad for charging exorbitant prices when a \$12 pair of headphones can sound this good. It is by no means the last word in audio fidelity, but for the cost of two McDonald’s Extra Value Meals, the KZ ATE sounds amazingly coherent and

balanced.

And it is not just headphones either. The Chinese are also disrupting the amplifier and DAC space with amazing offerings. Case in point, the M6 from Shenzhen-based SMSL. The M6 is a handsome little headphone amplifier and DAC combo that accepts USB, digital coaxial, and TOSLINK inputs, and decodes up to 32-bit/384kHz

PCM. Yours for around \$220.

A comparable desktop setup from a more established brand will cost more than double that.

However, not all products are worthy of recommendation. Some do not perform up to expectations and there are products that are outright rip-offs. Nevertheless, the rise of Chi-Fi should be viewed positively as it democratizes good sound and gets more people thinking about the gear that they are listening with.

WE AREN'T READY FOR THE AI REVOLUTION

Surely, the Google Duplex outcry is the first of many to come.

By Ng Chong Seng

There's been a lot of hot takes since Google CEO Sundar Pichai unveiled Duplex at its I/O developer conference. Duplex is an AI system that enables the company's virtual assistant, Google Assistant, to book appointments over the phone on your behalf.

The fuss was not because the still-in-the-works Duplex failed in the demo. Google had cherry-picked a couple of "real" and successful recordings for playback. It was because Duplex scored a home run; the machine had fooled the humans on the other end of the line into thinking they were speaking to a real person.

Hence the many debates: Is Google right to make Duplex sound so realistic? Shouldn't the virtual assistant identify itself so the other party knows they're conversing with a bot?

If the goal is to make the conversational experience as natural as possible, it's necessary for Duplex to sound as human as possible. And it did. In the demo, Duplex spoke with human-like cadence, with some variety for emphasis, occasional pauses, and verbal tics such as "uhm" and "ah."

With Duplex, Google Assistant is now one step closer to passing the Turing test. Introduced by Alan Turing in 1950, a machine will pass this test if



Shouldn't the virtual assistant identify itself so the other party knows they're conversing with a bot?

it's able to exhibit behavior equivalent to, or indistinguishable from, that of a human. While Duplex can't carry out general conversations yet, one can argue that it has already passed the test in the domain of "booking appointments." This achievement should be celebrated and Google given due credit.

That said, Google had only itself to blame when it found itself in the center of the ethics debate. The phone recordings in the demo didn't include disclosures. To make matters worse, Pichai offered no hint that Google was aware of the ethical concerns that Duplex was bound to raise.

When I asked Google about this, a spokesperson said the company announced Duplex early because it wants to be open and transparent about it. And since Duplex isn't a product yet, the company also hasn't finalized its implementation, including how disclosure is handled.

But on the next day, presumably after more criticisms, big G said it's now designing Duplex with "disclosure built-in" and will make sure the system is "appropriately identified."

If there's anything the Duplex outcry has taught us, it's that both Silicon Valley and consumers aren't ready for the AI revolution. As we create more solutions with AI and machine learning, it's high time we picked up the pace in looking into their social, ethical, and legal implications, too.



THE MOST IMPORTANT THING I LEARNED

Text and Photography by **Alvin Soon**

■ I learned, with a heavy heart, that Iranian photographer Abbas Attar passed away in April at the age of 74. Over six decades, Abbas photographed wars, revolutions, and religions, and was a member of the prestigious Magnum Photos agency.

Eight years ago, I was fortunate to attend a four-day workshop with Abbas, organized by Sony in the heart of Tokyo. Abbas struck me as a serious photographer with mischievous eyes. He was stern about the craft, but fun around the edges. Abbas introduced himself as a ‘photography monk,’ and warned us that he didn’t like to be photographed; he believed that photographers should stay on one

side of the camera and not the other.

Our days were packed — we started one morning at 3:45 AM — and I learned a lot from the master. For example, when asked about what makes a good photographer, Abbas gave us an answer that wove between practical and romantic. “First, get good walking shoes. Second, fall in love. Third, wear a scarf. It can protect your camera from rain, hide it from sight and keep you warm.”

And when we asked Abbas why he only shoots in black and white, he said, “I don’t want to show reality, I want to transcend reality. Color distracts, black and white helps me to concentrate on the subject.”

But the most important lesson

I learned from Abbas was to be ruthless when curating your photographs. Our 12-person group must have shot tens of thousands of images, but we could only select 40 photographs for the final photo essay. The selection was a painful process; we didn’t only cull mediocre photographs, we dropped many outstanding images as well.

“Less is more,” Abbas kept telling us, “20 pictures is not always better than 10. Always the necessary photographs only.”

It hurt to drop so many beautiful images, but the result was eye opening. The sequence was stronger because only the very best photos remained. I learned that having



FROM MASTER PHOTOGRAPHER ABBAS

more than one photograph of the same subject didn't lead to a better story. On the contrary, it dilutes the emotional resonance by splitting it between images. Showing only one photo — even if it's only lightly better than the others — is difficult for the photographer's ego, but makes a deeper emotional impact on the viewer.

Abbas shared that for a photo story, he would print the best of his photos and lay them on a long table for days to a week. He went through them again and again; to rearrange, throw out, and edit. He explained his philosophy this way: "The first stage in shooting is the emotional part. It's fed by emotion, culture, and your

moods. The second part is editing and is intellectual. Does it work? Purge emotions from your work; edit with a cold eye."

Those four days with Abbas changed the way I photograph and I've carried the lessons with me to this day. For example, I shot over 4,000 frames over 10 days for our article on travel photography in Japan. I loved 70 of these the most but only shared 11, and the feature is stronger for it.

It was only a short four days, but I'm grateful to Abbas for the warmth and generosity he gave us. The best way I know to repay him is to pass his lessons on. I hope you find them useful.

"The craft of photography is not one dimensional, it is many dimensions. When I'm shooting I'm aware of many things. Color, composition, movement, one split second and everything works. You have to be aware of the significance of what's happening. Luck is very important as well, but it has to be deserved. You have to work for it, you have to be aware. With respect to my friend Henri Cartier-Bresson, my idea of photography is not the decisive moment, it is the suspended moment. The mind, the eye, the finger, the foot, the heart, even the sex, all have to be one line. One split second, everything works. One split second after, everything is finished."

“We’re using technology like mobile apps and geolocation to connect doctors to the patients closest to them. That gives doctors more flexibility and helps patients access timely medical care. This can make healthcare more convenient, accessible, and in time, affordable.”



DOCTOR ON DELIVERY

Dr. Shravan Verma, Founder and CEO, Speedoc

By Koh Wanzi Photography Phyllicia Wang

How does the speedoc app work?

The app is a doctor-on-demand service. Patients key in their location in the app, in addition to any symptoms. They can also call a doctor for a family member, which is useful for people who can't always be around to take care of a child or parent. They will receive a price upfront, and the request will go out to the nearest doctor, or one that has seen the patient before to facilitate the continuation of care.

How does this fit in with Singapore's push toward a smart nation and city?

The whole point of the smart nation initiative is to use technology to improve the lives of people. I think that's what we are doing with our focus on digital health. Speedoc's goal is to reduce the downtime in the system and allocate healthcare resources more efficiently.

We're using technology like mobile apps and geolocation to connect doctors to the patients closest to them. That gives doctors more flexibility and helps patients access timely medical care. This can make healthcare more convenient, accessible, and in time, affordable.

In future, we will be looking at using data in smarter ways, including for disease prevention and prediction. Better machine learning algorithms will also be implemented. For example, if you

put in a request for a child, the pediatricians nearby will be notified first.

At the same time, we will have access to data that may shine a light on trends, such as a dengue outbreak or some cluster of symptoms in a location. This lets us perform location-based analysis and determine if there is a localized epidemic of some sort.

How has technology shaped the healthcare sector over the years?

There has been a big push toward digital health. There have been a lot of changes in the healthcare sector and we've seen big initiatives from major players like Apple, Google, and Samsung in the area of healthcare innovation.

Technology enables a greater degree of connectivity and more engagement from patients. For example, wearable devices let people monitor their own heart rate. In time, that may develop and allow people to track more metrics and better understand their health.

This data can eventually go toward preventing and predicting disease in the community.

Why do you think there is a need for such digital initiatives and services?

While I was working in a public hospital, I saw that a lot of the patients could actually be treated at

home. There was no need for them to come all the way to the hospital and wait three to four hours for a doctor. It doesn't make sense for hospital A&E departments to be crowded by non-critical cases that only add to the backlog of patients.

It's important to enable a more efficient distribution of healthcare resources. For example, more patients would get quicker access to care if surplus doctors could go to where they're most needed. We want to streamline Singapore's healthcare landscape by reducing the number of A&E visits and helping more people get primary medical care, regardless of time and location.

Furthermore, the increased flexibility and loosening of manpower resources will free up public hospitals to focus on what they're needed for, which is addressing life-threatening conditions and other critical cases. As Singapore's population ages, the growing number of elderly could benefit from easier access to care in a home or community setting.

What else is on the horizon in terms of innovation for the healthcare sector?

Our app has plans to tap into data from wearables. As more vital signs are recorded by wearable devices, they will be integrated into our app and provide our doctors with better information to make a clinical decision.

At the same time, we want to come up with optimal ways to deliver mobile medicine. This could include mobile X-rays, CT scans, and even MRIs. This would cut down the travel and diagnostics time as a patient would no longer need to go to a public hospital and join the queue, at least not at first. A mobile CT scan could also enable a stroke patient to more quickly receive the necessary care.

Read

A triumph of the spirit

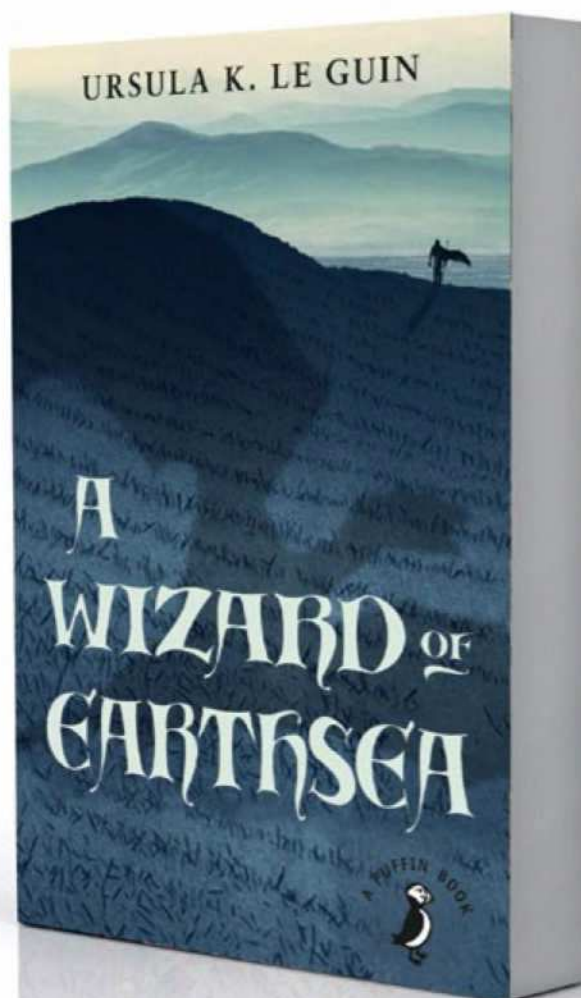
By Alvin Soon

■ *A Wizard of Earthsea* by Ursula Le Guin is a classic of fantasy literature, and for good reason. The book is full of poetry and wisdom, told at a tight pace with vivid imagery.

It is the story of Ged, a poor smith's son, who is born with a genius for magic. Ged goes to a school for wizards, where his rapid progress makes him arrogant. In a duel of magic, Ged's pride makes him overreach. He inadvertently summons a monster, which scars him and nearly kills him. The evil creature escapes, but it and Ged are intertwined — only one will prevail. And thus begins Ged's quest to vanquish it.

Unlike fantasy books that rely on bloodshed and battles, *A Wizard of Earthsea* is intensely personal. Le Guin's art lies in telling a story of struggle and growth with humanity and tenderness. Problems are solved, not with a fist or the wave of a magical wand, but with humility and wisdom.

50 years after its first publication, *A Wizard of Earthsea* remains a relevant story of the spirit.



Le Guin's art lies in telling a story of struggle and growth with humanity and tenderness.

Get a drink of ice water of Mars

Scientists discover clean water ice on the red planet.

By Alvin Soon

■ Scientists have previously discovered water ice on Mars, but nobody knew how pure it was. Now, researchers using NASA's Mars Reconnaissance Orbiter have discovered eight sites of thick ice beneath Mars' surface. And these deposits look like relatively pure water ice.

The sites don't only contain water ice, but they're also accessible sites, which makes the ice easier to get to. Shane Byrne of the University of Arizona Lunar and Planetary Laboratory, Tucson, remarked, "Astronauts could essentially go there with a bucket and a shovel and get all the water they need."

Having clean sources of ice water is crucial if we ever launch exploratory missions to Mars. Future visitors will benefit from having reservoirs of water for drinking or growing crops. Or if you're on a future science mission and get abandoned on Mars during a massive dust storm, then have to survive for 560 sols on the red planet, having these sources of water will prove useful.

PICTURE NASA/JPL-CALTECH/UU/USGS

THE ASIAN CONNECTION

How Asia is driving global tech trends, and how we're also apparently responsible for driving up prices.

By Zachary Chan

Yes. You. Me. Asians.

During the recent 2018 IFA Global Press Conference in Rome, GfK Asia's Gerard Tan shared with me some of his findings for the tech landscape in the past year or so. He also drew some very interesting connections between tech adoption rates in Asia and why we've been looking at the wrong sales numbers all this while.

First, let's take a look at some facts. Nearly 60% of the world's population already live in Asia, and according to GfK, two thirds of the World's middle class as well by 2030. Asia also boasts 4 of the World's top 10 largest economies and 5 out of 10 World's fastest growing economies. What do these numbers mean? We've got the largest concentration of the world's populace with disposable income.

So let's get back to topic. For the past few years, we've seen a boom in smartphone usage, and as mobile computing grew, it impacted other industries, mainly digital cameras and PCs. In GfK's own market data report for the Asia Pacific region, the demand for tech goods saw a universal drop in almost every category between 2016 and 2017. Display (TV) sales fell 5%, cameras dropped 14%, PCs saw a 7% decline. Even smartphones had only a tiny 1% increase.

However, in the same report, GfK data showed that TV prices increased by 7%, digital cameras by 16%, smartphones by 12%, and PCs by 10%. So, even though consumers were buying less tech devices across all categories, they were spending more for premium devices. The net

result is a market that's buffeted by increased prices rather than increased volume.

So why is this happening? With a growing middle class as mentioned above, Asia has found an appetite not just for new tech, but premium tech that's pushing the perceived value of devices up. For examples, the PC market is benefiting from the popularity of gaming, and just like sporting goods, people are willing to

pay more for PCs and peripherals that are supposedly gaming-grade.

There's also correlation for increased spending with the saturation of mobile devices, connectivity and adoption of mobile payment technologies such as digital wallets and biometric authentication. Again, Asia is just more comfortable with technology, according to Gerard. In a GfK Future Buy 2017 survey, a massive 90% of respondents in China use a mobile device for shopping, and APAC has a healthy 71%. Compare this to just 44% of respondents in Europe.

And speaking of China, it is quickly becoming the promise land for tech adoption, where nascent trends can go "viral"; the latest being smart homes. Between a short three-month period, smart speakers went from being a relatively negligible product category to a must-have device, spiking in sales value from 9 million USD in October 2017 to 35 million USD by December 2017.

Another category that saw explosive growth in 2017 in Asia Pacific was personal audio. Sports headsets grew by 78% over 2016, while true wireless took off in a massive way in 2017, with a 1,271% growth. Sure, it's a new category, but basically what GfK sees is that the Asian hunger for technology is driving adoption and pushing innovation. This is why 7 out of the top 10 global smartphone brands are from Asia, and 4 out of 9 global AI innovation centers have been setup in Asia as well.

The only downside to all this, is that we don't really get to complain that every new smartphone is more expensive than the last because we're the ones that's been willing to pay the premium.



Gerard Tan, GfK Asia

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Building a better eSport

Blizzard's vision for the future of esports

Blizzard's Overwatch League is ending its inaugural season this month with the playoffs scheduled to kickoff next month. The grueling seven-month long competition started in January this year and sees 12 professional teams battling it out to win a share of its US\$3.5 million prize pool. But while league viewership figures have been promising, the whole thing remains a massive gamble. Initially announced way back at Blizzcon 2016, the League is the most ambitious attempt at turning esports into a legitimate sports league to date. If it succeeds, Blizzard will set a new standard in esports that other games will look to follow, but if it fails, over three hundred million dollars will have been sunk into a venture that many said was doomed to fail right from the start.

*By James Lu and Wanzi Koh
Art Direction by Orland Punzalan*

The cost of starting your own sports league

Blizzard's entire approach to the Overwatch League has been different from other esports ventures. "We wanted to look at what made some of the things that make traditional sports so successful and apply that to our new league," says Blizzard President Mike Morhaime. "We noticed there were a lot of endemic issues with the way organic esports would form that really didn't provide very much opportunity for team owners to really build a business around their teams. So we kind of want to address all of that and get ahead of the curve and do it right out of the gate with Overwatch."

As a result, the Overwatch League more closely resembles American sports leagues like the NBA and NFL, with a closed franchise system that requires a hefty buy-in and approval from Blizzard itself. Blizzard was asking a rumored US\$20 million buy-in to own an Overwatch League team, and with each team tied to a specific geographic location (New York, London, Seoul etc.) some owners reportedly paid much more to secure lucrative cities. When Blizzard's terms were first disclosed, many mocked them as outrageous – only the most successful esports

Blizzard has been on a hiring spree too, picking up some of the best (and most expensive) talent from esports, traditional sports and broadcast media to make the league a success. The league's on-air casting talent is a veritable all-star list of greats from the past decade of esports, including League of Legends' Christopher "MonteCristo" Mykles and Erik "DoA" Lonnquist, Call of Duty and Halo's Chris Puckett and Matt "Mr X" Morello, and CS:GO's Mitch "Uber" Leslie and Auguste "Semmler" Massonnat.

It's taking a different approach to how players are treated too. All 131 players in the league have guaranteed 1-year contracts from their teams with a player option for a second year, and a minimum salary of at least US\$50,000, with many earning much more (Philadelphia Fusion star player, Lee "Carpe" Jae Hyeok, reportedly earns US\$180,000) – a far cry from the win big or go home empty-handed lifestyle of most pro-gamers.

Ultimately, the drive behind all of this is Blizzard's vision to turn the Overwatch League into, not just the biggest esports league, but the world's first truly global sports league, something that not even traditional sports have achieved.



Chris Puckett



Christopher "MonteCristo" Mykles & Erik "DoA" Lonnquist

organizations could put together the kind of money that Blizzard was asking. But these weren't the organizations Blizzard was targeting. Instead, Blizzard went to corporations like Comcast, owners of the Philadelphia Fusion, and the billionaire owners of actual sports teams, like Robert Kraft, owner of the Boston Uprising and the NFL's New England Patriots, and Stan Kroenke owner of the LA Gladiators, Arsenal F.C., and the NFL's LA Rams.

Blizzard hasn't just asked its partners to invest money, it's put a lot of its own money into the competition too, which included building a state of the art multi-million dollar Blizzard Arena in Burbank, California to host the first season of the league.



Jae Hyeok "Carpe" Lee



Matt "Mr X" Morello



Blizzard's global ambitions

When Blizzard started selling franchises for the League, one of its rules were that previous team names, including those of established esports giants like Cloud9 and EnVyUs would have to go. Forcing teams to ditch their established branding and identity to take part in a completely untested league may seem like a risky decision, but the intent here is to once again follow the lead of traditional sports and tie teams to cities rather than organizations. A team with a name like the London Spitfire is more likely to appeal to a casual viewer from the UK, than one called Cloud9.

While all teams are currently based in LA, with all games played at the Blizzard Arena, Blizzard's plan is that starting in Season 2, teams will be based in their home city, with other teams visiting to play them, just like a traditional sports league. With this in place, teams will have a true local market and will be able to generate revenue from their home venue. They'll be able to sell tickets to come watch the team, they'll be able to sell food and beverage, and merchandise at a team store just like a traditional sports team. Which again, is why Blizzard wanted traditional sports owners to buy-in to the league: many of them already own arenas that could be easily converted to esports arenas on game days.



The payoff

While Blizzard's eventual vision for the Overwatch League is still years away, the immediate payoffs have been much better than expected. Skeptics that doubted whether there would be enough investors to even get the league off the ground were silenced when Blizzard sold all twelve Season 1 franchise spots by December 2017. And there are already rumors of organizations waiting in the wings for a league expansion in Season 2, despite Blizzard's buy-in price reportedly jumping to US\$60 million for the next wave of franchises.

Right before the league commenced, Blizzard also signed the biggest contract in esports history with Twitch, worth US\$90 million for the rights to stream the Overwatch League for two years. The deal makes Twitch the sole broadcaster for half of the league's 12 weekly matches, while the other half are simultaneously streamed on Major League Gaming, the streaming platform owned by Activision-Blizzard. It's the most amount of money ever paid for the rights to stream an esports, but so far it's paying off: over a million viewers tune in to watch the League on Twitch each week, far more than any other esports channel.

And as the league grows, its sponsors grow too. Blizzard has also signed two year deals with HP Omen for US\$17 million and Intel for US\$10 million to supply equipment for the league. This is in addition to brand deals with Toyota, T-Mobile, and Sour Patch Kids, whose values haven't been revealed but are expected to be in the same region. Individual teams have also reaped the benefits of sponsorship, with London signing with Logitech, and Seoul signing with Razer and Netgear, among others.



WHAT MAKES A SPORT?

Physical activity, or something more?

Two days before the opening ceremony for the 2018 Winter Olympics in Pyeongchang, South Korea, Sasha “Scarlett” Hostyn pulled off a thrilling upset over Kim “sOs” Yoojin, a heavy favorite with five major championships under his belt.

Instead of stunning feats of endurance or dexterity on the field, both players were battling it out in Starcraft II. Scarlett used the famed “Zerg rush” of lore to crush her opponent, and the final result was a 4-1 rout.

The match took place in Gangneung, a seaside city not far from the Olympic Stadium. The competition was the Intel Extreme Masters Pyeongchang, and Scarlett had not only become the first woman to win a major international esports tournament, but also the first person to win an esports event with official links to the Olympics.

Unfortunately, esports isn’t an Olympic event yet. Despite encouraging signs elsewhere – esports is slated to be a medal event at the 2022 Asian Games in Hangzhou, China – proper Olympic recognition hasn’t arrived yet.

However, IEM Pyeongchang offered reason to be hopeful. The competition was broadcast on the Olympic Channel and was partially supported by the International Olympic Committee. Five Korean League of Legend players also bore the Olympic torch on its journey through South Korea, another first for competitive esports.

Late last year, the IOC released a statement saying that “competitive esports could be considered as a sporting activity, and the players involved prepare

and train with an intensity which may be comparable to athletes in traditional sports”.

Still, the obstacles to inclusion as an Olympic event are

immense. Despite the IOC’s acknowledgement of esports as a sporting activity, the president of the IOC, Thomas Bach, has explicitly stated that video games are not in line with its values. “We want to promote non-discrimination, non-violence, and peace among people. This doesn’t match with video games, which are about violence, explosions and killing,” said Bach in an interview with the South China Morning Post.

Nevertheless, Bach conceded that sports simulators like FIFA could one day be an exception.

More importantly, esports suffers from a pernicious problem with perception. Athletes are understandably wary of video games being placed on the same level as conventional sporting events. After all, when you put your body through backbreaking routines on a daily basis, you’re naturally skeptical of a sedentary activity that at first glance involves nothing more than huddling over your computer screen.

Alpine skier Ted Ligety summed it up when he told Reuters that only physical sports belong in the Olympics. “The mental side of esports can be tough I’m guessing for those guys, but the Olympics is where you have to do some sort of physical exertion,” Ligety said.

Other critics agree as well, which is why the lack of physical action has often been cited as the reason chess and other games involving intellect have never been accepted.



Team Seoul Dynasty

"I think this is a defining moment in esports"

The big pieces of the puzzle are in place for the Overwatch League, and so far it's completely silenced its naysayers. "I think this is more than a stepping-stone," says Kent Wakeford, COO of the Seoul Dynasty. "I think this is a defining moment in esports. People will look back at Overwatch League and compare it to the formation of the NHL or the MLB. The amount of effort, the sophistication, and the resources that have gotten behind the Overwatch League are phenomenal. It's only comparable to one of the traditional sports leagues. I think you'll see this catch on just like



Kent Wakeford

one of these traditional sports, if not bigger."

What's next for Blizzard could be turning its success with the Overwatch League to other games. Activision-Blizzard President, Coddie Johnson, said in the company's Q1 fiscal report, "building the Overwatch League allowed us to develop a unique set of capabilities and infrastructure, and we plan to begin applying them to other franchises in the near future, including Call of Duty." So while it's still early days for the Overwatch League, it might not be too long until it's just one of many global esports leagues.

IT'S NOT JUST ABOUT PHYSICAL ACTION

The common emphasis on physical exertion is not difficult to understand, but the rapid growth of esports means that it is not something that can be dismissed as a fringe phenomenon anymore.

The success of the Overwatch League aside, esports is projected to become a US\$1.5 billion market by 2020, according to Newzoo's Peter Warman. That's a huge leap from a modest US\$362 million in 2017.

To put things in perspective, the century-old NFL made US\$14 billion in 2017, while the NBA pulled in just over US\$7 billion.

However, it might be time to re-evaluate our definition of physical action, or even reconsider whether it's a criteria that can still be justified in the current milieu. As the IOC said last year, competitive esports players train with a regularity and intensity that rival their counterparts in traditional sports.

In talks with Singapore-based Overwatch team Chaos Theory, Benjamin "Zest" Seet speaks of a training schedule that lasts from six to seven hours a day. "This includes scrimms and some ranked games, in addition to reviews of previous gameplay," says Zest.

Zest is also quick to dispel the notion that esports players have it easy. "Everyone wants a job that lets them play games all day, but it's actually quite different when games become your job. You need to train in order to

continually improve, and it's no longer about playing the game in your spare time for fun," explains Zest.

"Most people also don't see the effort behind every win, so they seldom understand the hardship that accompanies the glory. They only see what is shown at the competitions.

Unless they are informed otherwise or have the opportunity to experience it for themselves, the masses will always think that it's easy to play games for a living."

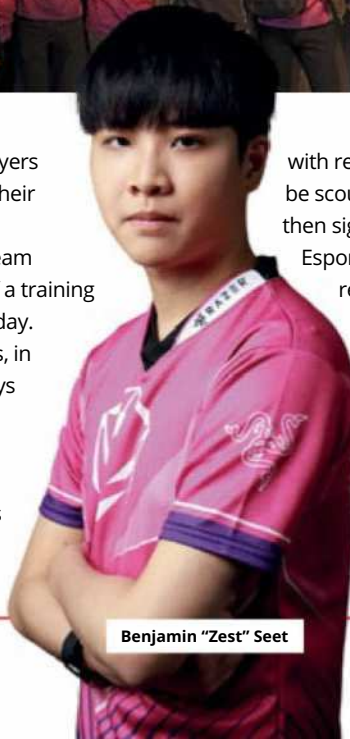
Chaos Theory is Singapore's first professional esports team, which means its players receive salaries, CPF, and medical benefits, much like any other employee.

According to Drew Holt-Kentwell, the Co-Founder and owner of Chaos Theory, professional esports teams also share many similarities

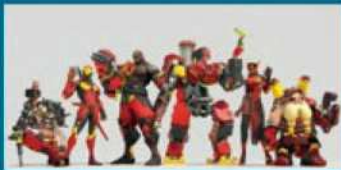
with regular athletic teams. "Players in esports can be scouted, drafted through a combine or academy, then signed to a team, much as in regular sports.

Esports teams also rely on many of the same resources as the latter, with access to coaches, analysts, team managers, psychologists, and even physiotherapists," Holt-Kentwell explains.

Furthermore, anyone who follows the professional esports scene will know that the scene isn't exactly injury-free either. The intensive practice and repetitive movements take their toll, and wrist injuries are common.



Benjamin "Zest" Seet



OVERWATCH LEAGUE TEAMS AND WHO OWNS THEM

TEAM	OWNER
Dallas Fuel	Team Envy
Los Angeles Gladiators	Kroenke Sports & Entertainment, owner of Arsenal F.C., the Los Angeles Rams, the Denver Nuggets and the Colorado Avalanche
Los Angeles Valiant	Immortals
San Francisco Shock	NRG eSports
Seoul Dynasty	KSV eSports, a San Francisco-based group led by Kevin Chou of North American video game company Kabam
Shanghai Dragons	NetEase, Chinese internet company and Blizzard regional partner
Boston Uprising	Kraft Group, owner of the New England Patriots
Florida Mayhem	Misfits
Houston Outlaws	Infinite Esports & Entertainment, the parent of OpTic Gaming
London Spitfire	Cloud9
New York Excelsior	Sterling VC, the venture capital sister company of the New York Mets
Philadelphia Fusion	Comcast Spectacor, owner of the Philadelphia Flyers

How much skill do games really require?

But for all the talk about structured leagues and grueling training schedules, it's difficult to shake the notion that esports require less skill than traditional sports. After all, when you're comparing the impeccable execution of a complex series of gymnastics moves to hitting a target on-screen, it's not difficult to see why this view exists.

Except there are people who claim otherwise. At a talk at this year's Games Developers Conference, Yauheni Hladki told his audience that "esports far surpass traditional sports in terms of skill". Hladki isn't entirely making this up, and this claim is based on statistical analysis. He also boasts impressive credentials and experience, with a background in theoretical physics and political science and previous experience as the StarSeries commissioner at StarLadder.

That said, this is a bold statement to make, and one that will attract immense skepticism and scrutiny. According to Hladki, luck and skill are the two components that determine the outcome of any competitive game. This is an idea inspired by the work of Michael J. Maboussin, whose book *The Success Equation* sought to place conventional sports on a spectrum between pure luck and skill.

Obviously, some games involve more luck than others. For example, luck factors more heavily in ice hockey than chess, and Hladki says the former is actually one of the most random professional sports. This also calls to mind a game like *Hearthstone*, which has received some flak for how random it can be.



WHEN YOU STREAM FOR 12 HOURS A DAY...

Tyler "Ninja" Blevins spends half his day streaming. The former Halo pro turned Twitch streamer is probably the most-watched user on the platform, with over 7 million followers.

Ninja plays *Fortnite*, Epic Games' free-to-play battle royale shooter, and he's made a reputation for himself as one of the best players in the game.

His schedule starts at 9.30am in the morning, and he plays still 4pm in the afternoon. This is followed up by a three- to four-hour break before he goes back online at around 7pm and plays till 3am.

It's an unforgiving schedule, and Ninja says 12-hour days are the bare minimum. Is it worth it? Ninja has gone on record saying that he makes over US\$500,000 a month, most of which comes from his Amazon Prime subscribers.

However, while Ninja seems to be coping pretty well, other streamers haven't been as lucky. Lirik, another hugely popular Twitch streamer, took a break from streaming in January to focus on himself.

Put simply, he was burnt out, tweeting that he did not "feel entertaining anymore" and was puzzled why people still continued to watch him play. More tellingly, he added that he needed time off the internet to figure out the next steps in life, change his habits, and ultimately "find what the point is."



IS GAMING THE NEW COLLEGE SCHOLARSHIP?

Believe it or not, esports is also gaining increased acceptance at post-secondary institutions and universities. According to Michael Brooks, the executive director of the National Association of Collegiate eSports in the US, the number of institutions offering esports scholarships has nearly quintupled in the last year.

Robert Morris University kickstarted the idea of varsity esports scholarships in 2014 with its scholarship-sponsored League of Legends team. Since then, more schools have gotten on board, including the University of Utah.

The latter's participation is significant because it is the first school from the Power Five athletic conferences to do so. The Power Five are athletic conferences at the highest level of collegiate football in the US, making Utah one of the largest, and also the first major sports school, to offer a scholarship for competitive video gaming.

In April 2018, Ohio's Ashland University announced a scholarship for Fortnite, making it the first school in the US to jump on the new phenomenon.

These varsity esports programs provide students with many of the same benefits as more conventional sport scholarships, including things like personalized coaching, structured guidance, and a focus on physical fitness.



Hladki thinks the larger sample size in esports means that the luck factor becomes a lot less significant. "By the sheer amount of games, the sample size becomes so big that the possibility for randomness almost goes to infinity," he explains. It's not entirely clear how he arrived at this conclusion, given that the number of matches played at an esports tournament doesn't seem to be a lot more than that played in a regular football season.

Nevertheless, it's possible that he was including online ranking systems in this metric, where it's more feasible for players to play a ton of matches a day in pursuit of the top ranks.

Furthermore, anyone who has invested any significant amount of time trying to get good at a game will tell you that it isn't as good as it looks. In any game, the gulf between the best players and the merely average is huge, and success depends on a rare combination of mechanical skills, decision-making, and game awareness.

Games may not be as physically taxing as traditional sports, but they do still require huge amounts of talent and skill.

The burgeoning esports scene is also becoming too big to ignore. As developers such as Riot and Blizzard continue to build out pro leagues for their games and governments set up regulatory bodies, the infrastructure for truly mainstream acceptance is starting to fall into place.

The reach of esports is immense. It's also capable of transcending geographical and cultural boundaries in a way that traditional sports cannot, so it seems only a matter of time before it becomes fully accepted as a proper sport. **HWM**

Men'sHealth

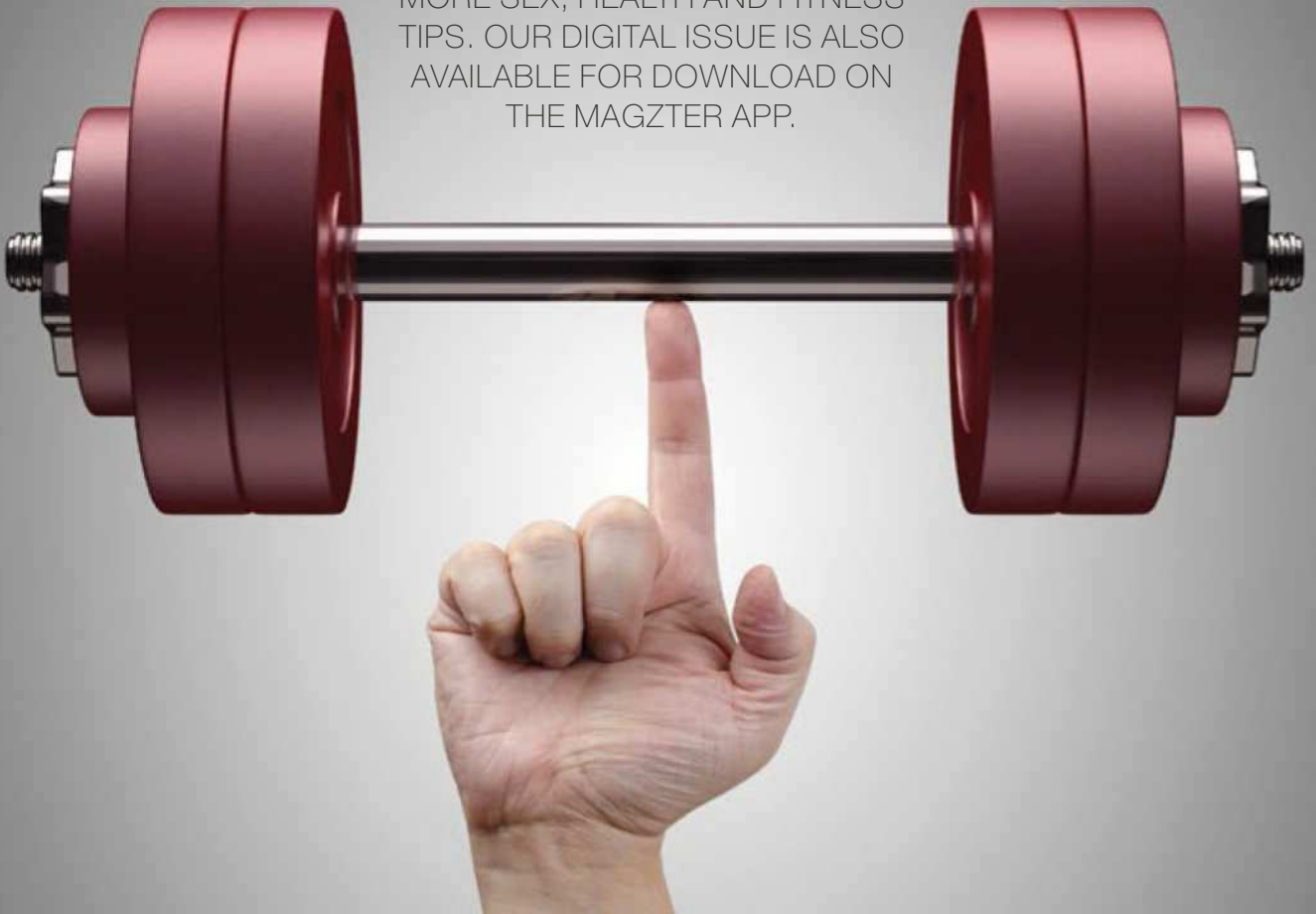
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- BOSE Soundsport Free
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- Bragi Dash Pro
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- JBL Free
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- Jabra Elite 65t
-
- Samsung Gear Icon X (2018)
-
- Sony WF-1000X
-
- Yevo Labs Yevo 1



Music set free

Just one year on, and the competition in the true wireless earbuds category has ramped up immensely, with big names like Bang & Olufsen, Bose and Sony jumping in the fray.

By **Marcus Wong** Photography by **Angela Guo** Art Direction by **Orland Punzalan**

B&O BEOPLAY E8

Stylish and elegant, the Beoplay E8 are Bang & Olufsen's first entry into the realm of truly wireless earbuds, and they certainly live up to the B&O branding in terms of delivering that "premium" feel. Both earbuds have to be paired to each other before pairing with your player, but this doesn't always work smoothly, requiring a restart in some cases.

On that note, the touch controls really take some getting used to, as there's no way to disable any of them. The app only helps to maintain firmware updates and switch your transparency settings. These settings let you adjust the amount of ambient sound you hear, but they seem to do so at the expense of your audio. The E8 is said to use NFRMI (Near Field Magnetic Induction) for better audio quality and greater connectivity. This held through in terms of sync between earbuds, but the left earbud would randomly drop out for split seconds so connectivity still isn't best. Battery life is rated at four hours on a single charge while the carrying case gets you another two full charges, so you get 12 hours of

play time on the road.

In terms of audio, we thought the E8 truly did serve up quality befitting of the higher price tag, with one of the most robust sounds we've heard out of true wireless earbuds thus far. It manages to produce pretty full sound, with a decent amount of bass to boot. This is a little on the dry side though, but there's enough kick when the piece calls for it.

For example, on a recording of Diana Krall's *Temptation* from her *The Girl in The Other Room* album, you can easily feel the bass guitar. It also shows good imaging

capabilities here too, as you get a sense of being in a bar setting with bass and lead guitar to your left, Krall slightly off center at the piano, and the drums to the right. Safe to say, the earbuds work with instrumentals, but regular pop pieces are served up well too, though rock pieces that call for more bass like the Red Hot Chili Peppers' *Californication* might leave you a little wanting. Still, among the true wireless earbuds we've tested, these are easily one of the best we've heard thus far.

+
Great sound for true wireless earbuds. Premium finish.

-
Can't switch Transparency modes without using the app.

AT A GLANCE

FREQUENCY RESPONSE
20Hz-20kHz

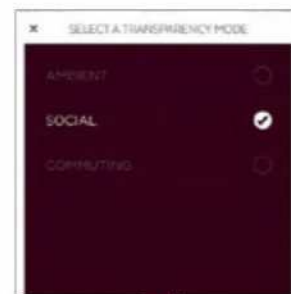
BATTERY LIFE
4 hours

WEIGHT
7g (right earphone)
6g (left earphone)

PRICE
\$429



A small blue LED indicates the pairing status.



The app offers you a choice of three transparency modes.

AT A GLANCE

FREQUENCY RESPONSE
20Hz-20kHz

BATTERY LIFE
5 hours

WEIGHT
14.2 g (each earphone)

PRICE
\$319



Individual LEDs indicate if each earbud is charging.



These controls are too stiff to activate easily.

BOSE SOUNDSPORT FREE

The SoundSport Free earbuds are supposed to be perfect for exercise, thanks to the addition of StayHear+ Sport tips. These are specially engineered so the nozzle spreads contact evenly around the inside of your ear, while the fin fits into the upper ridge of your ear, making for a secure fit. However, getting a right fit wasn't the most comfortable venture, and we found that we had to take a size smaller than what we normally use, so it's good that you get a selection of different sizes to start, and that they're fairly easy to replace.

As you might expect from something with "sport" in its name, the SoundSport Free earbuds are IPX4 rated so will take sweat or light rain just fine. The StayHear+ Sport tips really do help to keep the earbuds in securely, but that doesn't translate to a strong audio seal as you will still be able to hear your environment. Connecting to these somewhat oversized earbuds is a simple affair, and we didn't experience drop outs during our testing. However we did occasionally have issues where the left earbud didn't connect on startup – a situation easily remedied by putting both

earbuds in the case and putting them on again. While the right earbud sports a multi-function button that allows you to adjust volume and control playback, we found this to be too stiff to activate – so trying to increase volume would lead to us shifting the earbud for example.

In terms of audio, we thought the SoundSport Free performed well in the midrange, but had perhaps the best low end of the entire group. On a recording of Correnteza by Ana Caram for example, the earbuds manage to serve up a nice full-bodied bass to lead the track, while presenting Caram's vocals with good

clarity. We do think the earbuds could have done a better job with balance on this piece though, as we found ourselves struggling to pick out some of the nature sounds sprinkled throughout the piece, especially those on the higher end of the audio spectrum. Perhaps because of the more substantial bass, we found faster moving pieces to work better with these earbuds, as pop pieces like Bruno Mars' 24K Magic were presented with more than enough energy to get our feet tapping along.



Good all-rounded performance. Very secure fit when set right.



Large earbuds can take some getting used to.



BRAGI DASH PRO

The Bragi Dash Pro takes over from The Dash as the premium model in Bragi's lineup. It follows largely the same formula in terms of design for both the headset and the carrying case, but boasts improved Bluetooth quality and better battery life. These now give you up to five hours playback on a single charge, so together with the five charges provided by the carrying case gives you a total of 30 hours of playtime at a go; good for more than a full day's worth of listening.

It comes with an onboard media player with 4GB of memory so you can use the headphones on a standalone basis, and we found this to offer the best performance in terms of having a steady connection. However, you'll be limited to linear control of your playlist (i.e. jumping forwards or backwards one track at a time) as there's no way to see the entire set of tracks this way; not even via the app. The new Dash Pro also offers up a Virtual 4D Menu - which lets you literally use your head to call up and navigate a menu of commonly used functions.

Activating the menu requires you to look down till you hear a tone, then forward, and finally up again till you hear another tone. Turning your head left or right takes you through the various menu options, and then you have to look down till you hear a tone to select it. This works

pretty well in practice, but given how much of a range of motion you have to go through to activate it, we doubt most people will use it in public.

Audio performance is at about the same level as the previous model, with a shift in audio signature away from the lower ranges for better performance in the highs. Naturalness is a

strength with these earbuds, as they did best on live recordings like Eric Clapton's rendition of Layla for his Unplugged album. This piece is headlined by Clapton on guitar and Chuck Leavell on piano with extensive solos for both, and the earbuds did a good job of rendering both instruments cleanly. Bass is a little dry even for true wireless headphones though, so you may find yourself left a little wanting on rock pieces.

+

Good battery life.
Good performance in mids and highs.

-

Expensive relative to the competition.

AT A GLANCE

FREQUENCY RESPONSE
20Hz-20kHz

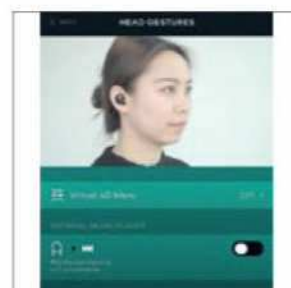
BATTERY LIFE
5 hours

WEIGHT
13.0g (each earphone)

PRICE
\$528



LEDs on the earbuds themselves indicate the battery status.



The 4D menu system is activated by the app.



AT A GLANCE

FREQUENCY RESPONSE
10Hz-22kHz

BATTERY LIFE
4 hours

WEIGHT
-

PRICE
\$249

JBL FREE

Sporting a simple, non-descript design, the JBL Free true wireless earbuds are billed as a flexible companion for an active lifestyle, and come with a splashproof IPX5 certified design as well as added gel sleeves that fit over the earphones for extra protection and a more secure fit when you work out. Battery life for these earbuds is a good four hours on a full charge, while the included case brings another five charges so you get a total of 24 hours of playback on the go.

Like the other earbuds in this shootout, the JBL Free comes with an integrated microphone so you can take and make calls with it. Unlike the others though, this automatically switches the audio to mono when receiving a call so you only get audio from the right earbud during the call. Stereo sound is restored when the music resumes. Push buttons on the side of either earbud allow you to control playback without having to dig out your media player. However, given that eartips themselves are relatively hard, this doesn't make for the most pleasant experience to

use as you almost feel like you're trying to drive something into your ear.

Unfortunately, trying to listen to music on the JBL Free is an experience marred by frequent connection drop outs. The left ear bud in particular tends to keep dropping out momentarily, leaving you

in mono mode more often than you would like. When they do play together, the earbuds are capable of good performance in the mids and highs, but seem to be lacking in terms of bass. For example, we tried listening to a recording of Rebecca Pidgeon's Spanish Harlem, and the only way to hear the opening bass line on

this track with these earbuds is to crank the volume up so the rest of the piece is uncomfortably loud. Sadly, even the highs can get screechy when pushed too hard. Live N' Let Die by Guns N Roses has an epic solo with a frenzy of violins and parts of this come off as sharp and jarring, making for an unpleasant listen. Seems in this case that the lowest priced earbuds really did perform commensurate to their price tag.



IPX 5 splashproof design.



Poor connection quality. Controls are uncomfortable to use.



The earbuds glow to indicate pairing.



LEDs in the carrying case indicate battery life.



JABRA ELITE 65T

Perhaps the most futuristic looking of the group, the Jabra Elite 65t earbuds offer fuss-free pairing and strong connection strength. These are advertised as offering “conversations as good as music”, but we really think it should be the other way around, given Jabra’s heritage in headsets and speaker phones.

While the Elite 65t earbuds don’t offer active noise cancelling, they do offer wind noise reduction and pretty good passive noise isolation that you can adjust by way of the Jabra app on your phone. This works by way of addition in the sense that you can choose to have more ambient noise fed in for better

awareness thanks to microphones on the earbuds. Jabra calls this HearThrough, and four modes are available via the Jabra app – Standard (with settings you can tweak), Commute (with HearThrough at 50% to hear announcements), Focus, and Relax. Both of the latter modes work to keep out as much of the surrounding sound as possible, though the headset will pause music from the headset to allow you to fully focus if you enable HearThrough.

Connection strength on the Elite 65t earbuds was definitely one of the strongest of the group, as the earbuds stayed connected throughout; though we did encounter odd bits of interference noise from the left earbud. In terms of battery life, the earbuds offer up to five hours of listening on a single charge with an additional ten hours from the carrying case. They also have a quick charge feature so just 15 minutes in the case will give you up to 1.5 hours of listening.

In terms of audio performance, the earbuds serve up a rich midrange with nice highs and a slightly dry bass. Rebecca Pidgeon’s vocals are sweet and

haunting on a recording of Spanish Harlem. Shifting to a more epic piece like November Rain by Guns N’ Roses further confirms the imaging capabilities of the earbuds, as they place Slash’s vocals well forward of the instrumental madness that goes on during the solo portion of the track. Meanwhile, faster moving pieces like Jamiroquai’s Love Foolosophy are handled well, with the earbuds easily managing the pace, injecting the needed energy to get you moving.

+

**Nice sleek design.
Good passive noise isolation.**

-

**Occasionally get interference
noise in the left earbud.**

AT A GLANCE

FREQUENCY RESPONSE
20Hz – 20 kHz

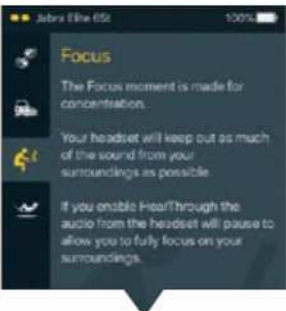
BATTERY LIFE
5 hours

WEIGHT
6.5g (right earphone)
5.8g(left earphone)

PRICE
\$268



Microphones on the earbud allow wind noise reduction.



Four HearThrough modes are available via the app.

AT A GLANCE

FREQUENCY RESPONSE
-

BATTERY LIFE
5 hours

WEIGHT
8g (each earphone)

PRICE
\$268



Pairing is via the Bluetooth button on the back of the case.



The LEDs glow green or red to indicate charging.

SAMSUNG GEAR ICON X (2018)

This year's Gear Icon X improves on virtually every aspect without hiking up the price. The earbuds are slightly more compact now, and with a narrower case that takes up less space. It also has battery charging indicators for both earbuds and a separate Bluetooth pairing button so you can initiate pairing even before you take the earbuds out.

As with the previous version, the earbuds will automatically pair to your device the instant you open the carrying case after the first pairing, so you'll have to take care to ensure that the case is kept closed during transit. Thankfully though, the earbuds now

come with a quick charging feature so just a 10-minute charge gives an hour of playback. There aren't official figures for how much battery life the case provides, but we'd say it gives at least three more full charges, giving you about 20 hours of playback on the go.

Gone is the onboard heart rate sensor, but in return you get up to five hours of playback via streaming from a media device, and up to seven hours of playback using

the internal media player. The 2018 version again comes with 3.4GB of internal storage, and this time they've fixed the streaming capabilities so music sounds just as good whether it's sent over from your phone or read from the internal memory. Like some of the other earbuds in this shootout, the

Gear Icon X also offers a Voice Focus feature that feeds external noise in so you can hear what's going on without having to tune down your music.

Needless to say audio performance is also much improved compared to the previous version. Gone is the excessively bright sound signature, and in its place is a more balanced

one that has good energy and a somewhat mellow bass. The earbuds managed to offer up an enjoyable rendition of Rebecca Pidgeon's Spanish Harlem, reproducing the piano and shakers with a good amount of detail while still keep Pidgeon's vocals the centerpiece of the track. A recording of Paradise City by Guns N' Roses further showed off the earbuds' ability to rock, but also revealed a tendency for the mids to be slightly bloated.



Balanced audio performance.
On-board memory to use without a media player.



Mids can be slightly bloated.



SONY WF-1000X

Announced at last year's IFA trade show, the WF-1000X is one of three audio products from Sony's wireless noise-cancelling headphone family, and probably one of the first true wireless earbuds to sport noise-cancelling capabilities. Coming in a choice of shiny gold or black, this has a more flashy design with a somewhat longish carrying case that doubles up to provide another two full charges for a total of nine hours battery life on the go. That's just about long enough for meaningful use, but is still the shortest among all of the contenders in this shootout.

Like the WH-1000X Mark II, the earbuds also get ambient sound modes and Sony has added the option of Adaptive Sound Control to the app which attempts to detect your present activity and then automatically pick the ambient sound mode that best matches it. This all sounds good in theory, but the open nature of these wireless earbuds means that the difference between ambient sound modes is minimal at best, so we just left the earbuds in full noise-cancelling mode at all times.

The supporting app also allows you to

change EQ settings, and lets you choose if you'd like to place a priority on sound quality or stable connection (in which case the connection codec is fixed to SBC). Firmware updates also come down by way of the app, thus letting you easily keep it updated.

When it comes to audio, we thought

the WF-1000X was one of the earbuds that easily stood out for its quality.

The earbuds easily handled faster moving pop pieces like Sam Smith's Money on My Mind. This piece has layers of overlapping vocals paced by a thumping bass beat, and the earbuds kept up with the pace and energy well.

They did well on acoustic pieces too, with a level of

refinement matched only by the Beoplay E8 in this shootout. For example, the earbuds presented an excellent rendition of the acoustic version of Hotel California by The Eagles, fleshing out each and every one of the various acoustic instruments present well while giving ample weight to both the singers and the crowd. As with most of the wireless earbuds we've tested so far the bass is on the dry side, but there's enough kick for it to be felt.

+
Good app support.
Option to stream at a lower rate for more stable connection.

-
Short battery life.

AT A GLANCE

FREQUENCY RESPONSE
20Hz-20kHz

BATTERY LIFE
3 hours

WEIGHT
6.8g (each earphone)

PRICE
\$349



The earbuds snap into place in the carrying case.



A button below the right earbud toggles noise-cancelling modes.



AT A GLANCE

FREQUENCY RESPONSE
-

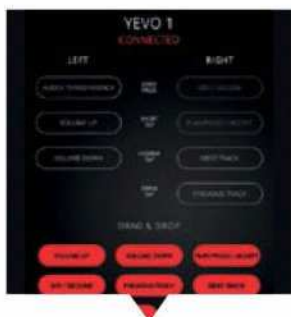
BATTERY LIFE
5 hours

WEIGHT
8g (each earphone)

PRICE
\$268



The carrying case has a drawer like pull-out design.



You can pick which actions are active via the app.

YEVO LABS YEVO 1

A new contender in the wireless earbuds space, the YEVO 1 actually comes from the creators of Swedish fashion and lifestyle brand Happy Plugs, which might explain the emphasis on design. These are easily the best looking wireless earbuds we've come across so far, with a minimalistic design that ensures the earbuds fit nicely into your ear instead of sticking out from it.

The included carrying case is equally sleek, with a pull-out drawer design that seems to have just enough resistance to stay closed thanks to what seems to be magnets within. This also provides an extra four charges to the earbuds, so you'll get a full twenty hours in your pocket on the go. A row of lights on the side of the case indicate just how much battery life remains in the case.

As with the other earbuds in this shootout, the Yevo 1 uses touch controls on the side of the ear buds to perform various functions. What's different, is that you can assign touch controls to either ear via the companion app, so you could have anything from just two controls to a full set of six. The app also adds EQ presets, the option

for Audio Transparency, and allows you to visually monitor the remaining battery life on the earbuds.

In terms of audio performance, the Yevo 1 proved to be a quality product – when the connection between earbuds held up. We found that on numerous

occasions, the left earbud would randomly drop out then come back in, which is obviously most distracting from the performance. When they do play together, the earbuds produce a nice wide soundstage, playing with both channels well to get a more obvious stereo effect. Vocals are generally presented nicely forward, and if you put on a piece

with heavy acoustic backing instruments like Diana Krall's *Temptation* for example, you'll be able to easily pick out each of the instruments. While the bass on these is still lacking some, there's an extra bass booster mode you can activate if you need more. Rock pieces like the Red Hot Chili Peppers' *Give it Away* and Bruno Mars' *24K Magic* need a good deal of energy to get you moving, and these earbuds are certainly capable of providing it.

+
Sleek looks.
Able to customize controls via app.

-
Unstable connection.



THE BEST WIRELESS EARBUDS ARE...



SONY WF-1000X

Sony's WF-1000X and B&O's Beoplay E8 stood out from the group in terms of audio quality, as the two truly excelled with all the test tracks we used. However, the Sony brings noise-cancellation and the option to sacrifice audio quality for improved connection between earbuds. Not that we needed to pick that option, as the earbuds had the fewest dropouts of the group. The three hour battery life is just about enough for your regular commutes, while the carrying case brings the total up to nine hours, which is certainly sufficient for daily use. From a price to performance perspective, the WF-1000X also comes in offering better value than Beoplay E8, and that's why it's the winner of this shootout.

BEST VALUE...

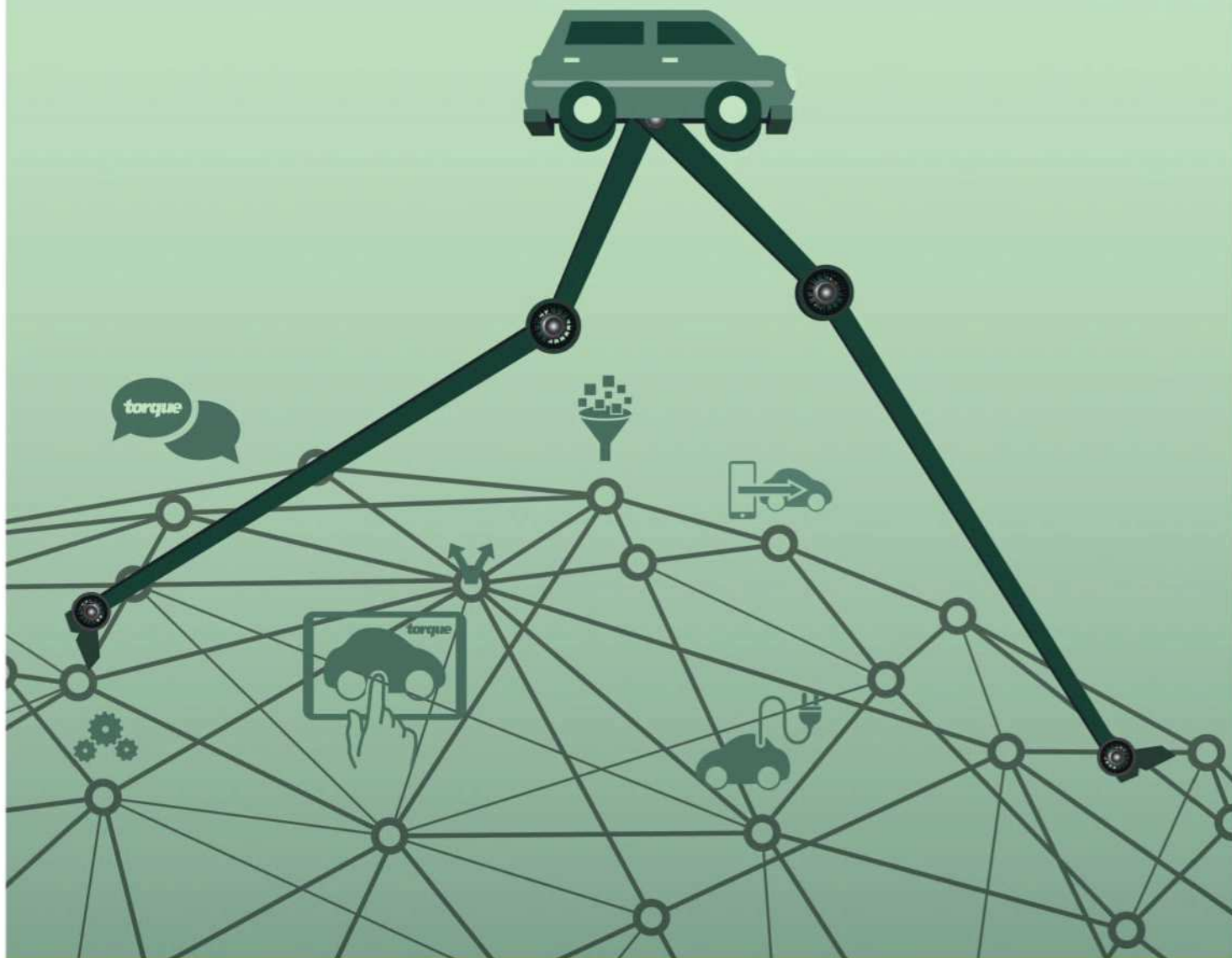
SAMSUNG GEAR ICON X (2018)

It's heartening to see how much a product can improve over the course of just one year. This year's Gear Icon X fixes the battery life and audio quality issues of its predecessor, and was one of the better performers in this shootout on our test tracks too. The earbuds are comfortable to wear in the ears, and the smaller size of the case makes it more pocketable. That they retained 4GB of onboard storage while lowering the price to \$268 only further cements its case as the best value of the lot.



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Go wide or go home



LG 34UC89G

By Ade Putra (GameAxis)

AT A GLANCE

PANEL

Curved, 34-inch, IPS

RESOLUTION

2,560 x 1,080 pixels,
21:9 ratio

REFRESH RATE

144Hz, G-Sync

RESPONSE TIME

5ms GTG

BRIGHTNESS

300cd/m2

PRICE

\$1,399

The sharp lines and black-red colors of the LG 34UC89G makes it clear that this curved ultra-wide is built for gaming. The 34-inch IPS finally brings NVIDIA G-Sync to the LG table, yet like its predecessor, is locked to a 2,560 x 1,080 pixels resolution. Even so, the reduced pixel density may be an acceptable sacrifice for mid-range systems looking to run games at speeds of 144Hz or more.

While evidently targeted at gamers, the 34UC89G manages to toe the line between reserved and flashy. From the front, the gentle curves and black-gray finish looks entirely at place in an office setting. It's the sleek, V-shaped stand and the monitor's rear panels that brings



USB 3.0 options aplenty, but note that the HDMI port only supports up to HDMI 1.4.

“gaming” to mind the most, the splashes of red and the chiseled lines looking right at home among contemporaries such as ASUS ROG and Acer Predator.

The stand itself offers both angle and height adjustments but, as expected of a curved display, not rotation. Colors aside, the stand doesn't

stray from LG's usual design conventions and it's both stable and easy to set-up. You can adjust the monitor with one hand, though I'd recommend using two just to prevent wobble and stress on the panel.

More pertinent is the interface panel. You'll find a DisplayPort 1.2 and (disappointingly) HDMI 1.4 for video, as well as four USB 3.0 and a utility port. One of those USBs is reserved for an upstream connection, though I do wish the remaining USB and audio ports were located to the side – having them all grouped together leaves the 34UC89G in a neither-here-nor-there spot when it comes to accessibility.

A clickable, 4-way joystick along the bottom edge is used to access and navigate



CONCLUSION

Fantastic mid-range ultra-wide gaming performance, but comes with a steep premium.

the on-screen display. LG isn't the only one to take the joystick approach, but it does slow the initial set-up as you go through the same set of menus again and again to access the settings. The better alternative, one I discovered when browsing LG's product page, is to download the OnScreen Control app, and it is by far a more pleasant way to use and navigate the OSD.

Fresh out the box, the 34UC89G cut a better impression than its predecessor. Colors were better presented, although users won't have plenty of options when it comes to fine-tuning. Nonetheless, the display looks great for both games and Netflix movies, with strong black level performance that leaves the overall



As a curved monitor, you can adjust tilt and height, but can't rotate to a vertical orientation.

presentation satisfyingly vibrant. It handled the dark vastness of space in *Elite Dangerous* (highly recommended for an ultra-wide!) and the carnival of colors in *Heroes of the Storm* well enough, while shows such as *Star Trek: Discovery* and *Stranger Things 2* proved just as enjoyable. While a great fit for gamers, the lack of

advanced calibration tools will likely give digital artists and photographers pause, sRGB mode or not.

On the bright side, viewing angles didn't pose any problems when sharing the screen with another, seated user. The curve is gentle and contrast shifts were only more evident when standing and off to the side, but nobody's going to look at a curved display like that. The biggest letdown is, of course, the 2,560 x 1,080 pixels resolution. The extra real estate is a plus, but if you're sizing up from a 1440p monitor then this does feel like a downgrade.

Where that 1080p ceiling does come in handy is for games, allowing mid-range systems to redirect their efforts towards framerate.

The 34UC89G goes up to 144Hz but can be pushed to 166Hz when overclocked. Motion blur and ghosting were negligible (unless one obsessively compares it to a 240Hz esports monitor) and G-Sync was ready to smooth over any hiccups. Its 5ms response time is sufficient for a majority of gamers, too, with no perceptible lag when hopping about in *Overwatch* or *CS:GO*.

The LG 34UC89G is a great monitor that addresses any gamer's desire to go ultra-wide. While the 21:9 aspect ratio takes some getting used to, especially at a 1080p resolution, its agreeable colors and fast performance help drive up this display's appeal.

While the \$1,399 price tag doesn't seem to mesh

TESTED & RATED

8.0 /10

HWM
SINGAPORE

with the mid-range crowd it seems to be targeting, note that LG also offers a 32-inch option, the 32GK850G, at the same price point with a QHD (2,560 x 1,440 pixels) display, G-Sync and 144Hz support. So, you have a choice to go curved and ultra-wide 21:9 at a lower 1080p, or a standard 16:9 flat screen at a higher 1440p resolution.

Read more at [GAMEA\(X\)IS.com](http://GAMEA(X)IS.com)

Audio nirvana from Japan

Audio-Technica ATH-ADX5000

By **Kenny Yeo**

The past couple of years have shown us that audiophiles are not shy about splashing thousands of dollars on flagship headphones as long as they like what they hear. And brands, like Audeze, Focal, and Sennheiser have responded by pouring resources into research and development to come up with superlative headphones.

The latest in the class of money-no-object headphone comes from the Land of the Rising Sun. I'm referring to Audio-Technica's new ATH-ADX5000. These are the company's newest flagship headphones and each piece is individually hand-assembled in Tokyo, Japan, and comes in a hard carrying case with a satin-lined interior. They have an open-back design and feature newly developed drivers, and their construction is characterized by premium and ultra-light materials.

In terms of aesthetics, the ATH-ADX5000 is best described as utilitarian. Unlike rival headphones which typically have fancy wood finishes or elaborate headband, the ATH-ADX5000 seemed to have been built with a strict adherence to the mantra of form follows



CONCLUSION

A high-resolving flagship that sounds supremely smooth and balanced.

AT A GLANCE

DRIVER
58mm dynamic driver

IMPEDANCE
420 ohms

SENSITIVITY
100db/mW

WEIGHT
270g without cables

PRICE
\$2,598

function. The headband is two pieces of magnesium lined with Alcantara, and the headband uses a friction-based adjustment that is elegant and effective. The arms and ear cups themselves are also magnesium, which helps keep weight down and improves weighing comfort.

Indeed, the ATH-ADX5000 is incredibly comfortable

could feel the fabric that covers the drivers.

The drivers are 58mm large, which is the largest yet of any Audio-Technica headphone. Each has a tungsten-coated diaphragm and a permendur magnetic circuit. The former improves transient response while the latter gives greater control over the drivers' movements. They have a fairly high

The end results are quite impressive. Audio-Technica headphones have a reputation for sounding lean and bright, but the ATH-ADX5000's sound can best be described as balanced and coherent. Contrary to popular belief, the bass response of the ATH-ADX5000 is adequate. They are not bass shy and can deliver the goods when

accentuated, but also very smooth, well-extended, and tame, with only a slight suggestion of peakiness that I noticed on some electronica and dance tracks.

Soundstage is adequate, but not impressively wide. And I can't help but think if it could be improved if the ATH-ADX5000 had thicker ear pads. On the other hand, imaging is exemplary and I could easily pick out the position of instruments in well-recorded tracks.

Since we are on the subject of well-recorded tracks, it is important to note that the ATH-ADX5000 is unforgiving when it comes to poorly recorded music. On badly mixed or engineered tracks, the ATH-ADX5000 is ruthless in revealing its flaws and can sound tonally imbalanced and limp. The ATH-ADX5000 demands that you feed it with material that is worthy of its stature as Audio-Technica's numero uno headphone.

That said, if you treat it with respect and feed it with good quality music and power it with a good high voltage amplifier, what you end up with is one of the best headphone listening experiences in the world. Overall, the ATH-ADX5000 is a highly commendable and musical effort from Audio-Technica that shows that they have what it takes to tango with the world's best.



The stock cable terminates in a 6.35mm jack and is long and heavy, but soft and pliant.



The driver is built directly into the baffle to reduce distortion and undesirable vibration.



The headphone comes with a luxurious satin-lined hard carrying case.

to wear. A big reason why is because the headphone only weighs 270g, which is remarkable for a full-size flagship-class headphone. Coupled with the soft and cushy Alcantara ear pads, you will hardly feel the ATH-ADX5000 on your head. My only gripe is that ear pads are shallow and I find it distracting that my ears

impedance of 420 ohms, which necessitates the use of a headphone amplifier to get the best out of them.

Each driver is also mounted directly into the baffle so that they form a single indivisible unit. This is called Core Mount Technology and Audio-Technica claims that it reduces distortion and unwanted vibration.

called for. But if I were to nitpick, it could do with a little more extension, tightness, and oomph.

The ATH-ADX5000, however, excels in other areas. The mid-range, for example, is intimate, clear, present, and very smooth. This makes the ATH-X5000 wonderful for vocals. Likewise, the treble is slightly

S9+ TESTED & RATED

8.5/10

HWM
SINGAPORE

TEST

A Sublime Cruiser

Audi S4 By Kenny Yeo



It used to be that performance was a mutually exclusive entity. You couldn't have a high-performance car that was comfortable or practical. But that changed when Audi introduced its S models some 18 years ago. Audi's S cars were designed to meld performance and practicality and the latest in the long line of everyday, all-weather, do-everything cars is the newest edition of the S4.

AT A GLANCE:

ENGINE

3.0-liter turbocharged V6

POWER

354hp / 500nm

**FUEL CONSUMPTION,
COMBINED**

12.98km/l

PRICE

\$314,180



CONCLUSION

Powerful and comfortable, the S4 is one for the demanding executive.



The S4 is the perfect example of a sleeper car. Unless you are a hardcore Audi fanatic, you would be hard-pressed to tell that the S4 packs some serious hardware under its hood. You need to know where to look. The grille has a different design, there are quad tailpipes (two on each side), the sills are slightly swollen, and the side mirrors have silver housings. Depending on your personal preferences, you might think it either looks understated and elegant or sedated and boring.

What's definitely not boring is

its drivetrain. The S4 sports a new 3.0-liter turbocharged V6. Power output is a meaty 354hp and 500nm of torque. 0-100km/h is claimed to happen in 4.4 seconds and top speed is, like most German sedans, electronically limited to 250km/h.

Audi's claimed performance figures seem spot on. Despite weighing over 1,600kg, the S4 takes off with surprising agility and urgency. With my right foot buried in the carpet, I was soon doing license-busting speeds. It revs smoothly too and it makes a surprisingly intoxicating

sound in the process too. It isn't too noisy or raucous as to be annoying and is just gritty and naughty enough to be exciting.

The wonderful thing about modern turbocharged engines is the wave of torque that they produce. In the S4, peak torque is delivered from as low as 1,370rpm, which means you are never short of shove. Overtaking is a breeze and addictive in the S4. Planting your foot down and watching the S4 leave traffic behind is something that most drivers, I think, will never get tired of.



That said, the S4 is more of a straight line bruiser as opposed to a corner devourer. Body roll is surprisingly minimal in a car of its class, and thanks to the S4's Quattro all-wheel-drive system, grip levels are impressive and you need to be really brave (or foolish) to get the car unstuck. However, the steering is numb, which doesn't inspire confidence. It doesn't help also that the 8-speed transmission can at times be hesitant on downshifts. As a result, it is on the highways that the S4 feels most in its element.

Further reinforcing S4's cruising credentials is its modern yet classy interior. The new interior is part of a major revamp on Audi's part and it is well-judged. One of the highlights of the S4's interior is its massaging chairs, which has no less than three massaging modes. Coupled with the S4's supple and accommodating ride, this makes cross-island drives surprisingly enjoyable.

Another highlight of the interior has got to be the Audi Virtual Cockpit, which eschews traditional analog dials for a thoroughly modern 12.3-inch high-resolution display. The use of an LCD display is modern and practical as it can be customized to show the most relevant information to drivers. Trying to find your way to a building that you have never been before? Simply switch up the display and enlarge the map. Apple fans will also be happy to learn that the S4 comes with CarPlay support as standard.



The front driver and passenger seats have massaging functions.

Seating space is decent for a compact executive sedan and definitely on a par with its rivals. My occupants in the rear did not complain about any discomfort. Boot space is good too and can easily swallow large items like strollers and boxes. And should you need more space, the rear seats can be folded to double carrying capacity from 480 to 965 liters.



The interior of the S4 is thoroughly modern.



The turbocharged V6 in the S4 is a tower of power.

In short, the S4 continues Audi's fine tradition of building high-performance sedans that are fast and are comfortable and practical enough for everyday use. Sometimes, you really can have your cake and eat it too.

TESTED & RATED

8.5_{/10}

HWM
SINGAPORE

The Fitbit Versa hopes to fit in as a smartwatch that does both notifications and fitness tracking for less money. At \$318, the Versa costs less than other smartwatches, which usually start from \$400. That includes the Versa's own older brother, the Fitbit Ionic, which retails at \$458.

The Versa includes many of the Ionic's features, but there are sacrifices to get the price down. There's no GPS and battery life is down from five days to four days (which is still impressive). The classic band the Versa ships with isn't as comfortable as the one on the Ionic. But on the plus side, the Versa is more attractive than the Ionic.

Fitbit OS, which powers the Versa and Ionic, is rudimentary. Swapping watch faces, for example, involves a trip to the Fitbit app on the phone, picking a face, and a quick reboot. You can't customize any of the widgets so you're stranded with whichever stat is showing on the watch face.

A major minus point is the lack of calendar support. You can't see your calendar anywhere on the Versa. How the Versa handles notifications is also quite simple. Once notifications arrive there's nothing you can really do about them on iOS. Canned responses, on the other hand, has just come online for Android-paired Versas.

The Fitbit smartphone app on the other hand, is a shining light among fitness apps. The app makes it easy to see your key stats on a single page, while Apple's Health and Garmin's Connect apps are obtuse. It's great how the app doesn't just track how you're doing, but



Why this could be your first smartwatch

Fitbit Versa

By Alvin Soon

CONCLUSION

An affordable smartwatch that's good value for money.

also gives you a benchmark for people your age. That helps you know if your sleep or resting heart-rate needs work.

I found the Versa accurate at tracking when I woke up and went to sleep. The Versa seems to get resting heart rates mostly correct, and it

does the same for steady-state exercise. But the Versa is slow to catch up when it comes to high-intensity intervals.

There's more I could nitpick about the Versa, like how the display doesn't always turn on when you raise your wrist. But then I remember

AT A GLANCE

SCREEN SIZE

1.34"

WATER-RESISTANCE

50 meters

COMPATIBILITY

iOS, Android, Windows

BATTERY LIFE

Up to 4+ days

PRICE

\$318

that the Versa is just \$318 and I bite my tongue. Other smartwatches cost more, in the \$400 to \$500 range.

The Fitbit Versa will probably not win our best smartwatch of the year award, but it provides decent performance, and is affordable enough for the curious who want to give smartwatches a try without having to blow a lot of money on one.



The Fitbit app has benchmarks that help you see if your stats are healthy or unhealthy.

TESTED & RATED

7.5_{/10}

HWM
SINGAPORE



Cutting cords

Logitech G613 Wireless Gaming Keyboard

By Koh Wanzi

The G613 is one of the first keyboards that I'm aware of to properly combine mechanical switches with wireless operation. I'm discounting keyboards such as the Filco Majestouch MINILA Air because that only uses Bluetooth, which definitely doesn't perform as well as a connection made over the 2.4GHz band.

The G613 uses Logitech's Romer-G switches and Cherry-style stabilizers, which feature a very slight tactile bump and are probably closest to Cherry MX Brown switches. I've actually never been a fan of Romer-G switches, as I find they can be quite fatiguing to type on over long hours.

Having said that, the switches on the G613 feel different, although Logitech didn't highlight any changes that it made. It's difficult to

describe, but it feels crisper, and I like them better than other Logitech keyboards such as the G Pro.

The different feel could be attributed to any number of reasons, and things such as the keycaps and base plate can affect how you perceive the switches. Despite its mostly plastic construction,

single-color white backlight to help those who work in low light.

You do get a column of six programmable keys to which you can assign custom commands in the Logitech Gaming Software, which is definitely helpful. However, it adds bulk to the keyboard for those who don't need them, and I'd much rather have had the ability to reprogram some of the other keys instead.

You'll also find a bunch of media controls at the top right of the keyboard, including buttons to toggle Bluetooth mode

and Gaming mode. It's not particularly elegant, but it sure is functional, and it's difficult to find fault with it at this price.

A final thing to note though is that the G613 also runs off a pair of AA batteries. Logitech claims months-long battery life, but time will tell if it holds out.

CONCLUSION

A solid wireless mechanical keyboard for those who really want to cut cords.

build quality feels solid, and there's little, if any flex to the keyboard.

The G613 is no-nonsense for those who want a simple wireless gaming keyboard that works. It has no backlighting of any sort, and while I'm willing to forgo RGB customizations, it would have been nice to see at least a

AT A GLANCE

SWITCHES

Logitech Romer-G

ACTUATION FORCE

45g

DIMENSIONS

478 x 216 x 33mm

WEIGHT

1,410g (without batteries)

PRICE

\$159



The Romer-G switches use their own key stem design, so they won't work with most third-party keycaps.

TESTED & RATED

8.0/10

HWM
SINGAPORE

Sometimes black, sometimes white

Nespresso Lattissima One

By Zachary Chan





What separates the Lattissima series from the regular range of Nespresso machines is the convenience of an integrated, automatic milk frother, as opposed to the separate Aeroccino frother purchase, which you'd still have to manually pour out. Except, previous Lattissima machines were designed for people who wanted milk in their coffee more often than not. If you liked your beverage black, and only occasionally dabbled in the world of lattes, getting a regular Nespresso machine and Aeroccino bundle was always the more logical choice.

In comes the Lattissima One, the "entry-level" Lattissima that Nespresso hopes would become the gateway drug into the frothy world of cappuccinos and latte macchiatos. I use quotation marks here because at \$448, the cheapest Lattissima is still pricier than the most expensive core range, which is the CitiZ + Aeroccino bundle (\$428). But of course, you could technically make the same

CONCLUSION

A simple, elegant, fuss-free machine to bridge the gap between black and milk-based Nespresso beverages.



beverages with any of Nespresso's machines, and the Essenza Mini costs only \$168, so it's a moot point trying to argue price. The value of any Nespresso machine is in how well it fits your caffeine-imbibing lifestyle. And speaking of lifestyle, the One is one dashing fella, with its blend of matte and glossy plastics.

Like the rest of its ilk, the Lattissima One has an integrated milk jug in the front that would froth and dispense milk automatically if you choose to make any milk-based beverages. The difference

is that the One is a single serve machine. There are only three buttons on the One, two standard Espresso and Lungo pulls for black coffee just like any standard Nespresso machine, plus an additional Milk beverage button. There is no other configuration to be made, and you cannot adjust froth settings either.

With the One, milk is designed to be completely depleted with every beverage made. A sensor on the machine behind the milk jug ensures this, though you can manually stop brewing halfway

AT A GLANCE

BREW SIZE

Espresso, Lungo,

PRESSURE

19 bar

WATER TANK

1 liter

DIMENSIONS

(W X D X H)

15.4 x 32.4 x 25.6 cm

WEIGHT

4.2 kg

PRICE

\$448



Instead of pre-set milk levels, this sensor depletes all the milk in the jug with every brew.

by pressing the Milk beverage button again. So, while Nespresso has provided friendly markings on the jug to indicate ideal milk levels for a cappuccino or latte macchiato, you can safely ignore them and fill the amount of milk that you want in your own coffee. Just make sure your cup is large enough to avoid spillover.

TESTED & RATED

7.5_{/10}

HWM
SINGAPORE



A Derivative Guilty Pleasure

Far Cry 5

By Salehuddin Husin (GameAxis)

As somebody who's played every iteration of the series, Far Cry 5 is too much like Far Cry 4 and Primal to feel worthy of being called a sequel. It's more of a refinement of the ideas from past games brought together in a whole new package.

Far Cry 5 takes place in the fictional Hope County of Montana, US. Playing a Sheriff's Deputy, the game starts with you accompanying a posse to arrest Joseph Seed, the leader of Eden's Gate, a cult that's taken root in the area. Needless to say, things don't go as planned and you soon find yourself trapped. From there, it's a rather predictable ride of taking down the members of the Seed family controlling

different areas of the county.

The characters here aren't as memorable or interesting as Pagan Min or Vaas, though the Seed siblings do provide enough incentive for you wanting to kill them.

Unlike past games, the whole world is pretty much open after the tutorial, letting you pick which Seed family member to go after first. You still need to take them all out in the end, but the freedom to choose can give your playthrough a different experience from others.

Progression in each region is represented by a Resistance Point (RP) meter. You fill it up by doing missions, assaulting cult strongholds, saving hostages, and a variety of other

activities.

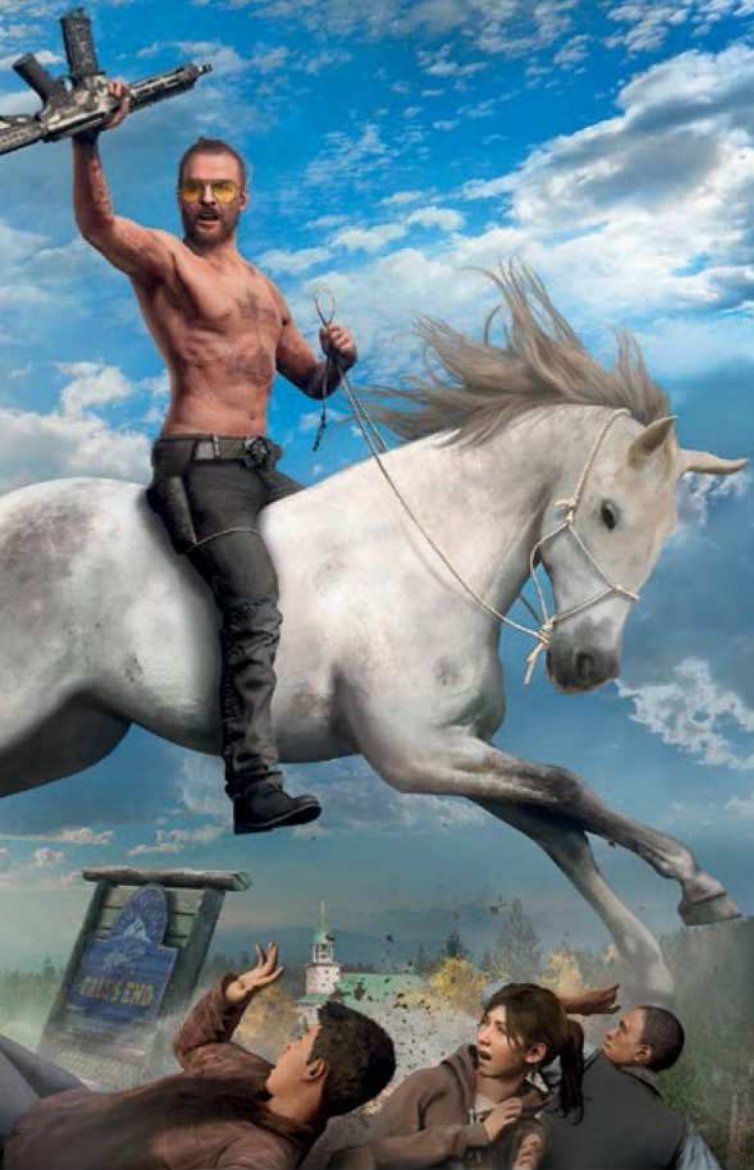
This whole cycle continues until you've liberated the area, which can turn into a boring grind for RP.

If you've played any of the last three games, you'll have déjà vu playing Far Cry 5. There are animal companions (Fangs for Hire) like Primal, and human sidekicks (Guns for Hire) like in Far Cry 4. The good thing is that the AI isn't half bad; they follow orders most of the time, kill intelligently, and can even aim!

It's awesome, especially with the animal companions, but I wish the system had more depth. Right now, they just unlock two hidden perks after a certain number of kills and that's that.

On the subject of perks, your character gets a boatload to unlock. They use the points you've earned from completing challenges, and come in multiple categories such as Survivalist, Renegade, Assassin, Prepper, and Leader. There's nothing radical, and most will seem overly familiar. There's a grappling hook for Assassin which sounds promising though, but it only works in certain areas and doesn't see much use.

Far Cry 5 has plenty of customization options. There is an astounding amount of clothes to unlock, and guns have an array of parts including suppressors, extended clips and scopes. Then there are the vehicles.



Boats make a welcome return, though with the open world the best way to navigate is by flying.

Here you can pick between choppers, planes, or a straightforward air-drop. All three are feasible and fun to use, though my personal favorites have to be the armed planes. There's no greater joy than dive bombing a cultist outpost and then making strafing runs as they scramble for cover.

Ironically, the best part of Far Cry 5 isn't the main game, it's the optional multiplayer mode. The Arcade lets you create maps for solo, co-op, or competitive play, and is a damn fun way to pass the time. You can upload your maps

PICTURES: UBISOFT

CONCLUSION

A solid game for those new to the series, but may be too much of a rehash for veterans.

or download community creations, and I foresee this being a big part of Far Cry 5's popularity down the road.

What's already certain is that this is one mighty fine looking game, especially if you're on the PS4 Pro.

Far Cry 5 supports Boost Mode and supersampling, which makes everything run

smooth and nice. Things can get a little choppy when there's a ton of action on-screen, though thankfully most firefights are fine.

There are weird glitches like enemies flying straight up when hit by cars or getting stuck in walls, but so far, I've not encountered anything serious like a borked save or other crashes. The whole experience is pretty stable.

If you've missed out on the previous games, then Far Cry 5 will make an awesome romp. Those expecting an overhaul from previous

AT A GLANCE

DEVELOPER

Ubisoft Montreal, Ubisoft Toronto

PUBLISHER

Ubisoft

GENRE

First-person shooter

PLATFORM

Windows, PlayStation 4, Xbox One

PLAYERS

Single, Multi



A large open world map means a lot of traveling. And the most fun way is definitely by air.



Fishing is hands down the best new optional activity.

games, like what Assassin's Creed Origins did, should avoid it. Hopefully, the incoming trio of DLC packs would change that, just like what Blood Dragon did for Far Cry 3.

Read more at GAMEA.XIS.com

TESTED & RATED

8.0/10

HWM
SINGAPORE

Made for FPS gamers

RAZER BASILISK

By Koh Wanzi



What makes a good FPS mouse? That probably depends on who you ask, but a reliable optical sensor and light weight would probably show up at the top of most people's lists. Either way, Razer thinks it's settled on the right formula with the Basilisk, its first mouse designed specifically

sensitivity in 50DPI increments in Razer's new Synapse 3 software, and the mouse supports up to five sensitivity stages. There's onboard memory as well, so you can save up to four onboard profiles if you need to take the mouse out with you.

The Basilisk's shape lends itself well to both palm and



CONCLUSION

A solid, well-designed mouse with an excellent implementation of a sniper button.

for FPS gamers.

The Basilisk is outfitted with the excellent 16,000DPI PixArt PMW3389 optical sensor. Razer calls this its 5G optical sensor, and it's based on the popular PixArt PMW3360 sensor. A version of this sensor, the PMW3366, is also found in Logitech mice like the G Pro and G903, both of which I've had great experiences with.

The PMW3389 has no inherent acceleration, jitter, or prediction algorithms, so it works great for FPS games where pinpoint accuracy is a must. It handled quick flicks well, and I was never able to make the mouse "spin out", which is what happens when the sensor loses track of where you're pointing at.

You can tweak the



You can customize the resistance of the scroll wheel to suit your preferences.

claw grips, but my hands are on the smaller side, so I naturally found the mouse more comfortable to palm. This is an ergonomic, right-handed mouse, and there is a helpful divot running down the left mouse button that guides your finger into place.

But what really deserves mention is the sniper button on the left, although

it's not really a button at all. Razer calls this a DPI "clutch", and that's because it takes the form of a small lever instead of a standard button. I still don't think sniper buttons are that useful since many FPS games offer dedicated sensitivity settings when scoped in, but if you have use for one, the Basilisk's implementation is probably among the best out there.

It's a lever, so it's a lot easier to press, and it feels less onerous to hold down. One of my biggest complaints with sniper buttons was that they always made it harder to control the mouse at exactly the moment when greater precision was required, and the Basilisk's design mitigates this somewhat.

One final thing to note is the weight of the mouse. At 107g, this is still a little heavy for a wired mouse, especially one targeted at FPS gamers. Most competitive FPS

AT A GLANCE

SENSOR

16,000DPI PixArt PMW3389 optical

BUTTONS

8

DIMENSIONS

124 x 75 x 43mm

WEIGHT

107g

PRICE

\$109

players prefer something under 100g, so it's slightly disappointing that Razer would neglect such an important characteristic of an FPS mouse.

TESTED & RATED

8.5_{/10}

HWM
SINGAPORE



Kratos in his best form yet

God of War

By Salehuddin Husin (GameAxis)

AT A GLANCE

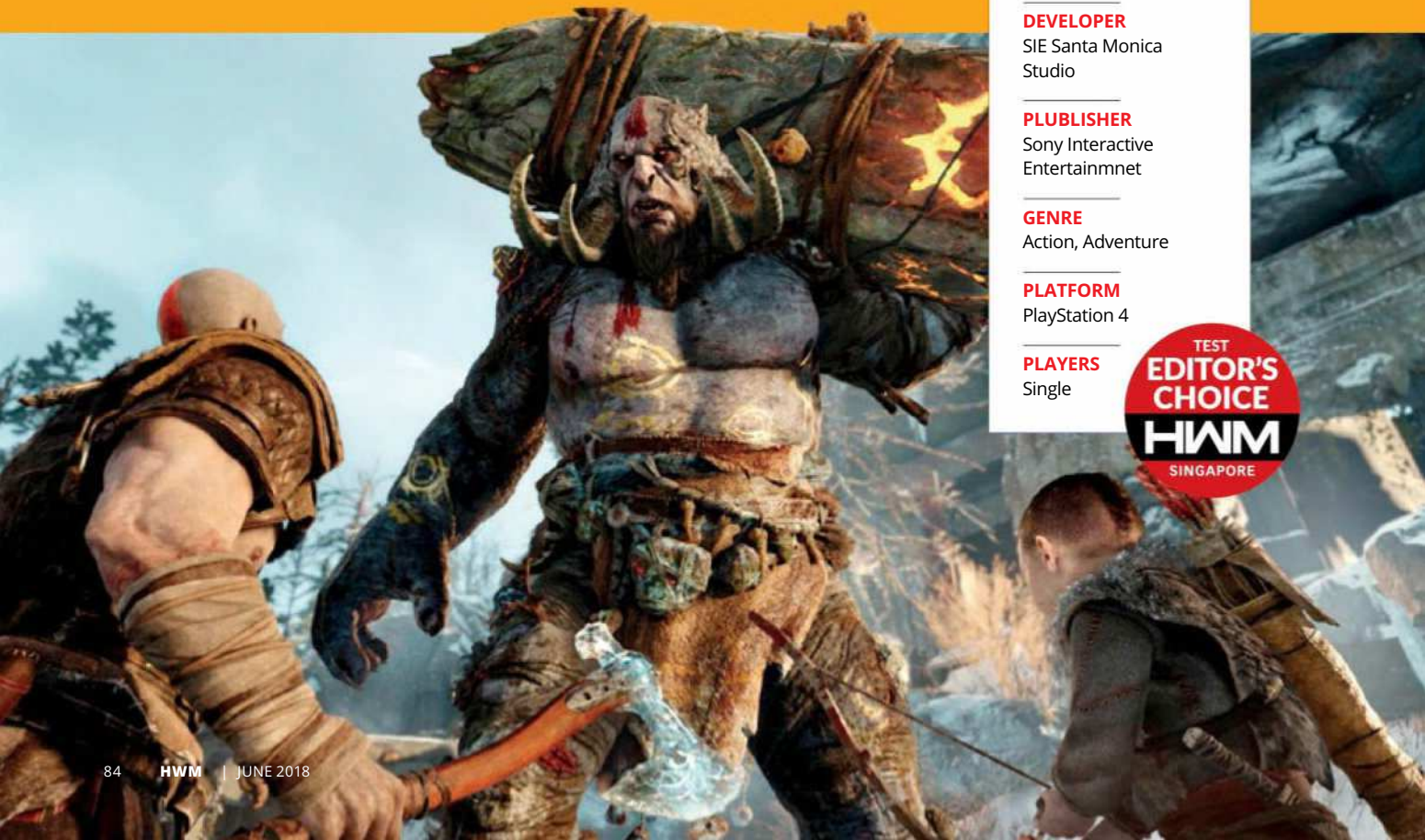
DEVELOPER
SIE Santa Monica
Studio

PUBLISHER
Sony Interactive
Entertainment

GENRE
Action, Adventure

PLATFORM
PlayStation 4

PLAYERS
Single



It has been a while since we last saw Kratos. After murdering Zeus and most of the Greek pantheon, it seems he finally had the time for a much needed break.

God of War picks up decades later, with the Ghost of Sparta now living in the frigid Norse lands with his family. The game opens with you building a funeral pyre for Kratos' wife, Faye. It doesn't take long before the Norse gods take notice, wrapping him up in another mythological saga. Out of all the previous games, God of War undoubtedly has the best plot in the series... and it's only just beginning!

magically recalled after being thrown. Kratos is still dangerous without his axe though. Unarmed blows fill up a stun meter that, when filled, lets you trigger gory finishing moves.

Different fighting styles have their own combos and moves, and you can seamlessly cycle between them with the D-pad.

Kratos goes up against a wide variety of enemies: dark elves, draugr, trolls, dragons, and other monstrosities from Norse mythology. And this raises a major peeve for me. Kratos only has a handful of finishers for each enemy type, so be prepared to see the same animations over

Spartan Rage meter, and triggering it regenerates your health and makes you stronger. It's incredibly useful when you need to take out tough enemies or when you're on the ropes and need a quick breather.

As a companion-type character, Atreus' AI is intelligent enough to assist in battle. He'll join the assault if he sees you rushing a foe, stepping in as soon as your own combo ends. He can also grab enemies for you to land some free hits and pull off a finisher. Atreus is completely worry-free as he can be stunned, but not killed.

When you're not fighting, chances are you'll be solving the numerous environmental puzzles in the game. Most of them are easy enough, but a handful requires some extra thinking.

There's an underlying RPG-lite mechanic system at work in God of War. Your gear adds to your overall power level,

range from fighting optional, hidden bosses, to finding translation runes to access hidden realms. There's a ton of meat to the game and it'll take you quite a while to see it all. I spent two whole days and nights to reach the end and I still haven't fought any of the hidden bosses.

God of War has some of the best visuals ever seen on the PS4. In fact, every area you visit has its own visual style, from jungle ruins to frozen caves, and they all look great. I'm still in love with the Lake of the Nine, with its huge open map and progressively changing topography.

On top of that, voice acting is top-notch. Christopher Judge (who you might know as Teal'c from Stargate SG-1) was born for the role. Judge's deep baritone is perfect for a grizzled Kratos, and his deadpan delivery to some of Atreus' lines made me

CONCLUSION

A landmark return of the franchise, with boatloads of content, fun gameplay and a great story.

Our new Kratos isn't the loner he used to be. Life as family man has mellowed him some. He's now joined by his son Atreus, whose neivety is a stark contrast to Kratos' harsh, pragmatic personality, and it serves as a great foil to the elder Spartan.

It plays off brilliantly and leads to genuinely compelling moments as they struggle to know and accept each other. Their dialog is one of the game's high point, humanizing the duo and letting us see Kratos in a whole new light.

Gameplay has seen a tremendous overhaul too, with Kratos now wielding the Leviathan Axe. Imbued with frost, it can freeze enemies and, like Thor's Mjöllnir, be



Not just hack and slash. Father and son dialog and story moments are some of the best parts of the game.

and over again.

Luckily, God of War's combat is fast, fluid and relentless, relying on timing and evasion more than straight button mashing. Kratos responds with no lag and it's a breeze to engage and disengage foes.

Landing blows will fill a



Atreus is pretty useful in battle. He can also help solve puzzles and best of all, 100% fuss-free.

which in turn dictates how tough enemies are. Since they don't scale to your level, equipping and upgrading better gear is pretty much required for tougher enemies and optional bosses.

God of War also has a handful of side-quests and endgame content too. These



chuckle more than once.

Santa Monica Studios and Sony have truly hit this one out of the park, and it's done what I thought was previously impossible: it has turned me into a fan. One who can't wait for the inevitable sequel, and there's no higher praise I can give.

Read more at GAMEA:IS.com

Great bang for your buck

ASUS ZENBOOK UX331U

By Koh Wanzi



The first thing you'll notice about the ZenBook 13 UX331U is its lid. Most ZenBooks feature a finish that quite clearly gives away their aluminum construction, but the UX331U looks like it's topped by a sheet of glass.

However, this is actually a specially treated metal surface, the result of a

get too excited yet though, because the GPU that's used is a more modest NVIDIA GeForce MX150 and not a beefier GeForce GTX 1050 Ti.

That said, this does provide a decent performance boost, and it's still a lot more powerful than your average ultrabook with integrated

The Harman/Kardon-certified stereo speakers point toward the bottom, and they're actually surprisingly loud and clear. The high frequencies can sound a tad shrill at high volumes, but I was otherwise pretty satisfied.

When it comes to wired connections though, this ZenBook has a total of two USB 3.1 (Gen 1) Type-A, one USB 3.1 (Gen 1) Type-C, and a full-sized HDMI port. There's a microSD card slot on the right as well, although I'd much preferred to have seen a proper SD card reader in its place.

One final point to address is the notebook's cooling. When you shove a discrete GPU into a notebook that's this thin and compact, you're probably worried about whether it can deal with the additional heat output. Fortunately, the UX331U does quite well in this area and there were no signs of throttling. It passed a 40-loop run of 3DMark's

AT A GLANCE

DISPLAY

13.3-inch
1,920 x 1,080-pixel IPS

PROCESSOR

Intel Core i7-8550U
(1.8GHz, 8MB L3 cache)

MEMORY

16GB LPDDR3
2,133MHz RAM

STORAGE

512GB SATA SSD

PRICE

\$1,998

CONCLUSION

An affordable and competitively specc-ed notebook for the road.

fancy-sounding process called nanoimprint lithography. But while it sounds great on paper, this finish is an absolute fingerprint magnet. Furthermore, it doesn't seem to hold up very well under daily use either as I've somehow managed to scuff it up a little already.

Still, the UX331U is a 13.3-inch notebook with a discrete GPU, defying conventional expectations for this class of laptops. It's not the first to offer this, but what makes it impressive is how thin and light it is.

The UX331U's aluminum body weighs a mere 1.12kg and measures 13.9mm thick, which makes it one of the thinnest and lightest notebooks you can get with discrete graphics. Don't



The USB-C port doesn't support Thunderbolt 3.

graphics.

The backlit keyboard is quite pleasant to type on as well. It offers a 1.4mm travel distance, and each key offers good feedback, for a laptop keyboard. I also required next to no time to adapt to the keyboard and was able to type at a fairly good pace right off the bat, which is more than I can say for many laptop keyboards.

TESTED & RATED

8.5/10

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CREATE STUNNING DIGITAL COMPOSITES



For Goh Guoxin, composite photography is an imaginative play of photos, using elements from multiple photos to form a single image. He often finds the results to be amazing as they help the photo manipulator tell incredible stories.

*Images by Goh Guoxin (@9oh9x), Founder, @Kilogrammerz
Edited by Marcus Wong*



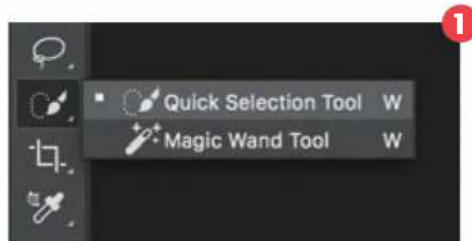
BASIC WORKFLOW FOR COMPOSITE PHOTOGRAPHY

Before we start, Guoxin says it's crucial to take note of some points. Identify and decide on the source and direction of the light. Then for easy editing, choose photos with similar lighting and angle (based on the angle of the background) so the end result is more realistic.



PART I: Masking your objects

Open the image of Mario in Photoshop.

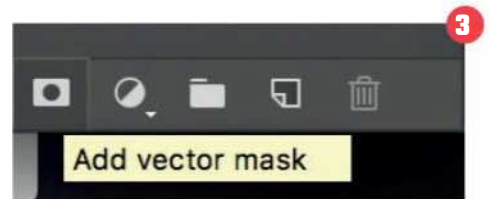


1 First, Guoxin selects and mask out the Mario using the “Quick Selection Tool” (shortcut key “W”).

2 Normally, Photoshop does a pretty neat job in selecting the subject, but this depends on the quality of the image, and on how much contrast there is between the subject and the background. Thus, Guoxin recommends zooming in to the edges to manually refine the selection.

3 Once satisfied, click on the “Add Layer Mask” to create the mask based on your selection.

4 Mario is nicely masked out.





5 Repeat the steps to mask out the lady, and then save it. The result is shown here.

Save your masked objects as a Photoshop file (PSD).



PART II:

Preparing the background

6 Here, Guoxin tweaks the color of the background with a “Color Balance” adjustment layer to color grade it a little, giving the image a more cinematic feel.

7 Next, he also tweaks it to look brighter with an “Exposure” adjustment layer.





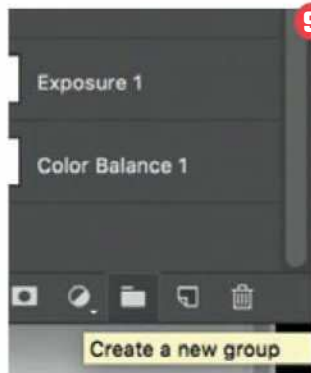
PART III:
Importing the masked objects

After adjusting the background image, Guoxin imports both the edited Mario and Lady images in by clicking and dragging them into it.

8 Then, he resizes the objects to achieve the results as shown in Fig. 8. The order of the layers should be as follows. Lady > Mario > Background.

Note: The imported images will be converted to “Smart Objects” by default, but this format is a good way to preserve the image quality especially when you scale it.

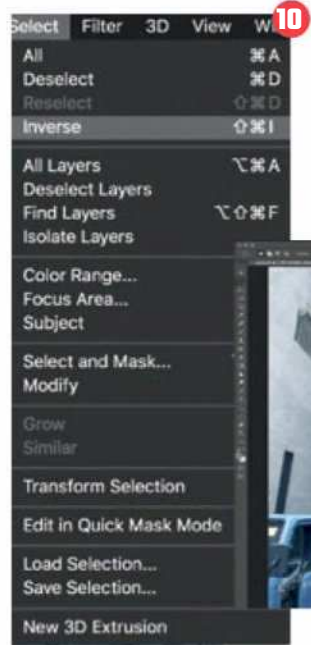
9 For easy management, group the Mario and the Lady layers.



9

Step 4 –
Editing Mario

10 As you can see, Mario’s right leg appears to overlap the cars. To fix that, Guoxin first hides the entire Mario layer to reveal the background. Then, he picks the background layer and uses the Quick Selection tool again to select the cars. By clicking Select > Inverse, selecting the Mario layer, and clicking on Create Vector Mask, Guoxin creates a mask on Mario to hide the portion of his leg that covers the cars.



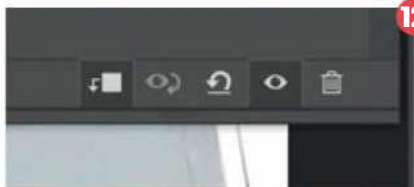
10





11

11 His next move is to select the Mario layer and create a new Color Balance adjustment layer. For this specific project, the settings in the Midtones are Cyan/Red -35, Magenta/Green 0, and Yellow/Blue +21.



12

12 Make sure the “Clip to layer” option is enabled so that it only affects the Mario layer.

13 Next, Guoxin selects the newly added Color Balance layer and then adds a Hue/Saturation layer to desaturate the colors by setting the Saturation to -30. Again, be sure the “Clip to layer” option is enabled so that it only affects the Mario layer.

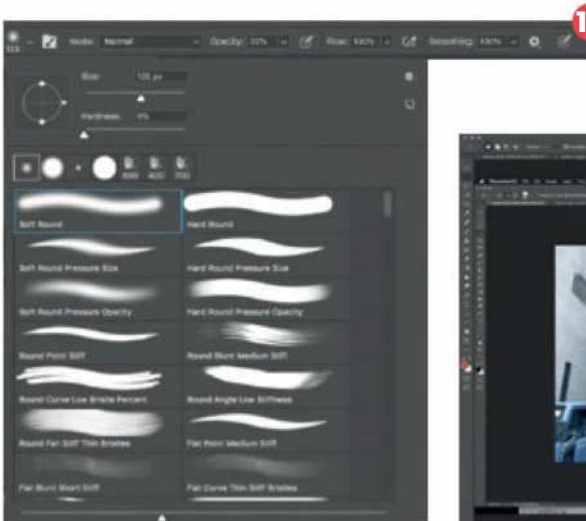
By now the Mario should look it blends well with the background.



13

14 Guoxin then creates a new blank layer on top of the Color Balance and Hue/Saturation layers for image “Burning”. Make sure to clip this layer to the Hue/Saturation layer as you only want the effects on the Mario. Then switch to Brush mode (shortcut key “B”), and pick a “Soft Round” brush (Size 125px, Opacity 22, Hardness 0) and choose black to brush the some areas to give it some shadow for realistic lighting.

15 For this image, Guoxin paints the legs and shoes.



14



15



16 Now, create a new blank layer just below the Mario layer. This will be the shadows layer. As there is no harsh lighting, the shadow cast on the ground should be diffused. With the same brush settings in the previous step, Guoxin brushes the shadows on the road and on the cars near Mario's right leg.

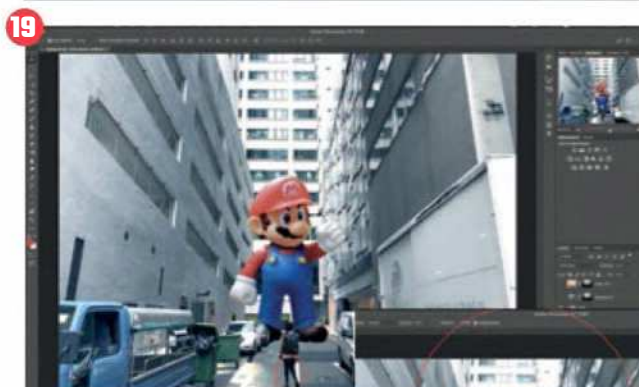
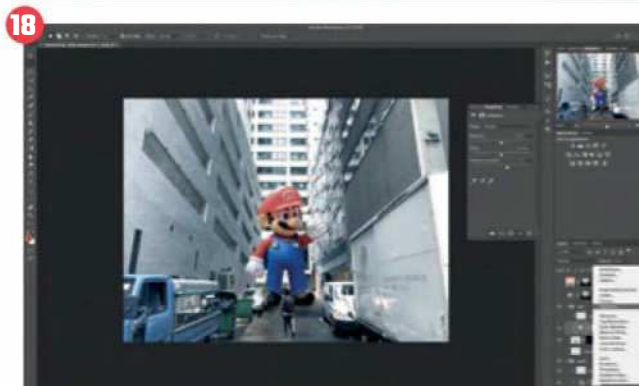
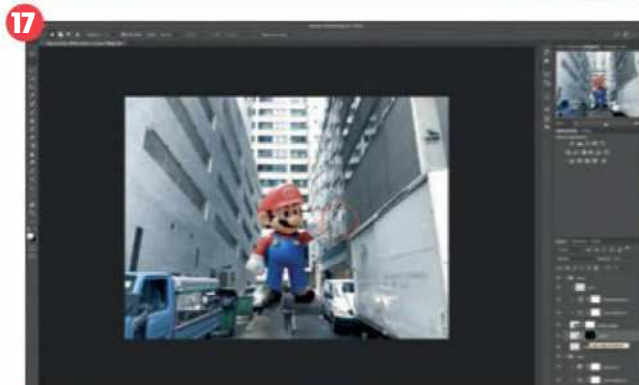
17 Lastly, he duplicates the Mario layer and flips it horizontally. Move this copy of Mario towards the right of the image and mask out a portion of his fist. Next, lower the opacity to create a reflection on the reflective panels of the wall. And you're done with Mario.

PART V: Editing the lady

18 Create an exposure adjustment layer to darken the lady so that the lighting looks right overall by clicking the adjustment layer button at the bottom of the layers panel. For this, Guoxin set Gamma Correction to 0.75, and make sure to clip the adjustment layer to just the layer with the lady.

19 Next, create a blank layer just on top of the Exposure layer and clip it to the exposure layer. Then brush over the legs of the lady with the same brush settings as before

20 Now, create a blank layer just below the Lady layer for her shadows. Again with the same brush settings, paint her shadows on the road.





22



21

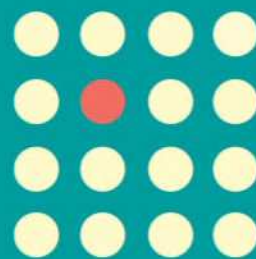
PART VI: Blending in everything

21 Guoxin creates an Exposure adjustment layer and places it at the very top, then applies a radial gradient to the mask, simulating a consistent glare on all the layers. The setting for this is Gamma Correction at 1.45.

22 And voilà, the finished composite.

#TMIT

This Month In Tech By Koh Wanzi



23rd June 1868

On 23rd June 1868, the first QWERTY typewriter was patented. The Sholes and Glidden typewriter - better known as the Remington No. 1 became the first commercially successful typewriter, marking the machine's evolution from a mere curiosity to a practical device.

More importantly, it used an early four-row iteration of the QWERTY layout, which the keyboard you're typing on right now probably uses. But even though most modern keyboards use this, the layout was actually created to deal with the limitations of typewriter design, where pressing adjoining keys in quick succession would cause the typebars to collide and jam the machine. As a result, the keys were reordered according to letter frequency, with letters commonly occurring in pairs placed far away from one another.



29th June 2007



The first iPhone goes on sale.

6 June 1984

Alexey Pajitnov releases the game Tetris in the Soviet Union.



Viking missions to Mars



19 June 1976

The Viking 1 spacecraft enters orbit around Mars.



16 June 1903

Henry Ford incorporates the Ford Motor Company.

PICTURES 123RF

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with a delicious crunch

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in a variety of flavours

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